EL "EFECTO 1812" EN LA PRENSA Y LA CIENCIA DEL SIGLO XIX

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Caracas, 2016

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Prefacio de los autores

Los estudios y razonamientos sobre los sismos de 1812 en Venezuela se inician casi al mismo tiempo que sus efectos destructores. Hubo quienes ni siquiera esperaron a que el polvo de las ruinas se calmara frente a sus ojos para comenzar a especular y explicar las causas de aquella ruina estremecedora. Envueltos en un contexto de pugnacidad y desgaste de referentes, la ocurrencia de estos violentos terremotos sirvió de combustible a las llamas de los enfrentamientos. Sin embargo, a la distancia y con la perspectiva de quien observa a los conflictos desde lejos, los temblores y la guerra, la independencia y el surgimiento de la nación, alimentaron imaginarios, columnas de periódicos, debates científicos, discusiones ideológicas, y hasta contribuyeron al nacimiento de las disciplinas geocientíficas.

Se trata de fenómenos naturales que amplificaron sus efectos de la mano de un contexto simultáneamente sacudido por la crisis de la monarquía española, el ocaso de la sociedad colonial y el inicio de la guerra; por otro lado, ese mismo contexto daba lugar al surgimiento del positivismo, de la ciencia moderna, y las especializaciones del conocimiento. Todo esto, en conjunto y complicidad con la extensa y compleja destrucción ocurrida aquella tarde del 26 de marzo, habría de contribuir significativamente al despliegue de un perfil protagónico insospechado por entonces y desconocido hasta el presente. Los sismos del Jueves Santo de 1812 en la naciente Venezuela darían la vuelta al mundo y serían, por muchas décadas, el centro de atención de las miradas científicas, literarias, y periodísticas con las que se observaba a esta sociedad.

Sólo en el propio año de 1812, luego de que los terremotos tuvieran lugar en el mes de marzo, más de cincuenta referencias fueron registradas

en periódicos de Europa, Estados Unidos y el resto de América, dando noticia u opinando al respecto. Descripciones, testimonios, explicaciones teológicas o pretendidamente científicas, así como radicales posiciones políticas, condujeron las columnas de docenas de publicaciones que hallaron en estos sismos una interesante oportunidad para ensanchar el campo de sus coberturas informativas. Con el paso de los años, cuando ya dejaron de ser primicia, los terremotos y sus efectos pasaron a ser un colorido testimonio de la independencia, una arriesgada anécdota de intrépidos viajeros, una estremecedora efeméride, o un ejemplo de la flamante *seismología*. Aquel protagonismo descollante acabaría cediendo el paso a otros sismos destructores en el mundo y a la aparición de los instrumentos de medición de los terremotos; sin embargo, y especialmente para la historia sísmica venezolana, el estudio de estos temblores continuaría dando de qué hablar incluso hasta el presente, representando una pieza clave en el rompecabezas telúrico de nuestras regiones.

Esta investigación, que comenzó con el acopio aislado de lo que nos encontrábamos eventualmente en archivos y repositorios documentales al respecto, fue impulsada desde el asombro inevitable que representó el tropiezo recurrente con todas estas referencias que no dejaban de aparecer cada vez que se iniciaba una búsqueda sobre terremotos en la historia de Venezuela. La sistematización de todos esos hallazgos acabó desbordando los esfuerzos individuales y convocando un equipo de investigación que cruzó miradas y especialidades para dar cuenta del "efecto 1812" en la historia periodística y científica del siglo XIX. No obstante, el estudio representa un eslabón más en una cadena de trabajos sobre 1812, sobre la historia de las geociencias y del pensamiento científico en Venezuela, o bien sobre las condiciones geofísicas de algunas ciudades en el país, todo lo cual ya lleva varios años.

Los autores acumulamos estudios e interés acerca del tema a través de recorridos individuales o asociados, pero confluyentes, al fin y al cabo. Desde la Sociedad Venezolana de Historia de las Geociencias (a la cual pertenecemos), se realizaron trabajos acerca de algunos de los protagonistas fundamentales de la documentación aquí presentada. Los estudios sobre

Manuel Palacio Fajardo y Alejandro de Humboldt, así como su relación con el francés Louis Delpeche en torno a sus publicaciones sobre los sismos de 1812, ya configuraban antecedentes al respecto y se aproximaban a advertir el asunto. Del mismo modo, las investigaciones documentales e históricas sobre los procesos sociales venezolanos observados a través de aquel año, acumularon fuentes primarias y publicaciones contemporáneas. Las indagaciones sobre la historia del pensamiento sismológico en el siglo XIX, desplegadas en libros antecedentes e inclusive en una tesis de grado, también nos aproximaron a la cuestión y nos identificaron con objetivos comunes. Las traducciones de textos especializados que se presentan al público a través de estas páginas representan la profundización y el ensanchamiento necesario de la mirada sobre la documentación hallada, así como el ineludible regocijo de publicarlas por vez primera. Estas experiencias y manejo de la información fueron enriquecidas con las pesquisas especializadas en torno a los enigmas documentales que hallamos (que no fueron pocos, ciertamente). Fue un esfuerzo colectivo tenaz y plural.

En varias oportunidades pasamos tardes enteras ante una mesa repleta de fotocopias, libros y periódicos, en el intento de descifrar anónimos que se antojaban sospechosos de coincidir con autores ya conocidos. Perseguimos publicaciones originales que jamás logramos hallar, o bien pasamos largas horas en bibliotecas lejanas detrás de periódicos que sería imposible consultar en nuestro país, a pesar de haber dedicado años de búsqueda en las hemerotecas nacionales (mucho de lo hallado procede de los repositorios venezolanos, igualmente). Fue un recorrido de múltiples caminos que nos llevó a tomar tiempo de otras dedicaciones para hurgar en este asombroso pasado noticioso y científico acerca de los temblores más controversiales de la historia venezolana.

En el marco del bicentenario de aquellos terremotos, hemos decidido dar a conocer un aspecto nunca mencionado sobre sus efectos, destacando su presencia alrededor del mundo y la construcción de una memoria sobre el evento que hoy parece desaparecida, quizás disuelta ante la ocurrencia de otros sismos de relevancia o bien de otros desastres de riguroso impacto.

Se persigue la intención, asimismo, de revelar que la atención sobre estos temblores no es exclusiva de la sismología contemporánea, sino que posee antecedentes que de igual manera enriquecen a la propia sismología y que contribuyen a una presencia histórica del acontecimiento eventualmente insospechada.

La investigación se limitó a las publicaciones periódicas del siglo XIX y las publicaciones exclusivamente científicas, como un reflejo de lo hallado originalmente en esas búsquedas precedentes y como una sistematización de las noticias, las conmemoraciones, y las narraciones que recorrieron los periódicos del mundo occidental de entonces. Sin duda este trabajo habría resultado interminable si se incluyesen las menciones literarias, bibliográficas, historiográficas o de documentación primaria que aquí no aparecen; del mismo modo, queda por colectar una buena parte de la prensa americana y europea que no fue hallada en este trabajo y de la que se sabe por referencias indirectas de su existencia. El "efecto 1812" trascendió todas las fronteras de la difusión informativa y del ámbito geocientífico decimonónico, y ello se trasluce en las fuentes que presentamos a continuación.

Estos documentos aquí compilados contribuyen a ilustrar la historia de la sismología y de la ciencia en general, así como a dar cuenta del lugar que ocupó en la prensa mundial un acontecimiento que le es propio y fundamental a la historia venezolana. Con ello, asimismo, los autores pretendemos aportar a la memoria colectiva de nuestra sociedad con relación a los terremotos de su pasado, y abrir nuevos caminos para la incorporación de los temblores a su cotidianidad. Las páginas que siguen devuelven a los ojos de todos nosotros un protagonismo que parecía perdido en el tiempo, pero que continúa vigente mucho más allá de conmemoraciones y aniversarios.

Rogelio Altez, Franco Urbani, Andrea Noria y Michael Schmitz
Caracas, agosto de 2011.

Estudio Preliminar

En la historia de los cataclismos de la naturaleza que de cuando en cuando azotan á la sociedad humana, pocas veces se ha visto uno que haya sido precedido y seguido de hechos y coincidencias tan trascendentales como el terremoto de Caracas del 26 de marzo de 1812.

Arístides Rojas[1]

La información de primera mano acerca de lo ocurrido durante y después del terremoto del 26 de marzo de 1812, se encuentra dispersa en una gran cantidad de escritos cuyo tema y objetivo central no era el discutir o informar acerca de ese evento. En una serie de documentos redactados por políticos, militares, religiosos, cuentistas, novelistas y otra diversidad de autores, se encuentra, codificado de acuerdo a la óptica e intereses de cada uno, algún dato importante acerca de lo que realmente aconteció en aquellos días no tan lejanos.

Jaime Laffaille y Carlos Ferrer[2]

Terremotos con brillo propio

En marzo de 1882 un periódico de Cincinnati publicaba su "Historical Calendar", una efeméride mensual en la cual se destacaban los hechos más importantes, según su perspectiva, ocurridos en la historia alrededor del mundo. Entre otros sucesos resaltantes para el mes en cuestión, aquella acotada lista marcaba el asesinato del Zar de Rusia en 1801, la muerte

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[2] "El terremoto de Mérida de 1812: escudriñando entre las páginas de una novela inconclusa en busca de información acerca de una historia real", en *Revista Geográfica Venezolana*, Vol. Especial, Mérida, 2005, p. 217.

de la reina Elizabeth en 1663, la declaración de guerra entre Inglaterra y Francia de 1744, la paz de Amiens de 1802, y la "destrucción de Caracas por un terremoto" el 26 de marzo de 1812.[3]

En 1831, un oficial de la legión británica que había batallado en la independencia venezolana, se animó a escribir una novela cargada de épica y dramatismo a la que llamó *El Terremoto de Caracas*, publicándola como el segundo de tres volúmenes dedicados a la narración de sus andanzas junto a los héroes venezolanos que lucharon contra la monarquía ibérica. El autor describió cuidadosamente la irrupción del temblor del Jueves Santo en medio de una desconsolada e inventada escena de amor, en la cual se entrecruzaban el espanto y el despecho en medio de "nubes de polvo que enfoscaban el aire."[4]

El cónsul y encargado de negocios de Francia, destacado en Montevideo entre 1853 y 1870, luego de haber visitado la capital venezolana hacia 1825, escribió un "poema ecléctico en dos cantos" titulado *Los novios de Caracas* (publicado en 1829), en el cual redacta una acción que, "propiamente dicha, comienza y concluye el 26 de marzo de 1812, año fértil en grandes catástrofes, así en el antiguo como en el nuevo mundo."[5] Cuando hizo referencia al terremoto, aseguró que "un pueblo entero, congregado para la muerte", gritó ¡Tiembla! al momento del primer remezón, mientras clamaba al cielo por misericordia.

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3 "Historical Calendar", *Western Christian Advocate*, Cincinnati, 22 de marzo de 1882, p. 90.

4 Richard Longeville Vowell, *Tales of Venezuela, Part I: The Earthquake of Caracas*, Printed by H. E. Carrington, Chronicle Office, Bath, Londres, 1831. Vowell publicó su obra en tres volúmenes con el título *Campaigns and Cruises in Venezuela and New Granada and in The Pacific Ocean; from 1817 to 1830: with the narrative of a march from the river Orinoco to San Buenaventura on the coast of Chocó; and Sketches of the West Coast of South America from the Gulf of California to the Archipelago of Chilöe. Also, Tales of Venezuela: illustrative of revolutionary men, manners, and incidents*. Su primer volumen fue identificado como *Campaignes and Cruises*; el segundo, como se señala arriba, *The Earthquake of Caracas*; y el tercero como *The Savannas of Varinas*. La traducción al español y posterior publicación del segundo volumen la realiza Ángel Raúl Villasana, bajo el título *El terremoto de Caracas*, y es publicada por el Banco Central de Venezuela en Caracas, 1974. Es ésta la edición que se consulta aquí.

5 Pierre-Daniel Martin-Maillefer, *Los novios de Caracas. Poema ecléctico en dos cantos, seguidos de notas o consideraciones políticas y morales sobre algunos estados del Nuevo Reino*, Ediciones de la Presidencia de la República, Caracas, 1954, con traducción y preámbulo de Santiago Key-Ayala. Esta es la segunda edición de una anterior (1917) también publicada en Caracas, por Talleres de Linotipo El Universal. La primera edición es de 1829 y fue publicada originalmente en francés por Delaforest, Libraire, Place de la Bourse, Paris.

Charles Dickens, el famoso autor de *Oliver Twist* y *Un cuento de Navidad*, en su rol de redactor del magazine *All The Year Round*, escribió en 1868 un artículo llamado "The Land of The Earthquake", donde se refería a los sismos que sacudieron las edificaciones españolas en América durante la colonia, deteniéndose con sumo cuidado y detalle en la narración del desastre que tuvo lugar en la ciudad de Caracas en el año 1812.[6]

Calendarios, novelas, poemas, narraciones, docenas de artículos de prensa, capítulos de libros y discusiones científicas, contaron con los terremotos de 1812 ocurridos en la naciente Venezuela como su tema central. Las menciones a aquella catástrofe no cesarían de alimentar las columnas de los periódicos y las páginas de las revistas a lo largo de todo el siglo XIX, como también lo harían en el siglo XX y en los albores de este siglo XXI, ciertamente. Sin embargo, los sismos de aquel controvertido año no fueron los únicos que causaron daños en la Caracas de ese siglo, así como en otras poblaciones venezolanas. Muchos otros temblores tomarían la escena en aquellas décadas de instalación republicana y andanzas de caudillos, pero ninguno calzó los puntos de publicidad alcanzados por los ocurridos en 1812 ¿Qué fue lo que llamó tanto la atención en el mundo entero acerca de estos terremotos?

La ocurrencia de los sismos en el contexto en el que tienen lugar contribuyó, sin duda, a su proyección histórica. Se trataba de Venezuela, el lugar donde con mayor contundencia se proclamó la independencia, cuya declaración continúa siendo dignificada con el galardón de primera en la historia iberoamericana. Fue, además, el ambiente en el que el Libertador daría sus primeros pasos como figura pública, inmortalizando su escalada por encima de los escombros de la iglesia de San Jacinto hasta convertir a aquella escena en una leyenda propia de un héroe inconmensurable. Fue, también, el comienzo de la guerra, probablemente la de mayor crudeza en las luchas contra la corona española.

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6 Charles Dickens, "The Land of The Earthquake", *All The Year Round*, Londres, 7 de noviembre de 1868, pp. 510-512.

Lo sucedido ocurrió en medio de todo ello, en una tarde de Jueves Santo, cuando los patriotas se aprestaban a celebrar dos años de haber iniciado las acciones con las que se estaban separando de la monarquía, justo al mismo momento en que tenían lugar las liturgias propias de las conmemoraciones cristianas. De la mano de miles de murmuraciones, debates y señales de cruz sobre pechos y frentes, la tierra comenzaría a temblar como un arrebato sin respuesta ni contención, sacudiendo edificaciones y espíritus al unísono. En segundos, la propia confusión generada por los discursos patrióticos de libertad e igualdad, flamearía entre polvo, ruinas y gritos de dolor. Todo se volvió un caos, pintando una escena de dramatismo y pasión que jamás dejaría de alimentar la mirada romántica con la que se construyó la leyenda de la independencia.

Son éstas razones suficientes para que los terremotos de aquella lejana tarde continuaran siendo los protagonistas de tinta y papel que por décadas recrearían el imaginario de millones de lectores ávidos de aventuras e historias. La prensa del siglo XIX, especialmente, no defraudaría a los ojos de los curiosos que buscaban enterarse a través de las páginas de los periódicos acerca de lugares remotos y fenómenos exóticos en cualquier parte del mundo. Leyendas y avatares, héroes y gente común, saltaban de entre hojas y párrafos para conmover el espíritu de los lectores y de muchos otros que sin tener cómo comprender lo que se publicaba por no saber leer, se aprestaban a oír la narración de quienes sí podían hacerlo.

Ese 26 de marzo de 1812 contribuiría con esas narraciones fantásticas y legendarias, pues ese día no sólo vendría al suelo la ciudad de Caracas, sino muchas otras más en una extensión que todavía hoy continúa sorprendiendo a todos. La capital que había declarado la independencia y la soberanía absoluta pocos meses antes, se bañó de una impronta lúgubre de cascajos y grietas, adornadas con un reloj atascado a las 4:07 de la tarde, en señal inequívoca de un tiempo detenido entre muertes y desgracias. Otras localidades de la entonces naciente república correrían igual suerte: La Guaira, Macuto, Maiquetía y casi todas las poblaciones del litoral central; Barquisimeto; San Felipe y el resto de las localidades alineadas al

pie de la serranía de Aroa; así como muchos otros pueblos intermedios que verían cimbrarse sus iglesias y casas a la misma hora. A ochocientos kilómetros de distancia de la rebelde capital, la ciudad de Mérida se derrumbaba una hora más tarde, enterrando entre sus escombros al obispo y contribuyendo con ello a crear una escena de mayor desconsuelo y terror.[7]

Aquella larga extensión de destrucciones, eventualmente salteada por regiones enteras sin mayor noticia que algún remezón y pocas grietas, llamó la atención de todos los científicos del mundo desde entonces y hasta el presente. En el siglo XIX, lapso en el que la sismología dio sus primeros pasos, aquel evento acabó siendo un ejemplo extraordinario al que se retornaba periódicamente en clave de enigma sin solución. Fue un elemento de comparación y análisis, en un recorrido que va desde Humboldt hasta Ernst, desde el pensamiento ilustrado hasta el positivismo, desde la duda hasta la certeza, desde la fe hasta el sismógrafo.

El impacto de los sismos de 1812 en la sociedad venezolana fue directamente proporcional al contexto político e ideológico en el que tuvieron lugar. El efecto de aquella irrupción estremecedora, no obstante, trascendió el momento, el escenario material, el imaginario, e incluso la propia memoria de lo vivido. La referencia sostenida y permanente a estos impresionantes fenómenos sísmicos a lo largo del siglo XIX, cuenta con una sorprendente presencia en la prensa extranjera, con mayor contundencia que en los periódicos venezolanos, quizás inmersos en sus propias diatribas políticas y caudillescas, orígenes de su propia existencia, además.

La advertencia a esta circunstancia, por demás llamativa e interesante, se hace patente en la lectura de publicaciones europeas y americanas, principalmente, en las cuales la catástrofe de 1812 (particularmente centrada en la suerte de Caracas), aparece y reaparece entre narraciones de viajeros y discusiones científicas, todas ellas bañadas de un inexpugnable

[7] Fue recientemente que se descubrió (gracias a la investigación documental), que aquella tarde del 26 de marzo de 1812 no hubo un solo terremoto, sino dos, con una hora de diferencia entre cada uno, aproximadamente. El de Caracas, La Guaira, Barquisimeto y la serranía de Aroa, sucedido alrededor de las 4 de la tarde, y el de Mérida y Tabay, que ocurrió una hora después, en torno a las 5. Más adelante se hará breve mención a ello.

tinte romántico, alimentado quizás por el drama real con el que se tiñó la historia venezolana en aquellos días de aciaga supervivencia.

La impronta de las narraciones tuvo el sello de la ciudad capital. Fue "el terremoto de Caracas" por encima de La Guaira, Barquisimeto, Mérida, El Tocuyo, Macuto o cualquier otra calidad afectada aquella tarde. Como sucede con casi todos los nombres de los desastres, la ciudad más importante se lleva su denominación. Tal como si tratase de un artilugio que pretende sembrar memoria o topo-nominar a los fenómenos naturales que causan daños, los relatos de las grandes catástrofes acaban asociados a las poblaciones más importantes que se ven afectadas por el evento. Este fue uno de esos casos, y aquellas narraciones que le dieron la vuelta al mundo en el siglo XIX, por lo general se hallaban identificadas con el nombre de Caracas, dejando atrapados entre líneas a los pueblos de menor rango político. Este fue, sin duda, uno de los *efectos* más característicos del despliegue de la información para entonces. Fue un protagonismo con sello de autoridad regional.

Esta presencia protagónica condujo a una investigación prospectiva. La búsqueda de noticias, descripciones, comparaciones y referencias a los sismos de aquel 26 de marzo en toda Venezuela acabó siendo el derrotero de este trabajo. Con ello fue posible advertir que *El "efecto 1812" en la prensa y en la ciencia del siglo XIX* tuvo mucho que decir por varias décadas, y que su eco aún hoy repercute entre científicos e historiógrafos. Se trató de un protagonismo que contribuyó, nada más y nada menos, con el nacimiento de la sismología. Fueron fenómenos telúricos que caminaron junto a la transformación de la interpretación de la naturaleza, y que ayudaron a dejar de entenderla como una manifestación caprichosa de voluntades omnipotentes, para abrir el camino que descubrió sus leyes y sus causas. Los terremotos de 1812 en Venezuela fueron el alimento de imprentas, plumas y tertulias a lo largo de un siglo que transformó la mirada del mundo sobre los fenómenos naturales. Fueron parte y argumento, sin duda, de ese proceso cultural que le dio nuevas herramientas a la construcción de la realidad, y que le dio al mundo una nueva forma de comprenderlo todo, una forma de entender la existencia que se llama *modernidad*.

Tiempos y escogencias de la investigación

El marco temporal que encierra esta colección de documentos no representa una cómoda escogencia cronológica o una selección de fuentes enmarcada por siglos. La mención a los terremotos de 1812 durante el siglo XIX fue recurrente y casi permanente, pero no es éste el argumento metodológico que condujo a acotar la escogencia de textos a ese siglo únicamente. El asunto es que fue en ese siglo que la sismología surgió y maduró como disciplina científica, y su proyección como ciencia tendrá lugar con mayor rigurosidad teórica y metodológica a partir del siglo XX. Sin embargo, y a pesar de las coincidencias, el caso de las menciones a los sismos venezolanos de 1812 en el período decimonónico, se corresponde con procesos que le son propios a la sismología como tal, al pensamiento científico venezolano, a la consolidación institucional de ese pensamiento científico dentro del país, y a la historia de los terremotos en Venezuela. Todos estos procesos parecen estar asociados con un calendario que se ajusta al siglo XIX, y que casualmente cierra sus correspondencias con las menciones a 1812 a partir de 1900.

En ese sentido, y en cuanto a la historia misma de la disciplina sismológica, el desarrollo de la "seismología", como se le llamó por entonces, caminó junto a la observación directa de los terremotos destructores, creciendo de la mano de la sistematización de la información y de la comparación entre grandes sismos. El desarrollo de teorías que intentaban explicar el origen y la causa de los temblores vio propuestas que partían de lógicas coherentes pero improbables. Fuegos internos, gases comprimidos en el interior del planeta, vientos subterráneos, electricidad acumulada, incidencia atmosférica, y hasta la colaboración de los cometas, agotaban los razonamientos de los pensadores de la época.

Sin embargo, la acumulación de debates al respecto contribuyó directamente a la madurez de la disciplina sismológica. Las observaciones realizadas desde el siglo XVIII con el gran sismo de Lisboa en 1755, permitieron atraer a los ilustrados y a los pensadores en torno a la explicación de los temblores. Esto hizo girar las miradas hacia los grandes terremotos

de la historia, hasta que fueron apareciendo otros terremotos igualmente destructores. El siglo XIX abrió las puertas a las comparaciones, y con la prensa como escenario se fue construyendo un discurso propio y especializado sobre la materia. En ese momento, y gracias a su temprana aparición, el que fue llamado como "el terremoto de Caracas" por casi dos siglos (y especialmente en el siglo XIX), acompañó los debates y las comparaciones por varias décadas.

En la historia de los terremotos que hasta entonces se escribía en los tabloides de circulación periódica para mayor conocimiento y disfrute general, "el terremoto de Caracas" tenía un lugar privilegiado. Su impacto histórico y su impresionante alcance destructor contribuyeron a que fuese tomado en cuenta por mucho tiempo. Quizás su protagonismo fue perdiendo brillo cuando hizo aparición la vida urbana del siglo XX, pues es con estos nuevos escenarios que los efectos destructores de los terremotos hicieron olvidar a los daños del pasado. Fueron perdiendo importancia las averías a las construcciones de mampostería, bahareque o madera, y ganaron atención los efectos sobre construcciones con estructuras de hierro o concreto armado. No cabe duda que el desastre de San Francisco en 1906, por ejemplo, condujo a pensar en los sismos de una manera diferente... Pero hasta entonces, los terremotos de 1812 continuaron siendo referidos y tenidos muy en cuenta por los investigadores.

Fue ésa una frontera que hizo a un lado al protagonismo alcanzado por los sismos de 1812. Sin embargo, y antes de llegar a esa frontera, el desarrollo del pensamiento científico en Venezuela que tuvo lugar en el siglo XIX, también aprovechó los impulsos brindados por los temblores. En efecto, muchos de los pensadores que asomaron sus luces en los periódicos de la época, dejaron sus reflexiones para la consideración de lectores y curiosos que se daban cita en las columnas de los periódicos de entonces. Con sus aportes, no sólo se logró posicionar al razonamiento científico en el naciente país, sino que también fue posible darle cabida a la lógica positivista del momento. En buena medida, los terremotos jugaron un papel decisivo en el asunto.

Si se nombran a algunos de los autores que introducen el positivismo en Venezuela, se mencionan al mismo tiempo a pensadores que sirven de pioneros en la ingeniería venezolana: Arístides Rojas, Adolfo Ernst, Alejandro Ibarra, Lino J. Revenga, José María Martel, Agustín Aveledo, Jesús Muñoz Tébar. Todos ellos, además, razonaron sobre los temblores y sus efectos en las construcciones, así como sus causas y orígenes. De ellos, Rojas, Ernst e Ibarra aportarían trabajos que todavía en el presente resultan fundamentales en la sismología nacional. Ellos mismos, además, escribirían sobre 1812 en más de una oportunidad.

Estos autores, quizás más que ningún otro en aquellos años, mantuvieron el interés sobre 1812 e hicieron de ese interés un asunto público. Su vida sirvió de vehículo a debates y reflexiones sobre el tema, y con su vida se marchó también una buena parte de aquel interés. Alejandro Ibarra falleció en 1880, Arístides Rojas en 1894, y Adolfo Ernst en 1899. Ninguno de ellos superó el siglo XIX. Algunas de sus discusiones todavía resuenan en la historia de la sismología, como el famoso debate que sostuviera Ernst con su compatriota Wilhelm Sievers, precisamente sobre 1812. Al desaparecer de la escena pública, estos entusiastas y prolíficos investigadores se llevaron consigo sus debates, y dejaron su lugar a otros, seguramente más articulados con asuntos que les fueron contemporáneos y en donde el lejano 1812 ya poco tenía que decir.

Los positivistas también acompañaron y contribuyeron con la consolidación institucional de la ciencia en Venezuela. La creación de la Sociedad de Ciencias Físicas y Naturales de Caracas, en 1866 y bajo el influjo de Ernst, formalizó las discusiones sobre los fenómenos naturales y su relación con la sociedad. Algo similar venía sucediendo con anticipación cuando se creó el Colegio de Ingenieros en 1861. En estos espacios y en sus proyecciones particulares (como la *Revista Científica* y *El Ingeniero*, del Colegio de Ingenieros; o *Vargasia*, publicación de la Sociedad de Ciencias Físicas y Naturales), la peculiar atención a la naturaleza y sus fenómenos cobró una importancia fundamental en la construcción de una mirada sistemática sobre el entorno y el medio ambiente de la época. Institucionalizar la ciencia condujo, con todo, a otorgarle un lugar formal a la atención

puesta en los terremotos. Seguramente con ello se fueron alejando de los periódicos y de la lectura pública aquellas discusiones que a partir de entonces formarían parte de asuntos más oficiales.

La creación del Observatorio Cagigal en 1888 (originalmente llamado "Observatorio Astronómico y Meteorológico"), en el marco de la institucionalización de la ciencia y de la observación de la naturaleza, adjudicaría el necesario espacio oficial al estudio de los terremotos en Venezuela. A pesar de que su orientación original apuntaba a cuestiones más vinculadas con la meteorología, el observatorio iba a ser dotado con los primeros sismógrafos de la historia venezolana: un par de instrumentos rudimentarios de nombre Agamennone y Ewing.[8]

Los sismógrafos llegaron en 1901, un año después del sismo del 29 de octubre de 1900, inaugurando con su presencia la era tecnológica de la sismología en Venezuela. A pesar de que no se encuentran registros documentales de la actuación de estos instrumentos, queda claro que con ellos comenzaban a escribirse otras páginas en la historia sismológica venezolana. Atrás quedarían las discusiones y debates plasmados en columnas de periódicos y revistas, en los cuales los sismos de 1812 jugaron un papel rutilante. Las comparaciones entre sismos destructores ya contaban por entonces con otros ejemplos más frescos, más contemporáneos, más cercanos en el tiempo y en el contexto. Con el comienzo del siglo XX llegó la tecnología, un nuevo terremoto en Caracas, y nuevos escenarios urbanos que hacían olvidar a la polvorienta época colonial.

El efecto causado por los sismos de 1812 pareció borrarse con el fin del siglo XIX. Pocas serían sus menciones en la prensa del nuevo siglo, y la joven ciencia de los terremotos contaba ya con nuevos objetivos y nuevos intereses. La tecnología comenzaría a labrar su espacio y el pasado tendría matices borrosos, cada vez más impertinentes. Así se fue apagando el

[8] Véase al respecto el estudio realizado por Rogelio Altez, José Antonio Rodríguez y Franco Urbani, *Historia del pensamiento sismológico en Venezuela: una mirada inquieta*, Ediciones de la Biblioteca Central de la Universidad Central de Venezuela-Fundación Venezolana de Investigaciones Sismológicas-Sociedad Venezolana de Historia de las Geociencias, Caracas, 2004.

interés por continuar debatiendo sobre aquella aciaga tarde de un Jueves Santo ya casi olvidado.

El marco temporal en el que se ha acotado esta investigación documental acabó subrayando un proceso que coincidió con un calendario de manera involuntaria. Con el inicio del siglo XX, entonces, las discusiones sobre los terremotos de 1812 fueron entrando en el campo de la especialización, de la tecnología, y de la profesionalización. Aquel *efecto* duró décadas, pero no alcanzó a superar el fin del siglo.

Más de quince años de investigación documental

Este trabajo representa la continuidad y la profundización de una investigación que tuvo inicios hacia 1996. Desde entonces y hasta el presente, los sismos de 1812 han sido el centro de docenas de debates científicos desarrollados en el seno de una comunidad multidisciplinaria que se ha dado a la tarea de razonar sobre aquel 26 de marzo.

La primera producción al respecto recaló en un Informe Técnico realizado en el marco de una investigación conducida por la Fundación Venezolana de Investigaciones Sismológicas, FUNVISIS, en el cual se compilaron extractos documentales que daban cuenta de los efectos del temblor en el flanco surandino venezolano.[9] A la vuelta de este primer trabajo fue posible desarrollar la investigación que propuso que aquella tarde no ocurrió un solo terremoto que causó daños entre Caracas y Mérida en un diámetro de ochocientos kilómetros, sino dos, con una hora de diferencia entre cada uno.

En efecto, la lectura detallada de esa información esclareció el enigma de la destrucción extensa y selectiva ocurrida ese Jueves Santo, pues en esos documentos pudo descubrirse que el sismo que sacudió a Mérida no fue el mismo que destruyó a Caracas, pues aquél ocurrió una hora después

[9] Se trató del trabajo realizado por Rogelio Altez titulado *Efectos del terremotos de 1812: Extractos de fuentes documentales*, en el marco del Proyecto "Estudio de neotectónica y geología de fallas activas en el Triángulo de Fallas Boconó-Valera-Oca Ancón", financiado por INTEVEP y llevado a cabo entre 1995 y 1997.

de éste. La idea fue presentada en las Primeras Jornadas Venezolanas de Sismicidad Histórica, celebradas en Trujillo hacia mayo de 1997, y su buena recepción condujo a nuevos razonamientos al respecto.[10]

La repercusión del hallazgo no se hizo esperar entre los investigadores y sismólogos. El geofísico Jaime Laffaille y el geomorfólogo Carlos Ferrer, por ejemplo, publicaron posteriormente varios trabajos sobre los efectos del sismo de 1812 en Mérida, y al respecto han desarrollado una interpretación propia sobre el caso.[11] Recientemente, los investigadores del Laboratorio de Geofísica de la Universidad de Los Andes, José Choy, Christl Palme, Carlos Guada, María Morandi y Stephanie Klarica, publicaron un trabajo que reinterpreta la información sobre el asunto y propone nuevas estimaciones de magnitud para el evento.[12] En el *Catálogo de Sismos Sentidos o Destructores, Venezuela 1530-1998*, el primer catálogo sismológico de acceso público que existe en el país desde 1940, los terremotos aparecen claramente diferenciados con horas y localidades afectadas por entradas distintas.[13] El enigma de aquella destrucción padecida a lo largo y ancho de ochocientos kilómetros había quedado resuelto: fueron dos terremotos diferentes con una hora de diferencia entre cada uno.

La investigación documental contribuyó decididamente a esta aclaratoria, y sus avances no terminaron allí. Otros trabajos especialmente dedicados al análisis transversal de aquella histórica tarde vinieron a complementar los productos al respecto. Varios asuntos fueron estudiados con

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[10] Algunos trabajos fueron publicados para dar cuenta de estos resultados: Rogelio Altez, "Cronometrización extemporánea: los sismos del 26 de marzo de 1812 en Caracas y Mérida", en *Revista Geográfica Venezolana*, Vol. 39, Nºs 1 y 2, Mérida, 1998, pp. 297-326; Rogelio Altez, "Terremotos confundidos: los sismos del 26 de marzo de 1812 en Caracas y Mérida", en *Anuario de Estudios Bolivarianos*, Instituto de Investigaciones Históricas Bolivarium, VIII, Nº 9, Caracas, 2000, pp. 1-32; y Rogelio Altez, "Los sismos del 26 de marzo de 1812 en Venezuela: nuevos aportes y evidencias sobre estos eventos", en *Boletín Técnico IMME*, julio, Vol. 43, Nº 2, Caracas, 2005, pp. 11-34.

[11] Véanse de estos autores los artículos "El terremoto del jueves santo en Mérida: año 1812", en *Revista Geográfica Venezolana*, Vol. 44, Nº 1, Mérida, 2003, pp. 107-123; y "El terremoto de Mérida de 1812...", ya citado.

[12] "Macroseismic Interpretation of the 1812 Earthquakes in Venezuela Using Intensity Uncertainties and a Priori Fault-Strike Information", en *Bulletin of the Seismological Society of America*, Vol. 100, No. 1, February 2010, pp. 241-255.

[13] José Grases, Rogelio Altez y Miguel Lugo, *Catálogo de Sismos Sentidos o Destructores, Venezuela 1530-1998*, Academia de Ciencias Físicas, Matemáticas y Naturales-Facultad de Ingeniería-Universidad Central de Venezuela, Caracas, 1999.

detenimiento y nuevamente la documentación primaria jugó un papel determinante en el asunto. Por ejemplo, en el caso del análisis del número de muertes ocurridas con el sismo de Caracas, otro artículo propuso la sobreestimación de fallecidos a partir de la exageración, tergiversación o manipulación de la información por parte de quienes narraron, describieron o historiaron el hecho, permitiendo observar a partir de allí la necesidad de revisar las cifras de fallecidos con el sismo. Sus resultados contribuyeron a precisar no sólo las muertes, sino también la intensidad del temblor.[14]

En ese mismo artículo se propone una reevaluación detallada de los daños producidos por el terremoto en la ciudad de Caracas, con lo cual fue posible precisar, como se dijo, las intensidades del sismo. Este trabajo alimentó otros estudios que tomaron en cuenta la propuesta de la reevaluación detallada o "microzonificación histórica", para extender y profundizar los razonamientos sobre el caso y sobre otros objetivos también,[15] así como para proponer una estrategia metodológica de evaluación de sismos históricos ajustada a la lectura analítica de fuentes primarias.[16]

Del mismo modo, la investigación sobre 1812 permitió publicar un trabajo en extenso que abarcó no solamente el tema sismológico, sino también la problemática histórica, social, cultural e historiográfica del caso. En *El Desastre de 1812 en Venezuela. Sismos, vulnerabilidades y una patria no tan boba*, se realiza una aproximación exhaustiva y detallada sobre la pérdida de la Primera República y sobre los efectos de aquel desastre.[17] Más tarde sería publicada una selección documental extraída de este trabajo, en el

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[14] Véase el trabajo de Rogelio Altez, "El terremoto de 1812 en la ciudad de Caracas: un intento de microzonificación histórica", en *Revista Geográfica Venezolana*, Número Especial, Mérida, 2005, pp. 171-198.

[15] Yoshitaka Yamazaki, Franck Audemard, Rogelio Altez, Julio Hernández, Nuris Orihuela, Salvador Safina, Michael Schmitz, Ichiro Tanaka, H. Kagawa, y The JICA Study Team for Earthquake Disaster Group, "Estimation of seismic intensity in Caracas during to the 1812 earthquake using seismic microzoning methodology", en *Revista Geográfica Venezolana*, Número Especial, Mérida, 2005, pp.199-216.

[16] Rogelio Altez y Jaime Laffaille, "La Microzonificación Histórica como complemento fundamental de la evaluación de la amenaza sísmica", en *Revista de la Facultad de Ingeniería*, Universidad Central de Venezuela, Caracas, Vol. 21, Nº 4, pp. 117-127.

[17] Trabajo publicado por Rogelio Altez, con el auspicio editorial de la Universidad Católica Andrés Bello y de la Fundación Empresas Polar, Caracas, 2006.

marco de la Colección Bicentenario de la Independencia de la Academia Nacional de la Historia.[18]

El alcance de estas investigaciones estimuló razonamientos más allá de las fronteras venezolanas, inclusive. El historiador colombiano Pablo Rodríguez, por ejemplo, ha publicado un par de trabajos sobre el efecto de los terremotos de 1812 en la sociedad de la independencia, atendiendo especialmente el uso del miedo con fines políticos e ideológicos. Su trabajo al respecto parte de la lectura de algunos de los libros y autores aquí mencionados, y da cuenta de la necesidad de nuevas investigaciones e interpretaciones de los procesos históricos americanos, a la luz de relecturas y revisiones de las fuentes primarias.[19]

Este efecto interpretativo que puede advertirse a la vuelta del "redescubrimiento" de 1812 en la investigación multidisciplinaria de los procesos históricos, sociales y naturales, se refleja igualmente en esta compilación documental. La publicación de estos documentos da cuenta de ese proceso de atención y cuidado a uno de los fenómenos naturales más importantes y atrayentes de la historia venezolana (y de la historia de la sismología), y al mismo tiempo presenta cómo ese atractivo no es un efecto nuevo, sino el reflejo contemporáneo de aquellas sensaciones expresadas con metódica pasión a través de todo el siglo XIX.

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18 Rogelio Altez, *1812: Documentos para el estudio de un desastre*, Caracas, 2009.

19 Véanse sus trabajos "1812: El terremoto que interrumpió la revolución", en Pilar Gonzalbo Aizpuru, Anne Staples y Valentina Torres Septién (Editoras), *Una historia de los usos del miedo*, El Colegio de México-Universidad Centroamericana, México, 2009, pp. 247-272; y "Miedo, religiosidad y política: A propósito del terremoto de 1812", en *Revista de Historia Social y de las mentalidades*, Universidad de Santiago de Chile, Vol. 2, Nº 14, 2010, pp. 237-260.

El interminable viaje tras las fuentes y los criterios de búsqueda y selección

Entre el asombro y la intuición, estos documentos fueron saltando de sus páginas originales hacia este trabajo a través de años de búsqueda, de hallazgos voluntarios e involuntarios, y de la acumulación sistemática que de suyo resulta a la vuelta de toda investigación documental. Sin embargo, la mayor y más significativa parte de estos textos proviene de una arremetida planificada exclusivamente con esta intención.

Luego de observar que la mención a los terremotos de 1812 parecía flotar por décadas entre discusiones científicas y descripciones de Caracas hechas por viajeros y publicadas en revistas extranjeras, pareció pertinente darse a la búsqueda metódica de esas menciones en los repositorios especializados que mayor acceso pueden ofrecer a las publicaciones periódicas del pasado.

La búsqueda se inició en la Hemeroteca Nacional, en donde fue posible hallar a los pensadores venezolanos que publicaron sobre 1812 en la prensa local. Allí pudo leerse a Alejandro Ibarra, Arístides Rojas y Adolfo Ernst. Fueron ellos, como ya se dijo, quienes insistieron en tornar la mirada hacia 1812 una y otra vez. No obstante, estos autores y sus trabajos no vienen a sorprender con sus publicaciones, sino a representar la relación correspondiente con el tema en medio de sus propios contextos. Es por ello que la búsqueda se amplió hacia otros derroteros.

El primer gran paso en ese sentido se dio en la Biblioteca de la Universidad de Illinois en Urbana-Champaign. Allí se abrió el compás de la investigación al dar con docenas de textos, artículos y libros que mencionaban directa o concomitantemente el asunto. El hallazgo fue de tal magnitud que no sólo estimuló la búsqueda en otros repositorios, sino que fue imperioso comenzar desde entonces a acotar el propio criterio de esa búsqueda. En este sentido, resulta pertinente aclarar por qué se escogió a la prensa y la ciencia del siglo XIX, y por qué se dejó por fuera a las publicaciones bibliográficas.

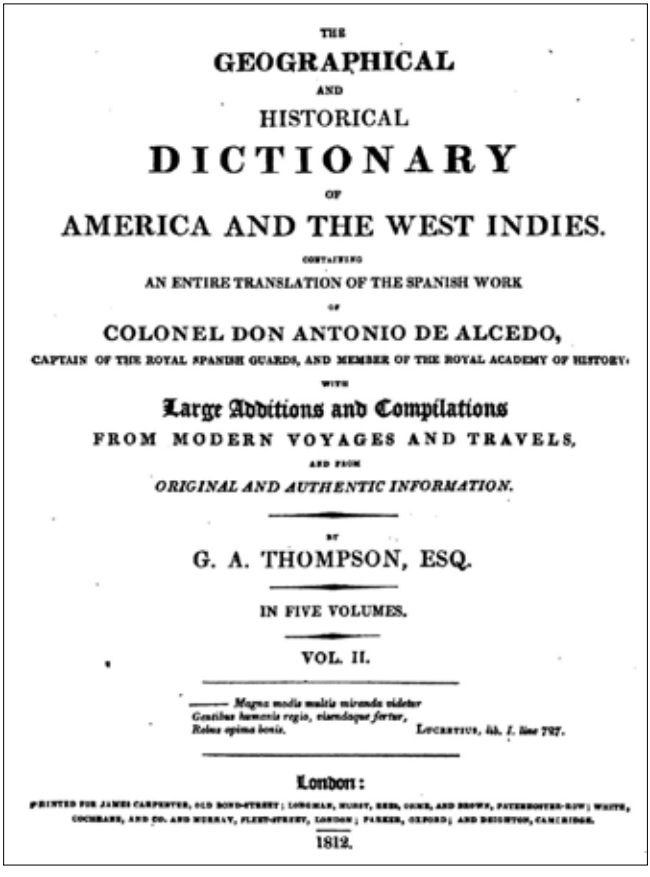
Ciertamente, la exclusión de las fuentes bibliográficas tiene como argumento el hecho de que las publicaciones hemerográficas fueron, por entonces en el siglo XIX, la vida misma de la opinión pública, el alimento de tertulias y debates, y el escenario más apropiado de la divulgación del conocimiento científico. En los periódicos y revistas vivió el imaginario colectivo, la memoria y la interpretación de la realidad, con mayor vigor que en los libros. Es éste un argumento fundamental para la escogencia.

Por otro lado, la mención sobre 1812 en los libros resultaba más espasmódica y menos recurrente que en las publicaciones periódicas, motivo por el cual su prosecución parecía menos sistemática que en la hemerografía. Del mismo modo, el sostenimiento del tema en los diarios y revistas da cuenta de la regularidad con que se trató el asunto a través del tiempo.

Sin embargo, esto no significa que los libros fueron desechados por completo, pues la ciencia del siglo XIX no sólo se divulgó por la vía hemerográfica, sino también a través de obras, compendios y manuales en forma bibliográfica. La publicación de textos con objetivos divulgativos (enciclopedias, diccionarios, manuales, por ejemplo), eventualmente hacían referencias a realidades geográficas desde las cuales se establecían comparaciones con el objeto de sentenciar generalidades o leyes universales. A lo largo de todo el siglo XIX, estas publicaciones parecen haberse comprometido con una carrera por abracar más información que sus antecesores o sucesores. Un ejemplo interesante y curioso resulta ser el *Geographical and Historical Dictionary of America and the West Indies*, publicado en Londres el propio 1812, pues con la noticia del desastre, sus editores se apresuraron a insertar la información sobre los efectos del sismo en su entrada titulada "Guaira":

> Since this article was prepared for press, we have to insert some particulars respecting the dreadful calamity with which the unfortunate city of Guaira has been visited. On the 26th March 1812, a most dreadful shock of an earthquake was felt here: it lasted about two minutes. The city was laid in ruins, and numbers of the inhabitants were killed and buried in them. The city of Caracas, we understand, has experienced a still worse fate, and has been totally abandoned by the unfortunate

inhabitants. The rocks and mountains were rent asunder; and it is impossible for pen to describe the devastation occasioned by this horrible explosion.[20]



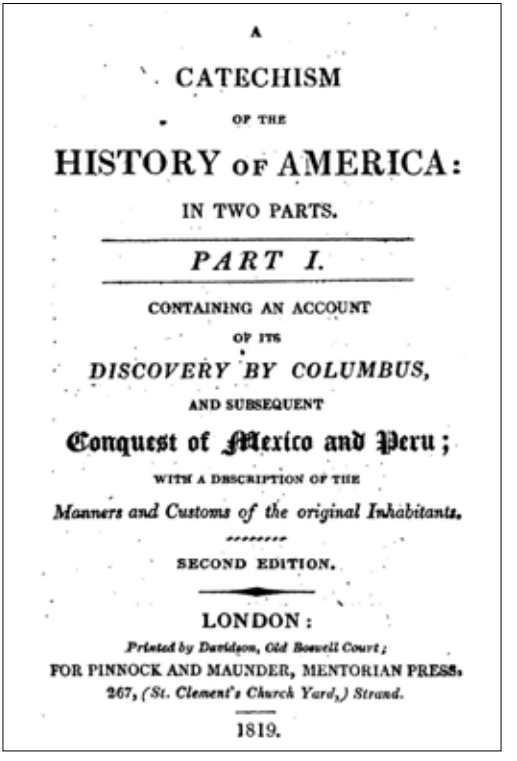
THE
GEOGRAPHICAL
AND
HISTORICAL
DICTIONARY
OF
AMERICA AND THE WEST INDIES.
CONTAINING
AN ENTIRE TRANSLATION OF THE SPANISH WORK
OF
COLONEL DON ANTONIO DE ALCEDO,
CAPTAIN OF THE ROYAL SPANISH GUARDS, AND MEMBER OF THE ROYAL ACADEMY OF HISTORY:
WITH
Large Additions and Compilations
FROM MODERN VOYAGES AND TRAVELS,
AND FROM
ORIGINAL AND AUTHENTIC INFORMATION.
BY
G. A. THOMPSON, ESQ.
IN FIVE VOLUMES.
VOL. II.
——— *Magna modis multis miranda videtur*
Gentibus humanis regio, visendaque fertur,
Rebus opima bonis. LUCRETIUS, *lib. I. line 727.*
London:
PRINTED FOR JAMES CARPENTER, OLD BOND-STREET; LONGMAN, HURST, REES, ORME, AND BROWN, PATERNOSTER-ROW; WHITE, COCHRANE, AND CO. AND MURRAY, FLEET-STREET, LONDON; PARKER, OXFORD; AND DEIGHTON, CAMBRIDGE.
1812.

Figura 1: Imagen de la portada del *Geographical and Historical Dictionary of America and the West Indies* (original de Antonio de Alcedo, cuya primera edición fue de 1786), publicado en Londres el mismo año de los terremotos de 1812.

[20] G. A. Thompson, "Guaira", *The Geographical and Historical Dictionary of America and the West Indies*, Londres, 1812, vol. II, pp. 183-184. El "diccionario" original pertenece al coronel español Antonio de Alcedo, "Capitán de las Reales Guardias", y su título es como sigue: *Diccionario Geográfico-Histórico de las Indias Occidentales o América*, Imprenta de Manuel González, Madrid, 1786.

En el caso de los catecismos (recurso pedagógico muy común por entonces), también fue posible hallar ejemplos de comparaciones e inducciones que perseguían hacer más inteligibles sus objetivos. Los terremotos de 1812 también contaron con protagonismo didáctico en estas publicaciones:

> Q. What part of Spanish America was visited by an earthquake in 1812?
>
> A. The province of Venezuela. On the 26th of March, a violent shock of an earthquake was felt at the city of Caracas, which overturned the greatest part of its buildings, and buried a great number of the inhabitants in its ruins. The port of La Guara, and several other towns in the province, shared in the same dreadful calamity.[21]


A

CATECHISM

OF THE

HISTORY OF AMERICA:

IN TWO PARTS.

PART I.

CONTAINING AN ACCOUNT

OF ITS

DISCOVERY BY COLUMBUS,

AND SUBSEQUENT

Conquest of Mexico and Peru;

WITH A DESCRIPTION OF THE

Manners and Customs of the original Inhabitants.

SECOND EDITION.

LONDON:

Printed by Davidson, Old Boswell Court;

FOR PINNOCK AND MAUNDER, MENTORIAN PRESS,

267, (St. Clement's Church Yard,) Strand.

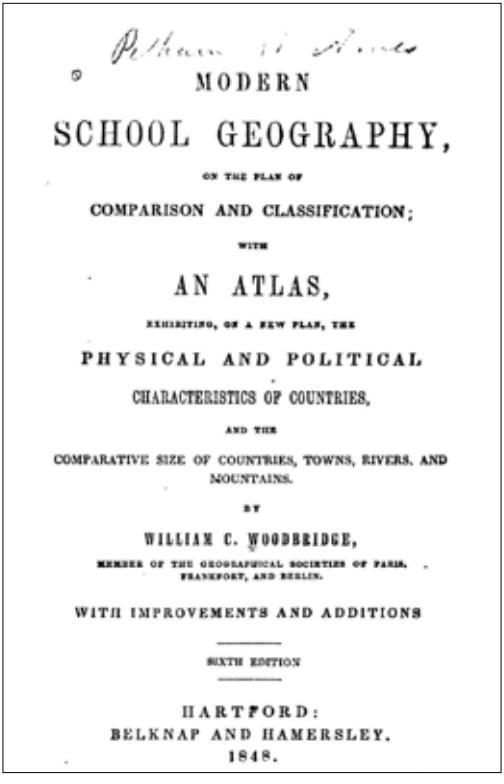
1819.

Figura 2: Portada del catecismo sobre la historia de América publicado en 1819, también en Londres.

[21] "Chap. XVII. Sketch of the late Revolution in Spanish America", *A Catechism of the History of America*, Londres, 1819, pp. 60-61.

También los atlas y manuales de geografía utilizaron a los sismos de 1812 dentro de sus ejemplos. Un libro de geografía escrito por un reconocido profesor norteamericano recurrió a este evento en su explicación de los terremotos causados por actividad volcánica:

> As volcanoes exist in most parts of the world, *earthquakes also frequently extend* to distant countries at the same time. *The earthquake of Lisbon* in 1755, in which St. Ubes, in Portugal, was swallowed up, was felt in New England; and that which destroyed Caraccas in South America, in 1812, and buried 20.000 people, was felt in many parts of the United States.[22]



MODERN

SCHOOL GEOGRAPHY,

ON THE PLAN OF

COMPARISON AND CLASSIFICATION;

WITH

AN ATLAS,

EXHIBITING, ON A NEW PLAN, THE

PHYSICAL AND POLITICAL

CHARACTERISTICS OF COUNTRIES,

AND THE

COMPARATIVE SIZE OF COUNTRIES, TOWNS, RIVERS, AND MOUNTAINS.

BY

WILLIAM C. WOODBRIDGE,

MEMBER OF THE GEOGRAPHICAL SOCIETIES OF PARIS, FRANKFORT, AND BERLIN.

WITH IMPROVEMENTS AND ADDITIONS

SIXTH EDITION

HARTFORD:
BELKNAP AND HAMERSLEY.
1848.

Figura 3: Imagen de la portada del libro de William Channing Woodbridge.

[22] William Channing Woodbridge, "Effects of internal fires; or, volcanoes and earthquakes", *Modern School Geography, on the plan of comparison and classification; with an atlas, exhibiting, on a new plan, the physical and political characteristics of countries, comparative size of countries, towns, rivers and mountains*, Belknap and Hamersley, Hartford, 1848, 6ta edición, pp. 108-111.

Por último, buena parte de los libros que trataron sobre los terremotos de 1812 en esa época, provenían de viajeros y curiosos que se dieron a la tarea de describir a Caracas u otras regiones a la vuelta de su experiencia etnográfica en estos contextos exóticos y tentadores, y este ejercicio lo repetían (varias veces, eventualmente), en columnas de periódicos o en artículos de revistas en donde reproducían íntegra o parcialmente lo mismo que publicaban en los capítulos de sus libros al respecto. En muchas oportunidades, lo hallado en libros era nuevamente conseguido en la hemerografía.

Asimismo, en muchas oportunidades la búsqueda se tropezaba con menciones mínimas y ocasionales al tema, al punto de hallar apenas una frase sobre el caso en medio de páginas enteras que describían con asombro y acuciosidad a Caracas, por ejemplo. Esos casos fueron excluidos por no ser representativos. Quizás una de las más lamentables exclusiones al respecto la represente el artículo de Allen Voorhees Lesley, médico, dibujante y político norteamericano,[23] quien visitara la capital venezolana en la década del 50 del siglo XIX, pues en esa publicación se presentan varias imágenes pintadas por el propio Voorhees Lesley, y entre ellas aparece el famoso dibujo de las ruinas del Convento de Carmelitas atribuidas al sismo de 1812.

El artículo publicado por Voorhees Lesley en el *Harper's New Monthly Magazine*, aparece sin firma, al estilo de la mayoría de las publicaciones periódicas de la época, y bajo el título de "Caracas". La pesquisa para determinar que se trataba del mencionado autor partió, precisamente, de sus dibujos, pues algunos de ellos fueron publicados en el *Diario de un diplomático británico en Venezuela, Sir Robert Ker Porter, 1825-1842*,[24] y de allí, al ver su nombre, fue posible establecer la autoría. El trabajo de Carola Bravo contribuyó con la precisión del asunto. En once páginas de publicación, Voorhees Lesley sólo dice lo siguiente sobre el sismo:

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[23] Véase al respecto el trabajo de Carola Bravo, "Tres visiones de Caracas. La ciudad decimonónica a través de sus testimonios pictóricos y gráficos", en *Argos*, Vol. 25, Nº 48, Caracas, 2008, pp. 44-69.

[24] Editado por la Fundación Polar, Caracas, 1997.

> The earthquake in 1812 destroyed some 12.000 of its inhabitants, numbering then 40.000, and roost of its fine edifices. It now contains about 50.000 souls, the whites being in small proportion to the negroes, Indians, and mixed races, although greater than in any other part of Venezuela.[25]

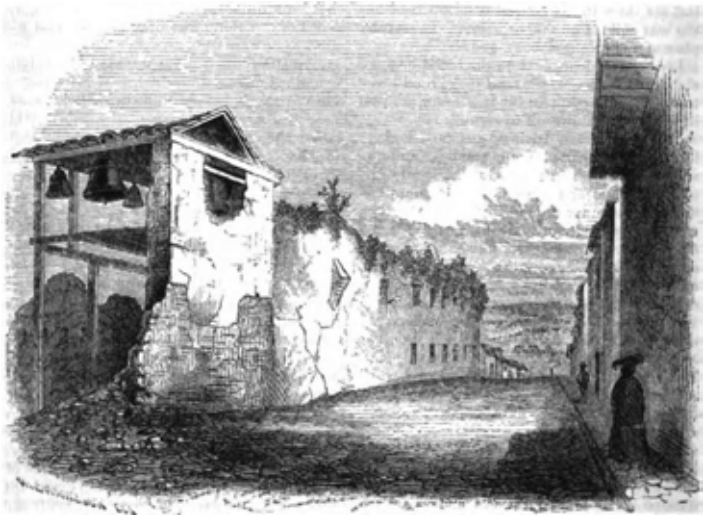


Figura 4: Ruinas del Convento de Carmelitas. Dibujo de Allen Voorhees Lesley, publicado en el artículo "Caracas", en *Harper's New Monthly Magazine*, York, Junio-noviembre, 1858, vol. XVII, p. 190. El original se encuentra en resguardo de la Galería de Arte Nacional, junto al resto de los dibujos de este autor.

Este no es el único ejemplo al respecto. Muchos otros artículos acabaron siendo excluidos por el mismo motivo: menciones muy breves en medio de extensos textos que poco aportaban a la investigación. Sin embargo, otros trabajos que también mencionan a los sismos de 1812 en forma escueta sí han sido escogidos para la selección aquí presentada. En este caso el criterio de inclusión tiene que ver con las discusiones científicas al respecto, o bien con las comparaciones entre sismos destructores, en donde 1812 ocupó un lugar privilegiado por décadas. En esos casos, a pesar de las alusiones breves, el texto fue incluido por representar un ejemplo claro de la atención al caso.

[25] Allen Voorhees Lesley, "Caracas", p. 191.

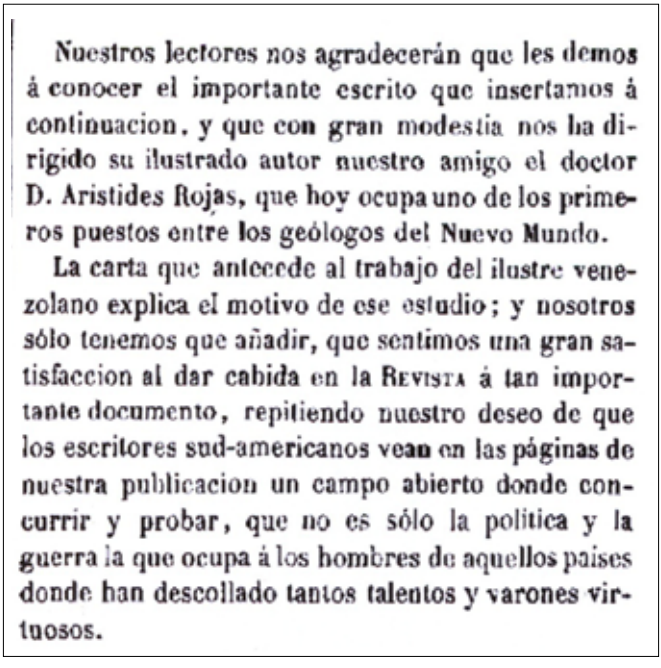
El periplo de búsqueda continuó en París, en la Biblioteca Nacional de Francia. Allí los esfuerzos acabaron por desgastarse ante la complejidad del sistema. Mucho de lo que fue directamente a buscarse por allá, se diluyó en idas y venidas dentro de la inmensa infraestructura levantada para albergar esa biblioteca. Poco se halló en comparación con la larga lista de dudas y títulos que fueron llevados antes aquellos anaqueles. No obstante, algunas de esas dudas pudieron ser aclaradas y el repositorio fue agotado.

Otro destino resultó ser la Biblioteca Nacional de Madrid. Allí fue posible acceder a periódicos españoles del siglo XIX que por lo general no se encuentran disponibles en otros repositorios. Quizás el ejemplo más interesante al respecto resulta ser el artículo de Arístides Rojas "Fragmento de un estudio geológico sobre los terremotos y temblores de tierra en Venezuela", editado en Caracas en un par de oportunidades hacia 1865, y vuelto a publicar en Madrid ese mismo año, donde se halló en la *Revista Hispano-Americana*.[26] No es de extrañar que un trabajo de Rojas fuese reproducido en otras latitudes, pues era considerado como un científico reputado, incluyendo el hecho de que en este mismo trabajo, la revista le presenta como miembro de la Sociedad Geológica de Francia. El editor hace una introducción a lo publicado que se reproduce a continuación, en donde se refiere a Rojas como el ocupante de "uno de los primeros puestos entre los geólogos del Nuevo Mundo."

Arístides Rojas contaba entre sus colecciones con un álbum de recortes de periódicos de todas partes del mundo que estaba dedicado a asuntos geológicos. Este álbum, resguardado hoy en la Biblioteca Nacional en la sección "Papeles de Arístides Rojas", cuenta con artículos provenientes de Londres, Nueva York, París y otras ciudades, en donde Rojas contaba con colegas con quienes se carteaba periódicamente. Alcanzó fama entre los investigadores de las Ciencias de la Tierra por sus conjeturas sobre los terremotos, y en especial por sus razonamientos sobre 1812, y no es una

[26] Este trabajo de Arístides Rojas apareció publicado originalmente en *El Federalista* (Nº 542, Caracas, 27 de mayo de 1865), y luego fue reproducido por la Imprenta Bolívar el mismo año. En ese mismo 1865, se editó en Madrid en la *Revista Hispano-Americana* para la Entrega 7, año II, tomo III, Nº 17 del 12 de agosto de 1865, pp. 251-260.

casualidad que el editor de la *Revista Hispano-Americana* haya asegurado, con motivo de la reproducción de su trabajo y en honor a su calidad como investigador, que por estas latitudes "no es sólo la política y la guerra la que ocupa a los hombres de aquellos países donde han descollado tantos talentos y varones virtuosos."



Nuestros lectores nos agradecerán que les demos á conocer el importante escrito que insertamos á continuacion, y que con gran modestia nos ha dirigido su ilustrado autor nuestro amigo el doctor D. Aristides Rojas, que hoy ocupa uno de los primeros puestos entre los geólogos del Nuevo Mundo.

La carta que antecede al trabajo del ilustre venezolano explica el motivo de ese estudio; y nosotros sólo tenemos que añadir, que sentimos una gran satisfaccion al dar cabida en la Revista á tan importante documento, repitiendo nuestro deseo de que los escritores sud-americanos vean en las páginas de nuestra publicacion un campo abierto donde concurrir y probar, que no es sólo la política y la guerra la que ocupa á los hombres de aquellos países donde han descollado tantos talentos y varones virtuosos.

Figura 5: Reproducción de la presentación al trabajo de Arístides Rojas publicado en la *Revista Hispano-Americana* de Madrid en 1865, p. 250.

Otro destino de búsqueda lo representó la Bodelian Library de Oxford. Allí la investigación halló un importante punto de inflexión, pues fue posible tener acceso a una inmensa cantidad de periódicos del siglo XIX, entre los cuales se encontraron muchísimas menciones a 1812. En la Bodelian la búsqueda se facilitó por sus rápidos sistemas de acceso a la información y por la amplitud de cobertura de sus bases de datos. De allí proviene una significativa cantidad de documentos que aquí son presentados.

Seguramente, de no haber accedido a la Biblioteca de la Universidad de Illinois y a la Bodelian Library de Oxford, esta investigación no contaría con la extensión y la profundidad que alcanzó y, más aún, no habría tenido la posibilidad de seleccionar con comodidad a los textos por sus contenidos y pertinencias. Parece importante señalar que, en casos como estos, la metodología de trabajo puede ser igualmente determinada por el acceso a la información, conviviendo metodológicamente con las estrategias previamente dispuestas para esa misma búsqueda. No es un juego de palabras; se trata de sobredeterminaciones metodológicas que intervienen decididamente en los resultados de la investigación.

La clasificación de los documentos

Las fuentes halladas proceden de diferentes momentos del sigo XIX, ciertamente, pero sus destinos, propósitos y objetivos varían, según sus orígenes, sentidos y contextos. Es por ello que se han desplegado en cinco grupos, a saber: *Cuando los terremotos fueron noticia*; *Narraciones, descripciones y testimonios*; *1812 como ejemplo ilustrativo entre los terremotos más destructores*; *Los sismos en las relaciones generales sobre Venezuela y Colombia*; y *Escritos científicos*.

El primero de esos grupos, *Cuando los terremotos fueron noticia*, consta de treinta y seis documentos que van desde el 1 hasta el 29 de abril de 1812, lapso en el cual es posible señalar que la información sobre el impacto de los sismos recorrió los periódicos de buena parte del mundo implicado o interesado en los hechos de la independencia y las novedades que desde América provenían al respecto. Ciertamente, otras informaciones serían publicadas en el transcurso del propio 1812 en esos mismos periódicos o en otros, pero la "noticia" como tal fue registrada de esta manera, y en las publicaciones posteriores sólo se hizo mención a la corroboración de la información (en algunos casos fue asumida como un engaño o señalada como una treta de los realistas), o a la extensión de la misma.

Muchas de esas noticias fueron posteriormente reiteradas en otras publicaciones, eventualmente vueltas a transcribir sin el menor reparo o anuncio, o bien como parte inserta dentro de textos más extensos. Algunas incluso no fueron firmadas y aparecen como "anónimo"; sin embargo, es posible hallarlas luego con algún autor, así como también vueltas a publicar con el nombre de un segundo autor. Los editores de los periódicos, en ciertas oportunidades, se permitían hacer comentarios al presentar esas noticias, señalándolas como verdaderas, o bien indicando que no se fiaban de su procedencia.

Como un ejemplo, se transcribe aquí la Nota de los Autores (N de A) en la entrada 1 del segmento *Cuando los terremotos fueron noticia*:

> Parte de este texto citado aquí como un testimonio de los hechos, es inserto también en "From the Philadelphia Register. The Earthquake. Extract of a Letter from a gentleman at Laguira to his friend in this city, dated April 2", *The Providence Gazette*, Providence, Rhode Island, 2 de mayo de 1812, vol. XLVIII, p. 1 (transcrito en la entrada 7); en el anónimo titulado "The Leading Facts relative to the Earthquakes which desolated Venezuela, in South America, in the months of March and April, 1812", *Transactions of the Literary and Philosophical Society of New York*, New York, 25 de marzo de 1815, vol. 1, pp. 308-315 (transcrito en la entrada 39); y con algunas mínimas modificaciones en el artículo "Earthquake at Caraccas and Laguira in 1812", *Municipal Gazette*, New York, N.Y., 1 de abril de 1848, vol. 1, Nº 41-63, pp. 864-865 (copiado en la entrada 71).

Aclaratorias como ésta se repiten muchas veces a lo largo de todo el libro. La pesquisa para determinar estas reiteraciones representó un esfuerzo mecánico y muscular de entidad.

El próximo grupo, titulado *Narraciones, descripciones y testimonios*, supone una segunda etapa en el recorrido de la noticia, ahora más reposada y evocadora, que se despliega sobre mayor distancia temporal y que recoge a testigos directos, así como a narradores secundarios, quienes acuden a la descripción de otros o a publicaciones anteriores. Inicia en 1813 y culmina en 1884, reuniendo veintinueve documentos.

El mejor ejemplo de lo señalado lo representan el primer y el último documento, pues en el caso del primero se trata de un testigo directo, mientras que en el segundo se acude al recuerdo que una generación recoge de la anterior, por vía oral.

> No podía describirse el terror y la desolación que se extendieron luego entre los habitantes: la confusión, el desorden, la desesperación, el infortunio y la exaltación religiosa estaban en su colmo. En un principio cada uno se salvó como pudo, prosternándose para implorar la clemencia divina. Los que escapaban a la muerte, igualmente heridos, cubiertos de polvo, con los trajes en jirones, llevando en *sus* brazos algunos niños, enfermos y heridos, ofrecían el espectáculo más desgarrador.[27]
>
> Pocas leyendas relativas á este panteismo, sostenido estrechamente por la naturaleza ecuatorial con las creencias y prácticas religiosas que á aquellos países se llevaron; nos darán tan cabal convencimiento de lo que hemos apuntado, como el recuerdo del terremoto de Caracas, la espléndida capital de Venezuela, el 26 de Marzo de 1812. Era Jueves Santo, y ningun pueblo, entre los más devotos y fervientes de la América Española, celebraba el culto de Semana Santa con más decididas conversiones á la vida de la fé.
>
> Voy á escribir una noticia de aquel acontecimiento, procurando asimilarme la tristeza de mi padre cuando me la relataba, señalándome ruinas de las muchas casas y templos que allí edificaron sus mayores, y procuraré trazarla tambien con la brevedad con que otro testigo presencial del conflicto, el baron de Humboldt, perpetuó su recuerdo en una página de sus viajes: *Das Erdbeben von Caracas*.[28]

Claro que el segundo narrador se equivoca al asegurar que Humboldt fue "testigo presencial" del hecho; pero por entonces esto no levantaba muchas discusiones. Para muchos, Humboldt "debió" haber estado allí, pues publicó en varias oportunidades sus impresiones sobre el asunto, las cuales tomó, ciertamente, de lo que los verdaderos testigos le facilitaron

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[27] Louis Delpeche, "Relation du dernier tremblement de terre de Caracas.", *Journal de Paris*, Paris, mayo de 1813.

[28] T. M., "El Jueves Santo de 1812 en la ciudad de Caracas", *La América. Crónica Hispano-Americana*, Madrid, 01 de abril de 1884, año XXV, Nº 6, pp. 11-13.

para sus conjeturas. Es justo decir, sin duda, que el sabio alemán jamás ocultó tal cosa y que, antes bien, lo señaló con propiedad y respeto a sus fuentes. Sobre esto, además, se volverá más adelante.

El tercer grupo de documentos, *1812 como ejemplo ilustrativo entre los terremotos más destructores*, contiene las comparaciones en las que los sismos de aquel año se vieron envueltos para beneficio de la sismología y de los curiosos. Recorre un lapso igualmente amplio, desde 1830 a 1886, y consta de quince entradas. Allí, por ejemplo, se encuentra el ya citado texto de Charles Dickens, quien en el momento de comenzar a narrar lo sucedido con el terremoto, dice así: "Let us next take the case of Caraccas, chief city of the Republic of Venezuela."

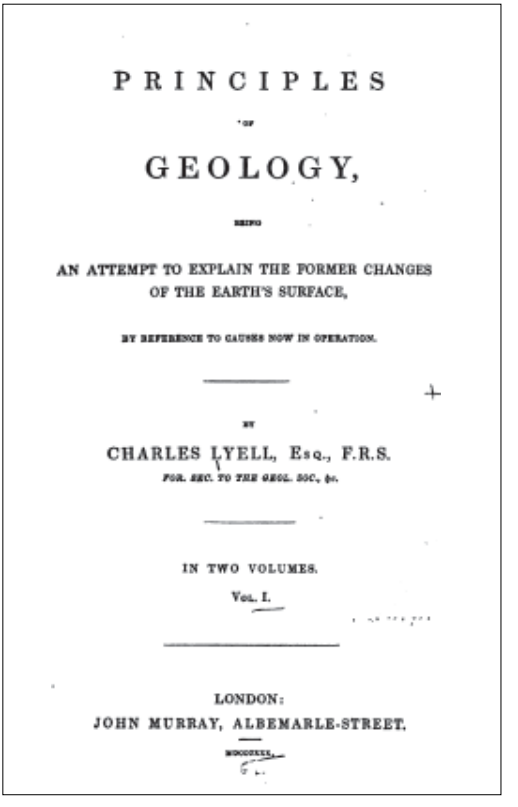
En este segmento se encuentra, además, el británico Charles Lyell, identificado como uno de los fundadores de la geología moderna, y quizás (junto a Humboldt) uno de los más referidos y citados entre estos mismos documentos aquí presentados (es mencionado en cuatro entradas, y sobre él Arístides Rojas realiza varias referencias en sus trabajos). Lyell, autor de *Principles of Geology*,[29] una de las obras de mayor influencia en el siglo XIX, hizo mención al "gran terremoto de Caracas" entre muchos otros de amplia destrucción. En esta mención, el brillante geólogo confunde los sismos de Nueva Madrid y Caracas, señalando que ambos sucedieron al mismo tiempo, cuando en realidad los del Valle de Mississippi ocurrieron entre diciembre de 1811 y febrero de 1812. El siguiente párrafo, publicado como un extracto de su obra principal, da cuenta de lo señalado:

> We have before mentioned the violent earthquakes which, in 1812, convulsed the valley of the Mississippi at New Madrid, for the space of three hundred miles in length. As this happened exactly at the same time as the great earthquake of Caraccas, it is probable that these two points are parts of one continuous volcanic region; for the

[29] *Principles of Geology, being an attempt to explain the former changes of the Earth surface, by reference to causes now in operation*, Vol. I, John Murray, Albemarle Street, Londres, 1830. Esta es la primera edición del primer volumen. La obra consta de tres volúmenes y tuvo varias ediciones ya en el propio siglo XIX.

whole circumference of the intervening Caribbean Sea must he considered as a theatre of earthquakes and volcanos.[30]

En todo caso, el hecho de que uno de los geólogos más connotados del siglo XIX tomara en cuenta a los fenómenos de 1812 en Venezuela, dice mucho del impacto causado por estos terremotos en las Ciencias de la Tierra por entonces.



PRINCIPLES

OF

GEOLOGY,

BEING

AN ATTEMPT TO EXPLAIN THE FORMER CHANGES OF THE EARTH'S SURFACE,

BY REFERENCE TO CAUSES NOW IN OPERATION.

BY

CHARLES LYELL, Esq., F.R.S.

FOR. SEC. TO THE GEOL. SOC., &c.

IN TWO VOLUMES.

Vol. I.

LONDON:

JOHN MURRAY, ALBEMARLE-STREET.

Figura 6: Imagen de la portada de la primera edición del Volumen I del libro de Charles Lyell.

[30] Charles Lyell, "Principles of Geology, being an Attempt to explain the former Changes of the Earth's Surface, by reference to Causes now in Operation. By Charles Lyell Esq. F.R.S. 2 vols. 8vo, Vol. I London, 1830. Murray. [Second Notice]", *The Athenaeum*, Londres, 9 de octubre de 1830, vol. 1, pp. 628-629. Lo publicado en *The Athenaeum*, según se observa, es una entrega por partes de la obra de Lyell, tal como se estilaba entonces, algo que se repite con otras obras también insertas en esta compilación.

Por otro lado, y al igual que los catecismos antes mencionados, las enciclopedias también se aprestaron a convertirse en recursos pedagógicos para la enseñanza pública y especializada. Su rol de publicaciones eruditas les permitió asentar ciertas generalizaciones que acabaron convirtiéndose en saberes. En el caso de los terremotos, el sismo de 1812 ocupó un lugar resaltado entre los más importantes "de la era moderna":

> The most remarkable earthquakes of modern times are those which destroyed Lima, in 1746, and Lisbon, in 1755; in the latter, 20.000 persons were killed. It extended from Greenland to Africa and America. A similar fate befell Calabria, in 1783, the province of Caracas, in South America, in 1812, and Aleppo, in Syria, in 1822. Several earthquakes have taken place quite lately, in South America, one particularly dreadful at Lima.[31]

El cuarto segmento (*Los sismos en las relaciones generales sobre Venezuela y Colombia*), se desplaza entre 1812 y 1896, y a pesar de su largo alcance, se trata del que menos entradas contiene: ocho. Sin embargo, dentro de la compilación y la búsqueda, las menciones a los sismos de 1812 en las narraciones de viajeros, diplomáticos y visitantes resultaron constantes y sostenidas. El hecho de que hayan sido seleccionados solamente ocho documentos, significa que la mayoría de las menciones halladas entre las relaciones sobre Colombia y Venezuela procedían de libros cuyo destino e interés no estribaba en las discusiones científicas, sino en la revelación de experiencias exóticas y fantásticas, o en las simples descripciones.

Los ocho documentos presentados fueron escogidos por superar esas condiciones. Cinco de ellos se encuentran en publicaciones de corte científico o académico: diccionarios de geografía, libros de historia, o enciclopedias. Tres de ellos, a pesar de proceder de viajeros y visitantes, son transcritos por haber sido publicados en revistas, gacetas o magazines, contribuyendo con "el efecto 1812 en la prensa". Esto permitió tomar en cuenta a las narraciones sobre Colombia y Venezuela, las cuales ocupan, también, un lugar privilegiado en la literatura decimonónica.

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31 "Earthquake", *Encyclopaedia Americana*, Philadelphia, 1830, vol. IV, p. 369.

En este grupo se inserta un documento que menciona y cita a "Mr. Eastwick", quien en realidad es Edward B. Eastwick, el Comisionado por el gobierno británico para atender el empréstito venezolano. Este diplomático arribó a Venezuela en 1864,[32] y a la vuelta de su experiencia en esta región equinoccial, decidió publicar sus impresiones por entregas en *All The Year Round*, el mismo magazine de Charles Dickens, hasta que se atrevió a redactar un libro al respecto. El libro en cuestión, titulado *Venezuela: or, Sketches of Life in a South-American Republic; with the History of the Loan of 1864*,[33] fue publicado por primera vez en 1868, el mismo año en que Dickens dedicó unas columnas a "The Land of The Earthquke". Seguramente, el famoso escritor y el diplomático deben haber sostenido muchas conversaciones sobre la Caracas de aquellos años, en las cuales las ruinas de 1812 (que causaron honda impresión en Eastwick) ocuparían un lugar privilegiado entre sus temas al respecto.

El quinto y último segmento de documentos corresponde a los *Escritos científicos*. Su lapso cubre desde 1813 hasta 1886 y consta de trece entradas. Este grupo representa un recorrido directo sobre el desarrollo del pensamiento sismológico del siglo XIX. En sus textos se puede apreciar el crecimiento de las argumentaciones y la madurez de las teorías. No obstante, uno de los aspectos más importantes de esta sección estriba en el hecho de que cuatro de sus exponentes escriben y razonan como venezolanos (Manuel Palacio Fajardo, Alejandro Ibarra, Arístides Rojas y Adolfo Ernst), a pesar de que uno de ellos sea de origen alemán.

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[32] A pocas horas de su arribo a Caracas, Eastwick fue sorprendido por las celebraciones en honor a la virgen de La Merced, la misma que Caracas nombró como Patrona de los Temblores desde que en 1766 resultara ilesa con el sismo del 21 de octubre de ese año. El inglés quedó impresionado por la forma en que se manifestaba el fervor religioso, y tal impresión no le resultó para nada agradable, pues "en medio de semejante bullicio", como lo aseguró, nunca logró conciliar el sueño. El editor de *The Eclectic Magazine of Foreign Literature*, quien publicó el extracto de la obra de Eastwick bajo el título "Little Venice" (New York, octubre de 1869, pp. 490-494), comentaba sobre el asunto: "Mr. Eastwick arrived at Caracas in the midst of a *fiesta*, which indeed it would seem difficult to avoid. South American Catholicism is very joyous and buoyant in its manifestations."

[33] Publicado por Chapman & Hall, 193, Piccadilly, Londres, 1868. hay traducción al español: *Venezuela o apuntes sobre la vida en una república sudamericana con la historia del empréstito de 1864*, Banco Central de Venezuela, Caracas, 1959. En el propio año 1868, cuando se publicó el libro por primera vez, se agotaron las dos primeras ediciones.

Del resto de los exponentes, debe destacarse a otros dos alemanes, Humboldt y Sievers, por el hecho de que escribieron sus textos exclusivamente dedicados al caso venezolano. En el caso del primero, se trata de un capítulo especialmente destinado al asunto, con varias publicaciones posteriores en forma de artículo de periódico o revistas; mientras que el segundo publicó un artículo con el terremoto de 1812 como tema.

En esta sección, igualmente, se realizan algunos aportes con relación a estos documentos. Por ejemplo, el importantísimo trabajo de Alejandro Ibarra se transcribe por primera vez al público luego de su primera versión de 1862. Más aún, este artículo es de difícil acceso en la Hemeroteca Nacional, por no hallarse disponible en microfilm y por encontrarse su original resguardado para la conservación. De esta manera, el trabajo de Ibarra, pionero venezolano en detectar la relación entre los efectos de sitio, las ondas sísmicas y las condiciones de la construcción, podrá ser consultado abiertamente a partir de esta publicación.

Por otro lado, resulta un aporte fundamental para la historia de la sismología venezolana la traducción al español del artículo de Wilhelm Sievers. Se trata de la primera versión en español del mismo, para lo cual se contó con la traducción directa del alemán por medio de un germano-parlante con conocimientos de sismología.[34] Hasta el presente, este importante trabajo sobre los efectos del sismo de 1812 en Caracas sólo había podido ser consultado en alemán, o interpretado a través de las discusiones que Ernst había sostenido con su compatriota al respecto.

Asimismo, se publica traducido al español el texto anónimo que se insertó en una de las tantas publicaciones que se hicieron de la narración del francés Louis Delpeche, testigo presencial del terremoto de Caracas, la cual se encuentra originalmente en alemán y en letras góticas, lo cual hace más difícil su consulta.

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[34] Algunos esfuerzos previos se habían logrado con la colaboración de traductores no especializados en el tema.

Es scheint hier nicht unschicklich, eine Erklärung dieser ausserordentlichen Naturerscheinung überhaupt, und die Aufzählung der merkwürdigsten Erdbeben anzuhängen.

Erdbeben, Erderschütterung.

Die fürchterliche Erscheinung, wobei ein größerer oder kleinerer Theil der Erdoberfläche auf längere, oder kürzere Zeit mit Heftigkeit erschüttert wird, und wodurch eine Menge der ausgezeichnetesten Veränderungen auf unserer Erde bewirkt worden sind, zieht zu sehr die Aufmerksamkeit des Naturforschers auf sich, als daß er nicht den wirkenden Ursachen davon nachspüren sollte. Durch Erdbeben sind ganze Strecken Landes mit ihren

Figura 7: Detalle del encabezado de la inserción editorial que se realizó en una de las publicaciones en alemán de la narración de Louis Delpeche. Este interesante folleto fue hallado en forma de copia fotostática en la sección Libros Raros y Manuscritos de la Biblioteca Nacional, bajo la cota: 987.7, B 554.

Este texto resulta por demás interesante al tratarse de una de las primeras interpretaciones formales que se realizó sobre los temblores de marzo de 1812. Sus conjeturas al respecto pueden considerarse pioneras, junto a las que se colocan a su lado, como las publicadas en la *Aurora de Chile*, también de 1813, por los tempranos intentos que representan en ese sentido.

Entre los pioneros, sin duda, debe mencionarse a Manuel Palacio Fajardo, prócer venezolano de la independencia y académico de sólida trayectoria: fue el regente de la cátedra de medicina del Real Colegio de Mérida en 1808, médico y doctor en derechos civil y canónico.[35] Palacio Fajardo publicó muy temprano, en 1817, algunas reflexiones e interpretaciones sobre los fenómenos de aquel Jueves Santo, las cuales fueron tomadas muy en cuenta por los científicos de la época, especialmente por Humboldt. Su texto al respecto es también seleccionado entre estos *Escritos Científicos*.

[35] Franco Urbani, "Manuel Palacio Fajardo (1784-1819) y su contribución a las ciencias naturales", en *Boletín de Historia de las Geociencias en Venezuela*, Nº 74, 1991, Caracas, pp. 222-229.

Sin duda, el texto científico más connotado de entre todos los seleccionados es el de Alejandro de Humboldt. Cuenta con referencias y alusiones en once entradas distintas a lo largo del libro, y forma parte de la obra fundamental *Viaje a las regiones equinocciales del Nuevo Continente*. Fue reproducido y traducido en varias oportunidades y giró entre las revistas y los periódicos de Europa y Estados Unidos durante años. Esta versión en inglés que aquí se transcribe es la primera traducción a esa lengua (realizada en Londres por Helen Maria Williams en 1819, el mismo año en que se publica el tomo II de sus "viajes"), y se deja de acuerdo a ese original por existir excelentes traducciones al español de consulta pública.

Otro aporte en esta sección lo representa la transcripción y traducción al español del extracto de la poco conocida obra del alemán Friedrich Christian Kries,[36] profesor de matemática y física, quien diserta brevemente sobre el sismo de 1812 haciendo referencia, ineludiblemente, a su compatriota Humboldt.

Los *Escritos Científicos* que se reúnen aquí dan cuenta, junto al resto de la colección, del "efecto" causado por los terremotos de 1812 en las regiones venezolanas. El uso como ejemplo, como comparación, o como objetivo especial de análisis, permite comprender que se trató de eventos que llamaron la atención de los investigadores a lo largo de todo el siglo, en tanto, como se señaló anteriormente, no abordaban la escena mundial tres variables que colocaron a estos protagonistas en un segundo plano: la transformación de la realidad urbana y los cambios en las tipologías constructivas; el arribo de la tecnología en la observación de los temblores; y la irrupción de nuevos terremotos destructores que desplazaron a los sismos de 1812 de entre los ejemplos comparativos.

[36] *Von den Ursachen der Erdbeben und von den magnetischen Erscheinungen*, Leipzig, 1827.

Humboldt y los terremotos de 1812

Como ya se señaló, las reflexiones de Humboldt sobre 1812 fueron las más consultadas al respecto. Debatidas o seguidas a pie juntillas, las ideas del sabio alemán le dieron la vuelta al mundo y sirvieron de punto de partida a muchos trabajos posteriores. Se trata, ciertamente, del pensador de mayor influencia en las ciencias naturales del siglo XIX, y en este caso en particular, su huella dejó una marca de honda impresión.

La visión que tenía Humboldt de las relaciones de la naturaleza, desde temprana edad fue fomentada por el espíritu de la Ilustración a través de las enseñanzas de sus profesores privados, el contacto con la naturaleza en el castillo de sus padres en Tegel, y los estudios en las universidades de Frankfurt an der Oder, Göttingen, Freiberg y en Berlín. Crecido bajo la sombra de su hermano Wilhelm, humanista quien fundó la universidad de Berlín, se consoló con la naturaleza de su mala salud. Al no lograr los avances de su hermano con los profesores privados, de los cuales el más importante fue Gottlob Johann Christian Kunth, entró en contacto con geógrafos de la época, así como con las ideas del representante más destacado de la Ilustración alemana: Immanuel Kant. Recibió enseñanzas amplias en ciencias naturales, con énfasis en botánica, en historia y minería, y tuvo contacto con participantes en las expediciones científicas mundiales de la época. Pudo aplicar sus conocimientos durante 5 años como responsable de distritos mineros en Franconia. Después de la muerte de su madre empleó su fortuna en la planificación y realización de su viaje científico más importante al nuevo continente, el cual realizó entre 1799 y 1804 junto con el botánico Aimé Bonpland.

La primera observación de Humboldt sobre terremotos del Nuevo Mundo corresponde a la zona de Cumaná. Allí presenció el sismo del 4 de noviembre de 1799, el cual fue "el primero que he sentido... era un verdadero solevantamiento de abajo arriba, y no una sacudida por ondulación"[37]. Indica que la ciudad "no posee... ningún edificio notable... [por] la frecuencia de los temblores de tierra... La serie de sacudidas débiles es interrumpida,

[37] *Viaje a las regiones equinocciales del Nuevo Continente*, Ministerio de Educación, 1956, Caracas, Tomo II, p. 176.

tras una larga sucesión de años por grandes catástrofes..."[38] También escribe sobre la sismicidad histórica de la región, al recopilar información proveniente tanto de publicaciones previas como de los recuerdos de los habitantes, rescatando de ello las fechas y los efectos de los terremotos desde mediados del siglo XVII. Al respecto concluye que "los grandes temblores de tierra que interrumpen la larga serie de pequeños sacudimientos no parecen tener nada de periódico en Cumaná. Se han sucedido cada ochenta, a ciento, y aun en ocasiones a menos de treinta años de distancia."[39]

Reafirma la creencia anterior acerca de que "varios hechos tienden a probar que las causas que producen los temblores de tierra tienen un estrecho enlace con las que obran en las erupciones volcánicas."[40] Pero en su explicación utiliza la idea generalizada en la época de que "todo parece indicar en los temblores de tierra la acción de los fluidos elásticos que buscan una salida para esparcirse en la atmósfera."[41]

Sobre la interpretación global de estos fenómenos, señala como un hecho el paralelismo de las zonas sísmicas con las cordilleras de los Andes y del Norte de Venezuela, e "indica una íntima relación entre las causas que producen los temblores de tierra y las erupciones volcánicas... Los temblores de tierra de Cumaná se conexionan con los de las Antillas Menores, y aún se ha sospechado que tienen ciertas relaciones con los fenómenos volcánicos de la Cordillera de los Andes." Con esto se inicia ya, de manera general, una idea sobre la geodinámica de las placas del Caribe y Suramérica.[42]

Las ideas de Humboldt al respecto contaron con la influencia de los razonamientos de la época, todos ellos con un origen común: el impacto causado por el gran terremoto de Lisboa de 1755. Sobre este evento, Kant se adelantó al contexto señalando que se trató de un evento natural, y no

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38 Tomo I, p. 320.

39 Ídem, p. 324.

40 Ibíd., p. 331.

41 Ibíd., p. 332.

42 Franco Urbani, "Contribuciones geológicas en las obras venezolanistas de Alejandro de Humboldt", en Martin Guntau, Peter Hardetert y Maring Pape (Editores.), *Alexander von Humboldt Natur als Idee und Abenteur*, Essen, Projekt Agentur, 1993, pp. 73-90. (Edición bilingüe alemán-español). La cita inserta de Humboldt corresponde al Tomo I, p. 330.

un acto de Dios.[43] Kant describió además los efectos que tuvieron las vibraciones de gran período sobre todo en las aguas de lagos y ríos de toda Europa. Humboldt, seguramente, comenzó a comprender a los terremotos a partir de propuestas como éstas.

En el caso de los temblores de 1812, el erudito alemán contó con el apoyo de dos manuscritos que le resultaron fundamentales en sus razonamientos al respecto. Residenciado en Europa desde años atrás, no pudo presenciar aquellos fenómenos fascinantes, y tuvo que recurrir al relato de dos testigos de excepción: el francés Louis Delpeche y el venezolano Manuel Palacio Fajardo, a quienes cita y refiere en su obra.

El primero de ellos, un agitado francés que sirvió a la revolución de Caracas hacia la Primera República, es el mismo autor de la relación ya referida anteriormente, la cual contó con varias ediciones en diferentes idiomas, y a la que se hará mención con mayor detenimiento más adelante. El manuscrito de Delpeche debe haber sido entregado a Humboldt en Paris hacia 1813, justo cuando este personaje intentaría, aunque sin éxito, negociar el apoyo de Francia a los patriotas.

Palacio Fajardo, por su parte, también entregó a Humboldt un manuscrito narrando y comentando los sucesos de marzo de 1812, y se encontraba en Paris para 1813 con la misma misión que su camarada Delpeche: negociar con los franceses. De seguro Palacio Fajardo, Delpeche y Humboldt debieron haber intercambiado opiniones sobre los terremotos, y de esas conversaciones, así como de la consulta a los manuscritos suministrados a la sazón, surgirían las conjeturas del alemán sobre los terremotos del 26 de marzo.[44] De allí la importancia de estos manuscritos, ya para los

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[43] Immanuel Kant, "Geschichte und Naturbeschreibung der merkwürdigsten Vorfälle des Erdbebens, welches an dem Ende des 1755sten Jahres einen großen Theil der Erde erschüttert hat von Immanuel Kant", en *Gesammelte Schriften*, Akademie-Ausgabe, Abt.1, Bd.1, Berlin, 1910, S.434 ff., original de 1755.

[44] El estudio que al respecto realizara Rogelio Altez realiza precisiones sobre el asunto, Véase, "Lo que el terremoto se llevó; los razonamientos de Humboldt sobre los terremotos de 1812 en Venezuela", en José Ángel Rodríguez, comp., *Alemanes en las regiones equinocciales*, Colección Trópicos, Alfadil Ediciones-Comisión de Estudios de Postgrado, Facultad de Humanidades y Educación, U.C.V.-AvH-Stiftung, Caracas, pp. 111-127, 1999.

razonamientos de Humboldt, como para el pensamiento científico decimonónico sobre los terremotos.

Humboldt le dedicó un capítulo completo al terremoto de Caracas y la relación de este fenómeno con las erupciones volcánicas de las Antillas menores. Como en sus primeras observaciones sobre el terremoto de Cumaná de 1797, coloca al terremoto de Caracas (y específicamente a un temblor precursor de diciembre 1811), en el contexto de las erupciones volcánicas, en este caso del volcán de la isla San Vicente. Atribuye "más de doscientas sacudidas desde el mes de mayo de 1811 hasta abril de 1812, en la isla de San Vicente, una de las tres Antillas que todavía tienen volcanes activos"[45] a la relación con los volcanes en...

> ...una vasta extensión de tierra, entre los 5° y 36° de latitud boreal y los meridianos de 31° y 91° al oeste de París, limitada por el meridiano de las islas Azores, el valle de Ohio, las cordilleras de Nueva Granada las costas de Venezuela, y los volcanes de las Antillas menores, estuvo casi a un mismo tiempo conmovido por sacudimientos que pueden ser atribuidos a fuegos subterráneos. (...) No quedaron circunscritos los movimientos a la parte insular de la América oriental… Estuvo casi continuamente agitada la tierra en los valles del Mississippi, el Arkansas y el Ohio… Acompañáronse de un gran ruido subterráneo que venía del suroeste. En algunos puntos, entre Nuevo Madrid y Little-Prairie,… las sacudidas se sintieron todos los días, casi a cada hora, durante varios meses. El conjunto de estos fenómenos duró desde el 16 de diciembre de 1811 hasta 1813. Limitadas en un principio al sur, en el valle del Bajo Mississippi, las conmociones parecían adelantarse poco a poco hacia el Norte.
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> En la misma época en que comenzó esta larga serie de temblores de tierra en los Estados transalegánicos[46], en el mes de diciembre de 1811, experimentó Caracas una primera sacudida, durante un tiempo tranquilo y sereno. No era probablemente accidental esta coincidencia de fenómenos, porque no debe olvidarse que, a pesar de la distancia que separa estos países, las tierras bajas de la Luisiana y las costas de Venezuela y

[45] *Viaje a las regiones equinocciales*..., Tomo III, p. 10.

[46] Alleghanis: nombre antiguo de los Apalaches en los EEUU.

> Cumaná pertenecen a una misma cuenca, a la del mar de las Antillas. Este Mediterráneo de varias salidas se dirige del Sureste al Noroeste, y parece reconocerse en él una antigua prolongación de las vastas llanuras elevadas gradualmente a 30, 50 y 80 toesas[47] sobre el nivel del océano, cubiertas de formaciones secundarias… Al considerar geológicamente la cuenca del mar de las Antillas y el golfo de México, hállasela limitada al Sur por la serranía costanera de Venezuela y las cordilleras de Mérida y Pamplona, al este por las montañas de las islas Antillas y los Alleghanis, al Oeste por los Andes de México y los Montes Rocallosos, y al Norte por las alturas muy poco considerables que separan los lagos canadienses de los afluentes del Mississippi. Más de dos terceras partes de esta cuenca están cubiertas de agua. Dos hileras de volcanes activos la orillan, al este en las Antillas menores…, al Oeste en las cordilleras de Nicaragua, Guatemala y México.[48]

La interpretación que sugiere la actividad de una cuenca uniforme desde el Mississippi hasta Venezuela, surge en conjunto con la analogía de las observaciones de Europa, las cuales parten de las reflexiones hechas con el sismo de Lisboa de 1755. A partir de ello, Humboldt asume que "no parecerá demasiado arriesgado suponer que toda esta cuenca de las Antillas, desde Cumaná y Caracas hasta las llanuras de la Luisiana, puede a las veces ser agitada simultáneamente por sacudimientos que parten de un mismo centro de acción."[49] Con esto, Humboldt concluye que los terremotos tienen su origen a gran profundidad, y aduce que los temblores de 1812 fueron producidos por "un volcán más próximo al continente, el de San Vicente, el que parecía ejercer su influencia hasta Caracas y las riberas del Apure. Es probable que en esas dos épocas el centro de la explosión estuvo a una inmensa profundidad alejado al igual de las regiones hacía las cuales se propagaba el movimiento hasta la superficie de la tierra."[50]

Humboldt contrapone esta teoría a la explicación más común de la época que relaciona los terremotos con fenómenos eléctricos:

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47 Antigua medida de longitud francesa, equivalente a 1,949 m.

48 *Viaje a las regiones equinocciales*..., Tomo III, pp. 9-11.

49 Ídem, p. 12.

50 Ibíd., p. 9.

> La casualidad puede favorecer la coincidencia de ciertos fenómenos. Los extraordinarios sacudimientos que casi continuamente se sintieron durante dos años en las orillas del Mississippi y el Ohio, y que en 1812 coincidían con los del valle de Caracas, fueron precedidos en la Luisiana por un año casi por completo exento de tormentas. Este fenómeno sorprendió de nuevo a todos los espíritus. No debe verse con extrañeza que en la patria de Franklin se guarde una gran predilección por explicaciones basadas en la teoría de la electricidad.[51]

Reconoce con ello la importancia de la casualidad de lo ocurrido, que puede haber influido en las asociaciones de los terremotos con fenómenos eléctricos (algo que, por cierto, no descarta por completo); sin embargo, no considera lo mismo para la conexión entre los sismos y las manifestaciones volcánicas a grandes distancias, sobre lo cual fundamenta su teoría acerca del origen de los terremotos.

Otra serie de observaciones sobre la forma y los sitios donde se sentían los movimientos lleva a Humboldt a concluir que los movimientos fueron "más fuertes en las cordilleras de gneis y micaesquisto, o inmediatamente al pie de ellas, que en las llanuras. La duración del terremoto, es decir, el conjunto de movimientos de ondulación y trepidación que causaron la horrible catástrofe del 26 de marzo de 1812 fue evaluada por unos en 50", y por otros en 1'12"."[52]

> La primera conmoción… fue bastante fuerte para remover las campanas de los templos. Duró de 5 a 6 segundos, y fue al punto seguida de otro sacudimiento de 10 a 12 segundos, durante la cual parecía hervir el suelo como un líquido, en un movimiento continuo de ondulación. Creíase ya pasado el peligro, cuando un enorme ruido subterráneo se dejó oír. Era como el retumbo del trueno, pero más fuerte, más prolongado que el que se oye en los trópicos en la estación de las tormentas. Este ruido precedió a un movimiento perpendicular de 3 a 4 segundos más o menos, seguido de un movimiento de ondulación algo más largo.

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51 Ibíd., p. 12.

52 Ibíd., p. 16.

> Las sacudidas eran en direcciones opuestas, de Norte a Sur y de Este a Oeste. A este movimiento de abajo arriba y a estas oscilaciones cruzadas nada pudo resistir. La ciudad de Caracas fue volcada de arriba abajo.[53]

Pareciera describirse con estos movimientos el paso de las ondas primarias (primera conmoción fuerte), seguidas por las ondas secundarias (sacudimiento de 10 a 12 segundos) y finalmente de las ondas superficiales (oscilaciones cruzadas).

Humboldt desmintió enérgicamente los rumores que le asignaban ideas que la Silla era un volcán apagado por la cantidad de azufre en el hallado y consideró "un deber combatir ideas que demasiado fácilmente se adoptan sobre las causas locales de los temblores de tierra."

> Dondequiera que el suelo ha estado continuamente agitado durante meses enteros, como en Jamaica en 1693, en Lisboa en 1775, en Cumaná en 1766, en el Piamonte en 1808, se aguarda ver abrirse un volcán. Olvídase que es lejos de la superficie del suelo donde hay que buscar los focos o centros de acción, que según testimonios positivos, las oscilaciones se propagan, y casi al mismo instante, a mil leguas de distancia, a través de mares de inmensa profundidad; que los mayores trastornos tienen efecto, no al pie de los volcanes activos, sino en cordilleras de montes compuestas de las rocas más heterogéneas.
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> Nunca he podido enunciar la idea de que la Silla y el cerro del Ávila, montañas de gneis y micaesquistos, eran cercanía peligrosa para la capital, porque en los bancos subordinados de caliza primitiva encierran esas montañas muchas piritas; pero me acuerdo haber dicho durante mi permanencia en Caracas, que la extremidad oriental de la Tierra firme, desde el gran temblor de tierra de Quito, parecía hallarse en un estado de agitación que hacía temer que poco a poco la provincia de Venezuela experimentase fuertes conmociones. Añadí que cuando un país había estado sujeto a sacudidas por largo tiempo, aparentaban abrirse nuevas comunicaciones subterráneas con los países inmediatos, y que los volcanes de las Antillas, situadas en la dirección de la Silla,

[53] Ibíd., p. 13.

> al Noreste de la ciudad, eran quizás los respiraderos por los que en el momento de una erupción se escapaban los fluidos elásticos que causan los temblores de tierra en las costas del continente.[54]

Estaba seguro de que "la destrucción de Cumaná en 1797 y la de Caracas en 1812 indican la influencia de los volcanes de las Antillas menores en las conmociones que experimentan las costas de Tierra Firme", y para sustentar dicha teoría se apoya en una cronología de las relaciones entre los fenómenos volcánicos y los terremotos en esa época:

> 27 de septiembre, 1796 erupción del volcán Guadalupe en las Antillas menores; noviembre 1796, el volcán de Pasto empieza a arrojar humo; 14 de diciembre, 1796, destrucción de Cumaná; 4 de febrero, 1797, destrucción de Riobamba; 30 de enero, 1811, aparición de la isla Sabrina en las Azores, se agranda el 15 de junio, 1811; mayo de 1811, comienzan temblores de tierra en la isla de San Vicente, que duran hasta mayo de 1812; 16 de diciembre, 1811, comienzan conmociones en el valle del Mississippi y el de Ohio, que duran hasta 1813; diciembre de 1811, temblor de tierra en Caracas; 26 de marzo, 1812, destrucción de Caracas, temblores de tierra que continúan hasta 1814; 30 de abril, 1812, erupción del volcán de San Vicente, y el mismo día ruidos subterráneos en Caracas y en las orillas del Apure.[55]

Al final del capítulo sobre el terremoto de Caracas, resume las ideas sobre la relación entre los terremotos y los volcanes de las Antillas e invita al estudio de sus relaciones: "Todo anuncia la acción de las fuerzas vivas que en el interior del globo reaccionan con otras, se equilibran y se modifican. Mientras más ignoremos las causas de estos movimientos de ondulación, de estos desprendimientos de calor, de estas formaciones de fluidos elásticos, mayor deber cumple al físico de estudiar las relaciones que estos fenómenos presentan a grandes distancias y de un modo tan uniforme. Sólo considerando esas diversas relaciones desde un punto de vista general, siguiéndolas en una grande extensión de la superficie del globo, a través de las formaciones de rocas más diferentes, es como se ha llegado a

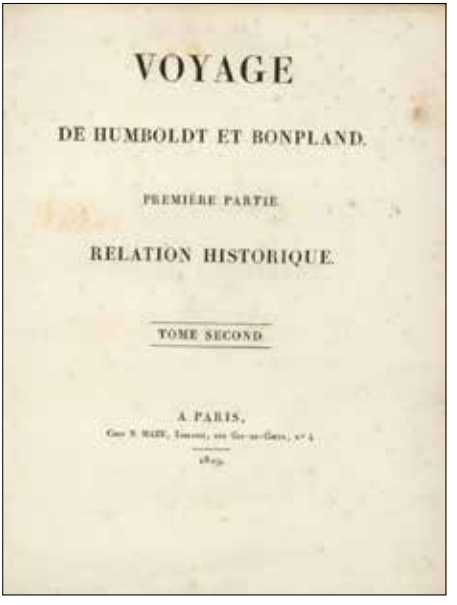
[54] Ibíd., pp. 19-20.

[55] Ibíd., p. 26.

abandonar la suposición de pequeñas causas locales, de capas de piritas o de carbón de piedra inflamado."[56]

Confirma Humboldt la total ausencia de volcanes en territorio Venezolano, indicando que la gran variedad de fenómenos de volcancitos de arena, aguas calientes, lagos y menes de petróleo, corresponden a otra naturaleza que la del ascenso de material fundido por aberturas en la tierra. Aunque generalmente las costas orientales de Cumaná eran consideradas "las más expuestas a los efectos destructores de los temblores de tierra", respecto al peligro de sismos en Caracas notaba:

> Fiestas de iglesia celebradas en La Guaira y en la capital misma a media noche recordábanles, sin duda, que de tiempo en tiempo la provincia de Venezuela ha estado sujeta a temblores de tierra; pero poco se temen los peligros que raramente se renuevan.[57]


VOYAGE

DE HUMBOLDT ET BONPLAND.

PREMIÈRE PARTIE.

RELATION HISTORIQUE.

TOME SECOND.

A PARIS,

Figura 8: Imagen de la portada del Tomo II de la primera edición de la obra de Humboldt sobre sus viajes a las regiones equinocciales.

[56] Ibíd., p. 31.

[57] Ibíd., pp. 8-9.

Sobre las primeras ediciones de la obra de Humboldt, es posible comentar algunas peculiaridades. Por un lado, su primera edición fue publicada en francés en tres tomos de gran formato (1/4 de folio), con encuadernado de lujo, y fue considerada, inclusive para su época, como un trío de libros muy costoso.[58] La edición de esos tres volúmenes se realizó entre 1814 y 1825. El capítulo sobre el terremoto de Caracas de 1812, aparece en el volumen II, publicado en 1819 (Libro V, Capítulo XIV, pp. 1-28).

La novelista y poetiza liberal británica Helen Maria Williams, quien se especializaba en realizar traducciones del francés al inglés, realizó la primera versión en inglés de esta obra. Es publicada en Londres entre 1814 y 1829, en formato de 1/8 de folio, en siete volúmenes.[59] La descripción del terremoto de 1812 aparece en el volumen IV (Libro V, capítulo XIV, p. 1-55), también publicado en 1819.

Casi al mismo tiempo se realiza en París una edición en francés, pero en formato pequeño de 1/8 de folio y con un precio más económico, para garantizar su adquisición y mayor divulgación. Con ello, los librillos llegaron a convertirse en los *best sellers* de la época. Esta serie es titulada *Voyage aux régions équinoxiales du Nouveau Continent, fait en 1799, 1800, 1801, 1802, 1803 et 1804 par Al. de Humboldt et A. Bompland, rédige par Alexander de Humboldt; avec un atlas géographique et physique.* La obra consta de trece volúmenes que son publicados entre 1816 y 1831. El capítulo sobre el terremoto de Caracas aparece en el volumen V (Capítulo XIV) publicado en 1820.[60] Luego de esto, también se iniciaron las traducciones a varios idiomas.

La mejor traducción al español del original en francés, pero que abarca sólo la parte inicial del viaje y sus descripciones venezolanas, fue realizada en Caracas por Lisandro Alvarado y completada por Eduardo Röhl y José

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58 *Voyage de Humboldt et Bonpland. Prèmiere Partie. Relation historique.* París, Tomo I, 640 p., F. Schoell, 1814; Tomo II, 722 p., Maze, 1819; Tomo III, 629 p., Smith & Gide fils., 1825.

59 *Personal Narrative of travels to the Equinoctial Regions of the New Continent during the years 1799-1804 by Alexander de Humboldt and Aimé Bonpland; with maps, plans, &c. written in French by Alexander de Humboldt and translated into English by Helen Maria Williams*, Londres, Longman, Hurst, Rees, Orme, and Brown, Paternoster Row. Vol. IV, 573 p.

60 París, Chez N. Maze, Librairie, rue Git-Le-Coeur, Nº 4, Tomo V, 318 p., 1820.

Nucete Sardi. Esta obra fue publicada por el Ministerio de Educación, con una primera edición en 1941 y la segunda en 1956.[61] Una reimpresión facsimilar de la segunda edición fue publicada en 1991 por la Editorial Monte Ávila. En estas tres ediciones el terremoto de 1812 aparece descrito en el volumen III (Libro V, Capítulo XIV, p. 7-36).

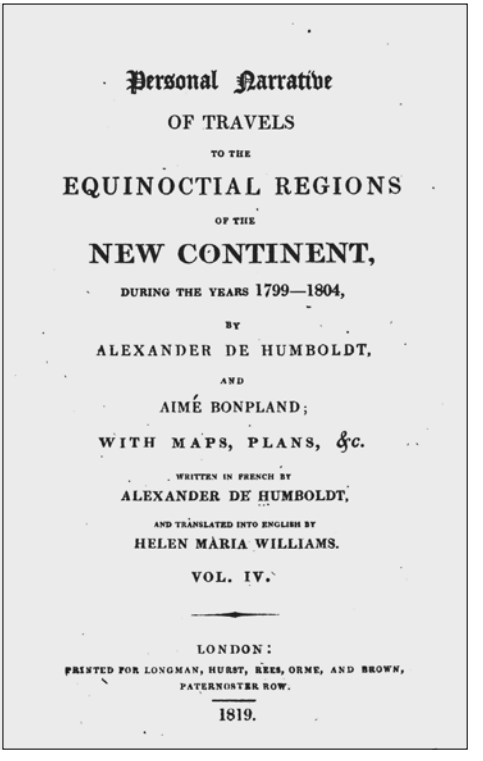
Personal Narrative
OF TRAVELS
TO THE
EQUINOCTIAL REGIONS
OF THE
NEW CONTINENT,
DURING THE YEARS 1799—1804,
BY
ALEXANDER DE HUMBOLDT,
AND
AIMÉ BONPLAND;
WITH MAPS, PLANS, &c.
WRITTEN IN FRENCH BY
ALEXANDER DE HUMBOLDT,
AND TRANSLATED INTO ENGLISH BY
HELEN MARIA WILLIAMS.
VOL. IV.
LONDON:
PRINTED FOR LONGMAN, HURST, REES, ORME, AND BROWN,
PATERNOSTER ROW.
1819.

Figura 9: Imagen de la portada del Vol. IV, correspondiente a la primera edición en inglés de la obra de Humboldt.

[61] *Viaje a las regiones equinocciales del Nuevo Continente*, Ediciones del Ministerio de Educación, Biblioteca Venezolana de Cultura, Colección Viajes y Naturaleza, Caracas. Tomo I, 388 p.; tomo II, 367 p.; tomo III, 327 p.; tomo IV, 497 p., tomo V, 369 p.

Pesquisas que viajaron en el tiempo

> Es bastante curioso que casi todo lo que sabemos de esta terrible catástrofe se apoya en el informe que un francés de nombre Delpeche que vivía entonces en Caracas envió a Humboldt.
>
> **Adolfo Ernst62**

Algunos documentos representaron un nudo de incógnitas de difícil solución. Muchos de los autores hallados parecen haber querido confundir a los lectores del futuro detrás de seudónimos, anónimos, siglas, y repeticiones interminables de los textos. Sin duda, lo lograron. No obstante, este fue uno de los retos más interesantes de la investigación, a pesar de no haber sido un objetivo previo. Jamás se tuvo en cuenta, desde que se inició el trabajo, que buena parte del mismo acabaría siendo un ejercicio detectivesco tras la pista de varios escritos.

El caso más destacado, ciertamente, fue el de Louis Delpeche. El controvertido francés redactó una descripción de su vivencia en el terremoto de Caracas que sería leída en muchas ciudades europeas y norteamericanas, pues acabó siendo publicada en varias oportunidades y en diferentes idiomas. Delpeche fue un aventurero enamorado de la revolución independentista que recaló en Caracas poco antes de 1810, donde contrajo matrimonio y estableció un negocio de imprenta con su compatriota Juan Baillío, el mismo impresor del *Semanario de Caracas*, *El Publicista de Venezuela*, *El Patriota de Venezuela*, así como algunos números de la *Gazeta de Caracas* e incluso el *Acta de la independencia*.[63]

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62 "El terremoto del 26 de marzo de 1812 en la Costa Norte de America del Sur" ("Das Erdbeben vom 26 März 1812 an der Nordküste Südamerikas"), *Aardrijusk Genostrah. Nederland*, Holanda 1886, Nº3, pp.175-181. Hay traducción al español en *Adolfo Ernst Obras Completas* (Blas Bruni Celli, compilador), tomo VII, Ciencias de la Tierra. Ediciones de la Presidencia de la República, Caracas, 1988, pp. 480-495.
Adolfo Ernst, *Obras Completas*, Ediciones de la Presidencia de la República, Caracas, 1988, pp. 480-495.

63 Véanse las referencias al respecto en el *Diccionario de Historia de Venezuela*, Fundación Polar, Caracas, Segunda Edición, 1997.

Hombre de confianza de Miranda, fue nombrado representante del gobierno de la Primera República ante Napoleón, y de allí que compartiera la misión con Palacio Fajardo, quien había sido nombrado por el gobierno de Cartagena para el mismo fin. Sobreviviente del terremoto, parte desde La Guiara hacia las Antillas en julio de 1812, intentando al mismo tiempo evadir algunas deudas que le aguardan en las islas caribeñas.

> Molini y Du Caylá deben embarcarse en la fragata "Orpheo"; pero Delpeche, porque parece que tiene graves inconvenientes para ir a San Tomas, trata de irse en la goleta "Erin", á San Bartolomé: este hombre parece debe en las colonias hasta la camisa.[64]

Delpeche finalmente se embarcó el 4 de julio por la vía que más le convenía: evitando pasar por San Thomas. El aventurero y revolucionario llegaría a Paris, vía Nueva York y Londres, hacia marzo de 1813, donde logra reunirse con el ministro de Relaciones Exteriores de Napoleón en conjunto con su colega Palacio Fajardo. Fue en su pasaje por Londres cuando publicaría por primera vez su famoso relato "Account of the late earthquake at the Caraccas", en el *The Philosophical Magazine*.[65] En esta oportunidad lo haría bajo un seudónimo: J. H. S., seguramente protegiendo su identidad de algunos perseguidores de turno o simplemente disfrutando del anonimato como estilo propio del momento.

Llegado a Paris, su misión diplomática no tuvo éxito, pero su estancia en la capital francesa le permitiría entrevistarse con Humboldt y publicar por segunda instancia el relato en cuestión, esta vez en el *Journal de Paris*

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64 Manuel María De Las Casas a Carlos Soublette, La Guaira, 3 de julio de 1812, en *Archivo del General Miranda*, Tomo XXIV, Editorial Lex, La Habana, 1950, p. 89. El célebre biógrafo de Miranda, William Spence Robertson, diría de Delpeche que, junto a Gregor Mac Gregor y John Robertson, por ejemplo, fue un aventurero imantado por la independencia: "Por ésta o por muchas otras razones, muchos hombres europeos fueron al país, la mayoría de índole aventurera, entre ellos un francés llamado Luis Delpeche y Gregorio Mac-Gregor... y el coronel John Robertson..." *Francisco de Miranda y la revolución de la América española*, Bogotá, Imprenta Nacional, 1918, p. 315.

65 Londres, Vol. XLI, marzo de 1813, pp. 161-166, con una nota editorial a pie de página que señalaba lo siguiente: "This interesting narrative is the production of a French gentleman, who has resided many years at the Caraccas, and was an eye-witness to the scenes which he describes. He was taken prisoner, on his return to France, on board the American ship Dolphin, by Capt. Malcolm of the Rhin frigate. To the latter gentleman our readers are indebted for the publication of the narrative. –Edit."

del 15 mes de mayo y bajo el título: "Relation du dernier tremblement de terre de Caracas."

Esta narración llamaría poderosamente la atención de un sinfín de lectores, así como de muchos editores de periódicos y revistas. Su precisa descripción, su auténtico dramatismo, y su calidad de testigo presencial, le otorgaban al documento un atractivo especial que se sumaba a la inmensa curiosidad que había despertado en el viejo continente la revolución caraqueña. Pronto, el texto de Delpeche sería demandado por muchas ciudades, iniciando con ello un periplo de publicaciones que se fue descubriendo poco a poco.

Hasta el inicio de esta investigación, solamente se conocían estas dos versiones del relato de Delpeche: la de Londres y la de Paris. Con la búsqueda de publicaciones sobre el tema, comenzaron a aparecer artículos aparentemente similares en varias oportunidades. Ninguno de ellos llevaba el nombre del aventurero francés, lo cual hizo imposible notar que se trataba del mismo escrito al momento de tenerlo entre manos, sino tiempo después, cuando las frases empezaron a llamar la atención y a rememorar el hecho de haber leído antes eso que se estaba leyendo.

Algunas sospechas previas advertían sobre el caso,[66] pero no era posible dedicar la pesquisa únicamente al descifrado de un autor; de manera que el asunto se fue atendiendo en la medida en que se iba haciendo presente. Fue así como saltaron a la vista dos publicaciones idénticas, pero en diferentes idiomas: la reproducción fiel del artículo publicado en Londres en el *The Analectic Magazine* de Filadelfia,[67] incluyendo su nota editorial, y una versión en alemán en el *Zeitung für die elegante Welt Berlin*[68] de Berlin. Ambas versiones fueron anónimas, lo que hizo más difícil su detección y su identificación.

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66 Véase el citado trabajo de R. Altez, "Lo que el terremoto se llevó..."

67 Agosto, Vol 2, pp. 164-168.

68 Bajo el título "Das Erdbeben zu Caraccas in Jahr 1812, von einem Augenzeugen beschrieben", Berlin, Vol. 13, Nº 115, del 10 de junio de 1813, pp. 915-918.

Descifrado el asunto hasta allí, apareció otro anónimo describiendo el terremoto hallado en la sección Libros Raros y Manuscritos de la Biblioteca Nacional, el cual, en este caso, estaba impreso en alemán y en letras góticas, como se mencionara páginas atrás, y se presentaba con el título *Beschreibung des schrecklichen Erdbebens, welches in vorigen Jahre in der Provinz Caraccas in Amerika gewüthet, und die schöne Stadt gleiches Namens, so wie noch viele andere Orte dieser reichen und großen Provinz zerstörte. Nebst einigen Betrachtungen über Erdbeben überhaupt*.[69] La tarea comenzó por transcribirlo y luego traducirlo, sumando el hecho de que se hallaba acompañado por otro texto inserto hacia el final del impreso, con su propio subtítulo: "Erdbeben, Erderschütterung" ("Terremotos, vibraciones de la tierra").

Beschreibung
des
schrecklichen Erdbebens,
welches
im vorigen Jahre
in der Provinz Caraccas in Amerika gewüthet,
und die schöne Stadt gleiches Namens,
so wie
noch viele andere Orte dieser reichen und großen Provinz zerstörte.
Nebst
einigen Betrachtungen über Erdbeben überhaupt.

Figura 10: Portada del anónimo atribuido a Delpeche existente en la sección Libros Raros y Manuscritos de la Biblioteca Nacional.

[69] "Descripción del horrible terremoto, que ha rabiado el año pasado en la provincia de Caraccas en América, y que destruyó la linda ciudad del mismo nombre, así como muchos otros sitios de esta próspera y grande provincia. Asimismo como algunas reflexiones sobre terremotos en general."

Su extenso encabezado principal distrajo la atención sobre el contenido, pues no resultaba el mismo título que el artículo de Londres, el de Filadelfia, el de Paris o el de Berlin. Por otro lado, el esfuerzo de la traducción se duplicó con el texto inserto al final, de manera que todo conspiró como para confundir la investigación sobre la nueva publicación de la relación de Delpeche. A todo ello debe añadirse que el folleto en cuestión se encuentra en la Biblioteca Nacional como una reproducción fotostática del original, y no es posible observar su pie editorial, pues sólo alcanza a divisarse que fue publicado en 1813. Se estima que debe haber sido editado en Berlin.

Finalmente, fue posible advertir que se trataba del mismo texto, y esto se dio gracias a la posibilidad de traducirlo de la mano de un lector germano-parlante, y a la comparación realizada con la traducción del artículo del *Journal de Paris* realizada por Jesús Rosas Marcano. Con esto se puede asegurar que la narración de Delpeche sobre el terremoto de Caracas en 1812, fue una de las más leídas en aquellos años. Si se le suma el manuscrito citado por Humboldt (quien no menciona haber consultado el texto en ninguna de estas ediciones), la descripción realizada por el revolucionario francés cuenta con seis ediciones diferentes, todas ellas durante el año 1813.

Otro caso interesante, pero de resultado parcialmente infructuoso, es el de M. Drouet. De este personaje no fue posible conocer su nombre de pila, aunque se sabe que fue un militar francés. De acuerdo a lo que puede descifrarse de lo señalado por el editor del *Transactions of the Literary and Philosophical Society of New York* (donde se publica un extracto de su narración sobre los temblores de 1812), Drouet estaba destacado en Guadalupe y de allí viaja a Venezuela.

> During the time that North America was shaken by earthquakes of greater violence than had been experienced before, the regions of the southern section of the western hemisphere, were the seat of more terrible disorders from the same cause.

> Mr. Drouet has written the most scientific history of them that I have seen. He had visited Venezuela in a military capacity, and was there when the earthquakes occurred. On his return to Guadeloupe, he published in French a description of the tremendous events that had happened where he had been. From that the materials forming the body of this essay have been extracted.[70]

El militar en cuestión escribió un libro del que se conoce su título (*Voyage a la Cote-ferme*), y algunas de sus características (fue publicado en Pointe-a-Pitre, Guadalupe, consta de 92 páginas y de fecha 1813), pero del cual no fue posible consultar un ejemplar durante la investigación. No se hallaron referencias de la obra en la Biblioteca Nacional de Paris, ni tampoco en la Library of Congress o en la Bodelian Library. Lo único que se sabe sobre el caso es lo que se ha hallado referido en segundas o terceras instancias.

Al parecer Drouet sostuvo algún tipo de contacto con Miranda, de acuerdo con François Dalencour,[71] quien seguramente consultó el escrito: "Un autre document de cette époque est l'opuscule de 92 pages écrit par un voyageur français, Drouet, sous le titre: *Voyage à la Côte-Ferme...*"[72] También Humboldt lo nombra en el Vol. II de su *Personal Narrative*, pues refiere el texto del francés publicado en el *Transactions of the Literary and Philosophical Society of New York*. Una versión de esa narración es publicada también en *The Medical Repository of Original Essays and Intelligence*,[73] con similares características: anónima, intervenida por el editor, e inserta dentro de un artículo que la refiere y cita textualmente, pero que no la transcribe de forma íntegra.

M. Drouet acabó desapareciendo entre papeles. Su libro quizás se encuentre en Guadalupe, en la Universidad de Pointe-a-Pitre, y para consultarle habrá que trasladarse hasta allá. No queda memoria de su actuación

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70 "The Leading Facts relative to the Earthquakes which desolated Venezuela, in South America, in the months of March and April, 1812", *Transactions of the Literary and Philosophical Society of New York*, New York, 25 de marzo de 1815, vol. 1, pp. 308-315.

71 *Francisco de Miranda et Alexandre Pétion*, Verger-Levrault, Paris, 1955.

72 Ídem, p. 122.

73 "Earthquakes in Venezuela", New York, 1 de abril de 1814, pp. 425-428.

en Venezuela, ni de sus testimonios. Arropado por el "efecto 1812", vino a dar entre otros testimonios y referencias al caso... afortunadamente.

Otros ejemplos de pesquisas interminables lo representaron las repeticiones de los textos insertados dentro de otras publicaciones. No sólo sucedió esto con los autores citados; el asunto se extendió a casi todos los formatos. Uno de los primeros casos reside en la noticia de los temblores publicada en la *Saint Thomas Gazette*, inicialmente editada en forma de "suplemento" y reproducida en varias oportunidades. La primera versión hallada para la investigación descansa en una transcripción existente en la sección Traslados del Foreing Office del Archivo de la Academia Nacional de la Historia. Allí se encuentra ya traducida y copiada a máquina.

La noticia publicada en la *Gazette* fue reproducida también en el *The Observer* de Londres del 31 de mayo de 1812, y en el *Scots Magazine and Edinburgh Literary Miscellany* de Edinburgh, de agosto del mismo año. Es éste un caso sencillo, sin duda, pero ninguno de estos ejemplos fue descifrado con anticipación, sino que fue necesario revisar todos los documentos para hallar correspondencias, repeticiones y confusiones.

Un caso similar ocurrió con una carta redactada desde La Guaira el 4 de abril de aquel año, la cual fue publicada también en varias oportunidades: en el *The Weekly Register*[74]; en el *American Watchman*[75]; en el *New Jersey Journal*[76]; en el *Orange County Patriot; or, the Spirit of Seventy-Six*[77]; y en el *Scots Magazine and Edinburgh Literary Miscellany*[78]. En casi todos los casos la carta aparece inserta en medio de la noticia y no como un artículo independiente, lo cual significa que su hallazgo depende de la disposición y la voluntad para el asunto. Es ésta una tarea mecánica, muscular y no siempre grata.

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74 Baltimore, MD, 25 de abril de 1812, vol. II, Nº 34, pp. 131-132, bajo el título "Earthquake in Venezuela".

75 Wilmington, Delaware, 25 de abril de 1812, vol. IV, p. 2.

76 Elizabethtown, New Jersey, 28 de abril de 1812, vol. XXIX, p. 2.

77 Goshen, New York, 28 de abril de 1812, vol. IV, p. 3.

78 Edinburgh, agosto de 1812, pp. 592- 593.

El manejo de una colección documental y de su selección final pasa por estas situaciones, ciertamente. No obstante, la indefectible especialización sobre el tema y sus documentos como resultado final, acaba siendo el mejor premio al esfuerzo. El trabajo al respecto, además, contiene la depuración de esa colección, con lo cual es posible evitar los errores y las repeticiones de los documentos, algo que resultaba muy probable al comienzo del acopio efectuado en esta investigación.

A la vuelta del acopio, revisión, transcripción y eventual traducción de documentos, es posible asegurar que mucho de lo que se dijo, razonó y debatió entonces y hasta el presente sobre los terremotos de 1812 en Venezuela, estuvo sobredeterminado por dos personajes fundamentales: Humboldt y Delpeche. Sobre el primero de ellos, no cabe la menor duda de que fue el pensador más importante e influyente en las ciencias naturales del siglo XIX, y que sus afirmaciones y conjeturas fueron la base y el material de muchos razonamientos posteriores, incluso en la actualidad. En el caso del inquieto francés, muy lejos de la filosofía y la ciencia, es justo decir que fue su testimonio el que se convirtió en un icono del "terremoto de Caracas", pues su descripción al respecto no sólo le fue de gran utilidad al propio Humboldt (y con ello ya es suficiente como para destacarlo), sino que es posible verla reflejada entre líneas o citada directamente en buena parte de todo lo que se dijo en ese siglo sobre el tema.

Si a esta advertencia se le suma que muchos de los investigadores contemporáneos han revisado esa descripción una y otra vez para su análisis sobre los temblores de aquella tarde, Delpeche cuenta con uno de los textos más consultados y referidos en la historia sismológica venezolana. Humboldt, Ernst, Sievers, Melchor Centeno Graü, Günther Fiedler, José Grases y el resto de los que le han dedicado tiempo a 1812, tienen en el francés a un testigo clave.

La secuela en el siglo XX

Como se advirtió al comienzo, el interés por los sismos de 1812 no cesó en el siglo XIX. Con la llegada del siglo XX y la especialización de la sismología, la atención a los terremotos del pasado habría de esperar por algo más que las simples comparaciones. Pronto llegaría la hora de los análisis pormenorizados de los temblores que no habían sido registrados por instrumentos de precisión, y junto a ello la aplicación de razonamientos y estimaciones que conducirían a evaluar sistemáticamente a esos terremotos.

En Venezuela esto contaría con el aporte de dos investigadores fundamentales, impulsores de la sismología y pioneros de la evaluación de los sismos del pasado: Melchor Centeno Graü y Günther Fiedler. El influjo de ambos en la investigación sismológica venezolana es notable. El primero de ellos, cumanés e ingeniero, uno de los fundadores de la Academia de Ciencias Físicas, Matemáticas y Naturales, es el autor intelectual del primer mapa de curvas de intensidades elaborado en Venezuela, trabajo que publicara luego del sismo de Macuto y Caracas del 29 de octubre de 1900. Centeno, además, es autor también del primer catálogo sismológico venezolano, el cual insertó dentro de un libro que tituló *Estudio Sismológicos*, cuya primera edición es de 1940 y se agotaría rápidamente. La segunda edición de este importante libro se realizó en 1969, a propósito del terremoto del 29 de julio de 1967.[79]

El segundo en cuestión es checo de nacimiento y graduado en la Universidad de Stuttgart, llegado a Venezuela luego de la Segunda Guerra Mundial hacia 1954. Fiedler es el impulsor de la sismología moderna en Venezuela, y desde su arribo se encargó del registro sismográfico del Observatorio Cagigal. Se presentó en el III Congreso Geológico Venezolano (noviembre de 1959) con tres trabajos de investigación, de los cuales uno

[79] La primera edición, de 1940, es de la Tipografía del Comercio, Caracas; mientras que la segunda, ampliada, pertenece a la Academia de Ciencias Físicas, Matemáticas y Naturales, realizada en 1969, también en Caracas.

de ellos acabó siendo referencia obligada por años en el estudio histórico de los sismos: "Áreas afectadas por terremotos en Venezuela."[80]

Ambos pensadores ofrecieron conjeturas sobre 1812 que todavía en el presente son referidas y debatidas con entusiasmo. Centeno supuso que aquella tarde tuvo lugar un sismo de tres focos simultáneos, al que llamó "sismo policéntrico", de acuerdo a su teoría:

> Parece, pues, que este sismo, que abracó una extensión considerable del territorio venezolano, tuvo varios focos de dislocación simultáneamente activos: uno, tal vez, en el mar Caribe entre los Roques y la costa de La Guaira que destruyó a Caracas y a otras poblaciones al Sur y al Oeste más allá de Los Teques; otro frente a San Felipe, Barquisimeto, El tocuyo, tal vez en las fallas que existen en la unión de las serranías de la Costa y Andina, etc., que destruyó estas tres ciudades y otras cercanas, dejando casi indemnes a Trujillo y sus alrededores; y otro, tal vez, al sur del Lago de Maracaibo, que es la parte más profunda de esta misma cordillera andina, o en esta misma que destruyó Mérida y pueblos vecinos hasta el límite de Trujillo por el suroeste. Alguna causa poderosa y profunda puso en conmoción las zonas de dislocación de las cordilleras Andina y de la Costa en un mismo instante de tiempo.[81]

Para descifrar el enigma de aquella destrucción tan extensa y selectiva a la vez, Fiedler argumentó, por su parte, que debió "haberse tratado de tres terremotos con epicentros en Caracas, San Felipe-Barquisimeto y Mérida, de los cuales uno puede haber desencadenado los demás, no siendo posible identificar el primer movimiento."[82] Estimó tres magnitudes diferentes para cada uno de los tres terremotos: 6,3 para Caracas; 6,2 para San Felipe-Barquisimeto; y 7,0 para Mérida. Más tarde, en el IV Congreso Geológico Venezolano, el propio Fiedler presentaba otro trabajo importante, en donde volvería sobre 1812 para decir:

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[80] En *Memorias del III Congreso Geológico Venezolano*, Tomo IV, Ministerio de Minas e Hidrocarburos, Caracas, pp. 1791-1810.

[81] *Estudios Sismológicos*, segunda edición, 1969, p. 138.

[82] "*Áreas afectadas...", p. 1797.*

> La importante conjunción de 1812 está aquí bien clara. Hasta ahora es el único año en los 440 años de historia sísmica en Venezuela cuando la energía liberada fue mayor que la estimada, casi exactamente en 1/3. La distribución de los epicentros para ese tiempo en relación con el mapa tectónico de Venezuela sugiere que el gran terremoto de San Felipe en 1812 representó el 'exceso de sismicidad' y que la falla transcurrente de Boconó, con el empuje de los dos grandes sismos simultáneos en Caracas y Mérida, se fracturó por unos 30 a 40 kms. cerca de su límite noreste, lo cual se manifestó en el sismo de San Felipe. Lo importante aquí es que los tres grandes terremotos de 1812 ocurrieron el día 26 de marzo, alrededor de las 16:00, hora local. (...) Se elimina por lo tanto, la posibilidad de errores de fecha y hora de estos tres sismos casi simultáneos.[83]

Estas propuestas de Centeno y Fiedler representaron las hipótesis más sólidas y seguidas en la interpretación de los terremotos del 26 de marzo de 1812 por muchos años. Fueron ellos, sin duda alguna, los herederos de las discusiones de los pensadores del siglo XIX, los continuadores de los debates entre Ernst y Sievers, los que volvieron a leer a Humboldt, a Delpeche, a Palacio Fajardo. Se convirtieron en los continuadores de una tradición que pareció haberse extinguido cuando hizo su irrupción la sismología moderna: la de volver la mirada hacia los sismos del pasado.

Luego de los aportes de Centeno y Fiedler, el estudio de los terremotos de 1812 recaló en el ingeniero civil venezolano José Grases. Entusiasmado con la sismología a partir del terremoto de Caracas de 1967, Grases de inmediato comprendió que los fenómenos de aquel Jueves Santo merecían una atención más documentada. Se dio a la tarea de revisar archivos en Europa y a la vuelta de ello publicó una serie de textos hallados para tal fin en el *Boletín Técnico* del Instituto de Materiales y Modelos Estructurales de la Universidad Central de Venezuela.[84] No fue ésta la única vez que Grases dedicaría el análisis a 1812.

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83 "La liberación de energía sísmica en Venezuela, volúmenes sísmicos y mapa de isosistas", en *Memorias del IV Congreso Geológico Venezolano*, Caracas, 1972, pp. 2442-2462.

84 "El terremoto de 1812 y sus efectos", *Boletín Técnico IMME*, año VII, Nº 29-30, Caracas, enero-junio, 1970, pp. 103-123.

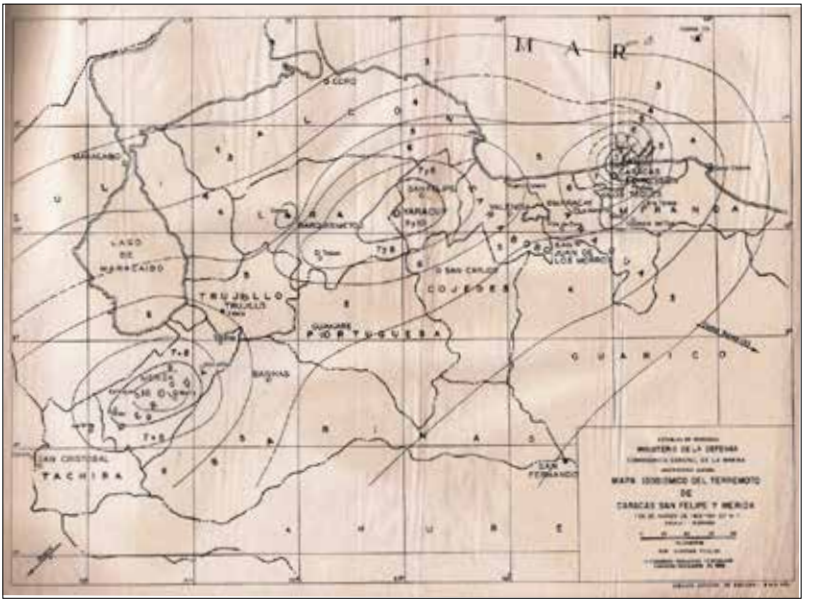

Figura 11: Mapa que corresponde a la interpretación realizada por Fiedler sobre los terremotos de 1812. Fue publicado en su trabajo "Áreas afectadas por terremotos en Venezuela."

En efecto, volvería sobre el tema en su libro *Terremotos destructores del Caribe, 1502-1990*,[85] en donde publicaría una versión del mapa de intensidades de Fiedler ajustada al criterio del autor original. Más tarde, en otro de sus libros, estimaría magnitudes a los tres sismos que había señalado Fiedler, asignando igualmente valores para cada uno de ellos, aunque con marcadas diferencias: 6,8 para Caracas; 7,2 para San Felipe-Barquisimeto; y 7,2 para Mérida.[86]

A Grases, como a Fiedler y Centeno, se le debe el estímulo y la insistencia en la reevaluación de los sismos del pasado. En ocasión del 1er Seminario Latinoamericano de Ingeniería Sísmica, celebrado en el IMME de

[85] UNESCO-RELACIS, Contribución al Decenio Internacional para la Reducción de Catástrofes Naturales, Montevideo, 1990.

[86] *Venezuela. Amenazas Naturales. Terremotos. Maremotos. Huracanes*, Academia de Ciencias Físicas, Matemáticas y Naturales-Cámara de Aseguradores de Venezuela, Caracas, 1994, p. 68.

la UCV en 1979, diría lo siguiente: "Los relatos históricos y descripciones sobre los efectos de sismos severos, son sin lugar a dudas un testimonio valiosísimo; dejando por ahora de lado los problemas propios de su acopio, es necesario ser muy cautelosos al usar tal tipo de información, pues la interpretación de descripciones imprecisas no es siempre evidente."[87]

Por otro lado, la historiografía tradicional poca atención le prestó a los sismos del 26 de marzo de 1812, a menos que fuese con la intención de colorear las andanzas de los héroes del momento o dramatizar sobre la epopeya de la independencia. A diferencia de los interesados en comprender qué fue lo que pasó aquella aciaga tarde, los historiadores se conformaron con asumir la presencia de los terremotos como si se tratase de un medio ambiente simplemente circunstancial. Sin embargo, la presencia de los temblores de marzo de 1812 resulta insoslayable, y es por eso que no es una casualidad que en el primer número del *Boletín de la Academia Nacional de la Historia*, publicado en marzo de 1912, saliera a la luz un artículo dedicado al asunto: "El terremoto del año 1812 y nuestra independencia."[88]

Aquello había ocurrido en el primer centenario de la catástrofe. Durante el siglo XX, los terremotos del Jueves Santo sólo llamaron la atención de un historiador (de oficio, y no de profesión), quien en realidad era un comunicador social con intereses de documentalista: Jesús Rosas Marcano. Profesor de la Escuela de Comunicación Social de la Universidad Central de Venezuela, Rosas Marcano publicó el libro *La independencia de Venezuela y los periódicos de Paris*[89], en donde recoge una importantísima cantidad de artículos al respecto, transcribiendo y traduciéndolos todos, incluso el ya citado de Louis Delpeche.

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87 "Riesgo y sismos", *1er Seminario Latinoamericano de Ingeniería Sísmica*, Facultad de Ingeniería, UCV, Caracas, 1979, p. 113.

88 Anónimo, en *Boletín de la Academia Nacional de la Historia*, Año 1, Tomo I, Nº 1, 31 de marzo de 1912, Caracas, pp. 71-74.

89 Consejo de Desarrollo Científico y Humanístico de la Universidad Central de Venezuela, Caracas, 1964.

El periodista quedó impresionado, igualmente, con el impacto del sismo y se había dado a la tarea de compilar más información y de publicar un librito fabulado sobre la tarde del 26 de marzo de 1812.[90] Allí tomó de su imaginación la idea de un periódico de nombre *El Lucero*, el cual inventó simpáticamente como diario de Caracas publicado el 27 de marzo de 1812, en donde se daba noticia del terremoto. Ese periódico tendría como lema, bajo su nombre, lo siguiente: "El comentario es libre, el hecho es sagrado." Para asumir el clima de confusiones advenido con la destrucción del sismo en la Caracas de entonces, agregaba: "Existe, por una parte, el hecho exacto e indubitable: el terremoto y la destrucción de la ciudad y de una gran extensión de la provincia. Por otra parte, el comentario: la interpretación más o menos libre que algunos testigos y referentes han dado en un número de opiniones."[91]

Seguramente, Rosas Marcano (como periodista y como historiador) y todos los que quedaron impactados con los temblores de 1812 continuaron hurgando entre papeles, escudriñando documentos una y otra vez, para confirmar que aquel desastre causó un efecto mucho mayor que la destrucción y las aflicciones del momento, trascendiendo su contexto y tomando un lugar en la historia, especialmente otorgado por la prensa decimonónica y la ciencia, aquella y la moderna. Venezuela y los terremotos del 26 de marzo agotaron columnas y tinta por más de doscientos años, con especial énfasis en el propio siglo XIX, cuando las noticias y la ciencia iban de la mano.

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90 *El terremoto del Jueves Santo. Reportaje entre papeles*, Instituto Venezolano de Investigaciones de Prensa, Caracas, 1962.

91 Ídem, p. 6.

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El "Efecto 1812" en la prensa y la ciencia del siglo XIX

Cuando los terremotos fueron noticia

1

Anónimo, "Earthquakes", *The Literary and Philosophical Repertory*, Middlebury, Vermont, 1 de abril de 1812, vol. 1, Nº 1, pp. 87-88.[92]

We learn from the public papers, that Laguira and Caraccas, in South America, have recently been visited by several tremendous earthquakes. The first and severest explosion took place on the twenty sixth of March, at 4 o'clock in the afternoon. It was so powerful that it leveled with the ground most of the buildings in these two cities, and was terribly destructive to the inhabitants.

In Laguira, two thousand and five hundred, and in Caraccas, no less than ten thousand people are said to have perished in this dreadful catastrophe. A letter from the former city states, that the shock came from the East –that "it continued about one and an half minutes, during which time it prostrated more than two thirds of the houses, and rendered the others untenantable, killed at least one half of the inhabitants, and wounded very many." The distress of the survivors was extreme. "On every side was to be heard, 'my wife, my husband, my children, my sisters, my brothers, where are they! Where are they! They are dead! Oh they have perished! These words were attired in the strongest tones of anguish and despair."

"Such is the alarm of the inhabitants," says another letter from the same place, "that the town is entirely deserted, and they are now living without the walls, beneath little tents and huts, which are erected merely to shelter them from the rain and the heat of the sun".

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[92] N de A: Parte de este texto citado aquí como un testimonio de los hechos, es inserto también en "From the Philadelphia Register. The Earthquake. Extract of a Letter from a gentleman at Laguira to his friend in this city, dated April 2", *The Providence Gazette*, Providence, Rhode Island, 2 de mayo de 1812, vol. XLVIII, p. 1 (transcrito en la entrada 7); en el anónimo titulado "The Leading Facts relative to the Earthquakes which desolated Venezuela, in South America, in the months of March and April, 1812", *Transactions of the Literary and Philosophical Society of New York*, New York, 25 de marzo de 1815, vol. 1, pp. 308-315 (transcrito en la entrada 39); y con algunas mínimas modificaciones en el artículo "Earthquake at Carracas and Laguira in 1812", *Municipal Gazette*, New York, N.Y., 1 de abril de 1848, vol. 1, Nº 41-63, pp. 864-865 (copiado en la entrada 71).

At Caraccas[93], not a house, we are told, is now inhabited. "On the twenty seventh of March, the people, that were living, were employed in digging the dead from under the ruins, putting them in large lighters, carrying them outside the shipping, and burying them in the sea. On the twenty eighth, the sea was as rough as to prevent them taking the dead off, they then built a large fire near the wharf, and commenced burning them, and burnt about forty at a time in one fire".

"It is shocking," observes one, who narrowly escaped destruction himself, "to see, at the close of the day, heads, arms and legs that have been left unburnt, as the fire dies away". On the twenty ninth, it is said, the stench had become so bad, that the people were obliged to relinquish digging their dead brethren from the ruins. They had then found about two thousand and five hundred bodies. We would here add other particulars of this horrid disaster, did we not expect, in our next number, to communicate a paper which is now preparing, comprising a history of the earthquakes, which have been experienced on this continent, and especially of those of the United States, in the course of the last winter. In this paper, further notice, it is probable, will be taken of the earthquakes of Laguira and Caraccas.

2

Anónimo, "Terrible Calamidad", *Supplement of the Saint Thomas Gazette*, Saint Thomas, Islas Vírgenes, 9 de abril de 1812.[94]

El 26 de Marzo fue un dia de tristeza y de horror para la Provincia de Venezuela; a las 4 p.m., la ciudad de Caracas se hallaba en todo su esplendor y pocos minutos mas tarde 4.500 casas, 19 Iglesias y Conventos junto con otros edificios publicos, Monumentos, &., fueron reducidos a escombros por un violento terremoto que no duró ni un minuto y sepultó a miles de sus infelices habitantes en ruinas y desolacion. Siendo aquel dia Jueves Santo y estando en

[93] This city, situated about 4.000 feet above the level of the ocean, and, on account of the mildness and salubrity of its climate, denominated the Montpelier of the new world, contained, before the earthquake, 45.000 souls, including those in the invirons, and 24.000 within its walls, Laguira is ten leagues from Caraccas. –A Gazetteer.

[94] N de A: Traducción tomada del Archivo de la Academia Nacional de la Historia, sección Traslados del Foreing Office. Esta noticia publicada en el *Saint Thomas Gazette* fue reproducida también en *The Observer*, Londres, 31 de mayo de 1812 (copiada en la entrada 20); y en el *Scots Magazine and Edinburgh Literary Miscellany*, Edinburgh, agosto de 1812 (transcrita en la entrada 29).

aquel preciso momento todos los lugares del culto repletos de gente para conmemorar el comienzo de la Pasion del Salvador por medio de una procesion publica que iba a salir por las calles algunos minutos mas tarde, esto elevó el numero de las infortunadas victimas a una cantidad increible desde luego que todas las iglesias quedaron arrasadas antes de que ninguna persona pudiera darse cuenta del peligro, montando el numero extraidas de una de las Iglesias (dos dias despues) a 300 ademas de aquellas que puede presumirse no han podido ser hasta ahora extraidas de los montones de escombros, lo cual da una idea de la magnitud de la calamidad;- el numero de muertos de acuerdo con las diferentes versiones se expresa ser de 4.000, 6.000 y hasta 8.000; horrible como aparece ser esta catastrofe seria un motivo de consuelo saber que los lugares vecinos ofrecieran alguna ayuda y abrigo a los adoloridos sobrevivientes; pero la poblacion vecina y Puerto maritimo de ella: La Guayra sufrió aun mas y tal ha sido el caso en los lugares de las costas vecinas a ella; enormes masas de cerros se han desprendido de las cimas y se han precipitado sobre los valles. Grietas profundas en la base de las rocas aun amenazan con nuevos desastres a los desventurados sobrevivientes quienes se ocupan ahora de enterrar o quemar a los muertos y en socorrer a los numerosos heridos que perecen por falta de asistencia médica, abrigo y otros cuidados.

Si alguna clase particular de personas puede presumirse que ha sufrido mas esta ciertamente es el Clero cuyos miembros para aquel momento se encontraban necesariamente reunidos en las Iglesias y habiendose venido al suelo los magnificos Cuarteles de Caracas que contenian dos Batallones de Veteranos y al Cuerpo de artilleria que se preparaban para la procesion se presume que todos en un momento fueron victimas de esta terrible visita del Todopoderoso.

Las poblaciones y caserios del Interior de la Provincia y los mas distantes Puertos maritimos de Puerto Cabello, Cumaná, Barcelona, &., habran sufrido menos.

3

Anónimo, "Mérida. El secretario del Gobierno á sus Pueblos, y á los de Pamplona", *Gazeta Extraordinaria de Cundinamarca*, Santafé de Bogotá, Cundinamarca, 18 de abril de 1812, segundo semestre, tomo1, Nº44, p.161.

El Jueves Santo a las 5 de la tarde, al salir el Sr. Obispo de la Catedral de celebrar el labatorio, comenzó un espantoso terremoto que con la interrupción de poco mas de un minuto arruinó enteramente esta Ciudad. En un mismo momento cayeron la Catedral, S. Francisco, el Colegio, y todas las demas Iglesias, en donde perecieron infinidad de personas, que aun se ignoran. En el mismo momento cayeron todas las casas, y mataron en las calles á todos los que corrian. El Sr. Obispo con los Curas del Sagrario, del Llano, varios Capellanes, y Colegiales perecieron al llegar á su Palacio, que les cayó encima: en una palabra, se conceptúan muertas mas de mil y quinientas personas, sepultadas baxo las ruinas, y con el desconsuelo de que no es posible sacar alguno de los que aun se creen vivos porque los restos de los edificios amenazan una proxima ruina y seria locura acercarse a ellos. No ha quedado absolutamente casa que no haya caido, ó esté para ello. Los temblores han continuado hasta la fecha, con interrupcion de media hora mas ó menos. El Jueves Santo en la noche todos los vivos lo pasaron en la plaza, y ayer Viernes por la mañana se han pasado a la Mesa, en donde está la quinta del Dr. Uscategui, y también las Monjas. Todos están en la mayor miseria, porque todos estan con la ropa que los cogió el terremoto, y si de los Pueblos no traen comida, quizá pereceremos. Hoy al amanecer se prendió fuego en esta Ciudad, el que por fortuna logró apagarse. En fin, no es posible decir todas las ruinas y desgracias que han sucedido. Sirva este ligero bosquejo, para que entienda VS. la general desolacion de esta Ciudad, en donde todos los vivos han quedado a pedir limosna, y sirvase comunicar este triste suceso a todos los pueblos y Gobiernos de la Confederacion de la Nueva Granada, porque aqui no hay proporcion para nada, y que siquiera nos auxilien para salir de este desgraciado suelo. Son las 7 de la mañana del Sabado Santo 28 de Marzo de 1812, y siguen los temblores. Mariano de Talavera. A todos los Pueblos de esta Provincia, y los de la de Pamplona.

El Supremo Gobierno de Cundinamarca, penetrado del mas vivo dolor por la desgracia de nuestros hermanos de Merida ha abierto subscripcion en la Aduana de esta Capital, para que todas las personas piadosas que quiera aliviar con algunos donativos graciosos la deplorable suerte de los vecinos de aquella infeliz Ciudad que han sobrevivido a tan lamentable suceso entreguen

la cantidad que gusten al Administrador D. Luis Sarmiento. Se dispondrá la remision de los socorros que por este medio se recogieren, con toda la brevedad posible, y se imprimira en la Gazeta la lista correspondiente.

Cundinamarqueses Esta es la ocasion mas propia de exercitar vuestra generosidad, y de manifestar el ardiente amor que tenéis a vuestros hermanos de qualquiera de las Provincias de America. No ha quedado en Mérida piedra sobre piedra. En medio de tan horrorosa desolación se podría decir que son mas infelices los que quedaron vivos que los que murieron. Socorredlos.

4

Anónimo, "Earthquake in Venezuela", *The Weekly Register*, Baltimore, MD, 25 de abril de 1812, vol. II, Nº 34, pp. 131-132.

The following are all the particulars we are yet able to collect respecting the melancholy matter to which they relate. A more distinct and perfect account will doubtless be published, which we shall not fail to lay before our readers.

By the arrival of the schooner Independence, Betts, at the port of Baltimore on Wednesday last, from Laguayra, we learn that Caracas, Laguayra, and the adjacent villages were destroyed in a great measure by an Earthquake. Twenty five hundred in Laguayra and about ten thousand in Caracas are said to have perished in the ruins. One American alone fell a victim to the catastrophe, a Mr. William Cromwell, of New-York. The first and severest shock at Laguayra, &c. was felt at 4 p. m. on the 25th day of March: four shocks were felt on the night following, but not sufficiently severe to do any damage. On the 27th all the survivors were employed in digging the dead from under the ruins, from whence they were put in lighters, carried outside of the shipping and thrown then into the sea. On the 28th of March the sea was so rough, that they desisted, built a large fire near the wharf and burnt forty at a time in one fire. On the 29th the stench was so great that they had to desist from digging up any more from under the ruins. The survivors pitched their tents on the plains of Mogetaro. On the 4th of April there was another very heavy shock that caused the vessels to tremble as if on ridge of rocks, and from the schooner Independence the mountains were seen moving like ships in a heavy sea, and large pieces scaling off them. As the Independence sailed at half past five p. m. the damage by the last shock was not known.

Sun.

Extract of a. letter from a gentleman at La Guayra to his correspondent in this city, dated La Guayra. April 4th, 1812.[95]

The dreadful earthquake which has laid in ruins the cities of Caracas and Laguayra, and the adjacent country, by which more than 5.000 houses have been destroyed, happened on the 26th March, at seven minutes past 4 o'clock; the explosion was so violent that it buried in its ruins more than eight or ten thousand persons.

Extract of a letter received per schr. Independence from Laguayra.[96]

A few days prior to our arrival, this town was almost destroyed by an earthquake; it commenced about four o'clock, P. M. on Thursday the 26th March; its duration was about four minutes, and its effects horribly destructive; since my arrival, there have been a few shocks, but no material damage done. Such is the alarm of the inhabitants that the town is entirely deserted, and they are now living- without the walls, beneath little tents and huts, which are erected merely to shelter them, from the rain and heat of the sun.

"It is not within the compass of my ability to describe to you the misery of these people; fear and despair, grief and ruin, have completely overwhelmed them. Parents have escaped, with the loss of their children; children with the loss of their parents, and very few without the loss of their property. Already five hundred persons hare been found, and the probability is, that a greater number still remain buried beneath the ruins. The destruction at Caracas is much greater; 2.500 bodies have been thrown upon a funeral pile, and burned already, and it is supposed, from 5 to 10.000 souls was lost. Out of forty churches in that place two convents only remain standing. Such is the lamentable situation of these two places, that it will be a long time before they can be reinstated. No business of any nature is doing. All the Americans here will go to Puerto Cabello.

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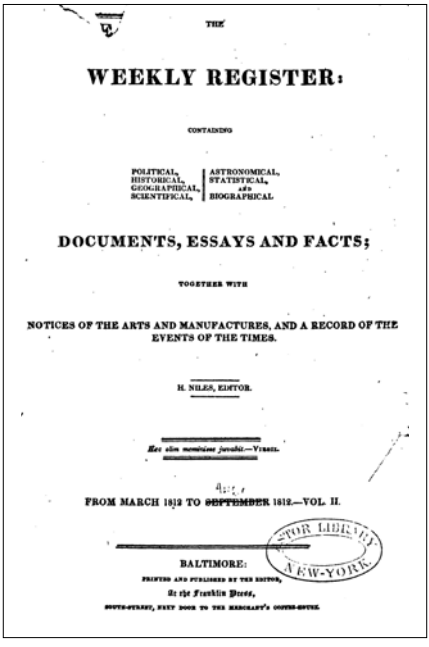
95 N de A: Este extracto epistolar aparece también publicado en el *American Watchman*, Wilmington, Delaware, 25 de abril de 1812, vol. IV, p. 2; en el *New Jersey Journal*, Elizabethtown, New Jersey, 28 de abril de 1812, vol. XXIX, p. 2; y en el artículo titulado "Postscript. Earthquake", del *Orange County Patriot; or, the Spirit of Seventy-Six,* Goshen, New York, 28 de abril de 1812, vol. IV, p. 3, inserto aquí en la entrada 5.

96 N de A: También inserto en el *Scots Magazine and Edinburgh Literary Miscellany*, Edinburgh, agosto de 1812 (transcrita en la entrada 29).



THE

WEEKLY REGISTER:

CONTAINING

POLITICAL, HISTORICAL, GEOGRAPHICAL, SCIENTIFICAL, | ASTRONOMICAL, STATISTICAL, AND BIOGRAPHICAL

DOCUMENTS, ESSAYS AND FACTS;

TOGETHER WITH

NOTICES OF THE ARTS AND MANUFACTURES, AND A RECORD OF THE EVENTS OF THE TIMES.

H. NILES, EDITOR.

Hæc olim meminisse juvabit.—Virgil.

FROM MARCH 1812 TO SEPTEMBER 1812.—VOL. II.

NEW-YORK

BALTIMORE:

PRINTED AND PUBLISHED BY THE EDITOR,

At the Franklin Press,

SOUTH-STREET, NEXT DOOR TO THE MERCHANT'S COFFEE-HOUSE.

Figura 1: Imagen de la portada del semanario *The Weekly Register* para el año de 1812.

5

Anónimo, "Postscript. Earthquake", *Orange County Patriot; or, the Spirit of Seventy-Six*, Goshen, New York, 28 de abril de 1812, vol. IV, p. 3.

A most destructive earthquake has lately taken place at Caracas and Laguire, in South America. Numerous letters have been received and published in N. York, confirming the horrible catastrophe. We have only room this week to extract the following:

Extract of a letter from a gentleman in Laguira, to his correspondent in Baltimore dated La Guira. April 4, 1812

"The dreadful earthquake which has, laid in ruins the cities of Caraccas and Laguira, and the adjacent country, by which more than 5.000 houses have been destroyed, happened on the 26th Match, at 7 minutes past 4 o'clock. The explosion was so violent that it buried in its ruins more than 8 or 10.000 persons."

6

Anónimo, "Extract of a Letter to a Mercantile House in Boston, Dated Laguira, March 30, 1812", *Poulson's American Daily Advertiser*, Philadelphia, 02 de mayo de 1812, vol. XLI, p. 3.

I write you from a place which 90 hours ago was flourishing in wealth and grandeur, but it is now reduced to an entire pile of ruins, by one of the greatest eruptions experienced for many years. The city of Caracas and the town of Laguira was, on Thursday the 16th inst. totally destroyed by an Earthquake, which twelve thousand of the [ilegible] many villages along the coast. It began at 4 o'clock and continued one minute and 30 half, without giving any previous notice. The inhabitants were principally preparing for the day following, which was to be the day of Independence; but now it is impossible to describe their distressed situation. Those who have escaped are either on board of vessels or in camped out in the mountains, naked and almost starving. They have fires day and night burning the dead, yet it is doubtful whether it will prevent a sickness. The priests tell them it is owing to their disloyalty to their old government, which will before long set them in a state of revolution. Since our arrival, which was yesterday the 19th, we have received numerous shocks, none to do any further damage, except to shake down some remaining walls.

The new government have detained all vessels with provisions, and seem determined to take their cargoes, let the consequences be what they will Mr. Lowry, the American consul, informs me that they only meant any provisions, which they must have, that no money must go out of the country, and all that produce which had arrived has been destroyed and no means of getting any more for if [ilegible] proposals I shall then demand any papers [ilegible] to proceed to Porto Cabello a place received but little damage, and where all the inhabitants are now going Mr Lowry is going there to establish himself.[97]

[97] Caracas is the capital of a province of that name, in South America, situated on the Southern coast of the Caribbean Sea. Its population is about 25.000 including its environs La Guaira is a [ilegible] time town, the principal seaport of the [ilegible] province, and contains about 24.000 inhabitants.

7

Anónimo, "From the Philadelphia Register.The Earthquake. Extract of a Letter from a gentleman at Laguira to his friend in this city, dated April 2", *The Providence Gazette*, Providence, Rhode Island, 2 de mayo de 1812, vol. XLVIII, p. 1.

"I cannot sufficiently thank the Almighty Disposer of events, for rescuing me from death, while it played no idle part in this place.

"On Thursday, at 4 P.M. (the 26th of March) a severe shock of an earthquake was felt here. It came from the East. On its first approach, it appeared as though there were a discharge in the neighborhood of some, thousands of cannons a moment after the earth began to rise about 18 inches, and rose in waves for about two seconds, or at least that height it continued altogether for about one and a half minutes, during which time it prostrated more than two thirds of the houses, and rendered the others uncountable, killed at least one half of the inhabitants, and wounded very many. Neither the strongest fancy nor the brightest imagination can come any way near to portraying the dismal aspect of the scene Words to describe it are not in use you can form no idea of it. On every side was to be heard, my wife, my husband, my children, my sisters, my brothers, where are they, where are they?, They, are dead! Oh they have perished! These words were uttered in the strongest tone of anguish and despair. Caracas has lost about 10.000 of its inhabitants.

"It was one of the holidays, a day rendered remarkable in Christian annals, by being the anniversary. That day on which our Savior was nailed to the Cross an hour only before a representation of that ceremony was to have been carried through the streets. Every church was full, and everyone was shaken to the earth. To the amount of 900 or 1.000 persons can be counted in two churches, all having perished. Not a house in Caracas is inhabited. The people have, as well as here, left the place; and raised tents in the open fields.

"I was the witness to the interment of about 50, who on their knees were imploring the protection of the Divinity, and who; at a loss distance than 20 steps, were covered by the falling of two houses.

"My dear friend, it was dreadful to behold, and never will the remembrance of it be effaced from my memory. The heart-rending shrieks of those who had lost their friends, joined by the dismal groans of the wounded and dying were enough to cause the strongest and most stubborn heart to feel the miseries of mankind. Even now, everything smells of death. No more than one-third of the unfortunates have been found. Those that have been, are either thrown into the sea or burned.

"Laguira will never assume its former appearance –no, never– such a hope is vanity. The streets are filled with ruins.

"About 20 slight shocks have been felt since."

8

José Manuel Restrepo, Henrique Rodríguez, Manuel Campos, Camilo Torres, Andres Ordoñez, Zifuentes y Joaquin Camacho, "Oficio de los Diputados para el Congreso general al Ciudadano Antonio Villavicencio, encargado de negocios de Venezuela cerca de esta Capital", *Gazeta Ministerial de Cundinamarca*, Santafé de Bogotá, Cundinamarca, 7 de mayo de 1812, segundo semestre, tomo 1, Nº 49, p. 177.

Conmovidos justamente nuestros corazones por las desgracias de Merida de Venezuela que V. S. nos recomienda en oficio 24 del corriente, quisieramos con una mano poderosa sacar a sus infelices habitantes de la desolacion y ruinas que los cubren. Mas ya que nuestras facultades y recursos son a pesar nuestro harto inferiores a los deseos que nos [ilegible] queremos á lo menos dar una señal de estos procurando algunos auxilios de las Provincias por medio del oficio de que acompañamos copia, y exhibiendo a nuestro nombre y del Secretario [ilegible] por mano de Sr. D. Frutos Gutierrez Diputado de la de Pamplona y presidente en ésa, que por sus relaciones en aquellos lugares nos a parecido el conflicto mas expedito para la celeridad del decreto. –Dios guarde á V. S. muchos años. Ibague Abril 28 de 1812. José Manuel Restrepo. Henrique Rodriguez. Manuel Campos. Camilo Torres. Andres Ordoñez y Zifuentes. Joaquin Camacho.

Al ciudadano Antonio Villavicencio encargado de negocios de Venezuela en Santafé.

Oficio que los mismos Diputados han circulado a las Provincias de la Nueva Granada

La Ciudad de Merida ayer fomentada, y constituida por la federacion de Venezuela, hoy convertida en escombros y ruinas por un terremoto sucedido el Jueves Santo, es un objeto que reclama imperiosamente todos los oficios á que sin duda tienen un derecho los desgraciados, y a los quales V. E. se sentirá desde luego impelido como pasando la vista como el adjunto bosquejo que resulta conforme con toda las noticias. La caridad, la humanidad, la amistad, en fin, que debe unir a los Pueblos de la Nueva Granada con los de la federacion Venezolana, no pueden ser estimulos ineficaces para los

habitantes de esta Provincia; y antes bien se apresurarán todos á dar en esta ocasion á aquellos afligidos hermanos una señal de que los animan tan laudables sentimientos. En esta confianza y citados por el Encargado de Negocios de Venezuela residente en Santafé D. Antonio Villavicencio, y deseosos de aumentar por este camino el socorro que nos han permitido nuestras facultades personales, recomendamos á V. E., el estado miserable de Merida, para que haciendolo notorio en esa Provincia, y abriendo una subscripcion de socorro, tengan sus generosos habitantes el placer devolver sobre aquella desgraciada ciudad sus miradas practicamente compasivas. Dios guarde á V. E. muchos años Ibague Abril 28 de 1812. José Manuel Restrepo. Henrique Rodriguez. Manuel Campos. Camilo Torres. Andres Ordoñez y Zifuentes. Joaquin Camacho. Exmo. Sr. Precidente de la Provincia de Popayán. Es copia, Ibagué, Abril 28 de 1812. Valenzuela.

9

Anónimo, "Noticias muy importantes", *Gazeta Extraordinaria de Cundinamarca*, Santafé de Bogotá, Cundinamarca, 9 de mayo de 1812, segundo semestre, tomo 1, Nº 50, p. 178.

[…]

El Cabildo de la Villa de Nra. Sra. Del Rosario de Cucuta en oficio de 25 de Abril, solicita también el mismo auxilio de Cundinamarca, y expone "que la necesidad de este auxilio no fuera tan urgente, si Merida y Barquisimeto en donde había unas fuerzas regulares, no hubieran sido arruinadas enteramente con el terremoto del 26 de Marzo, y si no hubieran tomado ya las tropas de Coro a Siquisiqui, Carora, Tocuyo, y Carache, estando próximas a entrar en Truxillo. Que todo esto hace ver que no se debe contar con algún auxilio de la confederación de Venezuela. Que toda la Provincia de Pamplona se haya en un estado de la mayor debilidad, que no le permite hacer los efuerzos vigorosos que se necesitan para la salvacion de la Patria; y que con esta consideración se le ha oficiado para que o permita que la tropa de Santafe pase a aquel destino sin entorpecerle su marcha con pretextos frivolos, o el Valle de Cucuta se entrega sin resistencia alguna al enemigo; pues se halla cansado ya de pedir auxilio por repetidas veces a los Gobiernos del Reyno, conociendo que no tiene fuerzas que oponer al enemigo".

[…]

Oficio que en 8 de abril dirigio el Gobierno de Pamplona al de Tunja y este al Comandante Baraya para su inteligencia el 17 del mismo.

Los desgraciados acontecimientos de la Ciudad de Merida en el terremoto del Jueves Santo pasado, han aumentado los cuidados de esta Provincia, tanto por las necesidades que le han sobrevenido de socorrer á unos hermanos por su infortunada situación de nuestras atenciones, como por que la miseria no los conduzca al caso de implorar la protección de Maracaybo, que nos seria del todo funesta. Si en virtud de estas consideraciones puede obtenerse que las tropas de Cundinamarca suspendan por ahora sus marchas para aca, seria lo mismo que contribuir el dinero y vivires que habían de consumirse en ellas, á beneficio de los habitantes de Mérida y Pueblos inmediatos, que los exijen con lastimosos ruegos. No empeoremos nuestra causa por llevar adelante proyectos que no han de subsistir, y que nos exponen á perderlo todo. Si en el presente tiempo se nos aflige por las tropas de Santafé, y se nos reduce al abatimiento y desesperacion que padecen los Socorreños, los Pueblos no harán otra cosa que maldecir el momento en que persuadidos de que su voluntad habia de ser la suprema Ley, se engañaron miserablemente, por que otras cadenas mas duras por mas desconocidas e inesperadas, se les preparaban por nuestros mismos hermanos. V. E., pues, debe influir en que respetandose los derechos de Pamplona en esta crisis peligrosisima, no le perturben sus operaciones, las quales deben reputarse urgentisimas respecto de la causa comun, a cuyo exito hemos sacrificado hasta aqui nuestros continuados desvelos. Dios guarde a V. E. muchos años. Pamplona Abril 8 de 1812. José Gabriel Peña, Gobernador Interino de Estado. Exmo. Sr. Gobernador del Estado de Tunja.

10

Anónimo, "Wednesday, April 29", *The Providence Gazette*, Providence, Rhode Island, 09 de mayo de 1812, vol. XLVIII, p. 2.[98]

Local and private bills wore next considered. On motion of Mr. Macon, which was adopted, 104 to 1, a bill was directed to be reported to authorize the President to cause provisions to be purchased and sent to Caracas for the use of the inhabitants who have suffered by the earthquake; and on motion of Mr. Randolph, an enquiry was directed to be made of the relief necessary to be extended to the inhabitants of the Canary Island, suffering from, famine, occasioned by the ravages of the locust.

11

Anónimo, "Dreadful Effects of Earthquakes", *Middlesex Gazette*, Middletown, Connecticut, 14 de mayo de 1812, vol. XXVII, p. 3.[99]

Official letter from the General commanding the troops of Coro de Domingo Campo Verde, to his Excellency the Governor and commander in chief of the province of Coro.

By the depositions of several individuals, I am informed of the unfortunate event that has visited the city of Barquisimeto, which was on the 26th of March, buried under its ruins in a most dreadful Earthquake, which was general through the province; all the villages belonging to this district and the city of Jouyo, with the greater part of the villages belonging thereto, have come and offered submission under the banners of Ferdinand the VII, imploring protection from the vexations of their enemies. Forty men and twenty muskets more have gone this day to Quibor. I am now only waiting for the reinforcement from Coro, to take possession of the ruins of Barquisimeto.

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98 N de A: Esta noticia hace referencia a las resoluciones tomadas por el Congreso de los Estados Unidos con relación a la ayuda que habría de enviarse a Caracas por motivo de las desgracias sufridas con el terremoto del 26 de marzo de 1812. Sobre esa decisión, véase la transcripción de las sesiones al respecto en la entrada 36: House of Representatives, "Wednesday, April 29, 1812", *Journal of the House of Representatives of the United States*, *1811-1813*, 1813, vol. 8, pp. 317-320. Hay mención a ello también en la entrada 17.

99 N de A: Este texto también aparece publicado en *Hampshire Federalist*, Springfield, Massachusetts, 21 de mayo de 1812, vol. VII, p. 2. El "Memorandum" que aquí se menciona es publicado también en *The Courier*, Washington (DC), District of Columbia, 27 de mayo de 1812, inserto en la entrada 15.

[...]

The enthusiasm of my troops, and the cowardice manifested by the enemy, assure me of success to all my undertakings; adding to this, the panic and terror with which the inhabitants are struck since the dreadful earthquake which has destroyed the annexed cities, I have no doubt that the army of Coro will eventually conquer the province of Venezuela. I have intimidated the condition of Truxillo, and expect it will capitulate before experiencing the fate of Coro.

God preserve your Excellency many years. Head Quarters, Coro, the 29th of March 1812.

[Signed] *Domingo Monte Verde.*

Memorandum of the cities known to this day, to have been destroyed by the earthquakes from the 26th to the 28th instant, which the greater part of the inhabitants buried. The city of Barquisimeto, totally destroyed; Arilaqua, funk; Santa Rosa, do. Caudare, destroyed; Phelipe, still worse; St. Charler, do, Caramaoate, in a bad situation.

It is presumed that Caraccas and other places have equally suffered. Any other particulars that may here after come to my knowledge shall be immediately communicated to your Excellency.

To the preceding cities that have suffered by the Earthquakes, we have already announced the following: Caraccas, Victoria, Valencia, Porto Cavello, Laguira, New Barcelona, Maiquetia, Cumana.

12

Anónimo, "Dreadful Earthquake in the West Indies", *The Derby Mercury*, Derby, Reino Unido, 19 de mayo de 1812.[100]

St. Pierres [sic], Martinique, April, 19. A most dreadful account was received here yesterday by the way of Curacoa [sic], that the City of Curacoa [sic] and the Town of La Guayra were destroyed by an Earthquake on the 26th ult. Seventeen were churches are said to have fallen at Caracas in a minute, and as it was Holy Thursday, they were, no doubt, full of inhabitants. Private

[100] N de A: Esta noticia, original del 19 de abril de 1812 y publicada en la *Martinique Gazette*, se reprodujo en *The Derby Mercury* por primera vez, y así lo hicieron el *Journal d'Empire* y *Le Moniteur Universel* posteriormente. Véanse las entradas 13 y 14 para esas versiones.

buildings, no doubt, also fell in great numbers from such a shock. Fourteen thousand persons are said to have perished there. At La Guayra few houses are said to remain and about 1.400 persons have perished. The Congress and people employed in the Federal Government were at Valencia, whom I believe and expect have escaped this dreadful visitation.

13

Anónimo, "Isla de Martinica, abril 19 (MG). Por la vía de Curazao", *Journal d'Empire*, Paris, 24 de mayo de 1812.[101]

Isla de Martinica, abril 19, MG [*Martinique Gazette*].

Por la vía de Curazao.

El 26 de marzo hubo en las ciudades de Caracas y de La Guaira un horrible temblor de tierra. Diecisiete iglesias se derrumbaron en un minuto en Caracas. Como era Jueves Santo, es muy probable que se encontrase un gran número de personas en ellas. Un conjunto de edificios particulares fue derribado en este horrible desastre y se asegura que perecieron más de catorce mil personas. En La Guaira mil doscientas personas se hallaban sepultadas en las ruinas. Sólo queda en pie algunas casas, pero muy agrietadas. El Congreso y las personas adictas al gobierno se encontraban en Valencia y se cree por esta circunstancia han escapado de la tragedia.

14

Anónimo, "(Extérieur). Isle de la Martinique, 19 avril", *Le Moniteur Universel*, Paris, 25 de mayo de 1812, Nº 146.

On a reçu ici, par la voie de Curaçao, la nouvelle que, le 26 mars, il y avait eu dans les villes de Caraccas et de la *Guyra* un horrible tremblement de terre. Dix-sept églises se sont écroulées dans une minute á Caraccas, et comme c´était le jeudi saint, il est probable qui il s´y trouvait un grand nombre de personnes. On dit aussi qu´une multitude d'édifices particuliers ont été renverses dans ce terrible désastre, où l´on assure qu'il a péri 14,000 individus. II n´est resté que peu de maisons á la Guyra; plus da 1200 personnes ont été enseve-

[101] sN de A: Esta traducción al español es tomada fielmente de la obra de Jesús Rosas Marcano, *La independencia de Venezuela y los periódicos de Paris*, CDCH-UCV, Caracas, 1964, pp. 124-125.

lies sous les ruines. Le congrès et les personnes a attachées au gouvernement se trouvaient á Valencia. On croit, dit la lettre qui contient ces terribles détails, qu´elles ont échappe á cette catastrophe.

15

Anónimo, "[Memorandum; Barquisimeto; Arilaqua; Santa Rosa; Candare; Phelipe; St Charler]", *The Courier*, Washington (DC), District of Columbia, 27 de mayo de 1812, vol. 1, p. 3.

Memorandum of the cities known to this day, to have been destroyed by the earthquakes**,** from the 26th to the 28th March, with the greater part of the inhabitants buried.

The city of Barquisimeto, totally destroyed.

Arilaqua, sunk.

Santa Rosa, do.

Candare, destroyed.

Phelipe. still worse.

St Charler, do.

Caramaote, in a bad situation.

It is presumed that Caracas and other places have equally suffered.

To tile preceding cities that have suffered by the earthquakes, the following have already been announced:

Caracas, Victoria, Valencia, Porto Cavello. Laguira, New Barcelona Maiquetia, Cumana.

16

Anónimo, "Barinas. Oficio del Presidente de Barinas la de Cundinamarca", *Gazeta Ministerial de Cundinamarca*, Santafé de Bogotá, Cundinamarca, 28 de mayo de 1812, segundo semestre, tomo 1, Nº 53, p. 190.

Un ataque inesperado de nuestros enemigos de Coro, que por desgracia les ha puesto en posesion de tres puntos interesantes en las fronteras de Occidente, ha producido en este Estado é inmediaciones una viva alarma, que ha resuelto á sus habitantes á defender á costa de qualquier perdida, la dulce libertad

de que han gustado. Sin embargo, como los males que ha causado en la naturaleza un violento terremoto que ha hecho desaparecer á Caracas[102] Guayra, Merida, Barquisimeto y otros Pueblos, ha debilitado en grande manera nuestras fuerzas ha sido para este Gobierno un gran consuelo saber que se acerca á este territorio un Exercito respetable que hará retroceder de sus intentos a los tiranos que quieran robar nuestra libertad, y volvernos á las cadenas.

En tan apuradas circunstancias, espera de V. E. este Gobierno dé sus ordenes con la actividad que acostumbra, para que en caso necesario nos auxilien, las fuerzas que están destinadas á nuestras fronteras.

Dios guarde a V. E. muchos años, Barinas 27 de Abril de 1812. Francisco de Olmedilla, Presidente en turno. Exmo. Señor Presidente del Estado de Cundinamarca.

Que espectaculo tan lastimoso se nos presenta actualmente! Al paso que la tierra se sacude y con fuertes movimientos convierte en escombros las poblaciones mas numerosas: al paso que nuestros enemigos exteriores nos asaltan

[102] Hasta ahora no habiamos tenido noticia de la ruina total de Caracas. Esta novedad funesta va a corroborar el sistema grosero de algunos fanáticos, que con un tono magistral aseguraban haber prevenido las ruinas de Merida y Barquisimeto, de la mutacion de Gobierno de aquellos lugares. ¡Insensatos! ¡Como si los antiguos gobernantes hubieran podido, con su barbaro influxo, atajar los funestos efectos que causa el ayre estrechado, y las explosiones con que anuncia su salida de las carceles subterraneas! Esos agoreros asotes saldrian muy en breve de su error, si consultáran mas bien á los principios de la Física, que al espiritu de Regencia. Tan naturales son en el mundo los terremotos, como los rayos y las lluvias. ¿Que mutacion politica hubo en el Reyno de Napoles para que el 5 de Diciembre de 1456 se hundiesen lugares enteros con perdida incalculable de habitantes, parte de ellos tragados de la tierra, y parte oprimidos por las ruinas de los edificios? Tampoco se mudó el Gobierno en Antioquia, y la noche en que se casó el Emperador Mauricio hubo un terremoto tan formidable en aquella hermosa Ciudad, que arruinó casi todos los edificios, quedando sepultados baxo sus escombros sesenta mil habitantes. Bien sabido es el terremoto que en tiempo de Tiberio hundió doce Ciudades principales del Asia; nadie ignora, tampoco que gobernando el Emperador Teodosio hubo un temblor de tierra tan horrendo y dilatado que hizo incalculables perjuicios en el Chersoneso, Alexandria, Bitymia, Antioquia, Helesponto, las dos Frigias y muchas otras Regiones de Oriente y Occidente. Nuestra Nueva Granada ha sufrido yá otras veces, sacudimientos bien notables de la tierra. Poco más de quince años hace que acaecieron los de Tacunga y Ambato, en que fangos y lagunas espantosas sucedieron á las más fertiles campiñas de la Provincia de Quito. No hace todavia ocho años que la Villa de Honda sufrió un terremoto desolador; y sin embargo de eso, ni este ni aquellos lugares pensaban al tiempo de su calamidad, que llegarian algun dia á poseer la noble virtud de resistir a la opresion y de fomentar una transformacion política para mejorar de Gobierno. Concluyo aconsejando á mis fanáticos, que en punto a las desgracias con que la naturaleza acaba de azotar al Estado de Caracas raciocinen mas bien del modo siguiente. Caracas por su inmediacion al Mar, por las invasiones de Coro y Maracaybo; y en una palabra, por el infierno envenenado del Apostol Cortavarria estaba en peligro inminente de ser conquistada luego si Dios ha querido qué desaparezca ha sido solamente por que no tengan el gusto de subyugarla sus barbaros reconquistadores.

ya de cerca, prevalidos de las desgracias con que la naturaleza agovia a nuestros hermanos; nosotros no hacemos otra cosa que armarnos contra nuestros propios conciudadanos, empuñando la cuchilla para degollar al hermano, al pariente, y al amigo. Nos rebelamos contra los que llevan en sus manos las riendas del regimen público, y atacarnos con el mayor vigor al Gobierno que mantiene el orden, haciendo de este modo que zozobre la seguridad de la Patria…

Quiera el Cielo que considerando los graves peligros que nos amenazan, volvamos sobre nosotros mismos, y tratemos solamente de cooperar con el Gobierno a triunfar de nuestros enemigos exteriores, y calmar del todo, nuestras turbulencias y conmociones intestinas.

17

Anónimo, "Monday, May 4", *Middlesex Gazette*, Middletown, Connecticut, 28 de mayo de 1812, vol. XXVII, p. 2.[103]

After some unimportant business had been disposed of, the House resolved itself into committee of the whole, Mr. Nelson in the chair on the bill for the relief of the inhabitants of Venezuela.

[The bill authorizes the President to cause to be exported such quantity of provisions and he may think proper. for the relief of the inhabitants of Venezuela, suffering by the effects of an earthquake.]

Mr. Newton proposed to fill the blank for the approbation with the sum of 30.000 dollars.

Mr. Pukin enquired for the official information, which might have been laid before the committee, on the subject of the distress existing at Caraccas.

Mr. Newton in reply said that there were many private letters in confirmation of the facts, and also letter from our consult, &c. Some of which were read.

[103] N de A: Al igual que en la entrada 10, esta noticia hace referencia a las resoluciones tomadas por el Congreso de los Estados Unidos con relación a la ayuda que habría de enviarse a Caracas por el terremoto. Sobre esa decisión, véase la transcripción de las sesiones al respecto en la entrada 36: House of Representatives, "Wednesday, April 29, 1812", *Journal of the House of Representatives of the United States, 1811-1813*, 1813, vol. 8, pp. 317-320. Otra mención a ello se realiza en la referencia de la entrada 19: "(Extérieur) Etats-Unis d'Amerique. Washington le 13 avril (Chambre de Representants)", *Le Moniteur Universel*, Paris, 30 de mayo de 1812.

Mr. Cathoun moved to fill the blank with fifty thousand dollars, which he thought would be little enough to be effect the object in view.

The question on the latter motion has decided in the *affirmative*, 45 to 29.

The committee ruse and reported the bill; which was ordered to be engrossed for a third reading this day.

Some other local bills were reported by the committee of the whole and then the house adjourned.

18

Anónimo, "Earthquake at Caraccas", *The London Times*, Londres, 29 de mayo de 1812.[104]

The accounts respecting this dreadful calamity are confirmed to their full extent. We were glad to have some occasion afforded us yesterday; to express doubts of their authenticity, as the first rumor of the afflicting event which reached this country had received a contradiction apparently of some authority. This contradiction appeared in a morning paper of Thursday se'nuight [sic], purporting to come from a Don Luis Lopez Mendez; and was as follows: "The calamity is represented to have taken place on the 26th of March. Don Luis has received intelligence from his Government, of the 28th of March, which informs him of the prosperous state of Caracas," &c. the writer then calls the whole account "a fabrication prepared at Martinique or elsewhere, for the worst of purposes." The appearance of this plausible statement naturally excited hope, which we are sorry to find, is entirely unfounded: but the author of the paragraph, whoever he may be, we are afraid, must be liable to the charge of that very fabrication of which he complains.

The subjoined letters from Caracas, and La Guayra, its port, afford some interesting particulars with regard to this terrible convulsion of nature, which seems almost to have rivaled the earthquake that laid Lisbon in ruins more than half a century ago.

Extract of a letter from Thomas Molini, Esq. date Caraccas, March 29, 1812, to his brother in London: "The dreadful catastrophe that took place in this

[104] N de A: La carta del capitán Cuthbert publicada aquí, es mencionada en la entrada 20 ("Earthquake at Caracas Confirmed", *The Observer*, Londres, 31 de mayo de 1812), e inserta en una nota al pie en la entrada 44 ("Sketch of the late Revolution in Spanish America", *A Catechism of the History of America*, Londres, 1819, pp. 60-61).

city on Thursday last, my pen is not able to describe: you will, without doubt, receive the dreadful details from other quarters.

My only motive for writing is to allay your apprehensions relative to my person, and I hope you will receive this letter as soon as the shocking account reaches England.

On the day above mentioned, at about seven minutes past four in the afternoon, we experienced one of the most dreadful earthquakes you can imagine. In less than three minutes one quarter of the town was laid in ruins, and the remaining three-fourths of the houses rendered totally uninhabitable. The number of lives lost is not yet ascertained, but the must moderate accounts estimate it 5.000 souls.

Similar accounts have reached us from La Guayra, and various other quarters: what is the extent of the evil in the interior we do not yet know. I fear the calamity has been general throughout the Continent.

P.S. General Miranda is well, and was out of town when this dreadful event happened."

Extract of a letter from Captain Cuthbert, of the ship Highlander, dated la Guayra, April 1, 1812:

"Since my arrival here, one of the greatest calamities has occurred at this place that ever happened in any country. On the 26th ult. whilst on board, I heart a most dreadful report of an earthquake: is lasted, as nearly as my recollection will serve, about two minutes. I soon learnt that the town of la Guayra was laid in ruins and that numbers of the inhabitants were killed and buried in them. The city of Caraccas, I understand: has experienced a still worse fate and has been totally abandoned by the unfortunate inhabitants. The rocks and mountains were rent asunder; and it is impossible for pen to describe the devastation occasioned by this horrible explosion. The cargo which I was to have taken on board has shared the fate of nearly all the goods in the city, and has been swallowed up in the general ruin. When the shock was first felt in board, every person was impressed with the feeling that the ship was beating to pieces on the rocks. On my going on shore, the most awful and afflicting scene presented itself: hundreds of the suffering inhabitants were seen mixed with heaps of ruins, and many of them still yet alive with their heads out, imploring assistance from their fellow citizens, who, instead of affording them aid, were throwing themselves the prostate before images, beating their

breasts, and imploring for themselves the protection of their saints. When the alarm bad in some degree subsided, the bodies of the dead were sought for; but I have not been able to ascertain the extent of the loss which this hapless city has sustained."

19

Anónimo, "(Extérieur) Etats-Unis d'Amerique. Washington le 13 avril (Chambre de Representants)", *Le Moniteur Universel*, Paris, 30 de mayo de 1812, Nº 151.[105]

L'agent du gouvernement de Venezuela *a* fait insérer dans les papiers publics que la nouvelle de la destruction des villes de Caracas et Laguira par un tremblement de terre e'était fausse.

20

Anónimo, "Earthquake at Caracas Confirmed", *The Observer*, Londres, 31 de mayo de 1812, p. 4.

We are sorry to state that the Chichester packet, which has arrived at Falmouth, has brought a confirmation of the melancholy intelligence respecting the earthquake at Caraccas, but, happily, not to the extent of the report brought by the Windsor Castle. The greater part of this city is in ruins, but the loss is now estimated at from 5 to 10.000 souls. This dreadful convulsion of nature, which appears to have rivaled the earthquake that laid Lisbon in ruins, more than half a century are had extended to La Guayra, and adjacent towns, and has probably been equally fatal in the interior; it is therefore impossible to ascertain the extent of the calamity accurately, until further accounts have been received. The shock was felt at several of the West India islands. Gen. Miranda, not being at Caraccas at the time, is supposed to have escaped.

From the St Thomas's Gazette of April 9.

[105] N de A: Esta noticia hace referencia (del mismo modo que la entrada 10 y la 17) a las resoluciones tomadas por el Congreso de los Estados Unidos con relación a la ayuda por el terremoto. Sobre esa decisión, véase la transcripción de las sesiones al respecto en la entrada 36: House of Representatives, "Wednesday, April 29, 1812", *Journal of the House of Representatives of the United States*, *1811-1813*, 1813, vol. 8, pp. 317-320.

"The 26th March has been a day of woe and horror to the province of Venezuela. At 4 p.m. the city of Caraccas stood in all its splendor, a few minutes later, 4.500 houses, 19 churches and convents, together with all the public buildings, monuments, &c, were crushed to atoms by a sudden shock of an earthquake, which did not last a minute, and buried thousands of the devoted inhabitants in ruins and desolation. That day happened to be Holy Thursday; and at the precise hour, every place of worship was crowded to commemorate the commencement of our Saviour's passion by public procession, which was to proceed through the streets a few minutes afterwards. The number of hapless sufferers was the augmented to an incredible amount, as every church was leveled with the ground before any person could be aware of danger. The number of sufferers taken out of one of the churches (two days after this disaster,) amounted alone to upwards of 800 corpses. An idea of the extent of the number of dead is differently stated, from 4 to 6, and as far as 8.000. Horrible as this catastrophe appear, it would be a matter of some consolation to know that the vicinity of that city offered some support to shelter to the surviving mourners; but the next town and seaport thereto. La Guayra, has, in proportion, suffered still more, as well as its immediate coast. Huge masses of the mountains detached themselves from the summits, and rolled down into the vallies. Deep clefts and separations of the immense bed of rocks still threaten future disasters to the hapless survivors, who are now occupied in burying and burning the dead, and in relieving the numerous wounded and cripples perishing for want of surgical and medical aid, shelter, and other comforts."

Capt. Cuthbert, of the Highlander, in a letter dated La Guayra, Ap.1. says, that the town of La Guayra was in ruins: that the shock which occurred on the 26th ult. lasted two minutes, and that the rocks and mountains had been rent [ilegible]. On his going ashore, he saw hundreds of the suffering inhabitants mixed with heaps of ruins, and many of them still alive, with their heads out, imploring assistance from their fellow-citizens, who, instead of affording them aid, were throwing themselves before images, beating their breasts, and imploring for themselves, the protection of their saints. When the shock was first felt, every one on board the shipping through that the vessels were beating to pieces.

[...].

21

Anónimo, "Extract of a Letter from a Spanish Gentleman at Coro, Dated 13th April, 1812", *Trenton Federalist*, Trenton, New Jersey, 01 de junio de 1812, vol. XIV, p. 2.[106]

The dispensations of God to man, are beyond human comprehension; who can doubt the existence of a ruling Providence? The events, which lately occurred at Caracas, are beyond conception. On Holy Thursday, the anniversary of the Revolution at about 5 o'clock in the afternoon, an Earthquake was experienced throughout Terra Firma, which without doubt, was the severest and of longer duration of any i ever remember in the different parts of the globe I have visited. But that part of the province of Coro, which remains faithful to their king, has not suffered at least injury the only effect produced at Maracaybo, by this 'horrible' convulsion of nature, was the decrease of nearly a feet of the depth of water on the bar. Caracas is entirely destroyed; the few houses that have remained are mere uninhabitable ruins. The troops perished in their barracks; the number of the dead is not exactly known, but it is very considerable. Laguayra was covered by the mountains which hung over it. Out of 60 sick in the hospital of that place, only one man was saved; he was a royalist condemned to death, on accounts of his resistance at Valentia; the [ilegible] his escape and has since arrived at Curasao.

Cape Blanco and [ilegible] have entirely disappeared from the surface of the earth, and their former [ilegible] are now covered by the sea. This wonderful change occasioned the capture of Leeward, of an American schooner, which was bound to Laguyra, having on board some French passengers and two emissaries of Napoleon. The Captain did not know of the coast of Laguyra or Puerto Cabello, which is entirely changed, and was captured by one of our cruisers of Curasao, and brought into the roads of Vela; the Frenchmen have been imprisoned; among them there is a clergyman, who formerly had been here asking charity for some religious community, and another a known agent of Napoleon, of whom the Governor here was already apprised and had order to [ilegible].

At Porto Cabello about 30 houses have been totally swallowed up, and of the remainder, only two houses are habitable, the one belonging to Mr. Herrera and the other to Mr. Llanos, both royalists, the one residing in Coro, the other in Porto Rico. The fortifications are a mass of ruins.

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106 N de A: Esta carta publicada en el *Trenton Federalist* es reproducida también en el *Municipal Gazette* de New York el 1 de abril de 1848, y está transcrita igualmente en la entrada 71.

From Barquismeto we learn that out of seven churches only one remains, and the city is severely ruined. Our troops under the command of Captain Monteverde of the royal navy, are marching for that city, after having conquered Carora, in the interior which did not suffer by the earthquake. St. Felipe, .St. Carlos, Valles de Aragua, and Santa Ross, have all suffered more or less.

Our General Migares, is gone to Porto Rico, which Col. Carabagno, to hold a council of war; he has left here in his absence, Brigadier Gen. Cagigal. I know not what has occasioned the activity, which is observed in our small army, under the command of Monteverde, a Canarian. Cagigal had been at Porto Rico, and the Gen. proceeded to the island immediately on his return.

22

Anónimo, "Extracto de una carta. Puerto Rico 15 de abril", *El Conciso*, Cádiz, 2 de junio de 1812, Nº2, pp. 2-4.[107]

Extracto de una carta. Puerto Rico 15 de abril. Ya se puede decir que no hay Carácas. El jueves santo (26 de marzo) á poco mas de las 4 de la tarde se sintió un temblor de tierra tan furioso que asoló casi toda aquella gran ciudad, la Guaira, y demas pueblos de las adjunta copia, que lo es de las cartas mas notables que tratan de este suceso: acaso serán mas los estragos, pues el terremoto continuó repitiendose el 4 de abril, dia que salieron de la Guaira dos sujetos que llegaron aquí el 13: bien que las oscilaciones parece que no eran tan grandes como las del jueves santo ni de tanta duracion. Como las noticias que dan estos sujetos y otros que han escrito son de los momentos inmediatos al suceso, no cabe mucha puntualidad, pues no podia saberse sino en globo. Los habitantes que no han quedado sepultados han huido á los campos. No se habla de sujetos particulares que hayan perecido; se asegura que el Arzobispo se salvó como tambien las religiosas de los dos conventos. Se asegura que en las ruinas de Barquisimeto quedaron sepultados mas de 20 hombres de armas que se disponian á ir á atacar á Monteverde, quien con 300 de la tropa que tenemos en Coro se apoderó el 23 de marzo de Carora destrozando 10 hombres que le resistieron […]. Clama porque se le socorra á fin de aprovechar el momento y marchar sobre Valencia en donde se halla establecido el Congreso ó gobierno que han formado los facciosos: parece que alli no hizo

[107] N de A: esta carta del Brigadier José Ceballos fue publicada también en la *Gaceta de México* y se halla transcrita en la entrada 31.

daño el terremoto aunque se sintió: en Puerto Cabello, dicen, solo perecieron 6 personas y muchos edificios: aseguran que ha quedado arruinada la mitad de la población de Cumaná: Nueva-Barcelona no ha padecido, pero escriben de Maracaybo haberse retirado el mar hasta dexar la barra con solo 8 pies de agua. Se trata de enviar á Coro los 300 hombres que vinieron de España, y estan aquí, para que juntos con los que alli hay y de los quales avisa el gobernador de aquella provincia, iba á despachar los mas que pudiese, y uniendose á los que manda Monteverde pudiesen continuar sus operaciones; en el dia, por las circunstancias, encontrará acaso pocos obstaculos, pues ya se le van reuniendo cada dia los pueblos de los contornos como la ciudad de Tocuyo, que ha reconocido al legítimo gobierno, y otros varios pueblos, cuyo número se aumentará á proporcion de la proteccion y coyuntura que hallen […].

Comprobantes de oficio.

Iº "Por las declaraciones contestes he sabido la desgracia de la ciudad de Barquisimeto, que el Jueves Santo 26 del presente en un terremoto que se experimentó en esta provincia, fué sepultada baxo sus ruinas. Todos los pueblos de esta jurisdicción, la ciudad de Tocuyo, y la mayor parte de sus pueblos me han oficiado, reconociendo la soberania del Sr. Fernando VII., y me piden auxilio para abrigarse de los enemigos. Hoy ha salido un destacamento de 40 hombres y 20 fusiles mas para Quibor, y solo espero el refuerzo de Coro para apoderarme de las ruinas de Barquisimeto.

V.S. vea el modo de auxiliarme con 800 á 10 hombres para poder hacer una tentativa contra Valencia. Las tropas de Marina y de la Reyna son las que me hacen mas falta; así no dudo de la actividad y eficacia de V.S. hará todo esfuerzo para que se me resuman al momento. El entusiasmo de mis tropas, y la cobardía ha manifestado el enemigo, me aseguran el buen éxito de quanto emprenda; y si á esto se agrega el asombro que han causado á todos estos vecinos las grandes desgracias del terremoto del 26 en los pueblos que se manifiestan en la adjunta relacion, no dudo que la conquista de Venezuela sea hecha por el exército coriano. […]. Quartel general de Carora 29 de marzo de 1812. Domingo de Monteverde. Sr. Gobernador y comandante principal de la provincia de Coro. Es copia. Ceballos".

"Relacion de los pueblos (sabidos hasta hoy) que quedaron hundidos en el terremoto del Jueves Santo, y continuando hasta ayer, quedando en cada pueblo sepultados la mayor parte de sus habitantes. Ciudad de Barquisimeto, absolutamente arruinada. Pueblo de Aritagua, hundido. Sta. Rosa, id. Lugar

de Candare, con asombro arruinado. Cuidad de San Felipe en peor situacion. Id. S. Carlos, en igual estado. Caramacate, con mucha ruina. Se considera que Caracas y sus demas pueblos hayan sufrido igual suerte. Quartel general de Carora 29 de marzo de 1812. Monteverde. Es copia. Ceballos".

23

Anónimo, "(Extérieur). New York, le 18 avril", *Le Moniteur Universel*, Paris, 04 de junio de 1812, Nº 156.

Le tremblement de terre de Caracas, qui avait d'abord été contredit, est confirmé par un bátiment arrivé des Isles-sont-lé-Veut. II a péri environ 10.000 âmes. Le tremblement de terre s'est fait aussi sentir dans plusieurs des isles de I'lnde-Occidentale.

24

Anónimo, "(Exterieur) New York, du 7 Mai", *Le Moniteur Universel*, París, 13 de junio de 1812, Nº 165.[108]

Les journaux de la Jamaique donnent quelques nouveaux détails sur le tremblement de terre a Caracas, qui parait avoir étendu ces ravages dans une vaste étendue de pays. Autre les désastres dont nous avons déjà parlé, quatre-vingt maisons ont été renversés à Puerto-Cavallo. Vittoria a été entièrement détruite; León a beaucoup souffert; de vastes espaces de terrain se sont effacés, et de lacs ont pris leur place.

[108] N de A: Esta versión es tomada fielmente de la obra de José Grases "El Terremoto de 1812 y sus Efectos", publicado en *Boletín Técnico IMME*, Instituto de Materiales y Modelos Estructurales, Facultad de Ingeniería, Universidad Central de Venezuela, Caracas, 29-30 enero-junio, 1970, pp. 103-124. La cita corresponde a las páginas 106 y 107.

25

Anónimo, "Nouvelles Etrangeres Angleterre: Amerique Meridionall. Londres, 10 juillet. Amerique Meridionall", *Gazette de France*, Paris, 18 de julio de 1812, Nº 200.

Venezuela, le 21 mai 1812. La régate anglaise Orpheus capitaine Pigot, a mis à la voile avant à bord Don Martin Tovar Ponte et Manuel Estevez son secrétaire. Ces gentlemen se rendirent auprès de l'amiral sur F. Laforey commandant en chef des forces britanniques dans ces mers, avec une réponse du gouvernement de Venezuela à S. Eve., que avant expédier l' Orpheus sur la nouvelle du terrible tremblement de terre qui a en cher dans cette partie. L' Orpheus rapportera la confirmation des succès obtenus prés de Valence, sur les habitants de Coro, par les patriotes.

Le detant des envois accoutumes d'espèces á Porto Rico s'y est état totalement sentir, que cette colonie a été obligé d'avoir recours a l'établissement du papier-calque

Valencia, le 17 avril 1812. Miranda est attendu le demain avec son état-major Bosico et Poro sont encore a Caracas eu dans le voisinage. Les secousses continuent encore dans cette ville charmante, dont on croit qu'il ne resté pas vestige. Malgre leurs malheurs, le patriotisme des habitants ne s'est pas refroidi : la proximité des Coriens les inquiète peu. Le commerce souffre : mais á cet égard jusqu'a ce que les Coriens aient été battus.

Trois cents personnes ont, dit-on, échappé á la mort á San-Phelipe, petite mais riche ville de l'intérieur, qui á été pillée par les Sambos, immédiatement après le tremblement. Trois rapports s'accordent sur la reddition de Guayana aux armes de Venezuela. Le gouvernement cependant n'a rien de' officiel á cet égard.

Laguira, le 25 mai. Un gentleman arrivé de Valencia nous a fonde les détails suivants, d'une espèce favorable.

Le général Miranda, á la tête d'un corps de troupes considérable, est parvenu á cerner complètement prés de Valencia, les troupes de Doro, destinées á agir contre la dite ville. On s'attend oit a chaque instant a leur voir mettre bas les armes, et l'on complote avec d'autant plus de certitude sur la prise de Coro par les patriotes, que les forces considerábles avoient été détaches pour la prompte réduction de cette ville.

26

Anónimo, "Valencia, 17 de abril de 1812", *Journal de Paris*, Paris, 18 de julio de 1812.[109]

Londres, junio 21

Valencia, 17 de abril de 1812.

Se espera para mañana la llegada a esta ciudad del general Miranda con su estado mayor. Las sacudidas continuaban todavía en Caracas. De esa encantadora ciudad –se cree– no quedarán vestigios. A pesar de la desgracia el patriotismo de los habitantes no ha decaído. La proximidad de los corianos inquieta poco…

Se dice que trescientas personas han escapado de la muerte en San Felipe. Esta pequeña y rica del interior ha sido saqueada por los zambos inmediatamente después del terremoto. Tres informes se acordaron sobre la rendición de Guayana a las armas de Venezuela; sin embargo el gobierno no ha dicho oficialmente nada a esta consideración.

[…].

27

Anónimo, "From the New York. Extract of a Letter from a Gentleman at Laguira to his brother in this city, date June 1812", *The Yankee*, Boston, Massachusetts, 31 de julio de 1812, vol. I, p. 2.

"The scene here is really distressing, out of 1.500 houses, of which this place was composed, not more than 500 remains, and it is generally believed, that five-elevenths of the inhabitants have perished in the ruins. What contributed much to their misfortune was the temporary loss of reason during the shock, which lasted about one minute and a half. Before the earthquake, the atmosphere was sultry and very calm. The houses were chiefly built of clay, and now this once flourishing place exhibits little more than one great sepulcher." The stupendous mountains and rocks in the neighbourhood are rent in the most terrible manner, and in different directions. The principal shock was felt seven minutes later here than at Caracas. The bodies of the unfortunate victims were collected in piles and burnt.

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[109] N de A: Esta traducción al español es tomada fielmente de la obra de Jesús Rosas Marcano, *La independencia de Venezuela*..., p. 125.

"Provisions here are very scarce; Flour is 40 dollars per barrel. Only one vessel from Baltimore, with 400 barrels has yet arrived. We wait with patient hope for the reasonable supply of provisions your virtuous and just government has voted us. If the grateful thanks and good wishes of a young and unfortunate government will avail anything with the Great Disposer of events, you have ours. Every one who can speak a sentence thanks and blesses the U. States.

"For a while, the enemies of truth, justice, and human liberty, triumphed in our misfortunes. Superstition turned the wife and [ilegible] government of God, into capricious vengeance for our opposing tyrants and tyranny. It was with grief and shame; I saw some paragraphs in your newspapers accounting for our disasters as the vengeance of God. The silly mortal who dares to throw the bolts of Heaven, does not deserve the society of man. At present, all is activity, Porto Cavello, is supposed, will take the place of Laguira for shipping, the surf not running so high, and is a better harbor. The cause of the Independents every day succeeds, every enterprise of theirs is crowned with success. Every one begins to feel confidence in their new rulers.

"The brig Pioneer was condemned June 5th at Porto Rico."

28

James Belt, "Extract of a Letter from James Belt, Esq. Dated Curaçao, May 9, 1812"; George Robertson, "Abstracted from a letter from George Robertson, Esq. Dated Valentia, April 17, 1812"; y Hall of Representatives "to the People of the Sovereign State of Caracas", *Gentleman's Magazine*, Londres, Agosto 1812, vol. LXXXII, pp. 110-112.

"I annex a copy of a letter from G. Robertson, esq. relating to the Main. I believe no more than 3000 persons were killed at Caracas and La Guaira. Another shock was felt here on the 24th instant. It must have been severe elsewhere. I did not feel any of the shocks myself: upon some people it had the effect of making the stomach sick, and an unpleasant nausea. The Jews, who are not famed here for strong minds or courage, were much alarmed on the occasion. The subjoined Proclamation, issued by the Governor at Caracas after the calamity, has attracted universal admiration. It was written by a Dr. Sanz, a Member of Government. The Executive is composed of men of extraordinary abilities, moderation, and firmness [...]".

Abstracted from a letter from George Robertson, Esq. Dated Valentea, April 17, 1812.

I arrived here last night, after a fatiguing journey. I had this morning an audience of the President, and had a favorable reception. Miranda and the Staff are expected here tomorrow. Roscio and Poro are yet in Caracas or its vicinity. The shocks there still continue, and it is now supposed there is no vestige of that charming city remaining; however, on Miranda's arrival, our information will be more correct. I am glad to say, from what i have yet seen here, that the mad spirit of hot-headed patriotism (as it is called) has greatly subsided, and has been succeeded by a cool steady *amor patria*, and a firm determination of fighting and dying for the cause they have adopted. The idea of the Corians gives them very little uneasiness, though Government are making all the preparations they can. I think the earthquake, in a political light, has done them good; but, in a commercial one, i am sorry to say, there is a terrible falling off, and, in my opinion very little prospect of amendment till the Corians are beat and confidence established.

"Only 300 persons are said to have escaped from St. Felippe (a small but rich city in the interior); it was plundered by the Sambos immediately after the earthquake. [...]

Translation. Hall of Representatives to the People of the Sovereign State of Caracas.

[...]

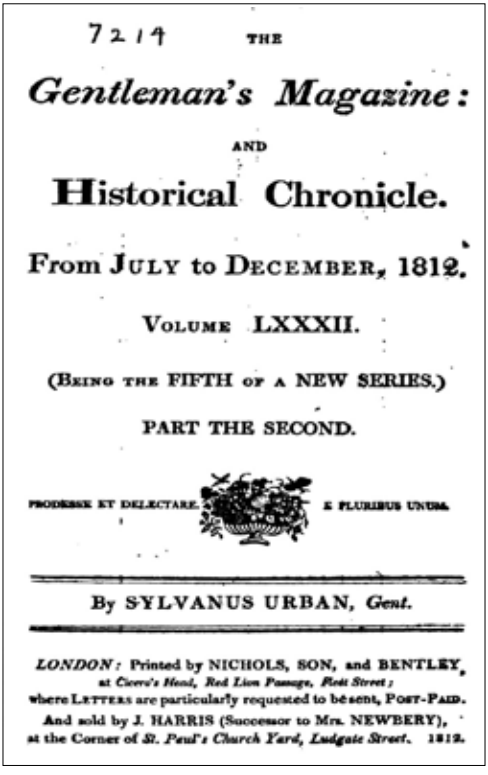
"Citizens! On the 26th March, at 7 minutes past 4 o'clock in the afternoon, the city of Caracas felt a most violent Earthquake, which has destroyed her edifices; but what consequence will you draw from this terrible event? The superstitious and fanatic will tell you, in a mysterious manner, that it is a punishment of God, who in his anger and rage (especially against the inhabitants of this city) has manifested his wrath in that manner. The ill-affected will suggest to you, that you have nothing to expect from a city, hated by God for having proclaimed her independence, and having declared herself against the tyranny of the ambitious. The enemies of liberty and equality will endeavor to persuade you, that the noble resolution with which Caracas detests tyrants, and makes war against despots, is the cause of this disaster; and that only by altering your opinion, and by bending yourselves again to the yoke which you have shaken off, you will appease the wrath of the Almighty.

"Such will certainly be the language of the superstitious, of the ill-affected, and of the enemy. But, Citizens! A true Christian, who follows the doctrine of Jesus Christ, divested of trifling prejudices, and disinterested, will tell you, that the Earthquake of 26th March, is the same as the different beauties and

horrors which daily are experienced by the human race in every part of the world; the necessary effect of nature, which God disposed to move His Creatures to admire His Omnipotente, to adore Him in His Works, and to acknowledge that men were not created for the apparent felicity of this life. [...]

"The well-affected will show you, in the ruins of Caracas and other towns, a most propitious opportunity to display those virtues most agreeable to God, and prescribed in our Holy religion, *Beneficence towards our neighbors*, resignation to the all-wise decrees of God, magnanimity in misfortunes; and a large field for the inhabitants of this state to display their abilities, and to prove to the world, that, if they could shake of the wicked yoke of the tyranny, they have fortitude enough to suffer the calamities of Nature.

"In Short, Citizens, the Politicians will prove to you in the precautions which have been taken and still are going forward, that if our enemies should avail themselves of our distress, to invade our territory, in this moment of general consternation, or during the discouragement which the Earthquake may have occasioned on the weak-spirited, superstitious, and fanatics, the advantage which they will obtain will only be of short duration; for by sending a superior number of military force, we in a short time shall recover the losses which we have sustained, and perhaps, our vengeance being provoked, being protected by God , who will reward our firmness, our patience, and our steadiness, it may not only be the moment to correct them , but also to subdue them, without leaving them any hope to vex a virtuous people, who, having proclaimed the sacred and natural rights of liberty, equality, and independence against their usurpers, have known how to support them amidst the most terrible events. Besides this, a wise Government, firm in the performance of its duties, which day and night is occupied, and exposed to every kind of inconvenience and difficulty, employs all the means in its power to comfort the afflicted, to assist the poor, to check the wicked, and to reestablish good order. You will have the satisfaction to know, that this Government (still existing amidst ruins) receives arms, ammunitions, and provisions, by foreign vessels arriving at La Guayra [...].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THE

Gentleman's Magazine:

AND

Historical Chronicle.

From JULY to DECEMBER, 1812.

VOLUME LXXXII.

(BEING THE FIFTH OF A NEW SERIES.)

PART THE SECOND.

PRODESSE ET DELECTARE. E PLURIBUS UNUM.

By SYLVANUS URBAN, Gent.

LONDON: Printed by NICHOLS, SON, and BENTLEY, at Cicero's Head, Red Lion Passage, Fleet Street; where LETTERS are particularly requested to be sent, POST-PAID. And sold by J. HARRIS (Successor to Mrs. NEWBERY), at the Corner of St. Paul's Church Yard, Ludgate Street. 1812.

Figura 2: Imagen de la portada de la revista *Gentleman's Magazine* para el año de 1812, volumen 72.

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Anónimo, "Earthquake at the Caraccas", *Scots Magazine and Edinburgh Literary Miscellany*, Edinburgh, agosto de 1812, pp. 592- 593.

The following statement of this calamitous event is taken from a supplement to the St Thomas' Gazette, dated 9th April, 1812:

"The 26th March has been a day of woe and horror to the province of Venezuela. At four p.m. the city of Caraccas stood in all its splendor. A few minutes later, 4.500 houses, 19 churches and convents, together with all the public buildings, monuments, &c, were crushed to atoms by a sudden shock

of an earthquake, which did not last a minute, and buried thousands of its inhabitants in ruins and desolation. That day happened to be Holy, or Maundy-Thursday; and at the precise hour, every place of worship being crowded to commemorate the commencement of our Saviour's passion by public procession, which was to proceed through the streets a few minutes afterwards, augmented the number of hapless sufferers to an incredible amount, as every church was leveled with the ground before any person could be aware of the danger. The number of sufferers taken out of one of the churches amounting (two days after this disaster) alone, to upwards of 800 corpses, besides those it may be presumed could not yet have been taken out of such ruins, gives an idea of the extent of the calamity. The numbers of dead are differently stated, from four to six, and as far as eighteen thousand. Horrible as this catastrophe appear, it would be a matter of some consolation to know, that the vicinity of that city offered some support to surviving mourners; but the next town and sea port thereto, viz. La Guira, has, in proportion, suffered still more, as well as its immediate coast. Huge masses of the mountains detached themselves from the summits, and were hurled down into the vallies. Deep clefts and separations of the immense bed of rocks still threaten future disasters to the hapless survivors, who are now occupied in burying and burning the dead, and in relieving the numerous wounded and cripples perishing for want of surgical and medical aid, shelter, and other comforts."

Other letters.

"It is not within the compass of my ability to describe to you the misery of these people; fear and despair, grief and ruin, have completely overwhelmed then. Parents have escaped, with the loss, of their children –children with the loss of their parents, and very few without the loss of their property. Already 500 persons have been found, and the probability is, that a greater number still remain buried beneath the rains. The destruction at Caraccas is much greater; 2.500 bodies have been thrown upon the funeral pile, and burned already, and it is supposed that from 5 to 10.000 souls are lost. Out of 40 churches in that place, two convents only remain standing. Such is the lamentable situation of these two places, that it will be a long time before they can be reinstated. No business of any nature is doing. All the Americans here will go to Puerto Cabello."

The following melancholy narrative was addressed to a respectable merchant in Philadelphia.

"Ruins of La Guira, April 2, 1812.

Dear Sir. Many times in my life have I experienced the goodness of a merciful God towards me-, but never so conspicuously as in my preservation during the tremendous exertion of his power, which has shaken the mountains to their foundation, and leveled the greatest part of this city, as also that of Caraccas, with the ground, more than 10.000 have been buried, and most of them now lie beneath the ruins! The stench arising from the dead bodies, is intolerable, such of them as could be come at, have been thrown into the sea, or collected into heaps and burned to ashes.

"It is imagined that seven-eighths of the houses in this city are demolished, and of those which still stand there are not perhaps twenty that will be found tenable. The customhouse, which was built very strong, is not much injured the house which I occupy is three storeys [sic] high, and was likewise very strong it stood the shock without falling, but it was so much injured that I do not intend to sleep in it, especially as we are constantly kept in a state of alarm by the frequent shocks which have daily taken place ever since the 26th ult. When the first great shock occurred, I ran out of my house, and in my amazement, I turned round, and beheld it rocking like a cradle, which, with the roaring of the earthquake, the screams of the people, and the crashing perhaps of a thousand buildings, made the scene horrible beyond description!"

592 *Earthquake at the Caraccas.*

ed the island at least one inch think. The country is melancholy, and unless we have rain, there is no saying what will become of our live stock.

Earthquake at the Caraccas.

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Other letters.

"It is not within the compass of my ability to describe to you the misery of these people; fear and despair, grief and ruin, have completely overwhelmed them. Parents have escaped, with the loss of their children—children with the loss of their parents, and very few without the loss of their property. Already 500 persons have been found, and the probability is, that a greater number still remain buried beneath the ruins. The destruction at Caraccas is much greater; 2500 bodies have been thrown upon the funeral pile, and burned already, and it is supposed that from 5 to 10,000 souls are lost. Out of 40 churches in that place, two convents only remain standing. Such is the lamentable situation of these two places, that it will be a long time before they can be reinstated. No business of any nature is doing. All the Americans here will go to Puerto Cabello."

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Figura 3. Primera página del documento "Earthquake at the Caraccas", que se publicó en *Scots Magazine and Edinburgh Literary Miscellany*, para agosto de 1812.

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"Anónimo", *Gazeta Extraordinaria de Montevideo*, Montevideo, 8 de agosto de 1812, Nº 7, pp., 501-508.

Caracas ya no existe, y casi todos los pueblos que la siguieron rebelde han pagado su nefando delito. La humanidad retiembla espavorida al recuerdo espantoso de tan sañuda catástrofe, el alma menos sensible se consterna, y la filosofia confiesa con sinceridad quan inutiles son sus investigaciones para fixar el origen radical del fenómeno asolador. El Dios de las venganzas ha mandado á los elementos nos recuerden el justo furor con que castiga los crimenes; nos ha hecho ver que, el orgullo humano tan debil, como insensato se rinde al solo movimiento de su dedo *omnipotente*. Caracas sepultada en el seno de su ignominia servirá de escarmiento a las ciudades delincuentes que se han abandonado a la furia de las pasiones. Quebrantando las leyes mas respetables de la religion, y de la sociedad han insultado el Supremo Hacedor hasta precisarle a reproducir substancialmente el castigo de las antiguas ciudades de Pentapolis. *¡La Providencia habia de servir de salvaguardia a la licenciasidad, á los asesinatos, y á la rebeldía!*

Un suceso casi singular en las edades del mundo le hubieramos tenido por apocrifo, si no le hubieramos visto tan autorizado: tres de los infelices, que la tirania de los *despotas de Venezuela* había arrojado a los calabozos, se salvaron con otros inocentes, y pudieron fugarse á *Puerto Rico* desde donde partieron á la Peninsula, conforme se indico en la 8ª reflexion del diario de la Coruña que insertamos literalmente; así que su relación es un testimonio de hecho que no dexa lugar a la duda. ¡Quien podrá leerla sin extremecerse! ¡quien sin exclamar *Dios protege a las Españas*! La relacion del Diario dice España. *Coruña 24 de mayo. Noticias de America*:

Relacion de uno de los sucesos mas memorables que cabe en la historia de nuestros siglos, y acaba de verse en la costa firme, y otras noticias del dia.

El 26 de marzo de este año, dia de jueves santo, á las 4 de la tarde, se padeció un horrible temblor de tierra en toda la extension de la costa-firme, desde Cumaná a Maracaybo. Las noticias que de él se tenian alcanzaban en Puerto Rico desde el 8 de abril a las 3 de la tarde del 15, dia de mi partida para España en el bergantin particular nombrado el *Volador*. La mano tiembla el escribir los estragos horrorosos que ha causado en las provincias de Cumaná. Caracas y Venezuela: en estas, unos pueblos quedaron enteramente arruinados, otros

hundidos, otros padecieron mas, otros menos, y otros solo lo sintieron y notaron. Véase de un golpe el quadro de esta catástrofe.

Caracas y la Guayra ya no existen.[110] Los lugares de Macuto y Mayquetia a la inmediacion de la Guayra, corrieron igual suerte. Cumaná quedó bastante arruinada. Puerto Cabello ha padecido en sus edificios. La ciudad de Barquisimeto absolutamente hecha escombros. Pueblos de Aniteagua [sic] hundido. Sta. Rosa id. Lugar de Candare [sic por Cabudare] con asombro arruinado. Ciudad de S. Felipe en peor situacion. S. Carlos en igual estado. Casamacate en mucha ruina, y otros de que no habia noticia todavia.

La duracion de este enorme terremoto en Caracas[111], unos la dan y aseguran de 3 quartos de hora, y otros de *media hora.* No quedaron en esta ciudad sino pocas casas, y estas quarteadas: se computa perecieron en ella de 10 á 12 mil personas, baxo las ruinas de 5 mil edificios. Los habitantes que pudieron escaparse de este horrible estrago, se acamparon la mayor parte en las cercanias de la ciudad, en tiendas y chozas que debilmente fabricaron, sufriendo la miseria, el hambre, y el rigor del clima; y otros se dispersaron por aquellos campos, buscando albergue. Los heridos fueron un gran numero; y quedaron sin boticas, y ningunos auxilios. Las iglesias, conventos y catedral, al desmoronarse, sepultaron á la mayor parte de la gente que asistía a los oficios divinos. Las monjas se salvaron, y se conservan al lado del arzobispo, que se retiró a la llanura de Nuaraules [sic por Ñarauli]: tambien se salvaron los padres franciscanos; pero no los mercenarios [sic por mercedarios] y dominicos, que de estos quedaron pocos. El gran edificio del quartel de S. Carlos, se desplomo todo, y quedaron en él sepultados muchos soldados y oficiales, como su parque de artilleria, municiones y armas. El cerro de Ávila, que domina la ciudad, se desprendió en gran parte. Según los avisos que se tenian el 5 de abril, en la Guayra se resentían alli mas fuertes los temblores. No se pueden detallas por aora mas circunstancialmente los destrozos de esta ciudad, como el numero de habitantes y sus clases que han perecido; y solo se asegura que las casas de caña y barro quedaron en pie, que los calores eran excesivos, y que las lluvias se habian retirado hacia tiempo.[112] El terremoto en la Guayra

[110] Reflexiones: A los 2 años cumplidos, y día en que los revoltosos profanaron los misterios mas santos y respetables de nuestra sagrada religion, dia y hora fixa en que han depuesto las autoridades legitimas, negaron la obediencia á la soberania de nuestro gobierno, y publicaron el bando de su rebelion.

[111] El temblor de tierra que en 1845 [sic por 1745] arruinó a Lima, y sepultó al Callao con sus habitantes, duró 15 minutos: el de 1755 que arruinó a Lisboa, la mar cubrió las murallas de Cadiz y se sintio en Madrid, duro de 6 a 7 minutos.

[112] Caracas fue arruinada por otro terremoto en 1641.

se repitió por varias veces: derribó casi todas las casas, excepto la aduana, que solo quedó rajada. Los pueblos de Coro y Maracaybo sólo sintieron el temblor, sin ningunos efectos mas que el haber notado el movimiento y ruido en los mares que los orillan. Las primeras noticias de Maracaybo fueron que la mar habia quedado en 8 pies la barra, y las segundas que en 11. Por disposicion del capitan general de estas provincias el señor Miyares, que reside en Coro, habia salido el capitan de fragata Monteverde con 300 hombres de marina del regimiento de la Reyna, y otros del mismo Coro al pueblo de Sisiqui [sic por Siquisique], que acababa de proclamar y reconocer a nuestro legitimo gobierno; para defenderlo de otros pueblos inmediatos a rebeldes. Establecido ya aqui atacó el 23 de marzo con dicho numero de tropas a la ciudad de Carora: derroto mil hombres, les hizo 83 muertos y 163 prisioneros, sin que se sepa el numero de heridos: les tomó 8 cañones, y sobre 300 fusiles, con otros efectos militares: ha hecho reconocer en esta ciudad la soberanía de nuestra santa causa, y ha puesto allí nuestro quartel general, en cuyos pueblos nada, nada le faltaba: y con 600 hombres que Ceballos, gobernador de Coro, á toda prisa le iba a enviar de refuerzo, se disponia á marchar sobre Valencia, en donde se habia retirado el congreso Caraqueño.

Monteverde avisa que resulta por declaraciones, que en Barquisimeto quedaron 2 hombres sepultados baxo sus ruinas que venian resueltos á atacarle en Carora.[113] Así mismo avisa que la ciudad de Tocuyo ha proclamado al gobierno legitimo, y otros pueblos circunvecinos suyos, e inmediatos a Carora, sobre los quales daba disposiciones de buen orden.

En Puerto Rico, se disponia el señor Miyares, que acababa de llegar de Coro con el objeto de dirigir las tropas que fuesen de la peninsula á los puntos que conviniese, a marchar a toda priesa á Coro con las que fueron ya de Cadiz, y poder aprovechar los momentos para la pronta pacificacion de aquellas provincias, restablecer el buen órden, y ayudar a los buenos habitantes en tan lamentable situacion, y que suspiraban por el gobierno de nuestra santa causa. El señor comisionado regio Don Antonio Cortavarria, tan laboriosos como prudente (que está para regresar a España á la primera ocasion), ha contribuido mucho con sus conocimientos y sabias reflexiones a estas miras.[114]

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[113] La población de Caracas se computaba de 31 mil almas. La de Guayra de 6 a 7mil, y la de todas aquellas provincias sobre 240mil.

[114] Si en la provincia de Caracas hubiera otro Pombal como en Lisboa en 1755, con iguales medios de que este disponla pudiera decir como él "yo he salvado á los que la naturaleza no ha destruido".

Habia noticia que los de Guayana batieron y derrotaron la expedicion compuesta de 36 embarcaciones pequeñas, que desde Cumaná habia salido contra ellos; y que se pasaron á los guayaneses sobre 200 hombres de la expedicion, quedando ya segurada la provincia guayanesa por esta accion, y las incidencias y destrozos que ha causado el terremoto en las otras.[115]

Se aseguraba que los de Santa Marta se sostenían con firmeza contra los de Cartagena y otros pueblos interiores. Que todos vocales que habian preso al respetable obispo, y en seguida tocado a vacante habian muerto naturalmente en breve tiempo, menos uno ó dos que estaban presos, y el pueblo pedia sus cabezas. Que los vocales elegidos nuevamente pidieron a la Jamayca su mediacion para quitar el crucero, porque perecian de hambre.

Tambien se decia de positivo que en Cuba quedaba el arzobispo de Santa Fe, escapado de incognito desde Mompox. Que en el reyno de Mexico se habia disipado la última nube de los malcontentos con la llegada allí de nuestras tropas de la peninsula, y que ya comenzaban á baxar el metálico á Vera-Cruz para España. Tampoco hay novedad en las islas de Cuba, Santo Domingo y S. Juan de Puerto Rico; y aunque de esta última se diga y escriba lo contrario, serán pequeños chismes, que con una sola plumada quedarán disipados.

Asimismo se decia que los Quiteños auxiliados por el virrey de Lima y aquel presidente, venían contra los de Santa Fe y que con las disposiciones de su virey, que ha pasado a Panamá, y el auxilio de algunas provincias internas por la buena causa, pronto quedarian sojuzgados aquellos debiles rebeldes.

Dicen que tambien llegó á la vela de Coro una goleta de los Estados Unidos, por equivocacion, que iba con destino á la Guayra, la que fue apresada: traia dos imprentas y otras cosas, con 2 comisarios franceses; á pocos dias de haber perecido la de Caracas, el caño y casa de moneda recien eregida.

De dia en dia llegarán detalles mas circunstanciados y exactos de todos estos puntos, tanto de los estragos que ha causado este enorme terremoto, como de los pueblos que han reconocido a nuestro gobierno legitimo arrepentidos

[115] Haria un gran beneficio al genero humano la fisica si nos diera un medio que anunciase estas tronadas subterráneas como lo tiene dado para anunciar las tempestades y tronadas celestes. Aquellas son unos fenómenos raros que la naturaleza nos presenta de mas consideracion. ¡Quantos millares no se habrian tragado!

ó asombrados con este azote[116], y si se ha extendido hacia otros parages que los citados.[117]

El Editor.

El espantoso terremoto que ha sepultado á Caracas, y ha sumido a los rebeldes ¡que leccion para Buenos-Ayres! ¡que sorpresa para sus tiranuelos! ¡que escarmiento para sus partidarios! Unos son sus delitos, una su ambicion, su perversidad en nada se diferencia: ¿terminará de diverso modo su carrera? La sangre inocente de los buenos ciudadanos clama allí venganza, ¿quedaría aquí impune la de las victimas que han inmolado la ambicion y la fiereza? No quiero renovar la ingrata memoria de unos sucesos que nos han hecho verter tantas lagrimas de compasion, y de corage, ni reconvenir tampoco a los obstinados revolucionarios, porque sé bien que el escarmiento ha de preceder á su reflexion, y á la retractacion de sus indignos crímenes. ¡Pero como dexar de prevenir a los infelices que sin participar de su delito están expuestos al furor del castigo! Abandonad, honrados ciudadanos, vuestros bienes, vuestra comodidad, vuestras delicias, y huid de una tierra proivida y nefanda: sirva tan solamente de albergue a los delincuentes para que ellos solos sufran el rigor que provocan, y á cuyo irresistible impulso deben perecer sus dias, y su nombre.

Qualquiera que mire con ojos filosóficos el estado de nuestra madre-patria, reflexione sobre su calamidad, y calcule sobre el poder de sus enemigos extraños, y domesticos abismado con los continuos prodigios que se han reproducido desde el inmortal 2 de mayo de 808 exclamará ¡milagro de la *onmipotencia*! El poderoso enemigo que le debasta desespera de su subyugacion, los ingratos hijos que la hostilizan son vencidos unos, sepultados otros, y confundidos los mas; asi es que apoyado en unos hechos del todo nuevos en la historia de los siglos podra vatisinar que, España triunfante de sus adversarios, ha sido mas protegida, que humillada, y mas heroyca, quanto mas ha tenido que vencer.

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[116] El vicario de coro 15 ó 20 días antes de este suceso anunció repetidas veces que Caracas sufriria un gran azote el jueves santo. El señor Millares: el gobernador de Coro, su asesor y muchos oficiales se lo oyeron: es de notar que los pueblos leales y recien arrepentidos no han padecido.

[117] D. Juan Budia, capitan del regimiento de la Reyna y Don Jose Vila del comercio de aquellas provincias son los embarcados en el Volador, que han estado con grillos y cadenas en las bovedas de Valencia, Caracas y la Guayra, acusados de contra-revolucionarios por la justa causa, y sentenciados a muerte por el gobierno intruso: con Vila siguió la misma suerte al Vizcayno, Instuita [sic], y otros.

¡Que esperanza puede confiar á nuestros vecinos de colidar su plan destructor! ¿á donde encontrarán apoyo de su felonia, de su ingratitud, de su inhumanidad! Quien les librará de las venganzas del cielo, y de la espada nacional que reclama sus ultrages? Aun quando no se reproduzca la horrible cátastrofe de Caracas, *por lo que rogamos á Dios para que los inocentes no sean confundidos con los culpados*, basta la proteccion visible que la Providencia dispensa á la santa causa de las Españas, para que la suerte de los revolucionarios de Buenos-Ayres, sino tan infeliz como la de los de Venezuela, les sea individualmente aun aciaga. Compatriotas de Buenos Ayres huid de entre los perseguidores de la inocencia porque es infalible que la Nacion triunfa, Dios la protege, venga á los que la insulta, y acelera el momento de su verdadera libertad. ¡Que delincuente ha de preservarse del golpe terrible de su brazo justiciero!

31

Anónimo, "Puerto Rico 21 de Abril. Catástrofe de la Provincia de Venezuela", *Gaceta del Gobierno de México*, México, 25 de agosto de 1812, tomo III, Nº 278.[118]

El juéves santo, 26 de marzo, á poco mas de las cuatro de su tarde se sintió un gran terremoto, que se asegura duró como unos cinco minutos, el cual se repitió en la misma tarde, con interrupcion de otros diez, por el espacio de tres cuartos de hora: tambien se sintieron algunos temblores en los dias siguientes, aunque menos violentos; y el 4 de abril en la tarde, uno bastante fuerte.

Las funestas resultas de que hasta hoy 20 de abril se tiene noticia en esta de Puerto Rico, son haber quedado la ciudad de Caracas asolada en la mayor parte; y aunque no se sabe la gente que ha perecido en sus ruinas, se tiene por cierto que pasarán de diez mil almas: los habitantes que han tenido la fortuna de salvarse, viven en el campo en chozas.

La Guayra ha quedado enteramente arruinada: sus fortificaciones y castillos, inservibles: sin una casa habitable. Se asegura por personas que se hallaban alli aquel terrible dia, que una tercera parte de su población habia perecido, y se sabe que habia ya reunidos mil y quinientos heridos.

La ciudad de Barquisimeto, arruinada en la mayor parte, enterrada toda la artillería con que la habian fortificado los rebeldes, y envueltos en la ruina la

[118] N de A: La relación aquí publicada (que pertenece a una carta redactada por José Ceballos) por la *Gaceta de México* también fue inserta en *El Conciso*, Cádiz, 2 de junio de 1812, y puede hallarse en la entrada 22.

mayor parte de dos mil y doscientos hombres que habian reunido allí para destruir á Monteverde, de quien se hablará mas adelante.

Pueblo de Aritaque, hundido. Santa Rosa idem. Lugar de Caudare, con asombro arruinado. Ciudad de S. Felipe, en peor situación. Aquí han quedado enterrados trescientos cuarenta y ocho hombres que habia de guarnicion, y se destinaban tambien para batir á Monteverde.

Ciudad de S. Cárlos, asolada. Caramacate, con mucha ruina. Puerto Cabello y la Victoria, se asegura que han padecido tambien mucho; pero no hay noticia segura de lo acaecido en estos dos pueblos; así como tampoco la hay de Cumaná y Nueva Barcelona, aunque se asegura que la primera ha padecido basstante.

Habiéndose proclamado el 17 de marzo en el pueblo de Siquisique de la provincia de Caracas el reconocimiento del legítimo gobierno, pidió aquel vecindario al señor capitan general de Venezuela, residente á la sazon en la fiel y constante Coro, le auxiliase, como lo hizo con poco mas de 300 hombres, al mando de D. Domingo Monteverde, capitan de fragata graduado, y comandante de 130 soldados que de batallones de marina envio el señor comandante del apostadero de la Habana. En Siquisique aumentó sus fuerzas hasta unos 500 hombres, y con ellos determinó batir á mas de 800 que los rebeldes tenian en Carora; y asi lo hizo el 23 del mismo mes de marzo, matándoles 83, haciéndoles mas de 160 prisioneros; y poniendo en dispersion y vergonzosa huida al resto, les tomó toda la artillería, que consistia en ocho cañones de distintos calibres, y todas las municiones y efectos: y despues de haber restablecido el órden, y haber jurado al legítimo gobierno el vecindario de Carora, ha recibido Monteverde diputaciones de la ciudad del Tocuyo, que ha padecido muy poco con el terremoto, de la de Barquisimeto, del pueblo de Quibor, y de otros varios que no expresa en sus partes manifestando haberse reconocido en ellos al rey y gobierno legitimo que le representa, y pidiéndole proteccion, que les ha dispensado en la manera que le permite su situacion.

Monteverde al dar parte de estos acontecimientos al gobernador de Coro, le pide tropa y municiones, que le iba á enviar en lo que pudiese; pero es sumamente sensible, que por absoluta falta de dinero (pues no hay un real en Coro) no pueda aquel gefe equipar la gente que con él podia proporcionar; mas sin embargo, es probable que Monteverde marche sobre Valencia, que parece no ha padecido en el temblor, y que deshaga el congreso venezolano, que se halla allí por haberse trasladado desde Caracas poco antes del terremoto.

A mediados de diciembre dispusieron los rebeldes enviar contra la fiel provincia de Guayana una expedicion por mar, que hostilizandola por el Orinoco, al mismo tiempo que tropas de desembarco lo hiciesen por tierra, la subyugasen. En efecto, la expedicion entró en el Orinoco á mediados de marzo; el 25 llegó frente de las fortalezas de la antigua Guayana; y cuando se creía victorioso, el mismo juéves santo 26, en su tarde, fue tan completamente batida por las fuerzas marítimas de los guayaneses, que no se salbó una sola vela de las treinta de que se componia la expedicion salida de Cumaná: represaron un bergantin que habia apresado en las bocas del rio la expedicion, y en él cogieron 115 fusiles nuevos, 55 que necesitan compostura, y mas de 70 quintales de pólvora: artículos ambos que hacian suma falta á los guayaneses.

De este suceso ha dado parte el gobernado de Guayana con fecha 27 de marzo:[119] y despues de la llegada aquí han comisionado á conducirle, y á solicitar auxílios, se asegura por noticias llegadas de las colonias inmediatas, que despues de haber concluido tan felizmente la expedicion maritima, habian batido y derrotado completamente los guayaneses a unos 500 ó mas hombres que por el parage llamado Borbon, á 14 leguas de la capital, habian pasado el rio para hostilizarla por tierra.

Obsérvase que el terremoto del jueves santo, en que celebra la iglesia los misterios sublimes de nuestra sagrada religión, fue el dia mismo que eligieron los rebeldes de Caracas en 1810 para separarse del gobierno legítimo; y segun aseguran los que presenciaron aquel suceso, ha sido destruida Caracas á la misma hora en que hace dos años se publicó en ella el bando de aquel trastorno.

Que en el mismo dia que la provincia de Caracas ha padecido tan grandes estragos, los guayaneses han abatido su orgullosa altanería.

Que esta provincia leal, ni las fieles de Coro y Maracaybo han padecido estrago alguno, aunque se sintió en ellas el temblor; ni tampoco han padecido los pueblos de la de Caracas en que siempre se ha manifestado adhesion al legítimo gobierno, como Velencia y el Tocuyo; ni los en que á la sazon estaban ocupados por las armas del rey. Podrá ser casualidad, pero son demasiado notables las particularidades de estos sucesos, para no reconocer en ellos los designios de la divina providencia.

(Carta fidedigna).

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[119] Y lo trae el Ramillete de Cuba, aunque no tan circunstanciado.

32

Anónimo, "Historical Chronicle. Foreign Events. South America", *Universal Magazine*, Londres, septiembre de 1812, p. 254.[120]

Earthquakes &c. In the short space between the 28th of March and the 2th of May last, 1812, a succession of dreadful physical events has demolished some of the finest cities in this quarter of the world, and shaken several of the islands to their foundations. On the 26th of March, the city of Barquesmeto was buried in ruins by a most dreadful earthquake; Ariquala was sunk, Santa Rosa also sunk, Caudare and Phelipe totally destroyed, and St. Charles and Caramoate greatly injured. In the Caraccas the same calamity has been equally tremendous. The citites of Caraccas, Victoria, Valentia. Porto Cavello, Laguira, New Barcelona, Maiquetia, and Cumana, have been almost entirely ruined.

The same, or similar subterranean causes, which have so severely desolated the continent, about the end of April manifested their influence among the West Indian Islands, early in May a volcano or *Soufriere,* in St. Vincent's, which had long been quiescent, poured out fire and smoke, and ashes, in immense quantities, accompanied with dreadful explosions. Two of the principal rivers in the island have been dried up, and new ones formed. The ashes and stones thrown out were on some estates, two or three feet thick, and the quantity of a lighter kind floating in the air, darkened the atmosphere to an extraordinary degree.

Soon after the volcano at St. Vincent's begun to explode, it seems the heavy and intense darkness came over Barbadoes, continuing from seven in the morning till the afternoon, accompanied with the sound, as was thought, of distant thunder.

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120 N de A: Esta relación parecer ser extraida de la carta de José Ceballos, inserta en *El Conciso* de Cádiz (ver entrada 22) y en la *Gaceta de México* (entrada 31).

33

Anónimo, "(Extérieur). Caraccas, le 17 juillet", *Le Moniteur Universel*, Paris, 28 de septiembre de 1812, Nº 372.

Le journal espagnol, intitulé l´Argus américain, s´exprime en ces termes:

"Notre ville n'est plus qu'un monceau de ruines. On n'avant jamais éprouvé dans la province de Vénézuela un tremblement de terre aussi violent. On ignore encore le nombre d´individus qui ont péri dans cette malheureuse catastrophe. C'était un spectacle déchirant de voir sur les débris des maisons des mères appelant à grands cris leurs enfants, des vieillards mutilés soutenus par leurs fils, des filles éplorées cherchant de tous côtés des parents ou des protecteurs. Le gouverneur général Miranda a déployé dans cette occasion l'activité et l'humanité la plus remarquable. On s'occupe dans ce moment-ci à déplacer les décombres. Nous donnerons de plus amples détails sur ce funeste événement qui le sortira pas de notre mémoire."

34

Patricio Curiñancu[121], "Articulo Comunicado", *Aurora de Chile. Periódico Ministerial y Político*, Chile, 11 de Febrero de 1813, tomo 2, Nº 6, p. 3.

Caracas ha sufrido un golpe terrible en su naciente libertad, porque aquel gobierno se descuido en uniformar la opinion publica creyendo sin duda que la verdad de sus principios y las ventajas consiguientes al rango y gerarquia á que habia acendido aquel pueblo, eran tan palpables é igualmente conocidas de todos sus individuos, que no habria alguno tan necio, que no las apeteciese, y no estubiese dispuesto á sostenerlas á costa de qualquier sacrificio, que debia necesariamente ser recompensado con la lagueza ó en su persona, ó en su posteridad. Pero el gobierno se engaño. Habian centenares de fanaticos, habian credulos, habian egoistas. Unos sostenian la causa de los opresores, figurandose que encontrarian en ellos un apoyo seguro á sus fortunas. Otros mas sabidos se mantenian en una taimada neutralidad, reservando declararse á favor del que triunfase, con lo que sin incomodidad ni riesgo venian á disfrutar de las fatigas de los demas y á reirse de las desgracias de los vencidos.

[121] N de A: Este artículo comunicado sobre los sucesos ocurridos en Venezuela para 1812 corresponde al chileno Camilo Henríquez (sacerdote, escritor y político), quien se identificó en ese escrito bajo el seudónimo de Patricio Curiñancu.

Pero esta cuenta, que se ha hecho en millares de ocaciones, ha salido errada otras tantas veces, y ultimamente en Venezuela.

Un horrible terremoto, semejante á los que ha padecido esta ciudad, la de Concepcion, Quito, Lima, Lisboa, la Calabria, y casi todos los puntos del globo, consternó aquella tierra. La supersticion, este azote de los pueblos, mas funesto que los meteoros mas terribles, esta plaga antigua del genero humano, siempre auxiliar de la tirania, y que se acompaña siempre de la ignorancia, proclamó á este fenomeno tan natural y frequente, como un signo infalible de que el cielo se intereza en que diez y seis millones de nacionales volviesen á la suerte de las bestias y continuasen viviendo en la esclavitud de la nacion mas cruel, mas atrasada y mas inmoral del mundo, sumidos en perpetua desesperacion y hechos esclavos de los esclavos de los Franceses.

Un marino Español se aprovechó de este accidente porque siempre los marinos Españoles con iguales juegos de manos han hecho creer á los hijos de America que son arbitros de la voluntad del Ser Supremo. Asi Colon en la Jamaica les hizo entender á seis cientos mil Indios infelices, ó á un millon como dice el Venerable Obispo las Casas, que un casual eclipse era indicante de que debian sometersele; como lo creyeron y perecieron despues todos, unos en las minas, otros quemados vivos, otros degollados, otros desquartizados para mantener á los perros con sus carnes. Los de Venezuela se entregaron á un nuevo Colon, y han sido tratados á la Española. Han tenido la misma suerte los que pelearon por la libertad, que los que la miraron, y ayudaron á los tiranos. Tres cientos de sus mismos adictos y faccionarios fueron envenenados por ellos, por que no tenian como hacerles causa; y dixeron que morian de peste. De este modo salieron mejor los enemigos declarados, porque infinitos de ellos huyeron con tiempo para volver á la carga. Han sido medidos con la misma vara los patriotas y los sarracenos, porque de todos se desconfia, y con razon. De los unos porque son enemigos, de los otros porque son viales, y tan insensibles que no sienten el desprecio de sus berdugos. Este ha sido siempre el sistema nacional, destruir á los que alguna vez pueden serles contrarios: esto mismo ha hecho en todos los puntos que han conquistado; esto hicieron en toda la America; lo hicieron con los Moriscos, lo hicieron en Oran, quando lo conquisto Pedro Navarro; esto han hecho en Quito, Cochabamba, &e. &e.

Compatriotas: estas son indirectas del Padre Cobos para que aprendais en cabeza agena. Tomemos ya un lenguaje mas serio. Una muerte noble es sin duda preferible á un yugo infame y eterno, y sobre todo á la muerte digna de los malvados. Quan duras medidas se adoptarina para reduciros á la im-

posibilidad de sacudir las cadenas, cuyo peso creceria inmensamente! Estas medidas de seguridad comprehenderian á todos, ni se eceptuarian los hijos y parientes de los nuevos autores de la esclavitud. No estudieis en engañaros: la division fue siempre la vanguardia de la tirania; y la seduccion su precursora. Ya sabeis quan sanguinarias han sido las disposiciones de las Cortes en medio de las convulsiones y proxisismo de su muerte. Tened á la vista la suerte del Cacique de Hayti, que ayudó á construir el primer fuerte español en esta parte del mundo. Sigamos la conducta de nuestros sabios Araucanos, que deben su libertad á todo el odio inextinguble y á toda la desconfianza de que son dignos nuestros horribles progenitores. Ah! admiradores de los extraños miramos con desden lo grande y sublime que tenemos dentro de casa. Tengamos un poco de firmeza mientras el genio extraordinario de la epoca presente, el nuevo Tito, purga la tierra de una raza abyecta, enemiga de la luz, y que exterminaría á los hombres al pretexto de servir al Dios de Caridad.

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Patricio Curiñancu.

Figura 4: Imagen del artículo comunicado que publicaría para febrero de 1813 Camilo Henríquez bajo el seudónimo de Patricio Curiñancu.

35

Anónimo, "Charles Town, febrero 15", *Journal des Débats*, Paris, 2 de abril de 1813.[122]

Un periódico de esta ciudad, de 8 de febrero, dice que según las noticias recibidas de La Guaira en fecha 9 de noviembre (1812), Mr. Scott enviado de los Estados Unidos cerca del antiguo gobierno de Caracas, no había podido realizar su misión. Como este periódico no ha, sido bien informado de lo acontecido, nosotros trataremos de establecer los hechos con la mayor exactitud.

Cuando se supo en los Estados Unidos el horrible suceso del terremoto ocurrido en Caracas el 26 de marzo de 1812, se abrieron, suscripciones para socorrer a los desgraciados habitantes de sus provincias. El gobierno y los particulares contribuyeron generosamente; cinco buques cargados de víveres y medicinas fueron expedidos inmediatamente. Mr. Scott condujo a La Guaira estos inapreciables socorros en una circunstancia tan crítica y fueron recibidos por el gobierno de Caracas.

Pero mientras que el pueblo de los Estados Unidos acudía de lejos para aliviar a los infortunados del desdichado pueblo colombiano, los ingleses, vecinos de sus costas, que desde tres años atrás sabían de la miseria de esa gente, no mostraron el menor signo de interés o de piedad. Sus negociantes, que desde largo tiempo hacían el comercio con ese país, al no encontrar más allí los recursos tan ventajosos ni los considerables provechos, especularon en lo adelante sobre la necesidad, y no enviaron sino los artículos de fábrica más indispensables para los apuros de la vida a cambio de la platería de las iglesias y de la de los particulares robada por los negros con quienes tenían el impudor de negociar.

Sin embargo los buques de guerra de S. M. B. cruzaban a la vista de la costa firme, y durante tres meses ninguno se presentó en sus puertos. De acuerdo con el partido realista español, el gobernador de Curazao proveyó al general Monteverde de hombres y armas para terminar de aniquilar a los habitantes de Venezuela. La historia no ha ofrecido jamás otro ejemplo de coalición tan bárbara, los ingleses y sus dignos aliados solamente fueron capaces de sacar partido a una circunstancia que debía excitar la compasión y el interés de cualquier nación civilizada.

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[122] N de A: La traducción al español que se reproduce aquí es tomada de la obra de Jesús Rosas Marcano *La independencia de Venezuela...*, pp. 134-135.

Pasados tres meses, la fragata inglesa *Orpheus* vino a La Guaira y trajo al gobierno de Caracas despachos del almirante Laforey, comandante de las Antillas, y bajo el pretexto de informarse del estado o de las necesidades de sus administrados, llevaron a bordo (contra las leyes del país) un millón de pesos pertenecientes a algunas casas inglesas establecidas en Caracas.

Poco tiempo después, el partido realista tomó la ventaja. Al encontrar en el puerto de La Guaira los buques llevados por Scott, el gobierno cometió la atrocidad de secuestrados. Mr. Scott fue maltratado y arrestado hasta el mes de diciembre. Trescientos habitantes de Caracas, la mayor parte mujeres y niños, que habían recibido asilo en otro barco americano para escapar de la venganza de Monteverde, perecieron en gran número cuando las baterías de La Guaira dispararon sobre el buque bolas de fuego. Al llegar éste a Curazao fue embargado, se burlaba el derecho de gentes bajo el pretexto de que la guerra podría ser declarada entre la América y los Estados Unidos. Se prohibió a los desgraciados amontonados abordo de descender a tierra, y se les ordenó de abandonar inmediatamente la colonia; al no encontrar asilo alguno en ninguna parte, se refugiaron en Cartagena donde fueron socorridos y acogidos por un pueblo hospitalario.

36

House of Representatives, "Wednesday, April 29, 1812", *Journal of the House of Representatives of the United States*, *1811-1813*, 1813, vol. 8, pp. 317-320.[123]

[....].

A motion was made by Mr. Macon, that the House do come to the following resolution:

Resolved, That the Committee of Commerce and Manufactures be instructed to report a bill authorizing the President of the United States to cause to be purchased –barrels of provisions, and to have the same exported to some port in Caraccas, for the use of the inhabitants who have suffered by the **earthquake**; and, also, authorizing him to cause to be purchased –barrels

[123] N. de A: Parte de las resoluciones dictaminadas en las sesiones del Congreso aquí expuestas, aparecen publicadas con anterioridad, bajo el mismo título, en *The Evening Post,* New York, 02 de mayo de 1812, p. 2; y en *City Gazette and Daily Advertiser.* Charleston, South Carolina, 09 de mayo de 1812, vol. XXXI, p. 2. Se escoge esta versión por ser la transcripción original de las sesiones y discusiones del Congreso. Hay menciones a estas decisiones del congreso norteamericano en las transcripciones realizadas en las entradas 10, 17 y 19.

of provisions, and to have the same exported to some port in Teneriffe, for the use of the inhabitants who are likely to starve by the ravages of the locusts.

A motion was made by Mr. Randolph, to amend the said resolution by adding thereto the following words: "and to authorize vessels laden with provisions to clear out for any port or ports of the aforesaid country:"

And the question thereon being taken,

It was determined in the negative, Yeas... 30,

Nays... 74.

The yeas and nays being demanded by one-fifth of the members present.

Those who voted in the affirmative, are,

John Baker,	Richard Jackson, jr.	Thomas Sammons,
Harmanus Bleecker,	Joseph Lewis, jun.	Richard Stanford,
James Breckenridge,	Robert Le Roy Livingston,	Philip Stuart,
Elijah Brigham,	James Milnor,	Lewis B. Sturges,
Epaphroditus Champion,	Jonathan O. Moseley,	Benjamin Tallmadge,
John Davenport, jun.	Joseph Pearson,	Uri Tracy,
William Ely,	Timothy Pitkin, jun.	Pierre Van Cortlandt, jr.
Asa Fitch,	Elisha R. Potter,	Laban Wheaton,
Charles Goldsborough,	John Randolph,	Leonard White,
Edwin Gray,	William Reed,	Thomas Wilson.

Those who voted in the negative, are,

William Anderson,	Felix Grundy,	Stephen Ormsby,
Stevenson Archer,	Bolling Hall,	Israel Pickens,
David Bard,	Obed Hall,	William Piper,
Burwell Bassett,	John A. Harper,	James Pleasants, jun.
William W. Bibb,	Aylett Hawes,	Benjamin Pond,
William Blackledge,	John M. Hyneman,	John Rhea,
Adam Boyd,	Richard M. Johnson,	John Roane,
John Clopton,	Joseph Kent,	Jonathan Roberts,
Robert Brown,	William R. King,	Ebenezer Sage,

William Butler,	Abner Lacock,	Ebenezer Seaver,
John C. Calhoun,	Joseph Lefever,	John Sevier,
Langdon Cheves,	Peter Little,	Adam Seybert,
Matthew Clay,	Aaron Lyle,	John Smilie,
James Cochran,	Nathaniel Macon,	George Smith,
Lewis Condict,	Thomas Moore,	John Smith,
William Crawford,	William M'Coy,	Silas Stow,
Roger Davis,	Samuel M'Kee,	William Strong,
John Dawson,	Alexander M'Kim,	George M. Troup,
Joseph Desha,	Arunah Metcalf,	Charles Turner, jun
Samuel Dinsmoor,	James Morgan,	Robert Whitehill,
Elias Earle,	Jeremiah Morrow,	David R. Williams,
William Findley,	Hugh Nelson,	William Widgery,
James Fisk,	Anthony New,	Richard Winn,
Thomas Gholson,	Thomas Newbold,	Robert Wright.
Isaiah L. Green,	Thomas Newton,	

A motion was made by Mr. Nelson, to amend the resolution by adding thereto the following clause: "and that the committee be instructed to inquire into the expediency of authorizing the President of the United States to grant licenses to vessels laden with provisions to be cleared out for the ports in the Caracas."

And the question thereon being taken,

It was determined in the negative.

A division of the question on the said resolution was called for by Mr. Rhea: Whereupon.

The question was taken on the first member thereof, to wit: from the beginning to the word "**earthquake**,"[124] inclusive:

And unanimously resolved in the affirmative, every member present voting therein, viz:

[124] N de A: Así en el original.

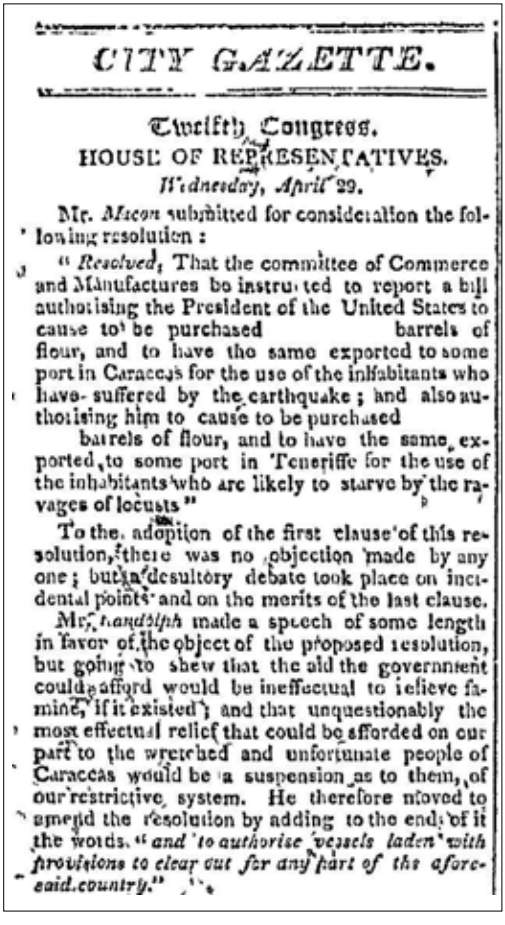
Willis Alston, junior,	Felix Grundy,	Timothy Pitkin, jun.
William Anderson,	Bolling Hall,	James Pleasants, jun.
Stevenson Archer,	Obed Hall,	Benjamin Pond,
John Baker,	John A. Harper,	Elisha R. Potter,
David Bard,	Aylett Hawes,	John Randolph,
Burwell Bassett,	Jacob Hufty,	William Reed,
William W. Bibb,	John M. Hyneman,	John Rhea,
William Blackledge,	Richard Jackson, jun.	John Roane,
Harmanus Bleecker,	Richard M. Johnson,	Jonathan Roberts,
Adam Boyd,	Joseph Kent,	Ebenezer Sage,
James Breckenridge,	William R. King,	Thomas Sammons,
Elijah Brigham,	Abner Lacock,	Ebenezer Seaver,
Robert Brown,	Joseph Lefever,	John Sevier,
John C. Calhoun,	Joseph Lewis, jun.	Adam Seybert,
Epaphroditus Champion,	Peter Little,	Samuel Shaw,
Langdon Cheves,	Robert Le Roy Livingston,	John Smilie,
Matthew Clay,	Aaron Lyle,	George Smith,
James Cochran,	Nathaniel Macon,	John Smith,
John C. Clopton,	Thomas Moore,	Richard Stanford,
William Crawford,	William M'Coy,	Philip Stuart,
John Davenport, junior,	Samuel M'Kee,	Silas Stow,
Roger Davis,	Alexander M'Kim,	William Strong,
John Dawson,	Arunah Metcalf,	Lewis B. Sturges,
Joseph Desha,	James Milnor,	Samuel Taggart,
Samuel Dinsmoor,	James Morgan,	Benjamin Tallmadge,
Elias Earle,	Jeremiah Morrow,	Uri Tracy,
William Ely,	Jonathan O. Moseley,	George M. Troup,
William Findley,	Hugh Nelson,	Charles Turner, jun.
James Fisk,	Anthony New,	Laban Wheaton,
Asa Fitch,	Thomas Newbold,	Leonard White,
Thomas Gholson,	Thomas Newton,	David R. Williams,
Thomas R. Gold,	Stephen Ormsby,	William Widgery,
Charles Goldsborough,	Joseph Pearson,	Thomas Wilson,
Edwin Gray,	Israel Pickens,	Richard Winn,
Isaiah L. Green,	William Piper,	Robert Wright.

The question was then taken on the second member of the resolution [plaga de langosta en Canarias], to wit; the residue thereof,

And determined in the negative, Yeas... 47,

Nays... 57.

The yeas and nays being demanded by one-fifth of the members present, [...].



CITY GAZETTE.

Twelfth Congress.

HOUSE OF REPRESENTATIVES.

Wednesday, April 29.

Mr. *Macon* submitted for consideration the following resolution:

"*Resolved*, That the committee of Commerce and Manufactures be instructed to report a bill authorising the President of the United States to cause to be purchased barrels of flour, and to have the same exported to some port in Caracca's for the use of the inhabitants who have suffered by the earthquake; and also authorising him to cause to be purchased barrels of flour, and to have the same exported to some port in Teneriffe for the use of the inhabitants who are likely to starve by the ravages of locusts"

To the adoption of the first clause of this resolution, there was no objection made by any one; but a desultory debate took place on incidental points and on the merits of the last clause.

Mr. *Randolph* made a speech of some length in favor of the object of the proposed resolution, but going to shew that the aid the government could afford would be ineffectual to relieve famine, if it existed; and that unquestionably the most effectual relief that could be afforded on our part to the wretched and unfortunate people of Caraccas would be a suspension as to them, of our restrictive system. He therefore moved to amend the resolution by adding to the end of it the words, "*and to authorise vessels laden with provisions to clear out for any part of the aforesaid country.*"

Figura 5: Primera página del diario *City Gazette and Daily Advertiser*, donde se exponen algunas de las resoluciones emitidas por el Congreso de los Estados Unidos.

Narraciones, descripciones y testimonios

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Louis Delpeche, "Relación del último terremoto de Caracas. Diciembre de 1812", *Journal de Paris*, Paris, 15 de mayo de 1813[125].

[125] N de A: Este texto, original de Louis Delpeche (agente francés al servicio de la revolución de independencia en Caracas hacia esos años, cuyo título en francés es "Relation du dernier tremblement de terre de Caracas"), fue publicado por primera vez en The Philosophical Magazine (Londres, Vol. XLI, marzo de 1813, pp. 161-166), con el título "Account of the late earthquake at teh Caraccas", bajo el seudónimo de J. H. S.; en esa oportunidad, el editor del magazine colocó la siguiente nota al pie de página del artículo: "This interesting narrative is the production of a French gentleman, who has resided many years at the Caraccas, and was an eye-witness to the scenes which he describes. He was taken prisoner, on his return to France, on board the Ame¬rican ship Dolphin, by Capt. Malcolm of the Rhin frigate. To the latter gentleman our readers are indebted for the publicatíon of the narrative. –Edit." Poco después, esta versión fue reproducida íntegra y fielmente (con el mismo título y la misma sigla firmante) en Filadelfia por The Analectic Magazine (agosto, Vol 2, pp. 164-168), conservando, inclusive, el mismo pie de página del editor. La versión que se reproduce aquí es tomada de la obra de Jesús Rosas Marcano (La independencia de Venezuela..., pp. 135-140), la cual aparece traducida al español tal como se observa. El editor del Journal de Paris también quiso acompañar el texto de Delpeche con una nota, aunque en esa oportunidad no la colocó a pie de página, sino como epígrafe: "El terremoto que tuvo lugar el último año en la comarca de Caracas y que destruyó la bella ciudad del mismo nombre, como también otras comunidades de esta vasta y rica provincia, no ha sido, hasta hoy, sino superficialmente descrito por los periódicos europeos. Esta conmoción extraordinaria se hacía sentir todavía en el mes de diciembre de 1812. Los pormenores de la memorable catástrofe, las circunstancias que la acompañaron, están llenos de interés y creemos hacer algo agradable a nuestros suscritores al consignar todas esas circunstancias y todos esos por¬menores en Le Journal de Paris." La narración de Delpeche fue reproducida en muchas ocasiones, y en algunas de ellas se mantuvo el anonimato, estilo común en el siglo XIX temprano. Fue posible detectar, de entre esas tantas versiones, dos traducciones al alemán de este mismo texto; una de ellas apareció en el Zeitung für die elegante Welt Berlin (bajo el título "Das Erdbeben zu Caraccas in Jahr 1812, von einem Augenzeugen beschrieben", Berlin, Vol. 13, Nº 115, del 10 de junio de 1813, pp. 915-918), y la otra en una reproducción fotostática y sin pie editorial (pero editada en Berlin, probablemente) hallada en la sección Libros Raros y Manuscritos de la Biblioteca Nacional de Venezuela (cota: 987.7, B 554, posee nueve páginas y su título origal en alemán es Beschreibung des schrecklichen Erdbebens, welches in vorigen Jahre in der Provinz Caraccas in Amerika gewüthet, und die schöne Stadt gleiches Namens, so wie noch viele andere Orte dieser reichen und großen Provinz zerstörte. Nebst einigen Betrachtungen über Erdbeben überhaupt), con fecha señalada solamente como 1813, la cual es antecedida por otra nota editorial que dice: "El horrible terremoto que ocurrió el año pasado en el paisaje Caraccas, y que destruyó la linda ciudad del mismo nombre, así como muchos otros sitios de esta próspera y grande provincia, hasta la fecha ha sido descrito solamente superficialmente en diarios europeos. Las circunstancias exactas de este acontecimiento extraño son las siguientes." El título de esta versión fue "Descripción del horrible terremoto, que ha rabiado el año pasado en la provincia de Caracas en América, y que destruyó la linda ciudad del mismo nombre, así como muchos otros sitios de esta próspera y grande provincia. Asimismo como algunas reflexiones sobre terremotos en general." Luego de ello, hacia el final de la publicación, el editor insertó un texto presumiblemnte de su autoría bajo el título "Erdbeben, Erderschütterung", el cual se presenta en la entrada 90. La traducción de ese documento y del que se transcribe en esta entrada (a través de la cual ha sido posible detectar todos los pormenores de las publicaciones de Delpeche), fue realizada por Michael Schmitz. Por otro lado,

El 26 de marzo de 1812, a las cinco de la tarde, se sintió la primera conmoción. El aire estaba tranquilo, el calor excesivo; nada precedió ni anunció el terrible acontecimiento. La primera sacudida de la cual nos apercibimos fue lo suficientemente fuerte para poner las campanas en juego. No duró sino seis segundos. Durante el intervalo de los diez o doce segundos posteriores, la tierra fue agitada por un movimiento ondulatorio parecido al de la mar en un tiempo de calma. Se creyó entonces que la crisis había pasado, pero pronto se escucharon ruidos subterráneos y detonaciones eléctricas mucho más violentas que las explosiones del trueno. La tierra, sacudida con una velocidad que no sabría describir, parecía hervir como el agua expuesta al calor del fuego violento. Durante tres o cuatro segundos un ruido sordo se hizo escuchar; algunos minutos después la tierra sufría nuevas agitaciones en sentido opuesto. De Norte a Sur. De Este a Oeste. Este corto espacio de *tiempo* fue suficiente para derribar de arriba abajo la ciudad de Caracas. Más de otras treinta ciudades, las casas de campo, los numerosos establecimientos extendidos sobre la superficie de esta deliciosa provincia, en un instante todo fue destruido en una extensión de trescientas millas. Noventa mil personas cesaron de vivir y millares huyeron horriblemente heridos.

Situada al pie de la más alta montaña, llamada "La Silla" y a la entrada de un vasto llano regado por varios ríos, la ciudad de Caracas se elevaba considerablemente sobre el nivel del mar y gozaba constantemente de una temperatura fresca y agradable. Ese día (era Jueves Santo) los habitantes se habían transportado en masa a las iglesias de la ciudad; éstas les sirvieron de tumba. Las iglesias de la Trinidad y de Altagracia, las más vecinas a la montaña, sufrieron también los más terribles efectos de la extraordinaria conmoción; aunque algunas habían sido levantadas a más de ciento cincuenta y seis pies sobre el nivel del suelo, las ruinas no pasan más allá de los cinco o los *seis* pies de altura; se puede formar una idea de la violencia del choque que estremeció esos enormes edificios, *si* se considera que estaban sostenidos por columnas y pilastras de treinta a cuarenta pies de circunferencia, de las que se encontraron apenas algunos vestigios. Una soberbia ringlera de edificios de dos pisos con capacidad para cuatro mil hombres y que servía de depósito de artillería

Humboldt refiere un manuscrito de Delpeche en el capítulo destinado a los terremotos ("Earthquakes at Caraccas. Connection of this phenomenon with the volcanic eruptions of the West India islands") en su Personal Narrative of Travels to the Equinoctial Regions of the New Continent during the years 1799-1804 (Chapter XIV, Book V, Vol. 4, Londres, 1819), el cual se titula "Sur le tremblement de terre en Venezuela, en 1812", y que resulta casi idéntico a esta relación. La Personal Narrative de Humboldt se encuentra transcrita en la entrada 92.

compartió la misma suerte. Un regimiento de línea, en marcha para juntarse a una procesión religiosa, fue casi enteramente engullido.

No podía describirse el terror y la desolación que se extendieron luego entre los habitantes: la confusión, el desorden, la desesperación, el infortunio y la exaltación religiosa estaban en su colmo. En un principio cada uno se salvó como pudo, prosternándose para implorar la clemencia divina. Los que escapaban a la muerte, igualmente heridos, cubiertos de polvo, con los trajes en jirones, llevando en *sus* brazos algunos niños, enfermos y heridos, ofrecían el espectáculo más desgarrador. Desde el primer momento de terror, durante el cual el deseo de conservarse a sí mismo hizo silenciar toda otra consideración, los desdichados escapados de la muerte huyeron agitados por los más penosos recuerdos; cada uno buscaba en la dolorosa inquietud, un pariente o un amigo, informándose con miradas llenas de espanto. Entre esas ruinas sangrientas y desiertas se veía a algunos de esos desgraciados habitantes que habían conservado la vida, esforzarse en desenterrar sin otro instrumento que sus manos débiles y temblorosas a los vivos y a los muertos que allí estaban sepultados. Todos corrían, aquí y allá, sobre ese vasto cementerio, precipitándose en medio de los escombros, con el oído atento a los gemidos de los que vivían todavía; algunos sepultados para siempre en esas mismas moradas donde minutos antes habían gozado de una tranquila felicidad.

El resto del día y la noche entera fueron consagrados a esta piadosa ocupación. El día siguiente fue necesario rendir los últimos deberes a los muertos, pero fue imposible cumplir las ceremonias fúnebres ordinarias; no habría sido posible encontrar el número suficiente de personas ni los instrumentos necesarios; con el fin, pues, de evitar una epidemia que habría causado el aire infecto, se amontonó los cadáveres en diferentes lugares y se les quemó con la madera extraída de las ruinas. Así fueron empleados los tristes momentos que siguieron a esta catástrofe. Otros trabajos igualmente deplorables quedaban por ejecutarse.

Las provisiones, los muebles, las ropas, todo lo que es necesario a la vida, habían sido destruidos o robado por el populacho y por los negros. Faltaba todo. Un choque tan violento había destruido los acueductos; los arroyos se habían secado o desviado de su curso. No había agua en la ciudad: faltaban envases para recogerla y era necesario ir lejos a buscar una cantidad suficiente para calmar la sed y emplear las manos para llevarla a la boca.

Devorados por el hambre y la sed, sin asilo, quienes poseían casas de campo se refugiaron en ellas, pero ¡infortunadamente!, nada se había salvado. El país no ofrecía sino una vasta extensión de ruinas. Regresaron a la ciudad, donde, entre sus compañeros de infortunio, parecían menos desdichados. El silencio y la soledad de los campos se agregaban, sin duda, al siniestro aspecto de la naturaleza.

Los mercados estaban desprovistos de víveres; los granjeros nada traían a la ciudad. Después de haber errado por los alrededores en la solicitud del alimento, varios murieron de hambre; los que sobrevivieron no obtuvieron su subsistencia sino con grandes dificultades: si no se hubiese salvado cierta cantidad de cacao, de azúcar y maíz (que se vendía en el detal a un precio exorbitante), el hambre hubiera hecho perecer un número mayor de personas que los efectos del terremoto.

Tres mil heridos de todos los rangos fueron reunidos y puestos al borde de un río bajo la sombra de algunos árboles, pero faltaba absolutamente todo, hasta las cosas más indispensables. Las palabras de consuelo era el único remedio que pudo darse a sus males. Se les decía que era necesario conformarse a los decretos de la Providencia y que todo sucedía por el bien.

Esta terrible crisis ofreció a la observación juiciosa de los hombres, el cuadro hiriente de las costumbres y del carácter de los españoles y de los principios sobre los cuales regulan su conducta.

Su extrema insensibilidad es apenas creíble: yo vi a padres de familia que habían perdido cinco o seis niños, amigos que habían perdido todos sus bienes, sin derramar una lágrima. La mayoría se consolaba conversando con una imagen de la Virgen o de algún santo privilegiado. Otros ahogaban, festivamente, su pena en el ron y todos parecían menos afligidos de este suceso, como no lo habrían estado por la pérdida de un proceso que hubiese descargado el golpe a su rango, como nobles, o les hubiese privado de su presencia en alguna asamblea pública o en una procesión religiosa.

El Jueves Santo es, sin duda, la más imponente de las fiestas católicas: es la fiesta que debe inspirar las más piadosas reflexiones, pero en Caracas, como en muchas otras ciudades, ese día las mujeres se ocupan de su tocado, y se preocupan más de agradar a los ojos de los hombres, que de honrar al Todopoderoso: sólo piensan en el placer. Pero apenas se hubo sentido el terremoto, lo creyeron el castigo enviado por el cielo irritado para penar a los mortales por sus crímenes: de inmediato se despojaron de sus elegantes aderezos, y en

señal de penitencia, vistieron burdos trajes. Voluntariamente se sometieron a la disciplina monástica y se golpearon sin piedad el pecho poco antes amado de las más preciosas joyas. En cuanto a los hombres, muchos olvidando sus intrigas galantes, se convirtieron en fanáticos y, con el fin de calmar la cólera celeste, iban en procesión sin otro vestido que una ancha correa, los pies desnudos y la barba larga, llevando alrededor del cuello una cuerda que sujetaba una gran piedra y sobre sus espaldas una cruz de madera, cuyo peso estaba entre las cien y las ciento cincuenta libras. En la ciudad y en todo el país no se veía sino procesiones noche y día. Cada montaña estaba transformada en un calvario, donde el pueblo, muriendo de hambre, imploraba la clemencia divina y besaba, gimiendo, las reliquias de sus santos tutelares.

Cada uno se acusaba de haber atraído la cólera del cielo y de haber causado la desgracia universal. Los que no podían encontrar un sacerdote se confesaban públicamente en los grandes caminos y revelaban robos y muertes secretamente cometidos.

En menos de dos días, alrededor de dos mil individuos (que no habrían tenido jamás la intención) fueron casados. Parientes en otro tiempo despreciados y abandonados por razón de su pobreza, fueron entonces reconocidos. Muchos niños, fruto desgraciado de ilegítimo comercio, que jamás habían conocido padres, los encontraron y fueron legitimados. Se hizo un gran número de restituciones y se terminaron varios procesos. Pero al mismo tiempo, un espectáculo singular y opuesto se ofrecía a la mirada del filósofo: mientras que una parte de los habitantes se apresuraba a expiar sus culpas pasadas, la otra, compuesta de personas que quizá jamás habían cometido mayores crímenes, pero cuya conciencia era poco escrupulosa, aprovechaban la confusión y se hacían culpables de todos los excesos.

Sin embargo las sacudidas continuaban; cada día y a cada hora, se derrumbaban algunas ruinas que habían quedado estremecidas por las primeras conmociones. El 5 de abril, a las cuatro de la tarde, hubo un choque tan violento que varias montañas fueron hendidas y divididas, algunas inclinaron su centro de gravedad y rocas enormes se desprendieron y rodaron hacia los valles.

Desde ese momento hasta las nueve de la mañana, las sacudidas se hicieron tan violentas y tan frecuentes que no pasaban cinco minutos de intervalo entre una y otra y, durante esos cortos lapsos se oían ruidos subterráneos y la tierra estaba continuamente agitada.

Estas conmociones extraordinarias no cesaron sino hasta el mes de diciembre de 1812, época en que abandoné ese desdichado país; y se consideraban como los días más tranquilos, aquellos que sólo habían sentido diecinueve o veinte sacudidas. Todo estaba destruido, las murallas de La Guaira que tenían alrededor de veinte pies de espesor, estaban derribadas. Se observó que muchos ríos habían crecido considerablemente, consecuencia natural de la abertura de montañas, que son al mismo tiempo grandes depósitos de agua. Muchas altas montañas habían sido divididas por el centro, y la llamada "La Silla" había descendido seis brazadas. Es difícil predecir el fin de este terrible acontecimiento, pero se puede arriesgar como una conjetura que terminará con la abertura de varios volcanes. En espera, los infortunados habitantes de esas comarcas, apegados al suelo natal y al no querer abandonar las cenizas de sus padres, han construido, con la mayor pena, viviendas toscas en las que aguardan con resignación estoica el fin de sus males.

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W.D.R, "Earthquake at Venezuela", *The Analectic Magazine*, Philadelphia, octubre de 1814, pp. 301-307.

The dreadful earthquake that shook Venezuela in the month of March, 1812, was one of those awful calamities, in contemplating of which, the mind is humbled into a sense of our utter insignificance and dependence, and spontaneously prostrates itself before the throne of the great Creator of the universe, at the breath of whose word the proudest productions of human art, and the grandest forms of nature, alike pass away as a fleeting vapour. This vast province, to the extent of *more than* 1.200 *square leagues,* experienced the shock at the *same* instant. The duration at farthest did not exceed *thirty seconds.* During this breath of time, mountains and valleys undulated like the billows of the ocean; cities and villages crumbled to pieces, burying in their ruins more than 24.000 human beings; and had the shock continued *thirty seconds* longer, with the same force, it is to be presumed every thing on the surface of Venezuela would have been destroyed.

Various parts of South America, as well on its surface as in its bowels, denote that this part of the earth has been subject to numerous and extraordinary changes, and, indeed, every part of the globe bears evidence of vicissitudes of which we have no record; for it is not improbable the same Omnipotent Being who, when he pleases, can shake our ball to its centre, has, in some of

these awful revolutions of nature, buried a part of the human race as well as their archives, in eternal oblivion.

In no part of the civilized world does superstition and ignorance prevail more than in South America, and it is difficult to describe the electric and universal effect which the earthquake produced over the minds of the unfortunate inhabitants of Venezuela.

The energies of that portion of the community, who had been struggling to emancipate their country from Spain, were suddenly palsied. The great body of the population were stupefied with fear. The priests were assiduous in their exertions to proclaim that this visitation of nature was ordered by the Deity as a punishment for the political crimes of Venezuela. During this state of the public mind, and a few days subsequent to the earthquake, a vapour was seen issuing from the lofty ridge of mountains in front of the city of Caraccas. Consternation seized the minds of the inhabitants, who now supposed that those who had been spared by the earthquake were destined to be destroyed by a volcano. To calm this general alarm, and to ascertain whether this appearance of smoke was really the effect of combustion, and an incipient sign of volcano or not; the executive of Venezuela appointed Doctor William Burke, with another gentleman, a native of the country, as a commission to ascend the mountain and determine the fact by actual observation. The following is the report of Doctor Burke to the executive of Venezuela:

"We began to ascend the mountain, on our mules, at 4 o'clock P. M. *Sunday, 4th April,* by the road of Galipan, which, as it runs along the ridges of the lateral spurs, or winds up the sides of steep hills detached from the main ridge, except at the base, is difficult and tedious. This, added to the great heat of the sun (the thermometer standing at 90º) reflected from the steep sandy road, rendered our ride particularly fatiguing. In our ascent we perceived the surface of the mountain over which we travelled, rent into fissures of from an inch to six inches wide, but the depth various and indefinite. The fissures were to be seen in all parts over which the road passed, whether the side spurs or the main ridge; and they generally ran in the longitudinal direction of the section or part of the mountain which we ascended, dividing the particular ridge along its whole length, and running in lines parallel to the ridge at each side down to its base. At half past 5 o'clock we entered a wood, and in half an hour afterwards reached the summit of this part of the main ridge, close to where the perpendicular cliff named Galipan rises above La Guyra, and threatens destruction to the places below. From this point we continued our route along

the main ridge under the shade of trees for about two miles, when we arrived at the house of Souza, which stands on that part of the ridge, overlooking at once Caraccas and La Guyra; and within a short distance of the point of the mountain, whence the supposed smoke had been seen to issue. Souza's house, though constructed of logs and earth, was nearly rent to pieces from the antecedent shocks; this, and some white patches on the more perpendicular sides of the mountain, from which pieces had been broken by the agitation of the mountain, were the only effects of the earthquake we could perceive here. Having ascertained that neither smoke arose, nor any other volcanic appearance existed on this, the La Guyra side of the mountain, from its summit down to nearly its base, we resolved, though it was then 7 o'clock, and growing dark, to descend the mountain by the same road we had ascended, intending next morning to reascend at another point, so as by gaining the particular spot whence the apparent vapour had risen, to determine the fact finally and satisfactorily. It is proper to observe that the thermometer in the *open air stood on the* ridge at *about* 65° *of Fahrenheit at sun set*, and no doubt would have descended with the approaching cold of the night, which became cloudy, to nearer 55 than 65°, a fact which proved that no unusual degree of heat existed on this part of the mountain. We here also observed several small trees affording a gum of the incense kind, and which on trial by combustion on the lighted end of our cigars, exhaled the same fragrance, or rather much superior to the incense used in churches; this we note with the view to the agricultural prosperity of the country, as we understood this species of tree grows wild in great quantity on many parts of the summit of the mountain, and might be rendered an article of profit by those who should cultivate it. We descended the mountain enveloped in darkness, not having the aid even of star-light, the road difficult and steep, and in many places covered with the ruins of fragments of the mountain which had fallen from one side above us, while, on our other hand, valleys dreadful to view in the day-time from their steepness and depth, yawned below, into which one false step must have hurled both mule and rider. After a laborious and perilous descent of nearly three hours, we beheld the lights of the suburbs of Caraccas at a tremendous distance below us in our front; we arrived, however, without any accident, at the foot of the mountain, and there passed the remainder of the night, which was signalized by two very severe shocks of earthquake. Next morning we took the direction of Savanah Grande: passing through this village we struck to the left for the house of Abila; where, having left our mules, we commenced the ascent of the mountain, which is here very steep and difficult of ascent even for foot passengers.

The same appearance of continued longitudinal fissures in the surface of the mountain presented itself every where, even immense *mica rocks*, with which the mountain abounds, were thus broken; the line of fissure passing through them regularly as through the earthy or softer parts. In examining those fissures, which extended to an immense depth, (but whether below its earthy surface to the more solid and internal bodies of the mountain we cannot say,) we could perceive no signs, either by smell or otherwise, of combustion or mineral influence, which would lead to the conclusion that such an effect had been produced by the violent shocks which those distinct, elevated masses composing the mountains had received, and that if any matter had escaped by those fissures, it was such as had no immediate connexion with combustion; for, as we before observed, not a single sign of that action could be traced by us either this day or the one before. That a matter, however, (we should suppose electric) did escape, appears probable from the circumstance that *one side of the* fissure is universally higher above the other side than the ascent of the mountain warrants, which would seem to indicate that some propelling force had raised the former above the latter. After continued exertions under a mid-day and nearly vertical sun, which shone out clear, and afforded us a prospect of mountains and plains in which were blended all that was sublime and beautiful in nature; we surmounted our difficult ascent, and gained a summit which gave us a near and perfect view of the spot whence had issued the appearance of smoke. It is necessary to observe the mountain here forms a kind of gully or triangular valley, whose long or acute angle points northerly, while its sides are formed on the east by the sleep "Cierro d'Avilla," and on the west by the nearly perpendicular mountain which rises next in height to the Sylla of Caraccas. The base is formed of the spur, on which we stood, to the south, and on the right of which the river Chacao, rising in the junction of the mountain at the north angle, runs into the plain of Chacao. As the north point of the spur on which we were projects like a wedge into the gully or valley, and has an elevation of more than 6,500 feet above the level of the sea, we had a complete view of the left or west side of the valley, from which the supposed smoke had issued, and still continued to issue. There we had the satisfaction of proving that the supposed smoke was no other than the lighted particles of sand and earth raised by the south wind blowing into the gully or valley, during the various fractures of the mountain, and the consequent falling of its projecting or perpendicular masses of stones and earth ; and as a further proof, we saw the dust rise with every increase of the wind, and particularly from the white or bare sandy patches, whence large pieces of the mountain had been detached, or were then falling.

"The trees on the bottom and the lower sides of the valley were covered with this dust, and the innumerable white patches on the almost perpendicular side of the left, or west mountain, left no doubt of the matter. On this side, which we have said is next in height to the Sylla of Caraccas, there are continued shoots or veins of white sand from the summit down lo the river of Chacao, at its base, and from all parts of which shoots we could perceive the dust raised at times by the wind to a considerable height in the form of smoke. With a view of having it still more in our power to dissipate the apprehensions of the citizens of Caraccas and La Guyra, with respect to the existence of an incipient volcano, we penetrated a wood, so as to approach the rising dust, and examine if it partook of a sulphureous or other volcanic smell, which we found was not the case. While engaged in these observations we experienced a severe shock at 2 o'clock P. M., presenting to us the awful spectacle of huge masses of the mountain tumbling around us, in every direction.

"Having perfectly satisfied ourselves, and, we trust, fulfilled the objects of our mission, we struck to the left, and after considerable fatigue gained the summit of the ridge, and descending the south side of the mountain, arrived at its base close to St. Lazarus at 6 o'clock in the evening.

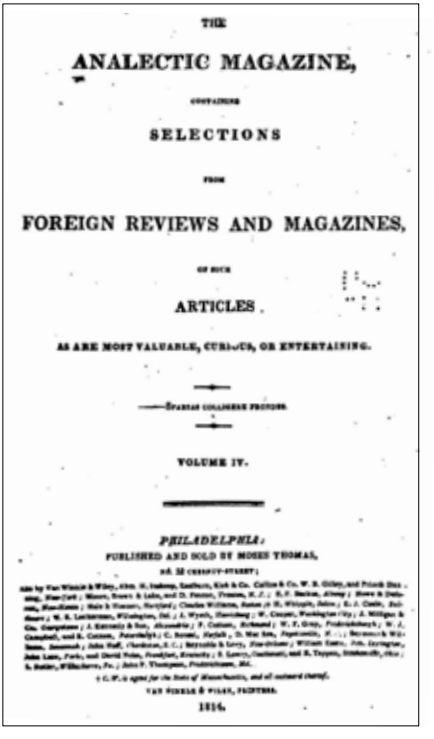
"We conclude by hoping that the inhabitants of Venezuela will perceive they have nothing to fear from any volcanic irruption, and we cannot at the same time forbear expressing our horror at the highly culpable conduct of many, of the priests and other enemies of the republic, who attribute to other sources those results which have their origin in natural causes, in the peculiar construction of our earth, and with which all parts of the globe have been occasionally visited, as if the God of Justice and Goodness would punish a long-oppressed people for breaking their chains, and endeavoring to place their extensive country, like the rest of the civilized world, in a state of improvement and prosperity. We flatter ourselves that the inhabitants of Venezuela will know how to distinguish natural from other causes, and to see that had their houses been constructed as the nature of the country demanded, and the streets of their cities and towns been of sufficient bread, the mortality that unfortunately took place could not have happened. It is, therefore, to the old Spanish mode of constructing houses, with heavy mud and earthen walls, together with narrow streets, that the late calamity is to be principally attributed; and which a different plan of building, such as is used in Italy, Peru, and other places subject to earthquakes, will, under Divine Providence, prevent in future."

The preceding report of Doctor Burke's allayed those fears which had been excited relative to a volcanic irruption, but it could not rouse the people from that despair and apathy which overwhelmed all classes of society since the awful catastrophe; and the consequences, in a moral point of view, have been infinitely more dreadful than their physical calamities.

The residue of 1812, all the year 1813, and the present year, have been marked in Venezuela, by alternate political revolutions, and scenes of horror among the royalists and those struggling for independence, baffling all powers of description. The whole empire of Venezuela presents one vast scene of atrocity and desolation, where the European Spaniards and their South American descendants vie with each other in cruelty, ferocity, fanaticism, and ignorance.

The writer intends shortly to submit further observations to the public on this interesting section of the globe.

New-York, September 11, 1814.


THE

ANALECTIC MAGAZINE,

SELECTIONS

FROM

FOREIGN REVIEWS AND MAGAZINES,

ARTICLES

AS ARE MOST VALUABLE, CURIOUS, OR ENTERTAINING.

VOLUME IV.

PHILADELPHIA:

PUBLISHED AND SOLD BY MOSES THOMAS,

1814.

Figura 6: Portada de la revista *The Analectic Magazine* para octubre de 1814.

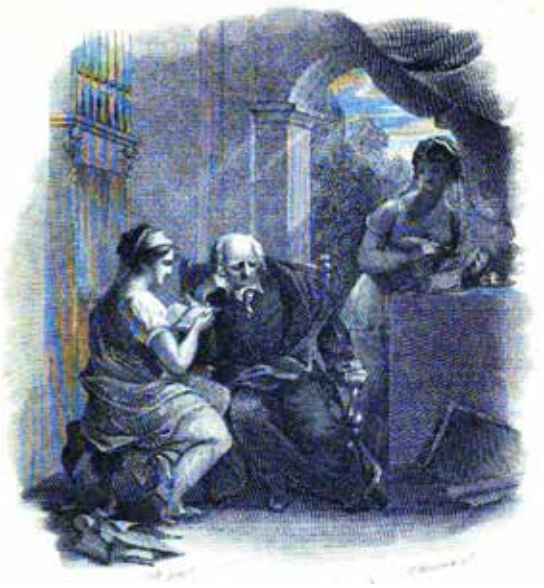


Figura 7: Dibujo de una de las portadas de la revista *The Analectic Magazine* para octubre de 1814.

39

Anónimo, "The Leading Facts relative to the Earthquakes which desolated Venezuela, in South America, in the months of March and April, 1812", *Transactions of the Literary and Philosophical Society of New York*, New York, 25 de marzo de 1815, vol. 1, pp. 308-315[126].

[126] N de A: Esta versión de la narración de M. Drouet (de quien hasta ahora no se conoce su nombre), inserta en este artículo del *Transactions of the Literary and Philosophical Society of New York*, se publica por ser la más completa de las halladas a lo largo de esta investigación, a pesar de que la otra versión encontrada posee fecha anterior (Anónimo, "Earthquakes in Venezuela", *The Medical Repository of Original Essays and Intelligence*, New York, 01 de abril de 1814, pp. 425-428), y guarda un estilo similar con ésta, pues también se trata de un artículo que refiere la narración de Drouet, insertando extractos de la misma. Este caballero francés parece haber visitado Venezuela, de acuerdo a lo que puede leerse en la presentación que realiza el editor de este periódico, y se sabe que publicó un trabajo titulado V*oyage a la Cote-ferme*, publicado en Pointe-a-Pitre, Guadeloupe (de 92 páginas y de fecha 1813), de acuerdo a las pesquisas realizadas para este trabajo. A pesar de dar con la referencia de esta publicación, no ha sido posible encontrarla. Es sabido, además, que quizás Drouet haya sostenido algún tipo de contacto con Miranda, pues así podría interpretarse siguiendo el trabajo de François Dalencour, *Francisco de Miranda et Alexandre Pétion* (Verger-Levrault, Paris, 1955), quien consultó el escrito de Drouet, según se descifra en la página 122: "Un autre document de cette époque est l'opuscule de 92 pages écrit par un voyageur français, Drouet, sous le titre: *Voyage à la Côte-Ferme*..." Por otro lado, Humboldt consultó la narración de Drouet publicada en el *Transactions of the Literary and Philosophical Society of New York*, y la refiere en el Vol. II de su *Personal Narrative*, la cual es transcrita aquí en la entrada N° 92.

During the time that North America was shaken by earthquakes of greater violence than had been experienced before, the regions of the southern section of the western hemisphere, were the seat of more terrible disorders from the same cause.

Mr. Drouet has written the most scientific history of them that I have seen. He had visited Venezuela in a military capacity, and was there when the earthquakes occurred. On his return to Guadaloupe, he published in French a description of the tremendous events that had happened where he had been. From that the materials forming the body of this essay have been extracted.

This ingenious gentleman states, that the mountains surrounding the city of Caraccas, and those forming the chain lying between it and the port of Laguira, have the appearance of extinguished volcanoes. Parcels of lava are found in abundance, as are likewise confused masses of quartz, broken granites, portions of metals which had undergone fusion, with iron and copper almost carbonized; whence, he thinks, it may be concluded that the country had long before experienced the operation of volcanic eruptions.

At the base of these mountains there is no natural disposition of the earth in horizontal layers; but the soil and stones are irregularly jumbled together. The mountain called Sylla contains more volcanic productions than any in the neighborhood of Caraccas, and its summit is nine hundred toises (five thousand four hundred French feet) above the level of the ocean. The city and plain of Caraccas are only five hundred and sixty toises (three thousand three hundred and sixty feet) high. This elevation renders the region one of the most excellent and agreeable upon the globe, although its latitude is no more than eleven degrees thirty minutes north.

The base of Mount Sylla is calcareous, approaching, in many places, to the character of lime or chalk; .and of a micaceous substance intermixed with primitive rocks, and interspersed with metallic veins containing bismuth, plumbago, antimony, iron, and even small quantities of copper and silver. Plants and shrubs scarcely grow upon it; and the bare and parched sides of this and the other mountains which form the borders of the valley of Caraccas, make a most striking contrast with the fertility and luxuriance below. And what is very remarkable, in this mountainous region the earth abounds with saltpetre; insomuch that Mr. Ponsard, after having satisfied himself of the fact, was occupied in establishing a manufacture of the article, when the earthquake laid his works in ruins.

These subterranean commotions are supposed not to have been the first which Venezuela has experienced. From the testimonials extant, there is reason enough to conclude, that the country has undergone violent convulsions in times more remote than the date of history.

During Passion Week, on Holy Thursday, at 4 o'clock in the afternoon of the 26th day of March, 1812, while the streets of Caraccas were filled with processions, and the churches with priests and people, and while the ceremonies of flagellation and bearing the cross were performing, a most destructive earthquake occurred. The cracking of houses, and the descent of tiles, as if acted upon by a gust of wind, were the first notices of it. As the atmosphere was calm, and not a breath of air was stirring, the cause was instantly conjectured.

The shocks succeeded each other with incredible rapidity; and were so strong that persons standing and walking tottered, and were even thrown to the ground.

Private houses, public buildings, and churches, tumbled down in all directions. Clouds of dust enveloped every thing; and the crash of edifices, with their dead and wounded inhabitants, exhibited terrible spectacles on every side.

The wretched survivors wandered about all night; and, the next day were ordered by the magistrates to retire from the ruins of the city, and encamp on the adjoining plain.

The shocks continued almost without interruption during the 27th; and were regularly preceded, by a rumbling and distant noise that added to the horror of the scene. They were repeated at intervals until the 4th of April, when, at four in the afternoon, there was another as violent as that of the 26th of March, and of much longer duration. This completed the destruction of those things which had escaped the former. Of forty churches, only three escaped demolition, and even these were very much damaged. Many other cities were deeply injured; particularly Porto Cavallo, San Philip, and Laguira, in the latter of which only three houses were left standing, the rest having been overturned on the heads of their occupants.

Some of the commotions were partial or local. Certain of them, for instance, which were felt at Caraccas, were not perceived at Laguira; and *vice versa.* The sound preceding and accompanying them was more sensible in high situations. This was aptly compared lo the roaring of thunder under ground; and it was ascertained that there were noises without shocks; though this might arise from the extension of the sound to a greater distance than that of the shock.

As far as could be discovered, the rumours and tremors proceeded from west to east. During the commotions, the atmosphere was observed to have suffered various changes. As there was an almost uninterrupted calm, the heat was considerably increased. Lightning and meteors were multiplied to an alarming degree; although the horizon was not loaded with clouds, nor were there any tokens of an approaching storm.

Mr. Drouet thinks it worthy of investigation, how far the Venezuela earthquakes may have had a connexion with the Cordilleras, with the workings of volcanoes, and particularly with the furious eruption at St. Vincent, an island belonging to the chain of the Antilles, about the beginning of May, 1812. On the theory of earthquakes, this gentleman, after examining the several hypotheses of those who ascribe them to fire acting upon subterranean fuel and forming very elastic vapour; to fire acting upon water and converting it to most powerful steam; to fire producing both rarified air and rarified water; and, lastly, to the subtile, pervading, and irresistible force of electricity; leaves the subject, in that respect, like his predecessors, exactly where he found it.

The first abstract of Mr. Drouet's pamphlet, I shall annex a few of the statements made by residents in Venezuela, to their friends in the United States.

The first is contained in a letter from a merchant in Laguira to his friend in New-York, dated April 1, 1812:

"On the 26th ult. at 4 p. m. we had an earthquake here, which has completely ruined this part of the province. Not a house is standing that any person would venture to remain in a single hour, and nine tenths of the town are level with the ground. From two thousand five hundred to three thousand persons, it is calculated, have lost their lives. Caraccas has shared the same fate. I was there at the time the dreadful catastrophe happened, and escaped by running from the house into a large court yard in which nothing could fall upon me, where I remained until it was over. We had one or more shocks every day since.

"There is not a house in Laguira, nor more than fifty in the whole city of Caraccas, but will have to be pulled down, or the places completely abandoned, which latter, I think, will be the case, and cities and towns built on places adjacent, and of wood. Ten thousand lives are said to be lost in Caraccas, but it is impossible to tell to a certainty. They have been digging out the bodies ever since, and burning them. It is shocking to see, at the close of the day, heads, arms, and legs that have been left unburnt, as the fire dies away:

and the stench is terrible. Every person is ordered out of Caraccas, except laborers, to avoid a pestilence. Three fourths of the wealth of Caraccas are lost; and, as no day has yet passed without a shock, we are waiting with fear and trembling to know when it will be entirely over, or what the effects of the next shock will be. All foreigners, and every person having the means, are leaving the place for the islands and elsewhere."

The next was written by a spectator of the ruins of Laguira, to his correspondent in Philadelphia, and bears the date of the 2th day of April, 1812. The melancholy narration it contains renders it worthy of preservation.

"Many times in my life have I experienced the goodness of a Merciful God toward me, but never so conspicuously as in my preservation during the tremendous exertion of his power, which has shaken the mountains to their foundation, and levelled the greatest part of this city, as also that of Caraccas, with the ground. Thousands and tens of thousands have been buried, and most of them now lie beneath the ruins! The stench arising from the dead bodies is intolerable; such of them as could be come at have been thrown into the sea, or collected into heaps and burnt to ashes. It is imagined that seven eighths of the houses in this city are demolished, and of those which still stand, there are not, perhaps, twenty that will be found tenantable. The customhouse, which was built very strong, is not much injured. The house which I occupy is three stories high, and was likewise very strong; it stood the shock without falling, but it was so much injured that I do not intend to sleep in it, especially as we are constantly kept in a state of alarm by the frequent shocks that have daily taken place ever since the 26th ult. When the first great shock occurred, I ran out of my house, and in my amazement I turned round and beheld it rocking like a cradle, which, with the roaring of the earthquake, the screams of people, and the crashing, perhaps, of a thousand buildings, made the scene horrible beyond-description."

A third account is derived from the communication of another inhabitant and witness, at the same time and place with the preceding:

"On Thursday, at 4 p.m. (the 26th of March) a severe shock of an earthquake was felt here. It came from the east. On its first approach, it appeared as though there was a discharge in the neighbourhood of some thousands of cannon; a moment after the earth began to raise about eighteen inches, and ran in waves for about two seconds, of at least that height; it continued altogether for about one and a half minutes, during which time it prostrated more than two thirds

of the houses, and rendered the others untenantable; killed, at least, one half of the inhabitants, and wounded very many. Neither the strongest fancy, nor the brightest imagination, can come any way near to portraying the dismal aspect of the scene. Words to describe it are not in use; you can form no idea of it. On every side was to be heard my wife! my husband! my children! my sisters! my brothers! where are they! where are they! They are dead! Oh they have perished! These words were uttered in the strongest tone of anguish and despair.

"It was one of the holydays; a day rendered remarkable in christian annals, by being the anniversary of that day on which our Saviour was nailed to the cross an hour only before a representation of that ceremony was to have been carried through the streets. Every church was full, and every one was shaken to the earth, To the amount of nine hundred or one thousand persons can be counted in two churches all having perished. Not a house in Caraccas is inhabited. The people have, as well as here, left the place, and raised tents in the open fields.

"I was a witness to the interment of about fifty, who, on their knees were imploring the protection of the Divinity, and who, at a less distance than twenty steps, were covered by the falling of two houses."

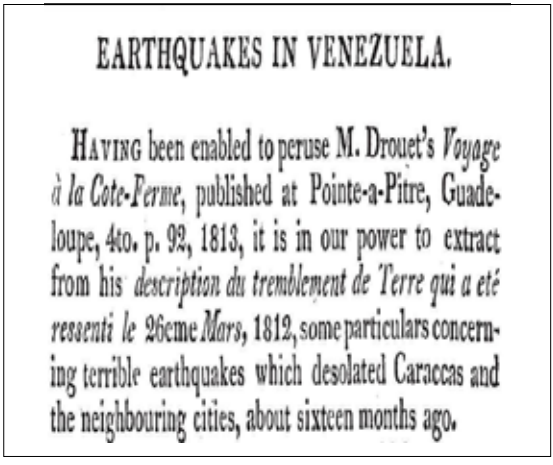
The fourth of these pieces I shall add, is dated April 4th, 1812, at Laguira, and is as follows:

"A very heavy earthquake, which took place here on the 20th ult. has laid this town in total ruins; not a house standing except a few which are so shaken and shattered as to be uninhabitable. The city of Caraccas, fifteen miles distant, is in a still more deplorable condition. There a total fall of all the houses has been effected. In Laguira the custom-house is still standing, but is cracked in many places. The killed in Caraccas are estimated at nine thousand. In Laguira, at one thousand five hundred. My own escape, is miraculous, for I was amidst the destruction in Caraccas, whither multitudes of people had gone in consequence of the great holydays, which began on the very day of the earthquake. The houses in the street where I walked did not fall immediately. I ran to the market square, which was close by; there were five of us in company, only three survived. As soon as the earth began to shake, the Spaniards dropt on their knees; had they run like the strangers, many more of them would have escaped."

For the relief of the sufferers by these calamitous occurrences, congress passed an act appropriating fifty thousand dollars for the purchase of flour. This donation was promptly forwarded to Venezuela, in vessels chartered for the

purpose; and the transaction is worthy of being remembered as an instance of friendship and generosity in the highest degree honourable to its authors.

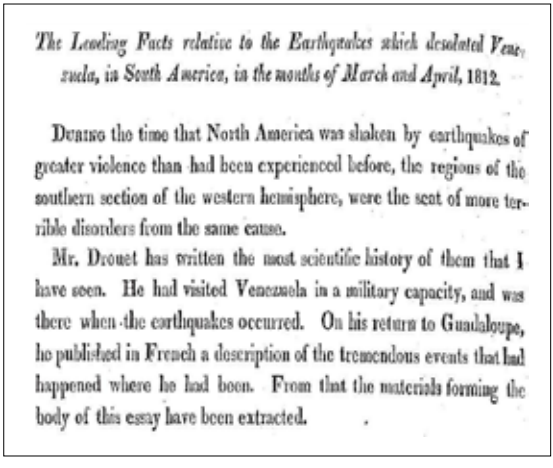
It does not appear from any document in my possession to what extent these earthquakes prevailed; nor in what manner they affected the remote and internal provinces.



EARTHQUAKES IN VENEZUELA.

HAVING been enabled to peruse M. Drouet's *Voyage à la Cote-Ferme*, published at Pointe-a-Pitre, Guadeloupe, 4to. p. 92, 1813, it is in our power to extract from his *description du tremblement de Terre qui a eté ressenti le* 26eme *Mars*, 1812, some particulars concerning terrible earthquakes which desolated Caraccas and the neighbouring cities, about sixteen months ago.

Figura 8: Imagen de una de las versiones de la narración de M. Drouet, publicada en *The Medical Repository of Original Essays and Intelligence*, para abril de 1814.



The Leading Facts relative to the Earthquakes which desolated Venezuela, in South America, in the months of March and April, 1812.

During the time that North America was shaken by earthquakes of greater violence than had been experienced before, the regions of the southern section of the western hemisphere, were the seat of more terrible disorders from the same cause.

Mr. Drouet has written the most scientific history of them that I have seen. He had visited Venezuela in a military capacity, and was there when the earthquakes occurred. On his return to Guadaloupe, he published in French a description of the tremendous events that had happened where he had been. From that the materials forming the body of this essay have been extracted.

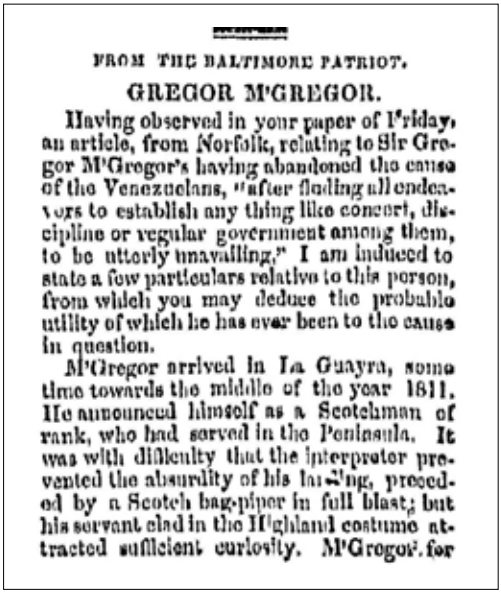
Figura 9: Imagen de la página de inicio de una de las versiones de la narración de M. Drouet sobre 1812, publicada en *Transactions of the Literary and Philosophical Society of New York*, para marzo de 1815.

40

Anónimo, "Gregor M' Gregor" [From the Baltimore Patriot]", *Farmer's Repository*, Charlestown, West Virginia, 12 de febrero de 1817, vol. IX, p. 2.

M'Gregor arrived in La Guayra, some time towards the middle of the year 1811. He announced himself as a Scotchman of rank, who had served in the Peninsula. It was with difficulty that the interpreter prevented the absurdity of his [ilegible] proceeds by a Scotch bag-piper in full blast; but his servant clad in the Highland costume attracted sufficient curiosity. M'Gregor for some time after his arrival did not find the military employment, which appears to have been his object in visiting the Main; but during his stay at Caracas he made himself remarkable alone for some English propensities such as constants display of horsemanship, a strenuous affection for the bottle, &c., but above all, his bag-piper was an inexhaustible source of wonder, or disgust, to the musically refined inhabitants of Caracas.

In the threatened civil convulsions which were about to explode when the earthquake took place in March, 1812. M'Gregor could take no part, as he had no employment, and was ignorant of the situation, the manners and language of the country. To Miranda he attached himself, and from him obtained, on the invasion of the Province from the side of Coro by the Spanish Royalist, under Monteverde, the command of a few hundred cavalry, whom, after the most ill judged maneuvering in the face of the enemy, he contrived to lead into an ambuscade, where the greater part of them were slain or taken prisoners, he himself escaping with great difficulty. His ill conduct on this occasion was notorious, and there were not wanting, those who accused him of absolute inebriety on the day he lost his cavalry, as well as that he was seldom otherwise, when there was a probability of being engaged. The writer of this knows that this mischance threw him completely into disgrace at the time, and was one of the chains of causes which induced Miranda in the month of July 1812, to surrender the country to an inferior force.



FROM THE BALTIMORE PATRIOT.

GREGOR M'GREGOR.

Having observed in your paper of Friday, an article, from Norfolk, relating to Sir Gregor M'Gregor's having abandoned the cause of the Venezuelans, "after finding all endeavors to establish any thing like concert, discipline or regular government among them, to be utterly unavailing," I am induced to state a few particulars relative to this person, from which you may deduce the probable utility of which he has ever been to the cause in question.

M'Gregor arrived in La Guayra, some time towards the middle of the year 1811. He announced himself as a Scotchman of rank, who had served in the Peninsula. It was with difficulty that the interpreter prevented the absurdity of his landing, preceded by a Scotch bag-piper in full blast; but his servant clad in the Highland costume attracted sufficient curiosity. M'Gregor, for

Figura 10: Imagen de la biografía de Gregor M' Gregor", publicada por *Farmer's Repository* para febrero de 1817.

41

A South American [Manuel Palacio Fajardo], "[Extracto de] Outline of the Revolution in Spanish America", *The Quarterly Review*, Londres, julio 1817, vol. XVII, N°XXXIV, p. 555.[127]

[...]

The provinces of Venezuela and of New Granada have constantly preserved some connexion in their operations, though governed by separate and independent congresses; they were entirely free, until the earthquake, which in March, 1812, destroyed the towns of La Guayra, Merida, and Caracas; and under their ruins crushed many thousands of the inhabitants, and buried the stores of arms and ammunitions destined for the service of their armies. This

[127] N de A : Manuel Palacio Fajardo posee otras referencias en estas transcripciones; en la entrada 42 se inserta un extracto de su *Outline of the Revolution in Spanish America* (New York, 1817); en la entrada 47 se observa la transcripción de un extracto del texto anterior; en la entrada 91 se transcribe su "An Account of the Earthquake of Caraccas" (*The Journal of Science and the Arts*, Londres, 1817); en la entrada 92 es citado directamente por Humboldt en su *Personal Narrative*, cuando hace mención al manuscrito titulado "Apuntamientos sobre las principales circunstancias del terremoto de Caracas"; y en la entrada 95 su artículo publicado en *The Quarterly Review*, precisamente, es referido por Leigh Hunt.

tremendous calamity occurred on Holy Thursday; and the impression, which one of the most solemn rites of the Catholic religion makes at all times on the superstitious population of the Spanish colonies, was aggravated by the recollection that it was the anniversary of their revolution. Of this circumstance the priests in the interest of the royalists took advantage, and confusion and despondency were introduced into the affairs of the republic. Miranda, having been appointed dictator, was, after a brave and skilful resistance, obliged to propose a capitulation to the Spanish General Monteverde, by which the constitution proposed for Spain by the Cortes, was accepted for Venezuela.

[...].

THE

QUARTERLY REVIEW.

APRIL & JULY, 1817.

VOL. XVII.

LONDON:

JOHN MURRAY, ALBEMARLE STREET.

1817.

Figura 11: Portada de la revista literaria y política *The Quarterly Review* para el año de 1817.

42

Manuel Palacio Fajardo, *Outline of the Revolution in Spanish America*, Published by James Eastburn and Co., Literary Rooms, Broadway, Clayton & Kingsland, Printers, New York, 1817, pp. 79-82.[128]

[...].

On March 26, 1812, between four and five P. M. Venezuela was visited by one of these tremendous earthquakes which from time to time ruin whole provinces. During a minute and fifteen seconds, the earth was convulsed in every direction, and nearly twenty thousand persons fell victims. The towns of Caracas, La Guayra, Mayquetia, Merida, and Sanfelipe, were totally destroyed. Barquisimeto, Valencia, La Vittoria, and others, suffered considerably. This catastrophe happened on Holy Thursday, a day when every Christian church peculiarly commemorates the sufferings of our blessed Redeemer, and at the very hour when the people were crowding into the churches to attend the processions which are usual in Roman Catholic countries, and to see the representation of our Saviour led to the cross. Troops are placed on such occasions at the entrance of the churches, to follow the procession; and many churches, and the principal barracks at Caraccas, being thrown down; there was a considerable number of soldiers killed, and many thousand persons crushed under their ruins. The arms and ammunition destined for the defence of the country, were buried in a similar manner; and what was worse, an unconquerable enemy to the independence of Venezuela seemed to raise its head from among the ruins –that religious prejudice which the earthquake inspired.

In an era less remarkable, a mere convulsion of nature would have had no influence on a new government; but, notwithstanding the prosperity Venezuela then enjoyed the seeds of discontent had fallen on one class of the community. The principles which formed the basis of the new constitution were democratical, and it had been necessary to deprive the clergy of some of their privileges, which of course created enmity in their minds to the present government. Immediately after the earthquake, the priests proclaimed that the Almighty condemned the revolution, and they denounced his wrath on all

[128] N de A: Hay versión en francés del mismo año: *Esquisse de la Révolution de L'Amérique Espagnole*, P. Mongie L'Ainé, Libraire, Boulevart Poissonnière, Nº18, Paris. La versión española (*Bosquejo de la Revolución en la América Española*), pertenece a las Publicaciones de la Secretaría General de la Décima Conferencia Interamericana, Colección Historia, Nº 3, Caracas, 1953, pp. 76-81. Un extracto de esta narración fue reproducida por C.C. Clarke en *The Hundred Wonders of the World, and of the three Kingdoms of Nature, Described According to the Latest and Best Authorities and Illustrated by Engravings* (bajo el título "Earthquake of Venezuela"), y es transcrita en la entrada 47.

who favoured it. They construed into a manifestation of the divine displeasure the occurrence of the earthquake on Holy Thursday, because the revolution had commenced on that festival; although it was not the anniversary, for this feast is moveable, and is celebrated on a different day every year. They made the people fancy that hell was opening to swallow them.

Such was the effect at this time of religious enthusiasm! Unprejudiced persons were undoubtedly not of the number; but these were few, compared with the host they had to resist; which, availing itself of the general consternation, blessed the public opinion in favour of the Spanish government.

It happened besides, that the royalists of Coro, wishing to divert the operations of the forces destined against Guayana, attacked the republican troops which defended the frontiers, and, having gained considerable advantage, got possession of Carora the day before the earthquake. The troops stationed at Barquisimeto were preparing to march under Xalon to attack the royalists at the hour the earthquake took place; and the barracks being thrown down, the greater part of the soldiers were buried under the ruins, and their commander severely wounded.

All these sources of public calamity were aggravated by the deficit in the public treasury. The new government had raised an army, increased the number of public appointments, defrayed the expenses of two military expeditions, and established a manufactory of guns, a coin, &c., when, at the same time, some of the channels on which the revenue of the state depended were cut off by the abolition of the alcabala, &c. The congress had been in consequence obliged to make one million of paper money, which was now in circulation, and which was regularly received in payment, though with considerable discredit since the earthquake. From that time confidence in the stability of the government, declined, and to continue the paper money in currency, severe penalties were enacted for refusing it in payment.

The congress was sensible that the danger required the strongest measures, and resorted to those usually practised in critical periods of republics, adding dictatorial to executive power; and it adjourned its sessions, that its members might serve in the army or return to their homes, in order to give energy in the provinces to a dispirited people. The command of the army was given to General Miranda, who was empowered to act in all things as he judged best for the good of the country; and he marched to meet the enemy at the head of 2.000 men, armed with the few guns that had been rescued from the ruins after the earthquake.

[...].

ESQUISSE
DE
LA RÉVOLUTION
DE L'AMÉRIQUE ESPAGNOLE,
OU
Récit de l'origine, des progrès et de l'état actuel de la guerre entre l'Espagne et l'Amérique espagnole, contenant les principaux faits et les divers combats, etc., etc.;
PAR UN CITOYEN DE L'AMÉRIQUE MÉRIDIONALE.
TRADUIT DE L'ANGLAIS.
Fata viam invenient. Æn. lib. x.
PARIS,
P. MONGIE L'AINÉ, LIBRAIRE,
BOULEVART POISSONNIÈRE, N°. 18.
1817.

Figura 12: Portada de la versión en francés del texto de Manuel Palacio Fajardo Outline of the Revolution in Spanish America, publicado en

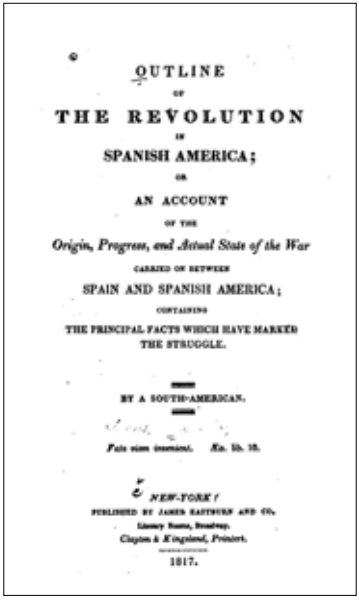

OUTLINE
OF
THE REVOLUTION
IN
SPANISH AMERICA;
OR
AN ACCOUNT
OF THE
Origin, Progress, and Actual State of the War
CARRIED ON BETWEEN
SPAIN AND SPANISH AMERICA;
CONTAINING
THE PRINCIPAL FACTS WHICH HAVE MARKED THE STRUGGLE.
BY A SOUTH-AMERICAN.
Fata viam invenient. Æn. lib. 10.
NEW-YORK:
PUBLISHED BY JAMES EASTBURN AND CO.
Literary Rooms, Broadway.
Clayton & M'Lagland, Printers.
1817.

Figura 13: Portada del texto de Manuel Palacio Fajardo *Outline of the Revolution in Spanish America*, publicado en 1817.

43

Anónimo, "Caracas; March; Venezuela", *City of Washington Gazette*, Washington (DC), District of Columbia, 21 de julio de 1818, vol. III, p. 3.

A gentleman, who visited this city of Caracas, some months since, informs us that its population is reduced to about 7.000 inhabitants. Prior to the earthquake in March, 1812, it was estimated to contain near 45.000: such an astonishing decrease may be attributed to some of the most dreadful calamities that can afflict the human family, namely, earthquakes, war, and famine. The population in many other parts of Venezuela is supposed to have suffered, nearly in the same proportion, and from the same causes.

44

Anónimo, "Chap. XVII. Sketch of the late Revolution in Spanish America", *A Catechism of the History of America*, Londres, 1819, pp. 60-61.[129]

[...]

Q. What part of Spanish America was visited by an earthquake in 1812?

A. The province of Venezuela. On the 26th of March, a violent shock of an earthquake was felt at the city of Caracas, which overturned the greatest part of its buildings, and buried a great number of the inhabitants in its ruins. The port of La Guara, and several other towns in the province, shared in the same dreadful calamity.

[129] N de A: Esta carta fue publicada anteriormente en *The London Times* (Anónimo, "Earthquake at Caracas", Londres, 29 de mayo de 1812), insertada en la noticia sobre el sismo bajo el título de "Extract of a letter from Captain Cuthbert, of the ship Highlander, dated la Guayra, April 1, 1812", y fue transcrita en este trabajo en la entrada 18. Existe una pequeña diferencia en la finalización de la misma entre ambas versiones. Some idea of this awful event may be formed from the following extract of a letter sent from thence by a British naval officer: "Since my arrival here, one of the greatest calamities has occurred at this place that ever happened in any coun¬try. On the 26th ult. whilst on board, I heard a most dreadful report of an earthquake: it lasted, as nearly as my recollection will serve, about two minutes. I soon learnt that the town of La Guara was laid in ruins, and that numbers of the inhabitants were killed and buried in them. The city of Caracas, I understand, has experienced a still worse fate, and has been totally abandoned by the unfortunate inhabitants. The rocks and mountains were rent asunder; and it is impossible for pen to describe the devastation occasioned by this horrible explosion. The cargo which I was to have taken on board has shared the fate of nearly all the goods in the city, and has been swallowed up in the general ruin. When the shock was first felt on board, every person was impressed with the feeling that the ship was beating to pieces on the rocks. On my going on shore, the most awful and afflicting scene presented itself: hundreds of the suffering inhabitants were seen mixed with heaps of ruins, and many of them still yet alive with their heads out, imploring assistance from their fellow-citizens, who, instead of affording them aid, were throwing themselves prostrate before images, beating their breasts, and imploring for themselves the protection of their saints. When the alarm had in some degree subsided, the bodies of the dead were sought for. I regret I have not been able to ascertain the extent of the loss which this hapless city has sustained; but the most moderate accounts estimate it at 5.000 souls."

Figura 14: Anteportada del texto *A Catechism of the History of America*, alusiva a un cuadro sobre Cristóbal Colón descubriendo a América.

merce, which was very injurious to our merchants, whose cargoes were lying there.

Q. What were the principal military operations in that quarter in 1811?

A. The siege of Montevideo by the Independents, and the defeat of Elio, the Spanish viceroy.

Q. Who offered to mediate between the parties?

A. The British government; but its mediation, though accepted, led to no permanent tranquillity.

Q. What part of Spanish America was visited by an earthquake in 1812?

A. The province of Venezuela. On the 26th of March, a violent shock of an earthquake was felt at the city of Caracas, which overturned the greatest part of its buildings, and buried a great number of the inhabitants in its ruins. The port of La Guara, and several other towns in the province, shared in the same dreadful calamity.*

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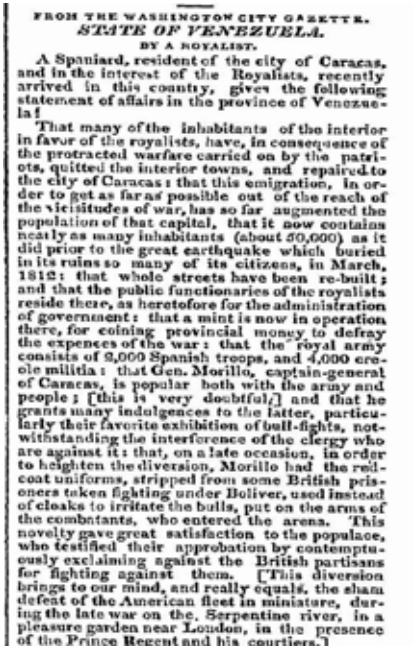
Figura 15: Detalles del capítulo "Sketch of the late Revolution in Spanish America", publicado en *A Catechism of the History of America*.

45

Anónimo, "From the Washington City Gazette. State of Venezuela. By a Royalist", *Berkshire Star*, Stockbridge, Massachusetts, 05 de agosto de 1819, vol. XXX, p. 2.

A Spaniard, resident of the city of Caracas, and in the interest of the Royalists, recently arrived in this country, gives the following statement of affairs in the province of Venezuela:

That many of the inhabitants of the interior in favor of the royalists, have, in consequence of the protracted warfare carried on by the patriots, quitted the interior towns, and repaired to the city of Caracas; that this emigration, in order to get as far as possible out of the reach of the vicissitudes of war, has so far augmented the population of that capital, that it now contains nearly as many inhabitants (about 50.000) as it did prior to the great earthquake which buried in its ruins so many of its citizens, in March, 1812; that whole the streets have been re-built; and that the public functionaries of the royalists reside there, as heretofore for the administration of government; that a mint is now in operation there, for coining provincial money to defray the expenses for war; that the royal army consists of 2.000 Spanish troops, and 4.000 creole militia [...].



FROM THE WASHINGTON CITY GAZETTE.

STATE OF VENEZUELA.

BY A ROYALIST.

A Spaniard, resident of the city of Caracas, and in the interest of the Royalists, recently arrived in this country, gives the following statement of affairs in the province of Venezuela!

That many of the inhabitants of the interior in favor of the royalists, have, in consequence of the protracted warfare carried on by the patriots, quitted the interior towns, and repaired to the city of Caracas: that this emigration, in order to get as far as possible out of the reach of the vicissitudes of war, has so far augmented the population of that capital, that it now contains nearly as many inhabitants (about 50,000) as it did prior to the great earthquake which buried in its ruins so many of its citizens, in March, 1812: that whole streets have been re-built; and that the public functionaries of the royalists reside there, as heretofore for the administration of government: that a mint is now in operation there, for coining provincial money to defray the expences of the war: that the royal army consists of 2,000 Spanish troops, and 4,000 creole militia: that Gen. Morillo, captain-general of Caracas, is popular both with the army and people; [this is very doubtful,] and that he grants many indulgences to the latter, particularly their favorite exhibition of bull-fights, notwithstanding the interference of the clergy who are against it: that, on a late occasion, in order to heighten the diversion, Morillo had the red-coat uniforms, stripped from some British prisoners taken fighting under Boliver, used instead of cloaks to irritate the bulls, put on the arms of the combatants, who entered the arena. This novelty gave great satisfaction to the populace, who testified their approbation by contemptuously exclaiming against the British partisans for fighting against them. [This diversion brings to our mind, and really equals, the sham defeat of the American fleet in miniature, during the late war on the Serpentine river, in a pleasure garden near London, in the presence of the Prince Regent and his courtiers.]

Figura 16: Detalles del documento "From the Washington City Gazette. State of Venezuela. By a Royalist", publicado en *Berkshire Star*.

46

Anónimo, "Account of the Earthquake Which Destroyed the Town of Caraccas, on the Twenty-Sixth March, 1812. (From the South American)", *The Kaleidoscope*, Liverpool, 30 de noviembre de 1819, p. 84.

The following remarks relative to the earthquake alluded to, and made on the spot, will perhaps be gratifying to the reader:

This dreadful calamity occurred on Thursday of the 'Semana Santa,' or holy week, the 26th day of March, 1812, at about twenty minutes past four, p. m.: I was then standing at the outer door of a house in the city, with some Englishmen; one of them remarked that he heard a troop of horses galloping down the next street, which he had scarcely uttered, when the internal thunder (which he had mistaken for the noise of horses' hoof) became distinct, and the earth began to tremble gently. The house being a corner one, we all ran to the crossing of the streets, to be as far from the walls as possible. The concussions then became so violent, that we could with difficulty keep our feet. One of the neighboring houses fell with a tremendous noise into the street, and buried several persons who had run out for safety; the tiles of another fell in heaps; and the crashing of timber and the screams of women and children, were truly terrific. The dust rose in columns from every part of the town, and enveloped us in obscurity. As the concussions (which lasted from 40 to 50 seconds) subsided, a gentle breeze sprung up from the westward, dispelled the clouds that darkened the air, and enabled us to behold the general devastation.

That part of the town where we were, suffered less than the suburbs, in which whole streets were razed to the ground, and the unfortunate inhabitants buried in the ruins. Every house that did not fall, either lost the roof, or was otherwise so shaken as to enable one to see through the rents made in the walls. The fronts of many that stood, hung in doubtful posture toward the street, striking terror into every one that passed them. The church of La Mercede (whence the holy procession was that evening to have sallied) became the tomb of some hundreds, and the other churches, which were not so crowded, escaped not the general destruction. I have been informed that many of the inmates of these holy sanctuaries would have saved themselves by running out, but the exhortations of the priests, added to their own ignorance, prevented this. I have little doubt but some believed themselves safer at the shrine of the holy virgin, than in any other attainable spot.

The cries of those wounded under the ruins in every part of the town, excited the compassion and exertions of all those who had not, through fear or superstition, be taken themselves to the fields. The strangers, of whom fortunately not more than one or two were killed, lent all the aid in their power, and dug numbers from the ruins alive.

It occurred to us that La Guayra might have undergone the same fate; and as we were interested in the fate of a gentleman then there, I was appointed to go down and enquire after his safety. I started on a young mule: it was a considerable time before I could find my way out of town; so stupendous were the ruins in many places that I was under the necessity of turning back one street and trying another. Immense masses of the mountain had tumbled into the road, and blocked it up: these obstacles, however, which, at another time, might have been deemed insurmountable, were but trivial when compared with the past danger.

The cottagers, who lived on the road side towards the sea, had formed a procession, carrying lanterns, and frequently on their knees offering their benedictions to the great author of the universe. The stillness of the night, broken only by the hymns of these poor people, impressed more forcibly upon the mind the horrors of the late awful visitation. This feeling was in no degree alleviated on my arrival at the village of Maycatia. The surviving relatives of families, bewailing the loss of all they held dear, and the groans of the dying, who had either suffered on the spot, or were transported thither from La Guayra, would have touched the most obdurate heart.

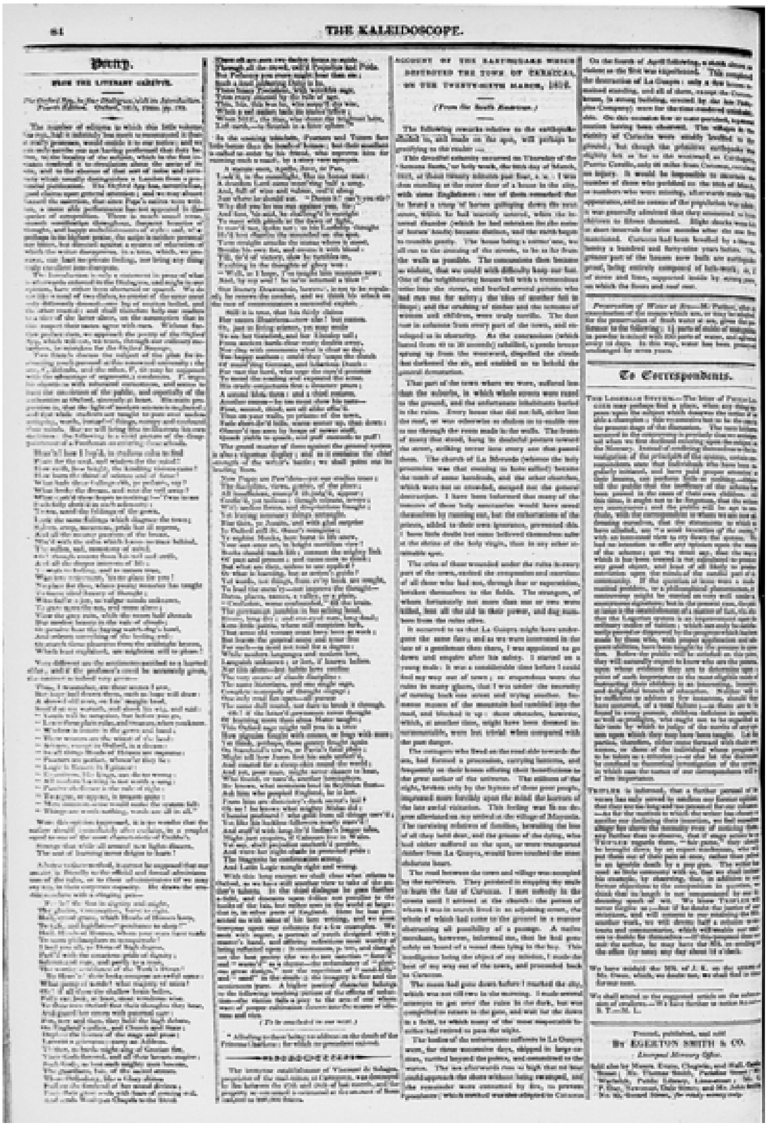
The road between the town and village was occupied by the survivors. They persisted in stopping my mule to learn the fate of Caraccas. I met nobody in the streets until I arrived at the church: the person of whom I was in search lived in an adjoining street, the whole of which had come to the ground in a manner obstructing all possibility of a passage. A native merchant, however, informed me, that he had gone safely on board of a vessel then lying in the bay. This intelligence being the object of my mission, I made the best of my way out of the town, and proceeded back to Caraccas.

The moon had gone down before I reached the city, which was not till two in the morning. I made several attempts to get over the ruins in the dark, but was compelled to return to the gate, and wait for the dawn in a field, to which many of the most respectable families had retired to pass the night.

The bodies of the unfortunate sufferers in La Guayra were, for three successive days, shipped in large canoes, carried beyond the points, and committed to the waves. The sea afterwards rose so high that no boat, could approach the shore without being swamped, and the remainder were consumed by fire, to prevent petulance; which method was also adopted in Caraccas.

On the fourth of April following, a shock almost as violent as the first was experienced. This completed the destruction of La Guayra; only a few houses remained standing, and all of them, except the Customhouse, (a strong building, erected by the late Philippine Company) were for the time rendered on inhabitable. On this occasion few or none perished, a general caution having been observed. The villages in the vicinity of Caraccas were mostly leveled to the ground; but though the primitive earthquake was slightly felt as far to the westward as Carthagena, Puerto Cavello, only 66 miles from Caraccas, sustained no injury. It would be impossible to ascertain the number of those who perished on the 26th of March, as numbers who were missing, afterwards made their appearance, and no census of the population was taken; it was generally admitted that they amounted to from thirteen to fifteen thousand.

Slight shocks were felt at short intervals for nine months after the one first mentioned. Caraccas had been leveled by a like calamity a hundred and forty-nine years before. The greater part of the houses now built are earthquake proof, being entirely composed of lath-work; or, if of stone and lime, supported inside by strong post, on which the floors and roof rest.



84 THE KALEIDOSCOPE.

Poetry.

ACCOUNT OF THE EARTHQUAKE WHICH DESTROYED THE TOWN OF CARACCAS, ON THE TWENTY-SIXTH MARCH, 1812.

(From the South American.)

To Correspondents.

Figura 17: Detalles del documento "Account of the Earthquake Which Destroyed the Town of Caraccas, on the Twenty-Sixth March, 1812. (From the South American)", publicado en *The Kaleidoscope*.

47

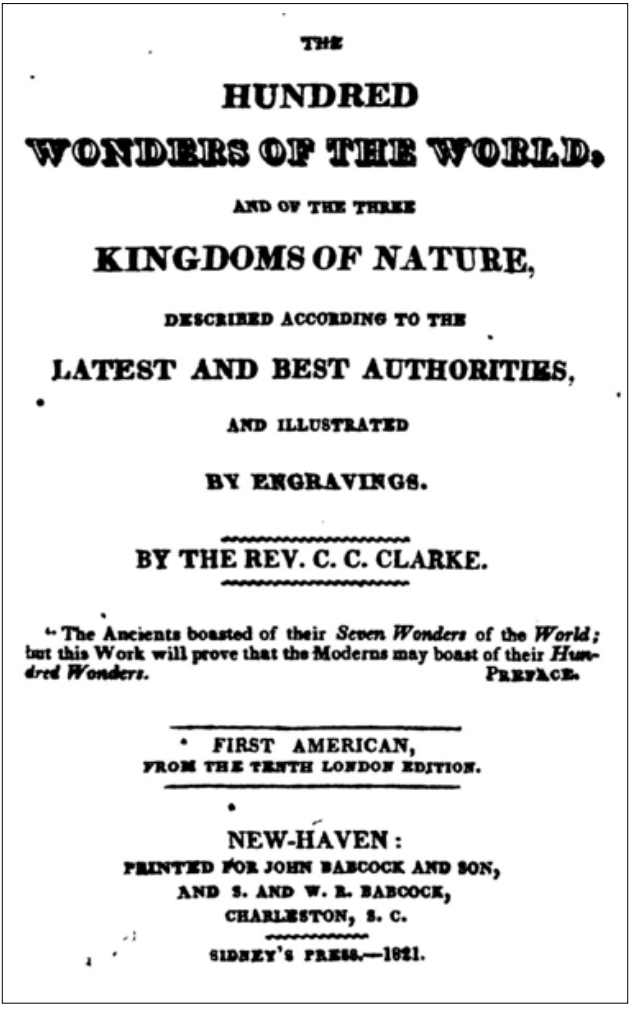
C.C. Clarke, "Earthquake of Venezuela", *The Hundred Wonders of the World, and of the three Kingdoms of Nature, Described According to the Latest and Best Authorities and Illustrated by Engravings*, Printed for John Babcock and Son, and S. And W. R. Babcock, Charleston, S. C., New-Haven, 1821, pp. 181-182.[130]

On the 26th of March, 1812, between four and five p. m. Venezuela was visited by one of those tremendous earthquakes, which from time to time ruin whole provinces. During a minute and fifteen seconds the earth was convulsed hi every direction and nearly twenty thousand persons fell victims. The towns of Caraccas, La Guayra, Mayquetia, Menda, and Sanfelipe, were totally destroyed. Barquisimeto, Valencia, La Vittoria, and others, suffered considerably. This catastrophe happened on Holy Thursday, a day when every Christian church peculiarly commemorates the sufferings of our blessed Redeemer, and at the very hour when the people were crowding into the churches to attend the processions which are usual in Roman *Catholic* Countries, and to see the representation of our Saviour led to the cross. Troops are placed on such occasions at the entrance of the churches to follow the procession; and many churches, and the principal barracks at Caraccas, being thrown down; there were a considerable number of soldiers killed, and many thousand persons crushed under their ruins. The arms and ammunition destined for the defense of the country were buried in a similar manner; and what was worse, an unconquerable enemy to the independence of Venezuela seemed to raise its head from among the ruins, that religious prejudice which the earthquake inspired.

In an era less remarkable, a mere convulsion of nature would have had no influence on a new government; but, notwithstanding the prosperity Venezuela then enjoyed, the seeds of discontent had fallen on one class of the community. The principles which formed the basis of the new constitution were democratical, and it had been necessary to deprive the clergy of some of their privileges, which of course created enmity in their minds to the present government. Immediately after the earthquake, the priests proclaimed, that

[130] N de A: Se trata de un extracto del texto de Manuel Palacio Fajardo (*Outline of the Revolution in Spanish America*, Published by James Eastburn and Co., Literary Rooms, Broadway, Clayton & Kingsland, Printers, New York, 1817), transcrito aquí en la entrada 42. Este mismo texto también apareció publicado posteriormente en la obra de John Loraine Abbott, *The Wonders of the World: a Complete Museum, Descriptive and Pictorial, of the Worderful Phenomena and Results of Nature, Science and Art*, Published by Case, Tiffany and Company, Hartford, 1856, pp. 412-413.

the Almighty condemned the revolution: they denounced his wrath on all who favored it; and a counter-revolution, attended by great bloodshed, was the unhappy consequence.



THE

HUNDRED

WONDERS OF THE WORLD,

AND OF THE THREE

KINGDOMS OF NATURE,

DESCRIBED ACCORDING TO THE

LATEST AND BEST AUTHORITIES,

AND ILLUSTRATED

BY ENGRAVINGS.

BY THE REV. C. C. CLARKE.

"The Ancients boasted of their *Seven Wonders* of the *World*; but this Work will prove that the Moderns may boast of their *Hundred Wonders*. PREFACE.

FIRST AMERICAN,
FROM THE TENTH LONDON EDITION.

NEW-HAVEN:
PRINTED FOR JOHN BABCOCK AND SON,
AND S. AND W. R. BABCOCK,
CHARLESTON, S. C.

SIDNEY'S PRESS.—1821.

Figura 18: Imagen de la portada del texto de C.C. Clarke, *The Hundred Wonders of the World, and of the three Kingdoms of Nature, Described According to the Latest and Best Authorities and Illustrated by Engravings*, publicado para 1821.

48

George A. Gardiner, *A Brief and Correct Account of an Earthquake which Happened in South America*, Printed by P. Potter, Poughkeepsie, 1820, pp.5-19.[131]

From the earliest antiquity down to the present period, it has not been unfrequent nor uncommon for violent concussions and eruptions to take place in the bowels of earth, in different parts of the world, which have not only shaken the strong foundation of our earthly tabernacle, but demolished whole cities; destroyed palaces and holy palaces, strong fortification and towers; caused the sea to become dry land, and the dry land sea; as also mountains of excessive magnitude to be vomited up from the vitals of the most stupendous fabric of nature, out of which fire and smoke have issued for many days; thus fulfilling what is frequently spoken of in sacred history, where in we are told there shall be Earthquakes in drivers places, which shall cause rough places to become smooth and the smooth to become rough; and mountains to sink and become vallies, and vallies to rise up into huge and lofty mountains, &c.

The scriptures also peak of several natural Earthquakes: one of the most remarkable of which, is that which happened in the reign of King Uriah, almost eight hundred years before our Lord and Saviour, *Jesus Christ*. There is mention made of this Earthquake by several of the prophets; and Josephus says that it was so violent, as to divide into halves a mountain which lay to the rest of Jerusalem, and to remove one half of it about fifteen hundred yards from its original site, insomuch that it closed up the highway, and covered the King's gardens.

Another very remarkable earthquake was that which happened at the time of our Saviour's crucifixion. Some have been of opinion that this concussion was perceived by all the world. Others maintain that it was only felt in the Temple, the gates whereof were shaken, and the veil rent asunder. St. Cyril, of Jerusalem, says that the rocks of Mount Calvary, which had been split by the force of this Earthquake, were still shown in his time. Orosius take this Earthquake to be the same which overturned the twelve cities of Sardis, Oæg, Mosthene, Mahnesia, Hierocærsaca, Temnus, Philadelphia, Temolus, Cyma, Apollonia, Myrinia, and Hyrcania, to which twelve cities, Eusebius adds Ephesus.

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[131] N de A: Esta version fue reproducida en formato facsimilar por Franco Urbani en el trabajo "G. A. Gardiner, médico y autor de un folleto sobre el terremoto de 1812", en el *Boletín de historia de las Geociencias en Venezuela*, Nº 17, 1985, pp. 1-9.

Pliny of Strabo makes this the most diredful concussion that ever was felt. It happened in the night, and proved the more dreadful as it was less apprehended. Most of the inhabitants were crushed under the ruins of their houses, and those who fled to the fields were swallowed up by the openings of the earth.

It is reported by Tacitus, that huge mountains sunk into the earth; that plains were raised up into high hills; and that dreadful flashes and eruptions of fire were seen among the ruins.

Phlegorn of Tralles says, that many cities of Pontus Sicily, Calabria and Italy, were greatly damaged by it; and adds, that the earth opening in many places, discovered bodies of a monstrous size, from one of which, a tooth was taken more than a foot in length, and presented to the Emperor Tiberius; but as this Earthquake happened, according to historians, in the fourth year of the reign of Tiberius, it could not have been the same that happened at the death of our Saviour, as it must have been fourteen years at least before it.

But let us take leave of antiquity –and while we suspend the subject of ancient quotations, let us invite our attention to a more interesting (as being a more recent) one, and one to which myself and family were the awful beholders, and by which we became the miserable and unfortunate sufferers.

On the twenty-sixth day of March, one thousand eight hundred and eighteen [sic], at seven minutes past four o'clock in the afternoon, (the customary hour for Spaniards to be in their hammocks indulging an afternoon's nap, which they call "dormir la siesta,") this great and wonderful phenomenon and FATHER OF EARTHQUAKES, closed the eyes of thousands –thousands who were the sleeping as they were supposed in full possession of all enjoyments and pleasures naturally to be expected in this world, when to their great astonishment and unexpected surprise, good and bad, rich and poor, bond and free, were all awfully mangled up together, into one common mass of confused and undetermined compound.

Neither virtue nor innocence can expect to find security from the devastation of such an Earthquake, but all may expect to be involved alike, and participate equally in the common calamity.

The Earthquake was preceded by a horrid and frightful noise under ground; then followed so terrible a shock, that the houses (which were commonly three or four stories high and built of mud or stone) generally crumbled and fell to the ground, while others were tossed to and fro like a ship on the sea, when, the shock being almost exhausted by dandling and tossing the earth about

for the space of a minute or more, was again renewed by treble force, the duration of which, was about seventy-five seconds, which left scarily a wall standing in the cities of Caracas, Victoria, St. Phillip, Barquisimetto, and the port of La Guyra. Forty or fifty villages were also totally destroyed. Puerto Cavello and Valencia suffered partially; but this dreadful Earthquake spread its devastations more than six hundred miles in different directions. St. Philip and Brquisimetto, particularly the latter, being considerably more than three hundred miles from Caracas, was left in one undistinguished mass of ruins, together with the inhabitants almost to a man, crushed and buried therein. At Caracas and La Guyra, it was equally destructive, while the noise of the cracking and bursting of the timber, the falling of the houses under ground, drowned the cries of the dismayed. Those who happened to be in their houses were for the most part buried under the ruins; and such as were in the streets, were from the narrowness thereof, together with the falling of the houses from both sides, generally crushed down, and buried from the spot.

As the earth continued (with some small intermissions) to shake several days and nights, more than *eighty thousand perished!* I was much hurt; but my infant daughter only ten months and several days old, *was buried under the ruins of a very large four story stone house, for about three hours,* and was taken out alive, and without any other injury than that of having a small bruise on one toe. As there was no utensils to be obtained from removing the ground and rubbish, I was obliged to employ my hands for that purpose until they were lacerated in such manner, as to cause the flesh to fall from the fingers, leaving in some the bones entirely bare.

During this and several subsequent days and nights, we were almost continually exposed to the most hideous cries and screeches from the wretched and miserable few who were singled out by the supreme disposer of events, to expire in the most *extreme agony of unparalleled omnipotent torture.*

Notwithstanding thousands were in an instant buried alive under the ruins, as many more were left half buried. After I had miraculously escaped with my family, I beheld hundreds who were caught in the jaws of earth, some up to their knees, others to their waists, while as many more remained only their heads and shoulders above the surface of the ground, the remaining part of their bodies being received into the bowels of the earth, and the wretched sufferers yet alive and in their perfect senses, imploring with all the tenderness of expression, (and beseeching in the name of a crucified Jesus,) of the dismayed and miserable few who had been so fortunate to escape being either buried

under the ruins, or caught in the jaws of earth, to assist and liberate them from their perilous and helpless situations; but in vane were all their entreaties, nor were agonizing supplications and dying groans ever taking notice of by their surviving brethren, whom it had pleased our most merciful sovereign to single out and spare in this dreadful calamity; but everyone seemed to pass by and even walk over their dying and bewailing fellow creatures without a consoling word, or even a look of pity; and they were left to compromise with the great and everlasting minister of peace, and struggle in hopeless despair with the universal tyrant and king of terrors.

The earth still continuing to shake beneath us, and the heavens obscured with sulphureous clouds full of ashes and cinders thrown up from the bowels of the earth, and all nature seemed to be on the brink of destruction from the violence of the shocks, which threatened every moment to put a period to time! What a dreadful calamity is this? The mountain itself, was broken and thorn with the violence of those sudden shocks, that forced their way through it, and carried desolation and ruin over all neighbouring country. How quick, how unexpected, how dreadful the change! All was at once overwhelmed with ashes, and cinders, and firy [sic] torrents, presenting to the eye the most dismal scene, of horror and destruction!

But it appears to me that this sudden and dreadful change is an emblem of that which must happen to every rich, luxurious state: while the inhabitants are sunk in voluptuousness, while all is smiling around them, and they think that no evil, no danger is nigh, the seeds of destruction are fermenting within, and breaking out on a sudden, lay waste all their opulence, all their delights; till they are left a sad monument of divine wrath, and of the fatal effects of eternal corruption.

As I daily visited the ruins for more than a month subsequent to the shock, I had an opportunity of knowing what passed, and how it went with the deserted sufferers. On visiting the demolished city next morning, I found several of those who were begging for assistance the night before, dead, and others so far exhausted as not to be able to articulate distinctly, many of whom expired before my next visit: thus situated, nothing but terror and death stared them in the face; thousands had taken their leave of sublunary fear, and its consequent misery; nut there were many who endured this dreadful torment for six, and some for eight days; I assisted in taking out one man on the eight day, who had been sick in the hospital for seven weeks previous to the Earthquake, whom I perfectly recovered, although he was not able to speak for ten days.

Of about six hundred persons who were dreadfully lacerated and mangled, that I attended, not more than thirty or forty recovered, they having remained under the ruin for several days with dislocations and fractures of the most complicated nature, before any one came to extricate or relieve them from their obscure and dismal subterraneous prisons. Many who were taken out were left to expire on the spot, all hopes of recovery being despaired of.

The consternations of the surviving few was such, that, for some minutes immediately after the shock, those who were neighbours and intimately acquainted, had no knowledge or recollection whatever of each other; nor did a man who lived next door to me, know his wife, nor the wife her husband, until after conversing together for some time. What added still more to the terror and surprise of the unfortunate survivors, was the continual emission of fire from the earth, which came up in large balls emitting a blue flame, which rolled about on the surface of the ground, flashing and sending forth strong sulphureous vapours, insomuch, that I found respiration somewhat difficult; and may were actually suffocated to death by noxious vapours which came up from the openings of the earth. At this time the heavenly luminaries appeared in all the splendor and glory of a midnight hour.

The day subsequent to the Earthquake, I saw two hundred and sixty seven beautiful children, from about two to seven years old, taken from the ruins, all of whom, had no doubt been suffocated by noxious fumes or vapours, as they were not crushed under the ruins; nor did they exhibit any marks of violence; nor yet was their delicate and tender bodies marred by contusions.

As the whole surface of the ground was every where covered with dead bodies, which were likely on a short time to produce an insupportable stench, the civil authority thought proper to order, that all the dead bodies exposed to view should be carried to the sea side, together with a sufficient quantity of fuel, and there burnt to ashes on the beach, which was carried into effect the same day, when I saw the lacerated and mangled bodies of one thousand five hundred persons, (men, women, and children,) ignited in one common mass. And the practice of burning the dead bodies as often as they were collected (which was daily) continued until the stench became so great, from the putrified bodies which lay near the surface, that no person was able to enter the limits of the demolished city.

Since the first great shock, the earth had continued to tremble at intervals both day and night; and on the fourth of April, (nine days after the first great shock,) a second concussion happened which was not interior to the first,

although it did not actually do so much damage, that having been fully completed by the first. Many believe this shock to have been more violent than the first; as in obedience to the mighty summons, that huge and lofty mountain on the back of La Guyra, bowed its lofty summit, which separated from its base, and came clashing and tumbling to the ground crushing every thing which came in its course; as the road passed along the foot of the mountain for a considerable distance, several persons as well as a number of animals, were destroyed by the huge pieces of rocks which passed over the road and went into the sea.

At this time, the few shattered walls which remained after the few shattered walls which remained after the first great shock, fell, which also killed many persons who were engaged in digging for their effects. Nor was this dreadful and alarming shock the last.

The earth having become so accustomed to commotion, that it was not uncommon to feel three or four pretty severe shocks in the course of the day, and as many more during the night.

The survivors, who were at first thrown into the greatest terror and confusion, had now become so habituated to these convulsive commotions, that terror and dismay had taken leave of their distressed minds, and did no longer occupy a place in their disturbed imaginations. Having already erected booths and tents, where the tattered fragments of many families assembled together, having no other place to sit or eat on, than the naked and wed ground, as there was then, frequent and heavy rains, especially at night. Thus exposed to the inclemencies of weather, (together with the almost insupportable fatigue and toil of digging and removing the rubbish during the day, as well in search of lost property as in expectation of once more beholding the remains of some dear relative or friend, however awful to the view may appear in it's the lacerated and distorted state,) in less than ten days about one hundred and fifty were attacked with dysentery and intermittent fever; and begin exposed in such dreadful habitations and places, and not able to procure the necessaries required, the diseases prevailed, and in a few days became general, which carried off in a sort of time, more than one half of those who had escaped the dreadful dangers to which they had been exposed in the time of the earthquake, and those who escaped the dreadful ravages of disease were left in such state of debility and wretchedness, as not to be able to assist each other or even themselves; and, a then formidable army of Royalists being in the neighbourhood of Caracas, threatening to put every on to immediate and

instant death who did not join their standard, all those who were able to creep from their tents and get to the sea side, embarked and fled from their native country; while those of their fellows sufferers who were confined by sickness, and not able to escape, fell into the hands of those *savage and uncivilized barbarians, and soon became the merciless victims of Spanish ferocity.*

Thus the famed city of Caracas, which a short time before, contained upwards of sixty thousand souls, was now reduced to less than fifteen hundred.

The Royalists exulted in the dreadful calamity that had taken place, as it gave them the peculiar advantage of once more becoming masters of the paradise of Venezuela, which all the force the king of Spain could have sent to South America, would never have effected had that not have taken place.

About four hundred miles from Caracas, a subterranean channel was formed by the tops of two very high mountains falling together, and in that situation being firmly cemented together by the action of the fire which gushed forth upon the metallic substances, formed an arc about twenty feet in breadth, the height of which was unequal, being in some places, thirty, and in others not more than twelve or fifteen feet from the surface of the water, which in general was form four to ten feet deep; and navigable for boats about a mile and a quarter. I passed through it by the assistance of candles; the sight being confined to the breadth of the channel and the length of the avenue; while the gloominess of the prospect added horror to the loathsomeness of the place of which I was confined. However, having navigated a mile and a quarter in this subterraneous channel, I once more got into open daylight, and resolved to enter it no more.

Not far from this place, a huge mountain sprung up out of the ground, which was before a smooth and level surface, and surrounded by an extensive and beautiful plain.

In another place I saw a forest, the trees of which were very lofty and of uncommon dimensions, which was vomited up out of the earth by the roots, and had fallen down promiscuously together upon the ground. It is said, (and there is no reason to doubt the truth of it) that a small village which stood near the foot of a large mountain about seven leagues and a half from the city of Truxillo, was removed from the distance of one league from its original seat, together with the inhabitants, who were generally in their houses, without any material injury to the building, or even the lost of a soul; several persons who having been dangerously wounded which afterwards recovered, except two, who were much lacerated and died for want of medical assistance.

How surprising are the alterations of nature! How sudden and how fatal the unhappy change! "It's natural for man to look upward; to throw his first glance upon the objects that are above him."

Prodigious theatre! Whose their lightning darts their fire, and thunders utter their voice: where tempest spend their rage, and worlds unnumbered roll at large! O! the greatness of that Almighty hand, which meteth out his amazing circumference with a span! O! the immensity of that wonderful being, before whom this unmeasurable extent, is no more than a point! and O! the unsearchable riches of that mercy, which is *greater than the heavens!* (Psalm cviii. 4). Is more extensive and unbounded in its gracious exercise, than these illimitable tracts of air, and sea, and firmament! that pardons crimes of the most enormous size, and most horrid aggravations; pardons them, in consideration of the Redeemer's atonement, with perfect freeness, and utmost readiness! more ready if it were possible, than this all surrounding expanse admits within its circuit, a ridge of mountain or even a grain of sand."

But a very short time since, the Independent province of Venezuela, rich, and in full possession of every earthly felicity, as well as in conquests gained over their barbarous and savages enemies, (the Royalists) had every city, town and village thronged and crowded with people of every description, language and nation; and was the most populous and flourishing, as well as commercial province in the patriotic dominions: but alas, where are they now? whiter have they made their exits? where are the rosy and the blooming fair who used to grace the monthly assemblies? that virgin train which used every morning to appear in the most humble attitude before the grand and majestic alter of our Lord and Saviour. Alas! They are no more! they did not anticipate their unhappy overthrow! they did not even suspect the great and everlasting creator, had determined on their immediate and almost indiscriminate destruction! but lo, the full time had arrived, and nature, no longer able to retain the weighty and mighty burden with which she was pregnant, announced to the world the full completion of the period of her conception, by ushering into it the offspring of her bowels, which *yearned at the explosion*, and became so violently agitated and convulsed, as to overthrow many large and valuable capitals, which caused the destruction of more than *eighty thousand souls*! Wretched indeed were their situations! they were not summoned by a previous lingering indisposition –they had no forerunner, no previous advice– no angel sent from Heaven, to exhort them to a timely repentance, and turn them from their present evil ways –to foretell and apprise them of the dreadful and fatal catastrophe! No, they were cut off in

the midst of all their sins and iniquities, and it is greatly to be feared, the greatest part of them consigned to eternal misery and everlasting condemnation!

Perhaps it will be necessary to observe, that, in the neighbourhood or vicinity of Caracas, there are several volcanoes or burning mountains, which for about eighteen months or two years immediately previous to the earthquake, had been entirely closed up, and had not been observed to emit either fire or smoke during that period; and it was not until sometime in June, that they exploded and became open as usual; when the earth (which had been almost continually in convulsive commotion since the first great shock) became pacified, and did no longer threaten devastation and death.

49

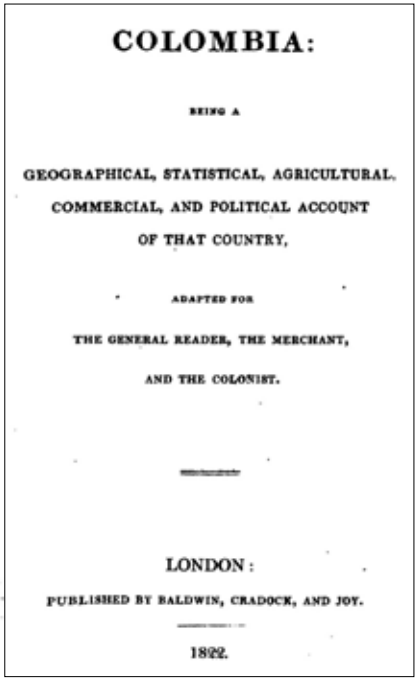
Alexander Walker, "Sketch of the Political Career of President Bolivar", *Colombia: Being a Geographical, Statistical, Agricultural, Commercial, and Political Account of that Country*, Londres, Baldwyn, Cradock, and Joy, 1822, pp. 708-709.[132]

Simón Bolívar, Commander-in-chief of the independent forces of Venezuela, and President of the Colombian Republic, is descended from a family of distinction at Caracas, where be was born about the year 1785. He was one of the few natives of the Spanish colonies who were formerly permitted to visit Europe. After finishing his studies at Madrid, he went to France, and, during his stay at París, rendered himself an acceptable guest in its social circles, by the amenity of his manners and his other personal recommendations. In the midst, however, of all its distractions, his strong and ardent imagination anticipated the task which the future fortunes of his country might impose upon him, and, even in his twenty-third year, he contemplated the establishment of her independence. Whilst he was at Paris, Bolivar's favorite and principal occupation was the study of those branches of science which belong to the formation of a warrior and statesman; and he was anxious to form such connexions as might give a more perfect direction to his hopes and views. Humboldt and Bonpland were his intimate friends, and accompanied him in his travels in France: nor did he think he had learned enough, until he had traversed England, Italy, and a part of Germany. On his return to Madrid, he married the

[132] N de A: Este "Sketch" aparece posteriormente publicado en *The New Monthly Magazine and Literary Journa*l, Londres, 1823, vol. II, pp. 4-5. Hay una versión en español del libro completo publicada como *Colombia, relación geográfica, topográfica, agrícola, comercial y política de este país*, editada por el Archivo de la Economía Nacional, Publicaciones del Banco de la República, Bogotá, 1973.

Marquis of Ustariz's daughter; and shortly afterwards went back to America, where he arrived at the very moment when his fellow-countrymen, who were wearied with the oppressions of the Spanish Government, had determined to unfurl the standard of independence. The talents rank, and acquirements of Bolívar, pointed him out as the worthiest and best qualified among them to be placed at the helm; but he disapproved of the system adopted by the Congress of Venezuela, and refused to join Don Lopez Mendez in his mission to England, which was connected with the interests of the new government. Bolívar even declined any direct connexion with it, though he continued a staunch friend to his country's liberties.

In March 1812 an earthquake devastated the whole province, and among other places destroyed the city of Caracas, together with its magazines and munitions of war. Fresh troubles followed this catastrophe, in which twenty thousand persons lost their lives; but it's most disastrous result was, that it became a rallying point for the priesthood, and facilitated their endeavours to bring back a considerable portion of their superstitious flocks to the ancient order of things. In their hands, the earthquake became a token of the Divine wrath; and, indeed, it was so manifest a token, as they alleged, of the indignation of Heaven, that the anniversary of the insurrection was the chosen day of its occurrence. The credulous rained was disconcerted and overwhelmed by these insidious representations; dissension enfeebled the independents; and a succession of disasters overtook them on the approach of the Spanish general, Monteverde, who lost no time in attacking them whilst laboring under these disadvantages. Bolívar hastened to join Miranda, who had fought in the ranks of the French revolutionists under Dumourier, and had already unsheathed his sword in the cause of freedom. But Miranda's efforts were unsuccessful, and he was obliged to retreat as far as Vittoria.



COLOMBIA:

BEING A

GEOGRAPHICAL, STATISTICAL, AGRICULTURAL, COMMERCIAL, AND POLITICAL ACCOUNT OF THAT COUNTRY,

ADAPTED FOR

THE GENERAL READER, THE MERCHANT,

AND THE COLONIST.

LONDON:

PUBLISHED BY BALDWIN, CRADOCK, AND JOY.

1822.

Figura 19: Imagen de la portada del libro de Alexander Walker, *Colombia: Being a Geographical, Statistical, Agricultural, Commercial, and Political Account of that Country*, publicado para 1822.

50

Anónimo, "Earthquake. The following is an extract of a letter from a gentleman in La Guyara, dated Feb. 15. 1827", *Christian Secretary*, Hartford, Connecticut, 7 de abril de 1827, p. 43.

We had a tremendous shock of an earthquake on the morning of the 2d instant; I was nearly thrown from my cot; the sensation when I first awoke was similar to that of being tossed by the back of a person placed beneath a bed. I was not long in getting into one of the windows; our old house made a noise something like the burning of spruce wood fire.; I thought it would come down, the shock was preceded by an awful rumbling, and followed by a rushing sound, like that of a heavy gust, although the air was quite still. It is the heaviest shock which has been felt since 1812, when Caracas and La Guyara were laid in ruins; however, no material injury has been sustained. A number of people were thrown from their cots, and two small mud houses were pulverized in Caracas.

51

John Miller, "Select Biography. Memoir of Bolivar", *The Mirror of Literature, Amusement, and Instruction*, Londres, 28 de marzo de 1829, Nº 363, vol. XIII, pp. 213-215.[133]

The conspicuous part which Bolivar has acted throughout the revolution in Colombia, and at the close of that in Peru, renders it imperative on us to give some account of a character, identified with so many great and extraordinary events.

Simon Bolivar was born at Caracas on the 25th of July, 1783. He lost his parents at an early age; and, in his sixteenth year, was sent to Europe to finish his education. He made the tour of France and Italy. Having married at Madrid, he embarked for Venezuela, where his wife died a few months after her arrival. Bolivar went a second time to Europe, and was present at the coronation of Napoleon. He returned to Caracas in company with Emparan, appointed, captain general of Venezuela by the central junta at Seville. Soon after the raising of the standard of independence (10th April, 1810) in that country, he was sent to solicit the protection of Great Britain. He was well received by the Marquess Wellesley, then secretary for Foreign Affairs. The British government offered its mediation between Spain and her colonies, but the offer was rejected by the court of Madrid. Bolivar returned to his own country, accompanied by General Miranda, who was placed in command of the Venezuelan troops. But the revolutionary government was too feebly organized to give efficiency to the military force. Divisions arose, and the cause of independence was on the retrograde, when the dreadful earthquake of 1812, and the subsequent invasion by the Spanish force under General Monteverde, for the time, precluded all possibility of success.

Bolivar, alleging that Miranda had betrayed his country by capitulating to Monteverde, arrested him at La Guayra. Bolivar then demanded his passport, and when taken before Monteverde, the Spanish general said that Colonel Bolivar's request should be complied with, as a reward for his having served the king of Spain by delivering up Miranda. Bolivar answered that he arrested him to punish a traitor[134] to his country, and not to serve the king. This answer

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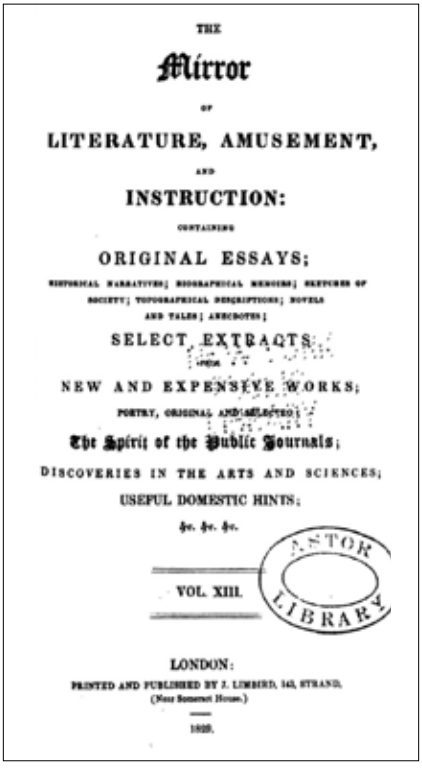
133 N de A: Este texto, publicado de esta manera en el *The Mirror of Litarature, Amusement and Instruction*, fue tomado del capítulo XXXI de Memoirs of General Miller, in the Service of the Republic of Peru, John Miller, Londres, publicado ese mismo año de 1829, vol. II, pp. 315-316. El The Mirror... editó este extracto en dos partes, siendo esta la que corresponde a la primera, mientras que la segunda parte fue insertada en el Nº 366 del 18 de abril de 1829, entre las páginas 262 y 265, en donde finaliza con el crédito a la "Memoir of Bolívar" de Millar.

134 Bolivar seems to have been buried into dreadful error by the warmth of his feelings. Not only is the expediency of the capitulation admitted by eye witnesses of the first respectability, but also that Mi-

had nearly included him in the general proscription; but the good offices of Don Francisco Iturbe, secretary to Monteverde, procured the passport, and Bolivar was allowed to sail for Curaçoa. From that island he went to Carthagena, where he obtained the command of a small force, with which he proceeded up the Magdalena, and having beaten parties of the royalist troops at various points on that river, he continued his march from Ocana to Cucuta, and solicited assistance from the government of Cundinamarca.

[...]


THE

Mirror

OF

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AND

INSTRUCTION:

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&c. &c. &c.

VOL. XIII.

LONDON:

PRINTED AND PUBLISHED BY J. LIMBIRD, 143, STRAND.

(Near Somerset House.)

1829.

NESTOR LIBRARY

Figura 20: Imagen de la portada del semanario *The Mirror of Literature, Amusement, and Instruction*, de marzo de 1829.

randa had no other alternative. The rich and influential inhabitants withheld their support, not that their political sentiments has undergone a change but because they saw the uselessness of sacrificing property and life in a wild attempt to stem the stream of public opinion; the bulk of the people having become decidedly royalist in principle ever since the earthquake, which had been represented by the priesthood as a judgment of Heaven upon the insurgent cause.

52

James Scott Walker, "Miscellaneous Record. The Earthquake of Caracas", *Christian Index*, Philadelphia, 15 de enero de 1831, vol. IV, Nº 3, pp. 38-40.[135]

Scarcely ever was there a catastrophe more memorable than this. To many of our readers the event has been never described; and to all, the following narrative from the pen of an eye witness and one deeply concerned in the scene, must prove highly interesting. The picture is drawn by the pencil of a poet.

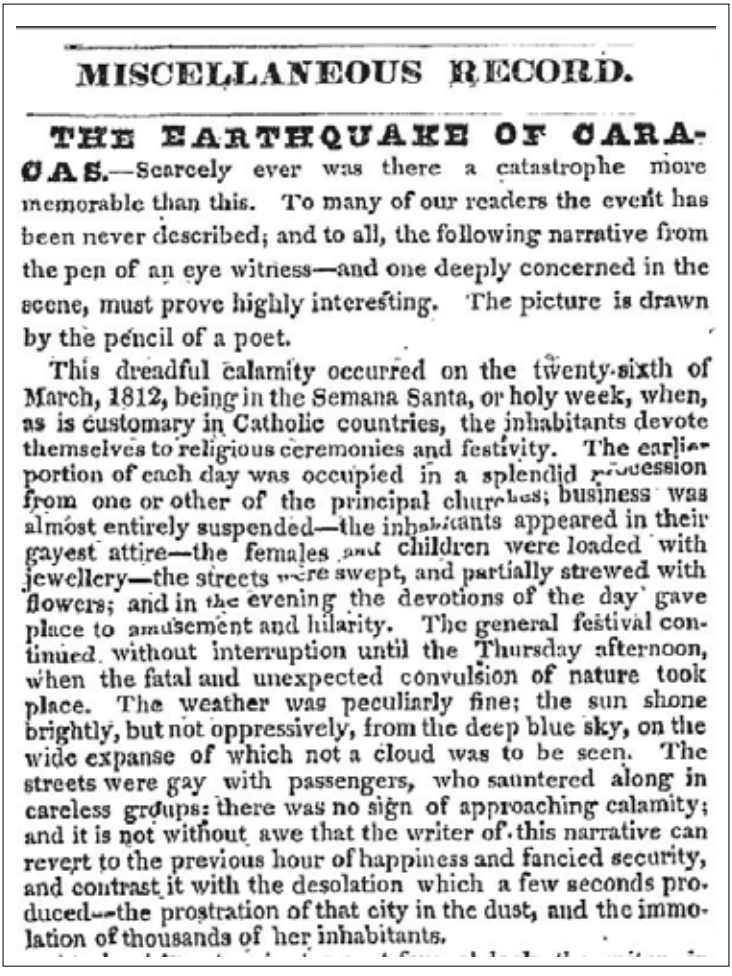
[...]

The following lines, from a Tragedy by the writer of this sketch, yet unpublished, may be considered a description, in epitome, of the calamity which he has attempted to record.

The Earthquake
It was a fearful day: down from the hills
The uprooted woods were launched into the plain;
And giant crags, hurled from their mountain sites,
Impetuous rolled, earth smoking'neath the crush,
Till, far beneath, they blocked the Guayra's tide.
The herds fell trembling to the staggering ground;
The laired panthers sprang from out their dens,
With glaring eye-balls, terror-struck to hear.
The subterranean groans that mocked their growling;
The birds with quivering wings, and note of fear,
Rose heaven ward for protection, from the boughs
That shook them from their rest. But man alone
Felt the full sense of whelming, swift destruction;
Which hand could not avert, nor foot escape:
Some could not rest, yet knew not how to flee,
And, thus bewildered, hastened here and there;
And some moved only with the fevered world,
That rocked and oscillated to and fro,
As if to spurn it from its heaving bosom!
The earnest question met the wild reply,

[135] N de A: Este documento es un extracto de la narrativa de James Scott Walker, la cual se transcribe inmediatamente después de éste, en la entrada 53. En este caso, el editor del *Christian Index* publicó este poema, el cual no había sido reproducido en ninguna de las otras versiones del texto de Walker.

And the first note of falling tenements
Was answered by deep prayers and words of terror
Short the suspense that else were death itself;
Down crashed the streets.
There was one general scream;
Then all was for a little moment still:
But, when the cloud of trust, that, like a pall,
Hung o'er the death scene, passed before the breeze,
Up rose the frantic shriek of anguished female;
The cry of mangled sufferer; or the groan
Of smothering wretches crushed-beneath the ruins;
But most were silent-in a speedy grave.
The few survivors, left alone to mourn,
Bereft of kindred—widowed, childless, friendless,
Knelt, awe-struck, on the fragments of their dwellings,
Like shivering remnant of some hapless crew,
Left by subsiding seas on cheerless rocks,
When all their mates were buried in the deep!
The sun, erewhile, that smiled upon that city
Her pride of palaces her festive joy,
Gilded, with parting ray, her glories razed
Columns and arches, massive walls arid beams
In wild destruction dashed, abrupt and dark
The tomb of both the living and the dead:
And the pale moon, soon, from a cloudless sky,
Serenely shone; as if in consciousness
That all this havoc dread to human thought
Shook not the harmony of worlds unknown,
Though it foreboded mightier things to come!



MISCELLANEOUS RECORD.

THE EARTHQUAKE OF CARACAS.—Scarcely ever was there a catastrophe more memorable than this. To many of our readers the event has been never described; and to all, the following narrative from the pen of an eye witness—and one deeply concerned in the scene, must prove highly interesting. The picture is drawn by the pencil of a poet.

This dreadful calamity occurred on the twenty-sixth of March, 1812, being in the Semana Santa, or holy week, when, as is customary in Catholic countries, the inhabitants devote themselves to religious ceremonies and festivity. The earlier portion of each day was occupied in a splendid procession from one or other of the principal churches; business was almost entirely suspended—the inhabitants appeared in their gayest attire—the females and children were loaded with jewellery—the streets were swept, and partially strewed with flowers; and in the evening the devotions of the day gave place to amusement and hilarity. The general festival continued without interruption until the Thursday afternoon, when the fatal and unexpected convulsion of nature took place. The weather was peculiarly fine; the sun shone brightly, but not oppressively, from the deep blue sky, on the wide expanse of which not a cloud was to be seen. The streets were gay with passengers, who sauntered along in careless groups: there was no sign of approaching calamity; and it is not without awe that the writer of this narrative can revert to the previous hour of happiness and fancied security, and contrast it with the desolation which a few seconds produced—the prostration of that city in the dust, and the immolation of thousands of her inhabitants.

Figura 21: Extracto de la narrativa de James Scott Walker, publicada en el *Christian Index*, del 15 de enero de 1831, bajo el título "Miscellaneous Record. The Earthquake of Caracas".

53

James Scott Walker, "From the British Magazine. Original Account of the Dreadful Earthquake of Caracas, in South America, in 1812. By an Eye Witness. To the Editor of the British Magazine", *The Museum of Foreign Literature, Science and Art*, Philadelphia, febrero de 1831, vol. XVIII, Nº 104, pp.121-129.[136]

Sir: The repented solicitations of individuals, whose opinions I cannot but respect, induce me to submit to you the following narrative of the fatal earthquake of Caracas in 1812, of which I was a witness, and of which a brief notice only was appended as a note of reference to a poem[137] published by me in 1815, and now out of print. Humboldt, the celebrated French traveler and geologist, to whom the subject was one of deep interest, had not the advantage of personal observation, and was therefore constrained to a more notice of the occurrence of the disaster, and a statement of the number of individuals who perished; and I have not heard of any authentic and satisfactory account of it having hitherto been published. This consideration, together with the finality of the earthquake, and the growing interest entertained for the country in which it took place, will, I trust, render the details acceptable to your readers, and I indulge a hope, may draw some philosophical writers to submit, through your pages, their opinions as to the causes of those dreadful convulsions of nature, that, from time to time, prostrate whole cities in ruins, and whelm thousands of human beings in destruction, Should that hope be realized, I shall probably adventure some speculations of my own on a subject which it is impossible to approach, without a humiliating sense of the inadequacy of human intellect to solve, with certainty, the grandest problem of the material world. The introductory part of my communication comprises a topographical sketch of the two towns which suffered the most extensively

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136 N de A: La entrega del *The Museum of Foreign Literature, Science and Art* que aquí se reproduce fue tomada originalmente del *The Columbian Star and Christian Index*, W. T. Brantly (editor), Printed by Martin and Boden, Nº 204 Market Street, Philadelphia, 1830, vol. III, y se trata de la versión más extensa y completa de la narración de James Scott Walker. Esto hace suponer que el escrito de Walker fue publicado varias veces y en varias versiones, cada una de ellas al gusto del editor de turno. Resulta una situación similar a la que se suscitó con el texto de Louis Delpeche, aunque en este caso con menor cantidad de reproducciones. Fragmentos de esta narrativa aparecen también publicados en dos entregas sucesivas de *The Friend: a Religious an Literary Journal*, Philadelphia; la primera de ellas el 9 de abril de 1831, vol. IV, pp. 202-204; y la segunda el 16 de abril de 1831, vol. IV, pp. 211-212. También aparece en *The Illinois Monthly Magazine*, Ohio, noviembre de 1831, pp. 85-93. El documento transcrito inmediatamente antes (en la entrada 52) es un ejemplo al respecto. El 19 de enero de 1856 también fue inserto un fragmento en el escrito titulado "An Earthquake or Two", publicado en el *Harper's Magazine*, New York, vol. IX, Nº 19, pp. 294-296, transcrito aquí en la entrada 62.

137 The South American.

by the calamity in question, and of the appearance of the adjacent country before the earthquake, in order that the reader may be better enabled to estimate the extent of the destruction which it involved.

I am, sir, your obedient servant,

James Scott Walker.

Birkett Street, Liverpool, 1830.

[...]

CHAPTER II

Journey from La Guayra to Caracas. Remarkable road on the mountains. Face of the country. Extent and sublimity of the views as the traveler ascends. View of the Valley of Caracas. The city. The inhabitants. Structure of the buildings before the Earthquake. The Valley not unlike the Vale of Clwyd. Delightful temperature of the climate.

The city of Caracas, formerly called St. Juan de León, is situated in a valley about four miles to the south (in a direct line) from the sea, from which it is completely walled in by the mountains, the height of which (particularly that called the "Silla" or "Saddle" of Caracas) renders it necessary for travellers to work their way to it by a road sixteen miles in length. When the writer was last at Caracas, a Frenchman proposed cutting a tunnel through the heart of the Silla, between the two towns, which would probably have reduced the distance (by an inclined plane) to little more than three miles; but the government were not possessed of the funds requisite for the accomplishment of the such an undertaking, had it been practicable. The writer has since learned from Mr. Stevenson, the talented and active engineer of the Liverpool and Manchester Tunnel and Railway, that his (Mr. S's) son, who was some time ago superintending the working of some mines in Colombia, had some communication with the authorities there on the subject of a tunnel; but that it was finally determined not to hazard the project, as the country was subject to earthquakes, which might destroy in a moment the subterranean labours of years.[138]

[138] If British skill cannot be prudently elicited in the New World, in the construction of tunnels, it is to be hoped that it may yet be employed there in works equally great and useful. A navigable communication between the Atlantic and Pacific Oceans has long been a desideratum, and the writer has, for years, lamented that no engineer, such as Mr. Stevenson, has ever found sufficient inducement to take a trip to Darien to ascertain, whit a practical eye, whether a ship canal could be out across the Isthmus. The distance from a navigable part of the Rio Chagres is stated to be only about forty miles. If the soil or hills present obstacles to a canal, cannot a railroad be laid? Either plans would be of incalculable advantage to England, as it would bring the whole trade of Peru and Chili almost as near to us as that of the West Indies. There can be no doubt that if the British government offered to undertake a canal or railway, the Republic of Colombia would, for its own sake, grant or sell the requisite land. Such an undertaking would be wiser and more profitable than a thousand Northern Expeditions.

As is customary, we hired mules for our journey to the city, and set off at a round pace, secured from the danger of falling by the convenient construction of the Spanish saddles. From La Guayra the road sweeps along the sandy shore of the Bay to the rural village of Maycatia, near Cape Blanco, whence it winds up the mountain in a zigzag direction to counteract the activity. Some parts of it are, however, so steep that the traveller, unless he be well mounted, is frequently obliged to alight, and seek safety and expedition in pedestrian exertion.

It is impossible to convey to those who have been accustomed lo English scenery only, (rich as that is during the summer) any adequate idea of the beauty and grandeur of the views which, al every turn on this road, burst upon the enthusiastic admirer of nature. He mounts, in fact, a succession of inclined planes cut out in serpentine curves on the face of the mountain, and overshadowed by trees; excepting at the turns he finds himself continually, as it were, on the brink of a precipice. There is a diversity of subsidiary hill and dale, even lo the highest ridges of these elevated regions, the greater part of which is covered with gigantic trees, veiled in a rich and variegated green, and here and there are observed fields of maize and plantations of coffee. The Silla is said to be eleven thousand feet above the level of the sea, and the traveller must ascend to nearly its full height before he reaches the pass. The view, through the glades of the country below, increase in interest and extent as he proceeds, and the curious frequently pause to mark parts of road which they have passed, and to which it appears they might, with facility, pitch down a stone, though they hare ridden some miles to attain the elevated site on which they stand. Instances are reported of travellers having fallen from the road down the precipitous declivity, mules and all but without sustaining any injury, saving successive bumps against the trees that broke their fall into portions, and thus saved them from destruction.

Before reaching the highest part of the road, the jaded rider and his mule are cheered by the welcome appearance of a posada, or inn, where may be had a gloss of Catalonia wine, and the greater luxury in a tropical country, of water so cold that it casts a dim upon the glass. The air is hero agreeably cool, but it is frequently obscured by mists. From a shrubbery in front of this humble place of entertainment, may be obtained, when the atmosphere permits, one of the most sublime and beautiful prospects it is possible for the most fertile imagination to conceive. The clouds and misty vapours frequently hang on the mountain, far below the eye of the spectator, and his continued

gaze downward seems to tie upon the impenetrable, yet still extending ocean of immensity. When the clouds are dispersed by the breeze, to look down from such an altitude upon the vast extent of hill, and dale, and ocean, and sky, which the eye can at once embrace, produces a momentary giddiness, which is succeeded by emotions of surprise and admiration, mingled with that blameless pride and feeling of independence, which is natural on attaining, with no little toil, an eminence whence we may look down like "monarchs of all we survey," upon the world that is spread out beneath us, relieved, for a time at least, from all its trammels and turmoils. From this spot, the large ships in the ruffled bay of La Guayra appear no bigger than boats, or mere specks upon the placid surface of a lake. While the eye is thus gratified, the noise of waterfalls and gurgling brooks, the songs of wild birds that flit past in the richest plumage, the shouts of muleteers, far and near, the rustling of leaves in the wind, and the hum of innumerable insects, all betokening a world of life and activity, convey to the naturalist a specimen of the riches of a tropical landscape, which the pencil of fancy would in vain strive to portray.

At a short distance from the top of the mountain, on the south side, the traveller's attention is arrested by a bird's eye view of the city of Caracas, and the whole valley, nine miles in length, surrounded by an amphitheatre of hills, and watered by innumerable rivulets that discharge themselves into a river that winds, with gentle current, down the meadows. As the valley is situated high, the descent on this side, though steep, is little more than half that on the eastern declivity of the mountain. The valley, indeed, is one of those elevated or table lauds peculiar to South America, which a European, were he conveyed to It without observing the rise of the road, would conclude was nearly level with the sea.

The streets of Caracas, we found to intersect each other at right angles, those running south-ward sloping gently towards the river. The houses of the genteeler portion of the community were not without considerable outward elegance. The greater numbers were built of a composition of clay and gravel, a few only being of lime and stone. The walls of those built of the former material are cast a few feet high it at a time, of any required thickness, within wood-work the clay being in a diluted state. When this becomes dry, and is partially hardened, the wood-work, consisting of boards, fixed on each side, is shifted higher, and more of the material is thrown on. This operation is continued till the whole is of the required height. These houses are tastefully ornamented exteriorly with pilasters, moldings, and other architectur-

al ornaments in cement, end is they are colored in imitation of stone; they have a pleasing and cheerful appearance. The material of which the walls are formed, acquires, in course of time, considerable hardness and consistency: but it is evident, that as the walls become like an entire piece of what in potteries is termed biscuit scare, they are liable to be easily rent or split in huge fragments; and having no elasticity from joint-work, they are not calculated to withstand the concussions of an earthquake. We saw few houses above two stories in height: indeed, the greater numbers were only of one story, but with lofty ceilings. The dwellings of the opulent (as now in that country) were designed with considerable taste. The entrance was by a wide gateway or passage in the centre, terminating in an open square, with light piazzas and a gallery above all round it, from which the doors of the upper apartments opened. The principal rooms occupied the part of the building that formed the front of the square. These houses were finished with more or less elegance according to the taste or wealth of the proprietors. The squares and passages of some were finely flagged of others, fancifully paved with, white and party-coloured small stones or not uncommonly, with bones of sheep and other animals, the knuckle part up, which had a pleasing and novel effect. Owing to the moderate height of the houses, the width of the streets, and the detached system of building, the city covered a large extent of ground.

The climate of Caracas is temperate and delightful. Though but ten degrees from the equator, it enjoys, from its altitude, that temperature which a tropical latitude would otherwise deny. It is said to be about five thousand feet above the level of the sea, and its height, together with the effect of the vapours tint often hang on the adjacent mountains and absorb the fiercer rays of the sun, renders the air at once balmy and salubrious. The days are seldom much warmer than our finest midsummer weather, and as this temperature is pretty evenly maintained, the warmth is less oppressive. The evenings are of a placid mildness grateful to Europeans, and are considered by the natives of the country (particularly those from the low lands, or "tierras calientes") as inclining to cold.

The principal public buildings were the churches, which were about twelve in number. The Cathedral was a brick edifice, with a square tower. The roof was supported by two rows of massy pillars, and we observed a superb altar, and some decayed paintings and ornaments that bespoke its former grandeur. Some of the pillars were covered with rich taffeta, the gifts of the pious or the penitent. The other churches were smaller, but more elegant in outward appearance. The spires and towers were provided with numbers of bells, which

were almost constantly tolling. There were likewise several nunneries, and a college; also barracks, in the outskirts, built in modern style.

The inhabitants of Caracas are principally whites, and of those mixed castes that partake but slightly of African or Indian complexion. Amongst the working classes, the proportion of which is smaller than in English towns, the blacks ore, perhaps, the most numerous. The more respectable inhabitants are chiefly engaged in commercial and agricultural pursuits. The produce of the country, which consists chiefly of cocoa, coffee, dyewoods, indigo, cotton, drugs, &c., is either sold to foreign houses on the spot, or carried to La Guayra, or Puerto Cabello, whence British and other piece goods, flour, hardware, wino, brandy, &c. are received in return for the cash purchasers may lie said to resolve themselves chiefly into this sort of barter. The principal recreation of the males is billiards. The females are lively gaditanas; they are generally of low stature, with small and comely features, and brilliant black eyes. Few of them have a rosy complexion, but this deficiency is compensated by a paleness that of delicacy, not of disease, which is equally agreeable, and perhaps more interesting. The Caracaneans are admirers of the fine arts, in which, however, they have made but moderate progress. They are passionately fond of music and dancing. The guitar is the common instrument. It is played by both sexes, and often as an accompaniment to the voice, with must taste and execution. The harp and flute are also played, and at their balls, the music (particularly the lively Spanish dances) is peculiarly pleasing. I am bound to add, that to many amiable domestic qualities, the inhabitants of Caracas add a hospitality and attention to foreigners not surpassed by any people I have ever met.

The valley of Caracas is not unlike that of the celebrated Vale of Clwyd: but the mountains are of a more imposing height, and the verdure is characterized by a richer luxuriance and variety. Caracas has, more over, the scenic advantage of numerous streams, murmuring through romantic dingles scarcely ever trodden by the foot of man.

The chief produce of the valley Is coffee, Indian corn, and Guinea corn, the last for the food daring of mules, on whose bucks all produce and other articles are transported from place to place, a wheeled carriage being seldom seen but as a curiosity,[139] To the productions named may be added fruits of every description, and a variety of market stuffs.

[139] The steepness of the roads on the mountains, and the badness of those generally through the country, which is too thinly peopled to bear a road assessment, may account for this. In Carthagena (also in Colombia) carriages are numerous but clumsy.

Caracas is esteemed one of the most enlightened towns in the Republic. Since the earthquake it has been rebuilt upon plans which may be called proof against a considerable concussion of the earth; and as it has resumed its former appearance and activity, these few remarks on the birth place of Bolivar may not be deemed irrelevant.

Chapter III

The Earthquake.

This dreadful calamity occurred on the twenty-sixth of March, 1812, being in the Semana Santa, or holy week, when, as is customary in Catholic countries, the inhabitants devote themselves to religious ceremonies and festivity. The earlier portion of each day was occupied in a splendid procession from one or other of the principal churches; business was almost entirely suspended the inhabitants appeared in their gayest attire the females and children were loaded with jewellery the streets were swept, and partially strewed with flowers; and in the evening the devotions of the day gave place to amusement and hilarity.

The general festival continued without interruption until the Thursday afternoon, when the fatal and unexpected convulsion of nature took place. The weather was peculiarly fine; the sun shone brightly, but not oppressively, from the deep blue sky, on the wide expanse of which not a cloud was to be seen. The streets were gay with passengers, who sauntered along in careless groups: there was no sign of approaching calamity; and it is not without awe that the writer of this narrative can revert to the previous hour of happiness and fancied security, and contrast it with the desolation which a few seconds produced the prostration of that city in the dust and the immolation of thousands of her inhabitants.

At about twenty minutes past four o'clock, the writer, in company with some friends, was standing at the outer door or gateway of a house in the city, expecting to be called to dinner, when the commencement of the concussion was marked by a rumbling, smothered, and extraordinary noise, which it is difficult, if not impossible, to describe, though its repetition would reach the ears of those who heard it like a familiar knell. It might be aptly called the groaning of an agonized world. This noise we heard before we were sensible of any tremulous motion of the earth; and one of my companions remarked that he heard a troop of cavalry (which had been employed during the festivities) galloping down a neighbouring street. As the horses and mules

in that country were seldom shod, we thought the conjecture probable, and awaited the approach of the supposed cavalcade. In a few seconds we were undeceived. The noise became more and more proximate, distinct, and continuous, not unlike internal thunder; and the earth began to tremble gently, a native of the town, who lived in the house, and had just joined us, now exclaimed, "Terramoto!" (an earthquake) and the trembling of the earth became every second more violent. The house was a corner one, at the crossing of two streets. We heard the walls crack, and pieces of the plaster fall upon the floors. The trembling of the ground now amounted to sudden jerks, which soon became so long and violent, that we could with difficulty keep our feet. Our first impulse was to gain the centre of the crossing, so as to be as for distant as possible from the walls; and with some difficulty we gained that point; whence we perceived many of the inhabitants in the streets, some running about in contusion others kneeling in prayer. Amongst the latter were a respectable old gentleman and his daughter, who had run out for safety from a house next to ours on the north. We beckoned and shouted to them to come to the spot where we stood; but they heard us not in their alarm. The corner house on the south-west angle fell with a tremendous crash, burying several of the inmates; and the tiles of another were dashed down in heaps at our feet. We instantly ascended the ruins for security. Other building fell throughout the town, keeping up, for a few moments, a continued crash of destruction. I observed the front wall of the house, opposite to which the old man and his daughter were kneeling, begin to totter. My heart throbbed with apprehension, and we again earnestly strove to induce them to join us. They were absorbed in prayer their words were audible, but no human power could now avail them no human speed could save. I saw the huge bulk of the wall loosened from its foundation, thrown outward from its balance. It hung a moment, as if reluctant to do its work of destruction; the next unable longer to delay the sacrifice; it had, as if in mercy, with noiseless precipitancy nearly reached the heads of its victims. They did not appear to see it. I turned away with an involuntary groan. I heard its dead and ponderous fall. The old man and his daughter were that instant crushed to pieces!

The crashing of timber and tiles; the falling of roofs, and floors, and walls; mingled with the ejaculations of the affrighted, and the screams of women and children were now appalling. The earth moved more and more violently, in sudden and lengthened jerks, which did not feel as if oscillatory, but to and fro in a direct horizontal line. Thought, in such emergencies, rapid in its conclusions as the passage of light, anticipated some terrible. I yet undefined

consummation. There was, however, a calmness depicted on the countenances of my friends. Sudden and imminent as was the danger, the mind had accommodated itself to wait with respectful awe and resignation, not unmingled with curiosity, what it was apprehended might be the final explosion of nature,[140] I observed several strangers near us; some of them appeared unconscious of their danger; others wrung their hands in distress, and called upon the names of their friends; many gazed upon the mountains that overlooked the town, as if they feared they would fall upon them; and not a few were fearful that the earth would open and swallow them up. At length the concussions having reached their height, the tottering town was shaken to pieces. There was one general and terrific crash of falling materials, preceded by shrieks and cries of distress. A brief silence ensued and then the stifled groan, and frantic cry, smote the ears of the living: the internal thunder gradually became less audible, and the throes of the earth subsided to a tremor which rapidly died away. When we found ourselves again, in a literal sense, upon terra firma[141], we entertained no apprehension of a future shock; and our first impulse was to ascertain the extent of destruction, and to lend what assistance we could in extricating those who might be yet alive beneath the ruins. Nearly half of the city was thrown down, and the atmosphere was thickened with dust, which rose in every direction, and shrouded the afflictive scene from the view of the survivors; but a gentle breeze sprang up from the westward, and soon enabled us to behold the general devastation.

It may appear remarkable, that the whole of the fatalities and occurrences related, from the time of the first tremor of the earth until the subsiding of the concussions, were comprehended in the brief space of probably less than one minute!

Those, however, who have witnessed similar calamities, will admit that the productions of ages of human industry may lie destroyed in a moment; and those who have studied the operations of the human mind, in the hour of peril and destruction, will as readily admit, that worlds of thought, of dreadful agony, of awful suspense, may, on such occasions, be comprised within the space of a few fearful moments. Thus it is, that could the mind be stimulated to its fullest activity throughout the average duration of life, the moral existence of man would be, as it were, prolonged to comparative ages.

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140 The writer has witnessed a kindred feeling in eases of extreme danger at sea.

141 The province is In Terra Firma, a name which the coast would not have obtained had Columbus known that it was subject to these awful convulsions.

The part of the town in which we resided suffered less than the suburbs, in which whole streets were razed to the ground, and the ill-fated Inhabitants buried in the ruins. Every house that did not fall lost the roof, or was otherwise so much shattered that the apartments could be seen through the rents made in the walls. The fronts of many that stood hung, in doubtful position towards the street, threatening to fall upon the unwary passengers; and the cautious passed them on tiptoe, lest the sound of their footsteps should bring them upon their heads. The house we had inhabited was rent in many places; the plaster strewed the floors, and it would no doubt have fallen, had it not been supported, in one of the principal apartments, by a number of bags of coffee piled up nearly to the roof. The cloth had been laid for dinner in one of the rooms, and an accidental circumstance gave us a pretty accurate idea of the length and direction of the concussions. The glasses had been inverted on the table: some of them were thrown upon the floor; others having in a manner maintained their position while the table moved under them during the shock, and the lime and earthy powder fell from the ceiling and walls, described circles at various distances in the dust; and, allowing for the probable is inertia of both glasses and table, and comparing these with the effects upon ourselves, I conjecture that, at its extreme concussion, the earth moved in a northeast and south-west direction, in jerks of about eight inches in length.

It is worthy of remark, that though the earthquake was comparatively but slightly felt at Puerto Cabello, a distance of sixty miles, on the westward coast, from Caracas, no fissure, or rent of the earth, was over discovered, so far is I could learn; and it becomes a curious speculation to account for the absence of all chasm or opening, on a continent a portion of which has undergone a violent horizontal concussion, while the surrounding land has remained in a state of comparative quiescence.

After examining our shattered dwelling, we sallied forth to explore the ruins of the town, and to lend our assistance where it might be available. The scenes of suffering and desolation were every where truly horrifying. Here, whole families were buried alive, at a great and hopeless depth beneath the ruins; there, were seen mangled bodies and limbs projecting from the ruins. Some of the sufferers, whoso cries and groans were heard from beneath, were extricated alive; some expired in again beholding the light of day, and finding themselves probably the last of their kindred; but the greater number who did not escape, were crushed in a manner too dreadful to describe. Many of them were never recognized. Nearly all the churches had come to the ground.

That of La Merce (whence a holy procession was that evening to have sallied) became the tomb of hundreds. Many of the inmates would there escaped, but the priests exhorted them to remain, in the belief that the sanctuary was under the immediate protection of the Almighty. Theories of the wounded, and the lamentations of the female survivors, excited the compassion and roused the exertions of all those who had not, from fear, betaken themselves to the fields The English, Americans, and other foreigners (of whom only one or two were killed) lent all the aid in their power, and succeeded in dragging numbers of the sufferers from the ruins.

It occurred to us that La Guayra might have experienced a similar fate; and as we were interested in the safety of a gentleman of our establishment who resided there, it was agreed that I should proceed thither, and obtain information respecting him. I started on a young and headstrong mule. A considerable time was spent in endeavours to find my way out of the town. So stupendous were the ruins in many places, where the streets might be said to be obliterated amongst the general wreck that I was under the necessity of turning back from the site of one thorough fare and trying another. Many of the front walls of the houses had fallen into the streets, leaving the floors, with the tables laid out for the repast, of which there were now no guests to partake. When I reached the brow of the mountain, a melancholy prospect of the city, with its bare and pointed fragments of the walls, and its confused heaps of ruins lay stretched in awful silence before me. Immense masses of the mountain had tumbled into the road, and blocked it up; and in some places the road itself had slid down from its site, forming steep and dangerous breaks. These obstacles, however, sunk into insignificance when associated with the perils of the past; and with some difficulty and delay, I reached the summit of the ascent soon after sunset.

The cottagers, who lived in straggling hamlets on the east side of the mountain, had formed a religious procession on the road, carrying lanterns, and frequently on their knees offering their thanks for their preservation to the Author of the Universe. The moon shone brightly from a cloudless sky; and the stillness of the night, broken only by the hymns and prayers of these people, and the distant roar of the sea ill the bay below, impressed more forcibly upon the mind the horrors of the late awful visitation. This feeling was in no degree alleviated when I reached the village of Maycatea. There, numbers of the dying and wounded, who had either suffered on the spot, or had been carried thither from La Guayra, lay on beds, in the open air, attended by their

distressed relatives. The road between the village and the town was occupied by groups of the survivors, who persisted in stopping my mule to learn the fate of Caracas, but could furnish no information of my friend.

La Guayra, I found on passing the drawbridge, had suffered severely from the shock. Few of the houses were left standing, or in a habitable state. The Custom-house (formerly the premises of the Philippine Company,) being a strong building, alone withstood the concussion without being much injured. I met with no one whom I recognized amongst the desolate ruins, until I reached the open space in front of the church. The gentleman of whom I was in search, lived in an adjoining street, the whole of which had come to the ground in a manner that rendered it impossible to pass. A native merchant, however, informed me, that he had escaped, and had gone on board one of his vessels then in the bay. Having thus accomplished the object of my mission, I made the best of my way out of the town, on my return to Caracas, where my friends anxiously awaited my return apprehensive of the worst, from the rumours they had already heard of the total destruction of La Guayra. My mule started and plunged at the sight of a number of dead bodies that had been extracted from the ruins, and were laid in rows in the area near the church; and before I could dismount to lead him, he trampled, in his terror, upon some others. Several individuals who were watching these remains conceived that I might have avoided the accident, and I had some difficulty to persuade them that no indignity was intended. Fortunately for my safety, I was recognized by a bystander as "bueno muchacho" and every one was assiduous to assist me in leading the mule through the intricate ruins to the highway.

My journey back to Caracas was slow and laborious. The moon had gone down before I reached the city, which was not till two in the morning. I made several attempts to get over the ruins in the dark, but without success, and I returned and awaited the dawn in a field to which the survivors of many of the most respectable families had retired to pass the night. At day-break I hastened to relieve the anxiety of my friends, who, I found, had been active during the night in assisting to extricate from the ruins many unfortunate beings who would otherwise have perished.

All business was, for some months after this calamity, entirely suspended. The inhabitants erected tents and booths in the meadows near the town, which soon assumed the appearance of a large encampment. Days elapsed before many of the timid would venture into the town for what furniture and effects

they could recover from the ruins of their houses, yet few articles, though exposed, were stolen, the earthquake having impressed the whole mass of the people with a sort of religions awe. The supplies for the market were nearly stopped, and I were so inadequate to the demand, and so dear, that individuals were, by some establishments, employed to scour the country on horseback for provisions; end one of these the writer remembers to have returned from a hard day's forage, with a solitary head of cabbage!

It would be impossible to ascertain, with certainty, the number of persons who perished In the two towns, on the 26th of March, as many who were missing afterwards made their appearance and no census of the population had been taken for some years before. It was generally admitted that the deaths amounted to from thirteen to fifteen thousand, though Humboldt (who, however, had his information from others) estimates them at some thousands more.

The bodies of the unfortunate sufferers in La Guayra were, for three successive days, carried in large canoes outside the bay, and committed to the deep. It was horrifying to see the negroes tossing the bodies of the promiscuous dead from the pier into the vessels some of them dreadfully mangled, others, without apparent bruise. None of them were stripped of their clothing, and I observed amongst them the bodies of beautiful and well dressed females, with the combs and ornaments still in their hair. On the fourth day the sea rose so high that no canoe or boat could approach the shore without being swamped, and the bodies afterwards dug out were consumed on the beach by fire, to prevent pestilence, which method, together with inhumation in large pits, was also adopted at Caracas. Few of the bodies, however, to which, owing to the height of the ruins, access could not easily be affected, were for many months extracted. The removal of such masses of rubbish, beams, and building materials was necessarily a work of much labour and no small expense, and where families were entirely buried alive; there was no one to take an immediate interest in digging them out. A sort of apathy succeeded to the first alarm of the surviving inhabitants, and twelve months elapsed before the streets of La Guayra and Caracas were effectually cleared an operation to which they were roused by an opportune contrivance of the Bishop. That divine issued a sort of injunction that every one should aid in the good work, preparatory to a general festival or thanksgiving, to be observed throughout the country, with great solemnity, on the anniversary of the earthquake, which was then at hand. This measure had the desired effect: rich and poor gave their assistance, and the writer saw even young ladies busily employed in carrying off quantities of rubbish in their little

baskets. The ruins had been so long in heaps and hills that they were intersected by regular foot walks; and it is remarkable that notwithstanding the heat, and the number of bodies below, there was no obnoxious smell, the absence of which is attributed to the earthy materials of the houses in which they were buried, generally at a considerable depth; and to the drugs and spirits here and there dispersed from the crushed vessels that contained them in shops and stores. The use of herbs is also very common in that country, and the odour of these was, for many months, perceptible among the ruins.

On the 4th of April following (nine days after the great earthquake) a shock almost as violent as the first was experienced throughout the province. This completed the destruction of La Guayra, leaving only a few houses standing, and all of them (except the Customhouse) so shattered as to be unsafe as habitations. When this happened the writer was with some friends, tilting under on orange tree on a plantation in the valley of Caracas. The duration of the shock was probably more than a minute, and it seemed to subside partially and again become violent.

We were under the ridge of the mountains on the north, of which we had a full view, and there was something fearfully sublime ill being sensibly rocked on so vast a bulk of matter. On this occasion few, if any, individuals perished a general caution having been observed. The villages in the vicinity of Caracas were mostly levelled to the ground, but though the first earthquake was felt as far to the westward as Carthagena, Puerto Cabello (before mentioned) sustained little injury by either of the shocks. Frequent concussions of the earth, more or less severe, were experienced in the province for nine months afterwards, and many of these occurred about the same hour of the day. I could not, however, trace them to any lunar influence, or to any peculiar state of the atmosphere. The shocks were distinctly felt on board of the vessels in the bay, and by others at a distance of sixty or more miles from the land. When one severe shock took place, I was with some friends in the cabin of a vessel riding at anchor. We ran to the deck to witness its effects. Presently the dust rose in columns from the ruins of the town, and an immense mass of the mountain, with its superincumbent weight of trees, was loosened from its site, and, sliding down the declivity, it left a space, several acres in extent, of naked red soil behind it. In the same year a violent eruption of the volcano in the island of St. Vincent look place, and ashes from the crater were swept from the decks of vessels as far to windward of it as Barbadoes, having doubtless been carried in that direction by a stratum of wind at a greater altitude than the trade winds,

which blow from the E. N. E. This volcano, probably, sometimes operates as a sort of safely valve for the escape of internal combustion, and it is not unreasonable to suppose that it has a submarine communication, or sympathy, with the proximate high land of South America, and that its eruptions may sometimes tend to prevent earthquakes, or reduce their violence, in that quarter.

Without here endeavouring to attribute these awful convulsions of nature lo the effects of internal combustion, the expansion of confined air or gas, electricity, or other conjectural causes, which geologists have hitherto failed, satisfactorily, to demonstrate it is impossible to reflect on the immense bulk and weight of the stupendous mountains, and prodigious extent of land, in Venezuela, thus agitated, as it were but as a leaf of the aspen quivering in lie wind, without a sublime idea of the incomprehensible power of the great God of Nature, and a humiliating sense of the pigmy efforts of man, with all his scientific appliances of the dements and matter placed under his control!

THE EARTHQUAKE AT CARACAS.

BY AN EYE WITNESS.

This dreadful calamity occurred on the 26th of March, 1812, being in the Semana Santa, or holy week, when, as is customary in Catholic countries, the inhabitants devote themselves to religious ceremonies and festivity. The earlier portion of each day was occupied in a splendid procession from one or other of the principal churches; business was almost entirely suspended—the inhabitants appeared in their gayest attire—the females and children were loaded with jewellery—the streets were swept, and partially strewed with flowers; and in the evening the devotions of the day gave place to amusement and hilarity. The general festival continued without interruption until the Thursday afternoon, when the fatal and unexpected convulsion of nature took place. The weather was peculiarly fine; the sun shone brightly, but not oppressively, from the deep blue sky, on the wide expanse of which not a cloud was to be seen. The streets were gay with passengers, who sauntered along in careless groups: there was no sign of approaching calamity; and it is not without awe that the writer of this narrative can revert to the previous hour of happiness and fancied security, and contrast it with the desolation which a few seconds produced—the prostration of that city in the dust, and the immolation of thousands of her inhabitants.

Figura 22: Extracto de la narrativa de James Scott Walker publicada en *The Museum of Foreign Literature, Science and Art*.

54

"America", *The Penny Cyclopaedia of the Society for the Diffusion of Useful Knowledge*, Londres, 1832, vol. I, p. 438.

[...]

The phenomenon of earthquakes is now exhibited in South America with more activity than in any other quarter of the world; no is North America free from them, though their sphere of action appears to be, perhaps, more limited, and their effects less terrible. The great earthquake which on March 26, 1812, laid Caracas and La Guayra in ruins, was felt near New Madrid on the Mississippi, where its effects where only less disastrous because the place is less populous. The forest near New Madrid presented, for some years afterwards, 'a singular scene of confusion; the trees standing inclined in every direction, and many having their trunks and branches broken.' (Long's Exped, to the Rocky Mountains, iii, p.184). These conclusions, which are very common about New Madrid, are felt it is said, from New Orleans to the mount of the Missouri, and from the settlements of the Red River and the Washita to the Falls of Ohio. They are felt also in the Appalachian system and on the Atlantic slope, though we know of no instance in which any damage has been done. But in South America, earthquakes are matter of ordinary occurrence, though, we believe, they are always within the immediate sphere of the greater Cordilleras and the detached branch along the northern coast of Venezuela. On the eastern coast of America the seldom occur. It is asserted, that where thunders and lightning seldom occur, earthquakes are an ordinary occurrence. Whether this generalization is really a safe one may perhaps be doubted, till it is confirmed by further observation. [...].

Figura 23: Mapa sobre Suramérica publicado en *The Penny Cyclopaedia of the Society for the Diffusion of Useful Knowledge*, 1832, en la página 436.

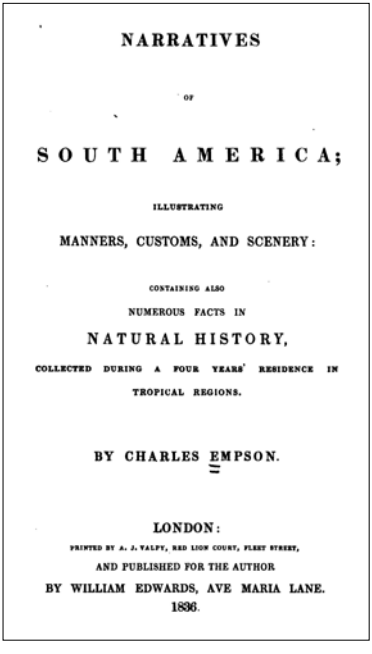
55

Charles Empson, *Narratives of South America; illustrating manners, customs, and scenery: containing also numerous facts in natural history, collected during a four years residence in tropical regions*, Printed by A. J. Valpy, Red Lion Court, Fleet Street, Londres, 1836, p. 80.

[...]

The earthquake of 1812 laid prostrate many of the cities of Venezuela, and destroyed nearly every house in Honda. They were never entirely rebuilt; but some of the buildings, which were only partially repaired, have experienced many successive shocks. There are but few habitations which have an appearance of security: the churches and convents are in a fearful state of dilapidation. The noble stone bridge built by the Spaniards across the Guale [sic por el río Guaire], and the adjoining monastery of San Juan de Dios, were thrown down at a later period; and falling into the bed of the river, the navigation became so dangerous, that the temporary bridge, represented in the sketch, was constructed from the ruins of the convent.

[...]



NARRATIVES

OF

SOUTH AMERICA;

ILLUSTRATING

MANNERS, CUSTOMS, AND SCENERY:

CONTAINING ALSO

NUMEROUS FACTS IN

NATURAL HISTORY,

COLLECTED DURING A FOUR YEARS' RESIDENCE IN TROPICAL REGIONS.

BY CHARLES EMPSON.

LONDON:

PRINTED BY A. J. VALPY, RED LION COURT, FLEET STREET,

AND PUBLISHED FOR THE AUTHOR

BY WILLIAM EDWARDS, AVE MARIA LANE.

1836.

Figura 24: Portada del texto de Charles Empson, *Narratives of South America; illustrating manners, customs, and scenery: containing also numerous facts in natural history, collected during a four years residence in tropical regions*, impreso para 1836.

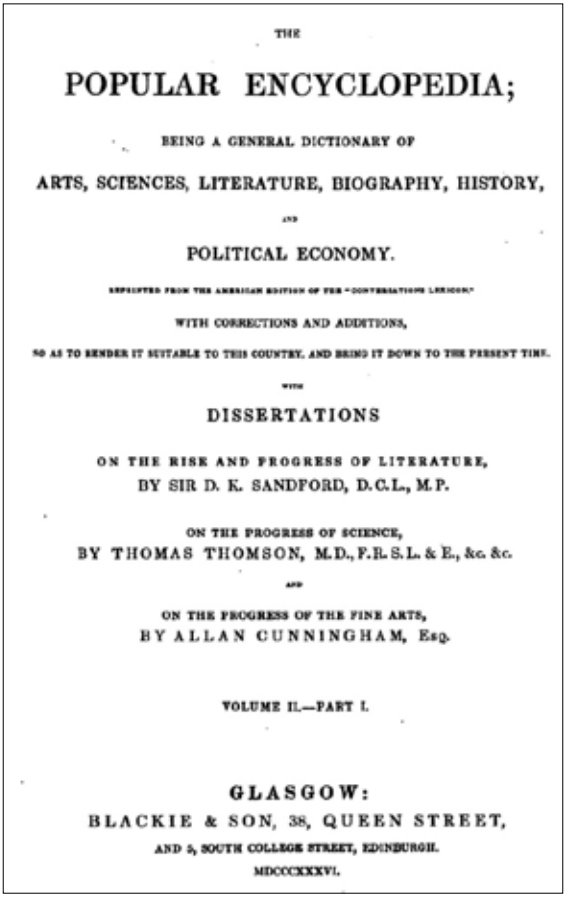
56

Daniel Keyte Sandford, Thomas Thomson & Allan Cunningham, "Caracas, or Venezuela", *The Popular Encyclopedia; being a General Dictionary of Arts, Sciences, Literature, Biography, History, and Political Economy*, Glasgow, 1836, vol. II, parte I, pp. 317-318.[142]

Caracas, or Venezuela. The coast of this country was originally discovered by Columbus, 1498, during his third voyage, several attempts being made to colonies, the Spanish government came to the determination of settling this country under its own direction. These expeditions were managed by priests, and generally ill conducted; and it was found necessary to subdue the inhabitants by force. When this was partially affected, and the Spanish settlers were placed in some security, the proprietorship was sold by Charles V. to the Welsters, a german mercantile company. Under their management, the Spaniards and the natives suffered the most grievous tyranny. The abuses of their administration becoming at last intolerable, they were dispossessed, in 1550, and supreme governor, with the title of *captain-general*, was appointed. From this period until the year of 1806, Caracas remained in quiet subjection to the mother country. In 1805, a gallant but unfortunate attempt was made to liberate her from the yoke. General Miranda, a native from Caracas, formed for this purpose an expedition partly at St Domingo and partly at New York. A landing was affected on the coast, but the force proved wholly inadequate to the designed object. Many where taken prisoners by the Spanish authorities, and several suffered death. The defeat was decisive, and gave an effectual blow, for the time, to the project of independence. In 1810, however, Spain begin overrun by the French troops, the opportunity was seized by the principal inhabitants to establish a freer form of government. For this purpose, a *junta suprema*, or congress, was convened in Caracas, consisting of deputies from all provinces composing the former captain-generalship, with the exception of Maracaibo. At first, they published their acts in the name of Ferdinand VII.; but the captain-general and the members of the *audiencia* were deposed and imprisoned, and the new government received the title of the *confederation of Venezuela*. The most violent and impolitic measures were now taken by the regency and cortes of Spain towards the people of the district. The congress finding the voice of the people decided in favour of independence, issued a

[142] N de A: El contenido que aquí se transcribe aparece publicado también en *The British Cyclopaedia of the Arts, Sciences, History, Geograohy, Literature, Natural History, and Biography*, editada por Charles F. Partington, vol. III, Londres, 1838, p. 440; y en la *Encyclopendia Americana. A Popular Dictionar of Cyclopaedia of the Arts, Sciences, History, Geograohy, Literature, Natural History, and Biography*, editada por Francies Lieber, vol. II, Philadelphia, 1838, p. 326.

proclamation on the fifth of July, 1811, formally declaring it. A liberal constitution was established, and affairs wore a favourable aspect for the cause of freedom, until the fatal earthquake of 1812, which, operating on the superstition of the people, led to a great change in the public opinion. Monteverde, a royalist general, taking advantage of the situation of affairs, marched against Caracas, and, after defeating general Miranda, compelled to the whole province to submit.


THE

POPULAR ENCYCLOPEDIA;

BEING A GENERAL DICTIONARY OF

ARTS, SCIENCES, LITERATURE, BIOGRAPHY, HISTORY,

AND

POLITICAL ECONOMY.

EXTRACTED FROM THE AMERICAN EDITION OF THE "ENCYCLOPÆDIA LONDINENSIS"

WITH CORRECTIONS AND ADDITIONS,

SO AS TO RENDER IT SUITABLE TO THIS COUNTRY, AND BRING IT DOWN TO THE PRESENT TIME.

WITH

DISSERTATIONS

ON THE RISE AND PROGRESS OF LITERATURE,
BY SIR D. K. SANDFORD, D.C.L., M.P.

ON THE PROGRESS OF SCIENCE,
BY THOMAS THOMSON, M.D., F.R.S.L. & E., &c. &c.

AND

ON THE PROGRESS OF THE FINE ARTS,
BY ALLAN CUNNINGHAM, Esq.

VOLUME II.—PART I.

GLASGOW:
BLACKIE & SON, 38, QUEEN STREET,
AND 5, SOUTH COLLEGE STREET, EDINBURGH.
MDCCCXXXVI.

Figura 25: Portada de *The Popular Encyclopedia; being a General Dictionary of Arts, Sciences, Literature, Biography, History, and Political Economy*, con observaciones de Daniel Keyte Sandford, Thomas Thomson & Allan Cunningham, editada para el año de 1836.

57

Anónimo, "Earthquake of Caracas", *The London Saturday Journal*, Londres, 04 de enero de 1840, vol. III, pp. 13-14.

The most awful convulsion of nature which has occurred in any part of the world, since the commencement of this century, was the earthquake of Caracas, a city of what is now the independent republic of Venezuela, in South America. It is situated about fifteen miles from the Caribbean Sea, from which it is separated by a chain of mountains, at an elevation of 3.000 feet above the ocean. It was well-built, possessed many spacious and beautiful edifices; the private houses were noted for the richness and costliness of their furniture and decorations an unequivocal indication of great wealth and it contained, at the time of the catastrophe, a population of 50.000. On the fatal 26th of March, 1812, it was reduced to a heap of ruins in a few seconds, and twelve thousand of the inhabitants perished together in an instant. The prince of travellers, M. Humboldt, has supplied us with a vivid and affecting account of this appalling calamity, to which we shall have recourse in drawing up the present notice of it. Shocks of earthquakes had been felt previously to the fatal day, particularly on the 7th and 8th of February, when the earth was kept in a state of perpetual oscillation day and night. A great drought prevailed at this period throughout the province. Not a drop of rain had fallen at Caracas, or for ninety leagues around it, during the five months which preceded its destruction. The 26th of March, the memorable day, was remarkably hot; the air was calm, and the sky was one sheet of unclouded azure. It being Holy Thursday, a great part of the population was assembled in the churches. Nothing in the earth or in the sky gave awful presage of the approaching calamity; it seemed a holiday with nature too. But at seven minutes past four in the afternoon a shock was felt, sufficiently powerful to make the bells of all the churches toll at once. This lasted five or six seconds, during which the ground rolled to and fro like an agitated sea, and heaved upwards like a boiling liquid. The danger was supposed to be past, when suddenly a tremendous subterranean noise was heard, louder and longer than the most terrible roll of thunder that ever pealed within the tropics, but resembling that phenomenon. This sound preceded a perpetual motion of three or four seconds, followed by an undulatory movement somewhat longer. The shocks were in opposite directions, from north to south, and from east to west. Nothing could resist this combined movement from beneath upwards, and the undulations crossing each other. As two contending waves meeting break each other into fragments, so was

Caracas shattered to pieces by this opposite rolling of the earth; and about twelve thousand souls were buried beneath the houses and churches.

There was of course a grand procession to take place that day; it had not yet set out, but so great was the concourse which thronged the churches, that nearly four thousand persons were crushed by the fall of their heavy vaulted roofs. The sacred edifices which bore the names of La Trinidad and Alta Gracia were more than one hundred and fifty feet in height; the naves were supported by pillars of twelve or fifteen feet in diameter; yet of these strong and massive buildings there only remained a mass of ruins, not exceeding five or six feet in elevation. The ground at this place afterwards sunk so much, that scarcely any vestiges of pillars or columns remained visible. The soldiers' barracks, a large and substantial building, almost wholly disappeared. A regiment of troops of the line that was assembled under arms, ready to join the procession, was, with the exception of a few men, overwhelmed beneath the ruins of this great edifice. In short, nine-tenths of the fine town of Caracas were completely reduced to a heap of rubbish. The walls of such houses as were not thrown down were so rent and shattered, that no one would run the risk of inhabiting them. The effects of the earthquake were somewhat less violent in the southern and western parts of the city than in the others. There the cathedral, a massive building, supported by enormous buttresses, remained standing.

The scene of desolation and misery which followed this dreadful visitation has been painted in such lively colours by the great traveller mentioned, that we shall quote his words.[143]

"The night of Holy Thursday presented the most distressing scene of desolation and sorrow. A thick cloud of dust, which, rising above the ruins, darkened the sky like a fog, had settled on the ground. No shock was felt, and never was a night more calm or more serene. The moon, nearly full, illumined the round domes of the Silla, and the aspect of the sky formed a perfect contrast to that of the earth, covered with the dead, and heaped with ruins. Mothers were seen bearing in their arms their children, whom they hoped to recall to life. Desolate families wandered through the city, seeking a brother, a husband, a friend, of whose fate they were ignorant, and whom they believed to be lost in the crowd. The people pressed along the streets, which could no more be recognized but

[143] N de A: Se refiere a Humboldt, del cual toma algunas citas y parafraseos que fueron publicados en su *Personal Narrative*, inserta aquí en la entrada 92. Hay referencias, citas y versiones de este texto también en las entradas 60, 61, 64, 65, 73, 78, 85, 87, 88 y 97.

by long lines of ruins. All the calamities experienced in the great catastrophes of Lisbon, Messina, Lima, and Riobamba[144], were renewed on the fatal day of the 26th of March, 1812. The wounded buried under the rains implored by their cries the help of the passers by, and nearly two thousand were dug out. Never was pity displayed in a more affecting manner, never had it been seen more ingeniously active, than in the efforts employed to save the miserable victims, whose groans reached the ear. Implements for digging and clearing away the ruins were entirely wanting, and the people were obliged to use their bare hands to disinter the living. The wounded, as well as the sick who had escaped from the hospitals, were laid on the banks of the small river Guayra; they found no shelter but the foliage of trees. Beds, linen to dress the wounds, instruments of surgery, medicines, and objects of the most urgent necessity, were buried under the ruins. Every thing, even food, was wanting during the first days. Water became alike scarce in the interior of the city. The commotion had rent the pipes of the fountains; the falling in of the earth had choked up the springs that supplied them; and it became necessary, in order to have water, to go down to the river Guayra, which was considerably swelled and then vessels to convey the water were wanting. There remained a duty to be fulfilled toward the dead, enjoined at once by piety and the dread of infection. It being impossible to inter so many thousand corpses, half-buried already under the ruins, commissaries were appointed to burn the bodies; and for this purpose funeral piles were erected between the heaps of ruins. This ceremony lasted several days. Amid so many public calamities, the people devoted themselves to those religious duties which they thought were the most fitted to appease the wrath of Heaven. Some, assembling in processions, sung funeral hymns: others, in distraction, confessed themselves aloud in the streets. In this, town was repeated what had been remarked in the province of Quito, after the tremendous earthquakes of 1797; a number of marriages were contracted between persons who had neglected for many years to sanction their union by the sacerdotal benediction. Children found parents by whom they had never till then been acknowledged; restitutions were promised by persons who had never been accused of fraud; and families who had long been enemies were drawn together by the tie of common calamity. If this feeling seemed to calm the passions of some, and open the heart to pity, it had a contrary effect on

[144] The earthquake of Riobamba, in Quito, which happened in 1797, produced as frightful, and at the same time as singular effects, as any on record. Forty thousand persons perished in a moment; and the earth so opened, that opposite sides of the same street were in some instances removed to a great distance from each other, and occasionally to a considerable height above their former level. ED.

others, rendering them more rigid and inhuman. In great calamities vulgar minds possess still less goodness than strength. Misfortune acts in the same manner as the pursuits of literature and the study of nature; their happy influence is felt only by a few, giving more ardour to sentiment, more elevation to the thoughts, and more benevolence to the disposition." The effects of conscience, here so graphically described, form a very interesting feature of the subject. Such a circumstance is so characteristic of human nature, that every one may have occasional opportunities of observing it.

On the same day on which Caracas was overwhelmed, violent commotions were experienced in various, and often far distant, places. For some time, the earth continued in a very unsettled state, and gave frequent intimations of internal commotion by loud bellowing and horrible murmurs. Volcanic eruptions likewise broke out, the explosions being heard at a distance of seven hundred miles. Indeed, this period was remarkable for the frequency of volcanic phenomena; but we shall not enter upon the subject at present.

THE LONDON SATURDAY JOURNAL.

EARTHQUAKE OF CARACAS.

Figura 26: Detalles del artículo "Earthquake of Caracas" de la revista *The London Saturday Journal*, Londres, publicado el 04 de enero de 1840.

58

G. Goodrich, *A Pictorial History of America; Embracing both the Northern and Southern Portions of the New World*, Hartford, 1844, pp. 244-247.

[...]

The rapacity, despotism and oppression of the Spanish government gave rise to conspiracies and insurrectionary movements in the districts which afterwards formed the republic of Colombia, for many years previous to the general revolt occasioned by the French invasion of Spain. As early as 1797, an attempt to raise the standard of independence was made in Venezuela, by two natives of Caracas, Don Josef de Espana, corregidor of Macuto, and Don Manuel Gual, an officer in the army. The plot comprised a large number of persons, the most distinguished in the colony for their talents, virtues and wealth. Their object was to possess themselves of the heads of the government, and to keep them as hostages till a treaty could be made with the court of Spain for a redress of grievances and a general change in the government. The insurrection was fixed for the 14th of July, 1797, but, on the evening previous, the design was betrayed by one of the conspirators, who, struck with fear, went to the Cathedral, and rang the bell. The alarm being raised, the magistrates were brought together, and the plot was revealed. Most of the conspirators were arrested, but the two leaders made their escape. The king, when the whole affair was known, became convinced that the people had been driven to rebellion by the intolerable oppressions of his officers, and ordered that the prisoners should be treated with clemency. Espana, on this intelligence, gave himself up. But the authorities of Venezuela disregarded this order, and Espana, with five of his companions, was put to death.

The discontents of the people were not quieted; and in the year 1805, General Miranda received a great number of *letters* from Venezuela, entreating him to put himself at the head of an expedition for revolutionizing the country. Miranda agreed to the proposal, and proceeded to the United States, where he collected a body of a few hundred adventurers. The expedition sailed from New York, in 1806, and reached the coast near Puerto Cabello, in May. Here Miranda made an attack, but was repulsed by the Spanish gun-boats. He proceeded to Trinidad, recruited his forces, and returned under the convoy of a British sloop of war. On the 7th of August, he landed at Coro, where he remained unmolested for twelve days; though a considerable Spanish force was posted only four leagues distant. Miranda, however, found the people of the neighborhood lukewarm in the cause of revolt; and shortly after, he was

deserted by his British auxiliaries, who had promised him powerful aid. He was therefore obliged to abandon the expedition, with the loss of many of his men, who were taken and hanged.

The Spanish dominion continued but a few years longer. The great revolution burst out in 1810. The captain-general of Caracas was deposed on the 19th of April, and a popular congress convened to organize a new government for Venezuela. The same was done at Bogota, the capital of New Granada, which erected itself, at first, into a separate republic. The congress of Venezuela published a declaration of independence on the 5th of July, 1811, and this example was followed by the other provinces, which were afterwards united in the republic of Colombia.

The history of this revolution, like that of most others of the Spanish American states, is filled with a perplexing and most wearisome detail of political changes, party maœuvres, factions, intrigues, negotiations, plots and counter-plots, and marches and counter-marches of political and military leaders. Of these scenes the reader has had already a sufficient specimen in the preceding chapters, to give him a general picture of the South American revolutionary troubles. It will not be expected of us to repeat these details in the remainder of this history; their sameness exhibits the operation of the identical causes which we have before specified, while the confusion in which they are involved, and their lack of general and permanent results, cause them to leave but a vague and transitory impression on the mind of the reader. Those things alone which are intelligible and significant form the proper topics for history, and to these we shall confine our narrative.

The whole control of the revolution soon became engrossed in the hands of one individual, who, for many years, became the most prominent and powerful man in South America. This man was Simon Bolivar, a native of Caracas, who, as early as 1810, was sent to London as agent from the revolutionary government, to solicit aid from the British. That government, however, determined to remain neutral. Bolivar returned to Venezuela, where he was made colonel in the independent army, and governor of Puerto Cabello. General Miranda had returned to this country, and was appointed commander-in-chief of the forces. The Spaniards sent armies into the country, and many actions were fought. The patriots were generally successful till 1812, when they experienced a terrible calamity. On the 26th of March, an earthquake destroyed, either entirely or in part, the city of Caracas, and ten or twelve others, killing twenty thousand persons.

This dreadful catastrophe, happening on the very day and hour in which the revolution broke out two years before, the clergy seized upon the occasion to alarm the superstitious fears of the people, and excite them in favor of the royal cause, by representing it as a judgment from heaven upon the revolutionists. Priests, monks and friars, were stationed in the streets, vociferating in the midst of credulous multitudes trembling with fear, while the royalist troops were getting possession of the whole country, Miranda, in despair, capitulated, and was preparing to leave the country, when he was arrested by the patriots as a traitor. He was delivered up to the royalist general, Monteverde, and sent to Spain, where he died in a dungeon.

[...]

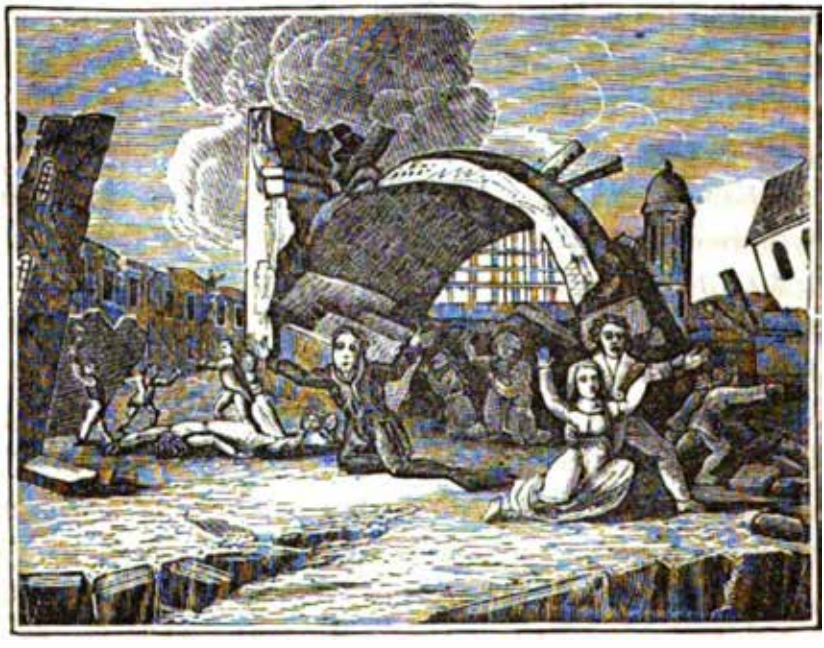


Figura 27: Cuadro sobre el terrremoto de Caracas de 1812, publicado en el libro de G. Goodrich, *A Pictorial History of America; Embracing both the Northern and Southern Portions of the New World*, p. 246.

59

Anónimo, "From the United States Gazette. The Earthquake at Caracas. Curaçao, Sept. 25th, 1845", *Littell's Living Age*, Published by Waite, Pierce & Company, New York, 24 de enero de 1846, vol. VIII, pp. 162-163.[145]

In the course of my visits to the house of a worthy English gentleman of great intelligence, who resides at Otrabanda, I have had the pleasure to hear from lips the following- reminiscences of the great earthquakes at Caracas, in the year 1812.

If I could but "tell the tale as't was told to me," I am satisfied that the reader would not dwell for a moment upon any other chapter of this poor book, until after reading, and at least twice re-reading this.

"I had been for some year in Caracas", said Mr. Da…., "when this sorrowful calamity occurred, and was driving a very heavy and sufficiently prosperous business. I recollect as well as though it had been this evening, the event.[146] It was late in the afternoon. I was sitting at the *table d'hole*, at dinner, with a large number of persons, chiefly foreigners, including many Frenchmen. While in the midst of our repast, wine and wit being in full flow, suddenly –in an instant– the knives, plates, and glasses sprang from the table some over our heads, others into our laps; our chains rocked under us, and the floor seemed swaying to and fro, like a huge scale suspended from a beam. "La terre temble", exclaimed the Frenchmen, as they leaped over the table and out of the windows, breaking down in their egress the strong gratings with which, in lieu of glass, the windows of that country are barred. I had never before witnessed an earthquake, and was not enough of a Frenchman at that time to understand their exclamations. But without divining what it was, I perceived instantly that there was something wrong, and that imminent danger was nigh at hand. Following the French party, who carried with them the others, to the

[145] N de A: Este texto también aparece publicado en el *Christian Watchman*, Boston, 13 de febrero de 1846, p. 28; y en el *Friends' Weekly* Intelligencer, Philadelphia, 7 de marzo de 1846, pp. 390-391.

[146] The clock of the cathedral was stopped, as is supposed, by the fist shock. The tower in which the dials are placed, one fronting each quarter of the heavens, remained standing; although the clock has been repaired and set going again, one of these dials and its hands have never been disturbed. They still point to the hour and minute which heralded so many thousand souls without a single moment's warning into eternity. According to this twenty minutes past four o'clock, P.M. was the moment of the first shock. I have seen the silent yet awful monitor myself, now when after the lapse of more than one third of a century a new city has sprung up on the spot where stood that whose destruction it witnessed; and new thousand when they raise their eyes to ascertain "what's the cock", are thus warned of the dread fate of these other thousands who thus so suddenly preceded them, to the dim cold home, to which we all are so speedily hastening.

house wall fell into the yard. I sprang upon it, and thence, clearing the yard wall and intermediate space at a single bound to the street, where my companions already were. I was the last of our company, and he as who escaped from that ill fated house. A moment later and I had been lost, for I had nor fairly landed in the street before the remainder of the house fell in, burying all of the servants under its ruins. Naturally, we thought of the servants, and were about devising means of ascertaining whether any were still living and could be saved, when one poor fellow crawled out through a crevice which had been formed by the arch of the door-way falling entire, with both his legs crushed off above the knees, as fully as though they had been amputated. We all started to procure a surgeon, but before we had advanced twenty paces, we saw so many others in as bad and worse situations, that we entirely forgot him, as well as his comrades who remained under the ruins of our fallen house. One *temble* (the shaking of the earth to and fro without disruption) followed another; one house scattered its debris alongside of these already down; one street sank after the other, until more than one half of the city, including all the churches, convents, public buildings, and much the best portion of the private houses were wholly destroyed, or greatly injured. We passes on our course, seeking we knew not what, but only endeavoring to avoid the instant death which momentarily and constantly hung over us, from the ever falling walls, timbers and stones. We came to the place where had recently stood one of the finest churches of the city, perhaps of this portion of the South- near the centre of the city. It was constructed in something of a circular form. Here our eyes were met by a monstrous pile of ruins. The walls had fallen in, (the day being Holy Thursday, all the churches were filled with people,) and four thousand persons had perished on the spot. Not one escaped to tell the melancholy tale. (in reference to so large a number being destroyed within one church, it may be proper to remark that the churches in Venezuela, as in other Catholic countries, are constructed without pews, benches or other seats, save the congregation, either standing or kneeling, will be far more numerous that could be placed within the same space in a church pewed or benched after the Protestant manner. But of course it will not be improper for the reader who desires great accuracy to make some deduction for gross estimates). A little further on we passed the Cathedral, from its wide portals now gaping wider with still more ghastly chasms where rushing upon the heels of the half crushed, wounded, bleeding and terrified crowd, a score or more of priests, monks and friars, some of them with the gore streaming from their shaven crowns, others with broken arms dangling at their sides and all covered with

contusions while most of the outside walls had stood firm the roof and inner parts of the building had fallen in pieces upon the congregation, this wounding almost every one.

We now thought we should seek some place of shelter. We selected the garden of one of our company, a French gentleman named Marceau. Through is centre flowed, as is the case with many of the gardens of Caracas, a small rivulet. Upon the banks of this brook grew a great number of cabbages; enclosed by the high walls of that garden defended by its barred and locked gate-eating those cabbages raw-green for food-and for drink using the water of the little stream; we remained for the space of eight days. It then became necessary for the space of eight days. It then became necessary for some one to go out in search of other food, our supplies even of this moloja[147] being well nigh exhausted. The city was depopulated. Those who went forth did not encounter a half a dozen human faces. Then commenced the work of plunder. The jewellers and goldsmith's shops were excavated; the mansions of the rich, and the government vaults were torn open.

Every night there Frenchmen retuned laden with booty. A gold watch of the first quality could be bought in the streets for a dollar rings, diamonds, plate, watches, chains, and jewellery of every description, were to be found un the hands or on the persons of miserable wretches, who bad delved them out of the ruins, but knew not their value.

These were brought into our garden in such quantities that soon it began to present the appearance of Ali Baba's cave, or the vault wherein the slave of the lamp kept guard over Aladdin´s treasures. But now, all the chance food that could be procured having been used, it became necessary to break open the baker's shops. From thence flour and bread was obtained. Soon afterwards a few soldiers were sent into the city to stop the work of pillage, which had long since become universal.

Near a month had now elapsed, and disgusted with my companions and desirous of change, I ventured forth for the first time. Not seeing any better, or indeed any other place of convenient or safe resort, I was about to return to our garden. A soldier met me in the street near our alley gate with the word "estras," (back). I told him "I was going home;" but as he presented bayonet, I retreated. I fell back to the next corner, and turning it, was met by another

147 Pronounced (moloja) Spanish for any green vegetable substance used to feed horses, cattle, asses, &c., and frequently applied extensively to green vegetables of every description.

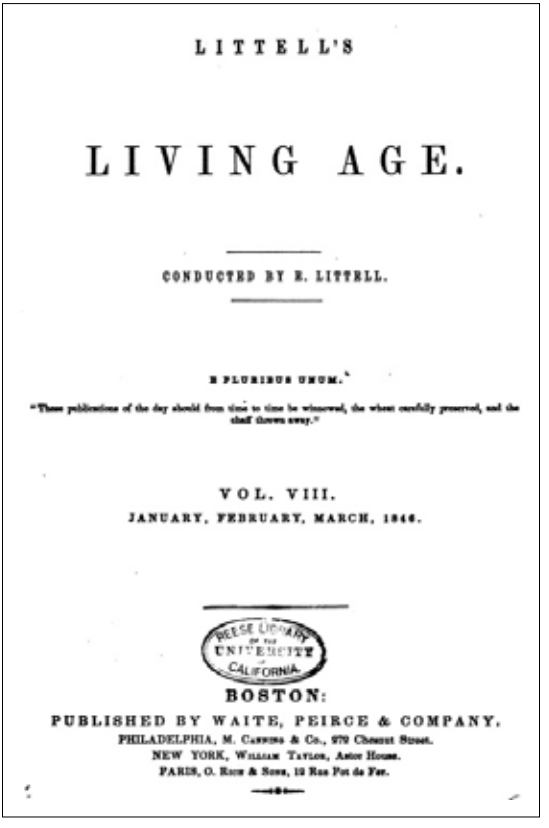
armed sentry and the same order. An officer was here also, and I was now informed that the government had issued an order for the burial of the dead and that every inhabitant capable of duty was mustered into service, for the purpose of excavating the ruins and collecting the dead bodies and mutilated limbs from beneath. We were furnished with hammocks and mattocks. A hammocks was spread upon the ground, and as wee dragged an arm, head or body from under the ruins, it was thrown upon it. When a load was obtained, it was tied up and carried upon the head of a peon (slave) into the plain beyond the city, where a large fired was kept burning, into which the ghastly putrid contents were thrown, and thus consumed. Beside the general pile, many smaller ones were found necessary to destroy all the dead. Then came the "peste." The stench of forty thousand (so many it is estimated by some perished in the sad catastrophe) dead bodies rotting in the open air, upon a plain of but a few miles extent, was intolerable indeed. We were rosaries, or string of limes, around our necks, in the vain hope of preserving a little pure air near our nostrils, by putting something at them from time to time. Sickness, of course, followed. But there were as yet but few to be sick. Had more returned the epidemic must have been frightful.

While engaged in searching for and collecting the dead, the most horrible spectacles were constantly exhibited. Being a high feast day, and in a country where dress and show is the greatest extravagance of the people, every one was found with some jewellery on, and all with all they had. Upon the ruins of the churches and elsewhere could be seen the miners for the dead looking with eager eye for the precious spoils, as over did those who delved in high Potosi, or deep Golconda. Now tearing the jeweled pendants from the cars of the corpse of a fair young girl, or cracking its putrid fingers in twain to enable the removal of their glittering load of rings now stripping an aged lady of her gold crucifix or jewelled watch- now rifling the pockets of the gay young cavalier of his purse and his mistress´ miniature even rending limbs apart at their already loosened sockets, in order to procure bracelets whose rusted lockets refused to yield to the touch of the now owner. In these, and all the thousand other disgusting forms, which may be imagined but not described, from day to day, the work went on.

The booty was the finder's no enquiry could be made, no certainty as to the ownership of property of this description arrived at. The dead were disfigured past recognition by putrefaction. The living were mostly fled far away. There were no claimants, could it even have been ascertained of whom claims should be made.

For thirteen months we lived in tents in the same garden, still doing a little business occasionally, and attempting to get along a best we could. During most of this time the shocks continued at short intervals, though with abated violence.

I can never forget that awful sickening motion. The earth seemed in throes of agony, and the heaving of her bosom to indicate her suffering. It was very difficult to stand, and it was only by extending the legs as wide as possible, bracing them firmly to the ground, and throwing the hands backward and to opposite sides, that we were able to do so.


LITTELL'S

LIVING AGE.

CONDUCTED BY E. LITTELL.

E PLURIBUS UNUM.

"These publications of the day should from time to time be winnowed, the wheat carefully preserved, and the chaff thrown away."

VOL. VIII.

JANUARY, FEBRUARY, MARCH, 1846.

UNIVERSITY OF CALIFORNIA

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Figura 28: Portada de la revista Littell's Living Age para el año de 1846.

160 THE EARTHQUAKE AT CARACAS.

through the Passion Week, and on Palm and Advent Sundays we sang lessons with our whole hearts.

Four times in the year all who had been confirmed attended the sacrament in the Lutheran church, where we always went on the Sundays. On these occasions we must have formed a pretty spectacle, all dressed in black silk, with caps and white veils, as is the custom in Switzerland.

The organist used to amuse me much. He always walked up and down, while playing sometimes treble, sometimes bass, but always the same interlude, and he generally dismissed us, however solemn the service, with the Copenhagen or the Stop Waltz.

I begin to fear, Mr. Editor, that my paper is spinning to rather an unreasonable length, but if (supposing you think it worthy of a place in your magazine) it should meet the eye of a parent who is thinking of sending his daughter abroad, and who does not wish her religious principles to be neglected, if not injured, let me beg him to make further inquiries concerning this school, which he may do through any Moravian minister, and I think he will find that I have not exaggerated the comforts of a place where none could be otherwise than happy.

From the United States Gazette.

THE EARTHQUAKE AT CARACAS.

Curaçoa, Sept. 25th, 1845.

In the course of my visits to the house of a worthy English gentleman of great intelligence, who resides at Otrabanda, I have had the pleasure to hear from his lips the following reminiscences of the great earthquake at Caracas, in the year 1812.

If I could but "tell the tale as 't was told to me," I am satisfied that the reader would not dwell for a moment upon any other chapter of this poor book, until after reading, and at least twice re-reading this.

"I had been for some years in Caracas," said Mr. Da——, "when this sorrowful calamity occurred, and was driving a very heavy and sufficiently prosperous business. I recollect as well as though it had been this evening, the event. It was late in the afternoon. I was sitting at the *table d'hote*, at dinner, with a large number of persons, chiefly foreigners, including many Frenchmen. While in the midst of our repast, wine and wit being in full flow, suddenly—in an instant—the knives, plates, and glasses sprang from the table—arose over our heads, others into our laps; our chairs rocked under us, and the floor seemed swaying to and fro, like a huge scale suspended from a beam. "La terre tremble," exclaimed the Frenchmen, as they leaped over the table and out of the windows, breaking down in their egress the strong gratings with which, in lieu of glass, the windows of that country are barred. I had never before witnessed an earthquake, and was not enough of a Frenchman at that time to understand their exclamations. But without divining what it was, I perceived instantly that there was something wrong, and that imminent danger was nigh at hand. Following the French party, who carried with them the others, to the window, just as I arrived there, a large piece of the house wall fell into the yard. I sprang upon it, and thence, clearing the yard wall and intermediate space at a single bound to the street, where my companions already were. I was the last of our company, and the last who escaped from that ill-fated house. A moment later and I had been lost, for I had not fairly landed in the street before the remainder of the house fell in, burying all of the servants under its ruins. Naturally, we thought of the servants, and were about devising means of ascertaining whether any were still living and could be saved, when one poor fellow crawled out through a crevice which had been formed by the arch of the door-way falling entire, with both his legs crushed off above the knees, as fully as though they had been amputated. We all started to procure a surgeon, but before we had advanced twenty paces, we saw so many others in as bad and worse situations, that we entirely forgot him, as well as his comrades who remained under the ruins of our fallen house. One double (the shaking of the earth to and fro without disruption) followed another; one house scattered its debris alongside of those already down; one street sank after the other, until more than one half of the city, including all the churches, convents, public buildings, and much the best portion of the private houses were wholly destroyed, or greatly injured. We passed on our course, seeking we knew not what, but only endeavoring to avoid the instant death which momentarily and constantly hung over us, from the ever falling walls, timbers and stones. We came to the place where had recently stood one of the finest churches of the city, perhaps of this portion of the South—near the centre of the city. It was constructed in something of a circular form. Here our eyes were met by a monstrous pile of ruins. The walls had fallen in, (the day being Holy Thursday, all the churches were filled with people,) and four thousand persons had perished on the spot. Not one escaped to tell the melancholy tale. (In reference to so large a number being destroyed within one church, it may be proper to remark that the churches in Venezuela, as in other Catholic countries, are constructed without pews, benches or other seats, save the confessionals along the walls, and that the congregation, either standing or [illegible] be far more numerous than could [illegible] thin the same space in a church pewed after the Protestant manner. But of course it will not be improper for the reader who desires great accuracy to make some deduction for gross estimates.) A little further on we passed the Cathedral, from its wide portals—now gaping wider with still more ghastly chasms—were rushing upon the heels of the half crushed, wounded, bleeding and terrified crowd, a dozen or more of priests, monks and friars, some of them with the gore streaming from their shaven crowns, others with broken arms dangling at their sides—and all covered with contusions—while most

* The clock of the cathedral was stopped, as is supposed, by the first shock. The tower in which the dials are placed, one fronting each quarter of the heavens, remained standing; although the clock has been repaired and set going again, one of these dials and its hands have never been disturbed. They still point to the hour and minute which heralded so many thousand souls without a single moment's warning into eternity. According to this twenty minutes past four o'clock, P. M. was the moment of the first shock. I have seen the silent yet awful monitor myself, now when after the lapse of more than one third of a century a new city has sprung up on the spot where stood that whose destruction it witnessed, and new thousands when they raise their eyes to ascertain "what 's the clock," are thus warned of the dread fate of those other thousands who thus so suddenly perished there, to the dim cold home, to which we all are so speedily hastening.

Figura 29: Detalles del artículo "From the United States Gazette. The Earthquake at Caracas. Curaçao, Sept. 25th, 1845", publicado en la revista *Littell's Living Age*.

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Anónimo, "Destruction of Caraccas by an Earthquake", *The Library Monthly Miscellany*, Londres, 15 de octubre de 1849.[148]

Humboldt, in the narrative of his journey to the equinoctial regions of the New Continent, has recorded all that could be learnt respecting the earthquake of the 26th of March, 1812, which destroyed the city of Caraccas, with twenty thousand inhabitants of the province of Venezuela. An abridgment of this account, will not only illustrate the human disasters common on such

[148] N de A: Esta es otra de las referencias que se hace a la *Personal Narrative* de Humboldt (ver entrada 92), donde es citado, mencionado o parafraseado, al igual que en las entradas 61, 64, 65, 73, 78, 85, 87, 88 y 97.

occasions, but the vast area shaken by the subterranean commotions, indicating a common agency exerted at a great depth in the interior of the globe, and bearing with fatal energy upon particular points. Drought was prevalent through the province of Venezuela at the time, and not a drop of rain had fallen for five months around the capital. The day of its destruction broke with a calm air and a cloudless sky, and became excessively hot. It was Holy Thursday, and the population gathered to the churches as usual on the festival. Not any token of danger appeared, till seven minutes after four in the afternoon, when a commotion was felt sufficiently strong to make the bells of the churches ring. The ground continued in a state of undulation, heaving like a fluid under ebullition, till a noise was heard louder and more prolonged than the thunder of the fiercest tropical storm, when the undulations became more violent, and proceeding from opposite directions, and crossing each other, Caraccas was overthrown. Subsidences occurred at the churches of the Trinity and Alta Gracia, and the barracks called El Quartel de San Carlos almost entirely disappeared by the sinking of the ground. The night of Holy Thursday presented a distressing scene of desolation and sorrow, which contrasted sadly with the beautiful aspect which nature speedily resumed. The thick clouds of dust which rose from the ruins and darkened the air had fallen to the ground. The shocks had ceased. Never was there a finer or a quieter night. The rounded summits of the Silla mountain were illuminated by the moon, nearly at the full, and the serenity of the heavens seemed to mock the disturbed state of the earth, where under a heap of ruins lay nearly ten thousand of the inhabitants of Caraccas. "In this city," says Humboldt, "was now repeated what had taken place in the province of Quito, after the dreadful earthquake of the 4th of February, 1797. Marriages were contracted between persons who for many years had neglected to sanction their union by the sacerdotal blessing. Children found parents in persons who had till then disavowed them; restitution was promised by individuals who had never been accused of theft; and families who had long been at enmity, drew together from the feeling of a common evil." Caraccas was at this period one of the foci of subterranean commotions, which from the beginning of 1811 to 1813 operated on a vast extent of the earth's surface, an area limited by the meridian of the Azores, the Valley of the Ohio, and the cordilleras of New Grenada. The shocks fatal to the city were sensibly felt at Honda on the banks of the Magdalena, 620 miles distant. Large masses of earth fell in the mountains, and enormous rocks were detached from the Silla. The lake of Maraycabo under went considerable diminution, but at Valecillo, the ground opened, and

emitted so great a mass of water, that a new torrent was formed, the same phenomenon taking place near Porto Cabello. In all parts the disturbance was more violent in the cordilleras of gneiss and mica-slate, or immediately at their base, than in the plains.

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Anónimo, "The Patriarch of Modern Science. (Concluded)", *Christian Advocate and Journal*, New York, 14 de julio de 1853, vol. 28, Nº28, p. 109.

To the penetrating eye and well-store mind of Humboldt, the voyage to which he had just committed himself was full of fascination and instruction. Nature revealed its marvels to him at every step. The sky, the air, the water, exposed their treasures and secrets to his initiated gaze. Much that he saw was new and surprising.

[...]

One of the first cities visited by him was Caracas, which was utterly destroyed by an earthquake in 1812, at least 12.000 inhabitants perishing beneath the ruins of their overthrown dwellings. It was during his journeying in these magical regions that he discovered the celebrated cow-tree, the previous reports concerning which had been regarded as fabulous.

[...]

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Anónimo, "An Earthquake or Two. [Continued from page 270]", *Harper's Magazine*, New York, 19 de enero de 1856, vol. IX, Nº 19, pp. 294-296.[149]

At the very time New Madrid began to be shaken, a sharp shock was felt at Caracas, a seaport town in Venezuela. It was not much noticed, and business went on as usual.

During the following three months, the ground near New Madrid, the island of St. Vincent, and portions of the Venezuelan shore never ceased to quake. Tremblings were experienced daily. Still no one seems to have looked

[149] N de A: Este texto es un fragmento del publicado por James Scott Walter ("From the British Magazine. Original Account of the Dreadful Earthquake of Caracas, in South America, in 1812. By an Eye Witness. To the Editor of the British Magazine") en T*he Museum of Foreign Literature, Science and Art*, Philadelphia, en febrero de 1831, el cual es transcrito aquí en la entrada 53.

for any greater disaster. Immemorial security from earthquakes explains the confidence of the dwellers on the Mississippi, and as for the Venezuelans, the authorities in the Spanish countries have always discountenanced anything like apprehensions of this kind. In Mexico, for instance, as Humboldt tells us, those who fled to escape an earthquake were heavily lined or imprisoned; the magistrates used coolly to announce that "they, in their wisdom, would know when there was actual danger, and would give orders for flight."

Reassured perhaps by some similar consolatory announcement, the people of Caracas and La Guayra spent the morning of the '26th of March in the ceremonies and processions peculiar to Holy Week in Catholic countries, "Business" says Walker, who was an eye-witness, "was entirely suspended; the inhabitants appeared in their gayest attire; the females and children were loaded with jewelry; the streets were swept and partially strewed with flowers. The weather was peculiarly fine; the sun shone brightly, but not oppressively, from the deep-blue sky, on the wide expanse of which not a cloud was to be seen. The streets were gay with passengers, who sauntered along in careless groups; no sounds were heard but those of amusement and hilarity." Upon this glad scene, suddenly, at twenty minutes past four, broke a low, rumbling noise, coming evidently from the bowels of the earth. Still, so blindly confident of security were the people, that they quietly observed to each other that the sound was that of a troop of horse galloping down a neighboring; street. Soon, however, the noise increased, and the ground began to tremble. Then the cry arose from the terrified crowd: "*Terramoto!*"

At the same moment the walls of the houses began to crack, and the plaster to fall. The wiser of the inhabitants rushed to the open squares and the centre of the crossing; but many, paralyzed by fear, fell on their knees where they stood, and prayed wildly. Shuck succeeded shock with increasing rapidity and vehemence. Mr. Walker saw mi old man and his daughter –a beautiful young girl– fall on their knees out-side their house, and clasp their hands in agonized prayer. At the same moment he noticed the wall of the house totter; he shrieked to them to fly; they heard him not; louder he called, even rose to drag them away; but before he could run a yard, the huge wall slowly leaned over and fell with a deafening crash before his eyes, crushing them beneath its *debris.* Such imprudences were common. The priests, with the peculiar courage of their order, energetically called upon the faithful to take refuge in the churches, as they assured them the earthquake could not injure the sanctuaries of God. Numbers obeyed the appeal, and flocked round the altars. They were

still thronging in when the earthquake culminated in one terrific crash. Half the city crumbled; the churches, being the highest buildings, falling among the first and burying priests and faithful together. For a few moments after this last shock, the air was so darkened by the clouds of dust which arose from the ruins that nothing; could be seen. When the dust blew away, desolation stared the survivors on every side, and to the hoarse rumbling of the earthquake had succeeded the shrieks and moans of the unfortunates who lay buried under the ruins. Mr. Walker noted that from the first subterranean noise to the final crash "*not more than one minute had collapsed*" a minute in which disasters to fill a century had been condensed. Over fifteen thousand persons had perished. Caracas was destroyed. La Guayra was partially respited, only to meet the same fate a week afterward.

But the convulsive force had at length found an exit. The earthquake at Caracas took place on the 26th of March; that which overwhelmed La Guayra, on the 4th of April; on the 30th of April a new volcano burst into activity on the island of St. Vincent, and ashes from the eruption were carried to windward as far as Barbadoes. The island itself was completely destroyed for agricultural purposes.

An apter illustration of the theory of internal heat could not well be imagined. Nothing easier, in fact, than to conceive the agglomeration of subterranean gases from the central furnace in the first days of the year 1811; their partial liberation through the volcanic island Sabrina, which proving too small a vent, was soon abandoned, and submerged by the waves; their wanderings to the Antilles, shaking the earth as they went; their vain search for a valve on the banks of the Mississippi, where, as in parts of Central America, they succeeded in relieving themselves of a quantity of fluid and solid matter; their increased virulence as they roamed vainly round their deep caverns, until they absolutely shook the sphere in the explosion of their fury at Caracas and La Guayra; and finally, their liberation by the tremendous eruption of St, Vincent. One of nature's epics, truly!

The theories which dispense with a central fiery sphere to explain volcanic phenomena are neither so clear nor so interesting as the one which we have mentioned. Many of them ascribe the generation of hydrogen or other elastic gases to the admission of water to unoxydized matter in the interior of the earth. Sir Charles Lyell vaguely hints at magnetic or electrical agency as well, but he wisely abstains from propounding an intelligible and therefore assailable theory.[150]

[150] N de A: Véase la entrada 67, donde se inserta el texto de su autoría "Principles of Geology, being an Attempt to explain the former Changes of the Earth's Surface, by reference to Causes now in Operation.

Dr. Daubeny, one of the leading authorities on volcanic phenomena, is a convert to the water theory. He supposes that the water of the sea forces itself through crevices in the rocks, and thus gains access to the unoxydized nucleus of the earth. Those who follow him in this belief rely, in a great measure, on the geographical position of the known volcanic regions. Of the two hundred active volcanoes which have been laid down in the explored regions of the world, all but two or three are in dose proximity to the ocean. They form a girdle round the earth. Starting, for instance, from the volcanoes in Kamtchatka, the chain passes through the Japanese and Loo Choo islands into the Eastern archipelago. Most of these isles are of recent volcanic origin, and all are subject to frequent earthquakes. The chain goes as far South as New Zealand, where they have earthquakes once a month; it then ascends, through New Guinea, to the Moluccas, Java, Sumatra, and the neighboring isles. We find the next link on the island of Ceylon, and the next in the Gulf of Cutch, where the violent earthquake of 1819 took place, overthrowing several villages and a large town, and submerging the fort of Sindree, on the Indus, to the depth of several feet below the surface of the water. Hence to Persia, where the destruction of Shiraz, which took place on the 21st of April, 1853, attests the power of the volcanic force. We trace the chain across the Euphrates and the Tigris to Palestine, where the ruins of the Pentapolis mark its path. Even at the present day the whole coasts of Asia Minor and the Levant are subject to earthquakes. Stromboli, AEtna, and Vesuvius follow in regular order, and the destruction of Lisbon furnishes a link between them and the Azores, or Teneriffe. Crossing the Atlantic with a bound, we find the chain continued in the Antilles, most of which have been subject to earthquakes. On touching the coast of America the chain may be said to divide itself info two branches, one going north and the other southward. The latter, starting from St. Vincent and Caracas, pursues its fatal course, between the shore of the Pacific and the Andes, through Quito, Peru, and Chili, to the very Terra del Fuego. The former, taking its rise at the same point, traverses Central America and Mexico, and probably the whole of California and Oregon. With the single exceptions of Java and the neighboring islands and Iceland, these two branches have been more frequently and cruelly visited by volcanic accidents than any other portions of the world. Finally, the circle is completed by the Sandwich Island and a few other insular volcanoes, or perhaps still more directly by the volcano at the mouth of the

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By Charles Lyell Esq. F.R.S. 2 vols. 8vo, Vol. I London, 1830. Murray. [Second Notice]", *The Athenaeum*, Londres, 9 de octubre de 1830, vol. 1, pp. 628-629.

Columbia, and possibly, some smaller fire-mouths in Russian America and the islands of the Sea of Kamtchatka.

It will be noticed that this line follows the seacoast. The few seats of volcanic action which are not included in it, such as Iceland, are likewise in close proximity to the sea. And it is confidently asserted that marine fossils have been found near or on every explored site of extinct volcanoes, proving that the sea once flowed there. It is true that volcanoes exist, and earthquakes have been felt in a particular region of Tartary, which is 260 miles from any known large body of water; but the advocates of the water theory deny that this tract has been sufficiently explored to certify the non-existence of lakes. In like manner they argue that Jorullo, in Mexico, which is 120 miles from the sea, is obviously connected with Tuxtla on the Atlantic, and Colima on the Pacific shore.

Hence, says Daubeny and his school, it is not at all unnatural to suppose that sea-water may have something to do with volcanic action. The hypothesis derives additional plausibility from the fact that the same elements are found in volcanic exhalations and sea-water.

A third and older theory than either of the two mentioned, is that of spontaneous combustion. This was suggested by an ingenious experiment, which any youthful reader may repeat for his own amusement. If a quantity of clean iron filings be mixed with an equal quantity of sulphur, formed into a paste with water, and then buried, in a cloth, in the earth, a mimic earthquake will be produced. Sulphureous vapors will force their way through the ground. The adjacent earth will grow warm, and at night, flames may be seen issuing from the surface. If the quantity of filings used be large, and the ground well trodden down around and above the package, an explosion will sometimes take place. Arguing from analogy, Lemery and other philosophers supposed that similar combinations might be effected by nature in the bowels of the earth, and that earthquakes and volcanic eruptions might be the result. But this theory is now generally rejected. *Harper's Magazine.*

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Anónimo, *The Pictorial History of England, being a History of the People as well as a History of the kingdom*, W. and R. Chambers 47 Paternoster Row and High Street Edinburgh, Londres, 1858, vol. II, p. 51.

On Holy Thursday, the 26th of March 1812, almost the entire population was to be in churches; and if no rain fell before that day, the whole people would pray, as with one voice, for rain. The sky remained cloudless, and on the great day the heat was excessive. At a few minutes after four, when the churches were crowded, the bells clanged of their own accord; the pavement heaved under the people's feet, the steeples toppled and fell. There were two earthquakes at once; that is, the movement of the ground crossed each other. Nothing could stand this. The city of Caracas was almost entirely overthrown, and much of it buried. The clear moon of that night, which shone brilliantly when the dust had subsided, lighted up as dreary a scene as the earth ever presented. No food was to be bad; the conduit pipes were snapped and crushed, and the springs choked up, and not a drop could be obtained for the dying who groaned out their entreaties for water. As the dead could not be buried, they were burned; and the yellow fires gleamed for many nights in the moonlight. The guilty confessed their sins aloud in the public ways; the licentious hastened to marry those whom they seduced, and to acknowledge their illegitimate children; men of good fame avowed former frauds, and made restitution; enemies were reconciled. Such were spectacles seen amidst the moral monstrosities which are always witnessed in such crises of panic and suffering, when the brutal and the reckless come out into the light. The priests said that these acts of penitence and reparations were well, as far as they went, but they were not enough. The earthquake was a retributive infliction for the general sin of the community of setting up a constitution for itself. The Holy Thursday procession of two years before had been the occasion of the first talk of the new constitution; and here, on the same high festival, was the sign of the displeasure of Heaven. Aided by other influences, the event, and this preaching on it, availed to overthrow the new liberties of Venezuela. The Spanish troops pushed the advantage given by the panic of the people. Whole bodies of the patriot army went over to them. Bolivar failed to hold a fortress against them; and in July, Miranda agreed to a treaty which introduced the new Spanish constitution, in the place of that of Venezuela. This was the end of Miranda's career. The old patriot was seized in his bed by a party of political foes, of whom Bolivar was one, and put in irons, with the knowledge of the

Spanish general, who took no pains to help him. After some moths' imprisonment in irons, he was sent to Spain, where he died in close captivity in 1816.

It is plain that there was no political enlightenment in Venezuela which could secure any stability. The country changed hands more than once, and was cruelly ravaged by each party in turn. Bolivar, as dictator, was dreadfully vindictive; and when he and his party were driven out of the country, and the patriots completely humbled, by the end of 1814, the Spanish rule was a mere system of barbarian pillage and oppression. During 1815 the patriots were quiet. In 1816, Bolivar and some comrades, driven out of New Grenada, were joined by volunteers from Great Britain and other European countries, and made attempt at invasion, which was unsuccessful at the time. The struggle which proved successful at last, was begun, with similar assistance in 1817. The conflict was maintained till 1823, when the last of the Spanish troops left the country. In 1819, Bolivar and freed new Grenada; and the two states were now united for a few years, till the inconvenience of their junction was found to outweigh its advantages. This is looking forward a little. 1816, when as we have seen, Mexico and New Grenada were humbled under the foot of the restored Ferdinand, Venezuela was in no better condition.

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Arístides Rojas, "Humboldtiana. La Catástrofe de 1812", *La Opinión Nacional*, Caracas, 12 de julio de 1879, p. 2.

En la historia de los cataclismos de la naturaleza que de cuando en cuando azotan á la sociedad humana, pocas veces se ha visto uno que haya sido precedido y seguido de hechos y coincidencias tan trascendentales como el terremoto de Caracas el 26 de marzo de 1812. Verificarse en juèves santo, dia solemne de la cristiandad, y precisamente à la hora en que la poblacion henchia los templos, tanto en Caracas como en los pueblos y ciudades que fueron víctimas de la calamidad; á los dos años en que, en el mismo dia, fueron depuestas las autoridades españolas por la Revolucion del 19 de abril de 1810 que trajo, un año más tarde, en 5 de julio de 1811, la declaracion de la Independencia de Venezuela; y en una época de dudas y zozobras, cuando dos partidos beligerantes se disputaban la colonia y la república, origen de la guerra civil que, bajo fatales suplicios, habia abierto la campaña de 1812: todo esto da á la catástrofe del 26 de marzo un carácter único en la historia natural y política del continente americano. Agréguese á esto el fanatismo

político y religioso, arma terrible que supieron explotar los partidarios de la causa realista, desde el momento de la desgracia, y el espanto que, unido al desaliento y á la falta de recursos, sumieron á los republicanos en la más completa inaccion; y tendremos las causas generales que produjeron la pérdida de Venezuela, el infortunio de Miranda y de sus compañeros y el triunfo completo de la causa realista.

La historia de esta época de agitaciones naturales y políticas tiene que ser inmortal en los anales americanos. Sintetiza un año lleno de infortunios, de persecuciones inauditas, de miserias sin número, y tambien de lecciones provechosas. No fué bajo escombros que desapareció la flor de la juventud caraqueña y venezolana; fué tambien al fuego de los combates, de las persecuciones, del ostracismo, de la desesperacion y del abandono que sucumbieron caracteres nobles, espíritus de la gran causa que, desesperada y terrible, lucha más tarde, para ser, el dia del triunfo, magnánima y sublime.

La causa republicana en Venezuela, despues de la declaracion de 1811, vacilaba por carencia de opinion que la sostuviera y por falta de iniciativa que la patrocinara. El partido realista contrario á toda reforma, con núcleos en Oriente y Occidente, en el Sur y en el Centro, obraba con actividad, miéntras que ejércitos patriotas hacian frente á las tropas españolas que invadían por diversos puntos. Todo auguraba un triunfo indeciso para ambos contendientes cuando se verificó el terrífico suceso que trajo á Venezuela dias de llanto y á la República su muerte. Necesítase impulso y hállase rémora, necesítase union y hai desobediencia, apélase á la fuerza y cunde el desaliento. En tal estado de cosas un suceso extraordinario é inesperado bastó para echar por tierra una situación política que carecia de base sólida y que era más que real, teórica.

Era juéves santo, 26 de marzo de 1812. Despejada estaba la mañana, y aunque á eso de las diez una llovizna imperceptible parece interrumpir la serenidad de la atmósfera, al instante cesa y el sol continúa radiante en medio de un cielo puro y trasparente. Como de costumbre, los santos oficios de la mañana fueron celebrados con pompa, y la poblacion despues de haber asistido á ellos, regresó á sus hogares, para salir despues al comenzar la tarde. Las cuatro suenan en el reloj de la Metropolitana, única campana que se oye en el solemne dia: nada anuncia próxima catástrofe y nadie la presiente, pues la muchedumbre llenaba ya los templos, y en las calles nueva concurrencia iba y venia visitando los monumentos de las iglesias y rezando las estaciones. Gruesas gotas de agua caian despues de las cuatro sin que apareciera en el

cielo aparato de lluvia. Siete minutos pasan, cuando de súbito se estremece la tierra, suenan las campanas de los templos, crujen los edificios y un grito de terror se levanta de la ciudad conturbada. A este sacudimiento que dura cuatro segundos sucede otro más violento y prolongado que aumenta el pánico. Todo es confusion, cuando se escucha espantoso trueno, como si una tempestad volcánica hubiera estallado bajo el suelo de Carácas. En ménos de un minuto vése la tierra que se mueve de Norte á Sur y de Oriente á Occidente, con sacudimientos verticales que simulan un mar agitado por olas encontradas. Siéntense crugir y desmoronarse los edificios, caer los muros, de los que se exhalan alaridos y gritos lastimeros que parecen prolongar el trueno del abismo. Como si los corazones se hubieran fundido en uso y las inteligencias hubieran sido tocadas por una misma idea, de todos los labios se escapa una frase que llena los espacios: *Misericordia, Señor, Misericordia*, á la cual se mezclan los gritos de las víctimas, la desesperacion de los que huyen, el ruido estruendoroso de los edificios que caen y el llanto de los que elevan al cielo sus plegarias; miéntras que la muchedumbre de los templos y los moradores del caserío, se apiñan, se confunden y ruedan, y se levantan y caen, para volver á levantarse y caer de nuevo, como autómatas que corren impulsados por el pánico y alimentados por la esperanza. Lo que no es derribado al primer sacudimiento cae al segundo; pero cuando el trueno del abismo repercute en las montañas, la desesperacion llega á su colmo y nadie se conoce. Hai en aquella tarde un instante en que se paralizan los nobles atributos del corazon humano; mas luego que todo pasa y recobra la razon su libertad, escenas conmovedoras vuelven al corazon el sentimiento perdido. Escúchase entonces el llanto de las madres que llaman á sus hijos y el de los niños que solicitan á sus madres y se agarran del primero con quien tropiezan buscando amparo á su horfandad. Cada familia corre á su hogar en solicitud de los suyos y otras se lanzan á las calles dominadas por la misma idea: buscan los hermanos á sus padres y éstos á sus hijas y esposas. De todos los escombros se levantan alaridos, por todas partes claman auxilio, se confiesan los pecados, se perdonan las injurias, se reconcilian los enemigos; en tanto que columnas de polvo, tranquilas ó imponentes se levantan se levantan y nublan el sol. ¿Cómo describir las escenas que han comenzado con el toque violento de las campanas, anticipado tañido ante la tumba que recibe millares de víctimas? ¿Cómo pintar el dolor de las madres y la ansiedad de los niños, y el quejido de los moribundos que sostienen la misericordia divina, y las súplicas que se elevan al cielo, último tributo de la criatura al autor del Universo? En todos los semblantes se retrata el pavor, de todos los ojos brotan lágrimas, pende el

perdón de todos los labios. ¡Dios solo impera sobre las desgracias humanas y solo su misericordia es el refugio de los que sufren!

Todavía, cuando se pasa por las actuales ruinas del antiguo convento de las Mercedes, se cree oir los alaridos de aquel monje que durante ocho dias permanece vivo bajo los escombros sin que fuera posible salvarle. Todavía, se cree ver tendidos en el suelo de una sala y asidas de las manos aquellas siete niñas que han sido cubiertas por los escombros. Allí pasan toda la noche del 26; al principio se hablan, lentamente cesa la conversacion, y cada una conoce por el mutismo, y por la frialdad de las manos que su hermana ha muerto. Cuando á la siguiente mañana son socorridos habian perecido cuatro.[151] Pero, no es en estas y otras escenas en las cuales descuella augusta la fraternidad del dolor y se confunden las clases sociales y la caridad nivela todos los seres, donde debemos detenernos; no, en estas escenas está Dios: es en el fanatismo religioso y político que, cual hidra de mil cabezas, se apodera de la conciencia pública y la enfoca. Desde el momento en que queda consumada la desgracia, sacerdotes realistas interpretando á su modo los designios divinos, comienzan su propaganda y asientan que todo aquello era castigo de Dios.

A veces pequeñas causas producen grandes efectos: el haberse verificado la catástrofe el mismo dia en que dos años ántes fueron depuestas las autoridades españolas; el haber quedado de pié, entre los escombros de la plaza de la Trinidad, la columna en que estaba pintado el escudo de España, y la horca que en la misma plaza habia servido para ajusticiar en 1811 á los primeros revolucionarios peninsulares, fué lo suficiente para despertar el fanatismo de los moradores de Carácas. A las puertas de los templos, en las plazas, donde quiera que se agrupa la multitud, se grita por los partidarios de la causa realista, "venganza del cielo, castigo, por haber ultrajado la majestad del Rei"; y se exagera la calamidad, y se exige reparacion y arrepentimiento. Entónces comienzan las apostasías, y se pide perdon al monarca y á Dios, y se promete, se acusa, se condena y… se olvida. ¿Quién podrá detener el torrente invasor que en lugar de mitigar la pena infunde nuevo espanto en el alma desesperada de las víctimas? Cuando el convento de San Jacinto bambolea y el gentio que lo llena clama socorro, vése á un joven en mangas de camisa que, con una actividad extraordinaria, socorre á las víctimas que sobre sus hombros conduce á la plaza del convento. Hacía rato que continuaba en esta labor cuando ya un sacerdote fanático, delante de la muchedumbre llorosa, fulminaba anatemas

[151] La familia Lacumber y Berrío.

contra la ciudad dolorida por su desobediencia al Rey y á Dios, é infundia en la multitud pavor. El joven le ve, se acerca, le escucha, y al instante le hace descender de la mesa que le servia de púlpito y le impone silencio. En seguida vuelve al templo, pero al entrar tropieza con uno de los defensores de la causa realista y le dice: *Si se opone la naturaleza lucharemos contra ella y la haremos que nos obedezca*. ¿Quién es ese mancebo que, despues de salvar muchas víctimas exponiendo su vida, impone silencio al sacerdote de la multitud y lanza aquella profecía, parto de un espíritu delirante? Ese mancebo lo conoce la historia con el título de *El Libertador de América*. Era Bolívar.

Cuando el gobierno que habia prestado á la poblacion todos los recursos imaginables sabe lo que pasaba, manda derribar la columna de la plaza de la Trinidad, y á pasar por las armas á los religiosos que en las plazas de San Jacinto y San Felipe habian predicado en favor de la causa española, infundiendo el espanto en la multitud; órden firmada por Miranda, que al decir de un historiador español, no se llevó á efecto, porque no encontró ejecutores.

A poco llega la noche y aparece velada sobre la cima del Avila la luna llena de marzo: no venia como siempre, á anunciar la resurrección del Salvador de los hombres sino como testigo de un campo de desolacion. La ciudad de Losada habia desaparecido en sus dos terceras partes y bajo sus escombros yacian diez mil víctimas. Prolongada noche de dolor, no interrumpida sino por el quejido de los heridos y por el sollozo de las familias. Hubiérase dicho que la ciudad se habia convertido en cementerio, un dia de difunto. Por todas partes se divisaban luces, se cavaban las ruinas, se sacaban cadáveres: era la piedad socorriendo á los desamparados, y la autoridad civil persiguiendo á los rapaces que buscan siempre su botin en medio de las desgracias humanas. Pavorosa noche iluminada solamente por los resplandores de una hoguera siniestra, aquella que á las faldas del Avila consumia los cuerpos de millares de seres que horas ántes vivian para la patria, para el hogar y para Dios.

Dejemos á esta ciudad desolada en las plazas, en los campos, bajo los árboles y tambien sobre los escombros, porque es en ellas donde se comunica el espíritu de los sobrevivientes con los que descansan ya en la paz del Señor. Trasportémonos á lugares más distantes donde se han consumado iguales desgracias, donde han desaparecido ciudades florecientes, y llanto y dolor han sido tambien el patrimonio de los que sufren. ¿Qué pasaba en los otros pueblos de Venezuela en el instante en que Caracas se reducia á escombros? La onda de movimiento, al tocar la cordillera de la Costa, sigue al Sur, conmueve los Andes venezolanos, y va á perderse á doscientas leguas de distancia, más alla de

la cordillera oriental de Cundinamarca, mientras que por el Este agita la cordillera del Avila y va á perderse en el Golfo de Paria y aguas del Atlántico. Pero al recorrer los Andes, se irradia el movimiento hácia las llanuras venezolanas y estremece las dehesas del Guárico, del Portuguesa, del Apure y del Orinoco, y sigue hasta las costas orientales de las Guayanas. Esto pasaba en la region al Este de los Andes venezolanos, en tanto que conmovido el nudo de Pamplona, el movimiento se ramificaba hácia el Oeste y agitaba las regiones de Maracaibo, Rio Hacha, Santa Marta y las ciudades del Magdalena. ¡Cuántas poblaciones destruidas, cuántas calamidades y cuánto llanto y orfandad en ese espacio de segundos! Caen los pueblos al Norte de Caracas, desmorónanse las ciudades en el entroncamiento de la cordillera de la costa de los Andes, y queda reducida á escombros la ciudad de Mérida en el extremo de la cordillera andina. ¡Cuántas escenas! En Carayaca acababa de salir la procesion cuando cae el templo: en San Antonio de los Altos se cantaban maitines en el instante del sacudimiento: en Villa de Cura se verificaba la ceremonia de las tinieblas, cuando se estremece el templo. La muchedumbre huye, pero al acto regresa para continuar la ceremonia y acompañar despues á la procesion, mientras que en muchos pueblos sácase el sagrario de los escombros hacinados. Barquisimeto es un monton de ruinas, San Felipe es víctima del terremoto, del incendio y de la inundación, Tocuyo, Quibor y otros lugares quedan casi arruinados; en tanto que Mérida sepulta á sus hijos, entre los cuales descuella el justo Prelado, primera víctima del aciago dia. Casi todas las poblaciones de las llanuras sufren y de todas se saca el sagrario. Como cuarenta mil víctimas llenan el área de la catástrofe que ha conmovido más de trescientos pueblos y sepultado veinte.

¿Qué sucedia durante este tiempo á las tropas republicanas que, en diversos lugares, se aprestaban para combatir á los realistas? Sálvanse las españolas en Maracaibo, Coro y Carora, y triunfan en Guayana en el mismo dia de la ruina, y sucumben los patriotas en Caracas y La Guaira, en Barquisimeto, San Felipe, Tocuyo, Quibor y Mérida, y quedan estas ciudades a merced del invasor. "Castigo de Dios" es la frase que se repite tambien en los lugares desolados, y las poblaciones invocan de nuevo el nombre del monarca español y piden perdon.

Al amanecer del 27, sin que se hubiese experimentado ningun temblor despues del 26, Caracas concibe esperanzas de reposo, cuando al llegar la noche comienzan los sacudimientos de la tierra acompañados de bramidos subterráneos. Así continuaban los dias, cuando el 4 de abril á las tres y media de la

tarde un estremecimiento más violento que los predecedentes, acompañado de horrisono (sic) trueno, echa por tierra los escombros, derrumba porciones de las montañas ó infunde nuevo pánico en los afligidos habitantes de la ciudad. La torre de la Metropolitana inclinada hácia el Este por los temblores del 26, vuelve á su aplomo con el choque del 4. La tierra en constante agitacion parece anunciar la última hora de Caracas: todo es desolacion y llanto. Una escena imponente acompaña á esta convulsion memorable. El arzobispo Coll y Prat, vestido de pontifical, acababa de sacar de las ruinas de la Trinidad el Santísimo que, con grande acompañamiento, conducia en procesion al sitio de Ñaraulí. No habia acabado de llegar á este lugar, cuando se estremece la tierra y comienza la agitacion que duró siete horas. El Prelado se detiene, ve bambolear las montañas, los edificios que han resistido, caer los escombros que quedaban de pié; y escucha el grito de la ciudad desolada que llega á sus oidos, como si voces de agonía se levantaran de los sepulcros. Lleno de caridad y de mansedumbre, bendice, y absuelve desde lejos, á la ciudad; por tres veces hace la señal de la cruz con la custodia que tiene en sus manos, en tanto que la muchedumbre que lo acompaña besa el manto del Prelado, y de rodillas recibe la absolucion. El Pastor permanece largo tiempo con la vista fija sobre aquel campo de dolor, y elevando las manos y los ojos al cielo pide á Dios misericordia para su pueblo. En aquellas horas que se prolongan hasta avanzada la noche, en que cesa el movimiento, la multitud que llena los campos se confiesa y recibe la absolucion de los sacerdotes, los cuales, reunidos bajo las arboledas de Chacao, se confiesan unos con otros, y se absuelven, y se abrazan llorando, y se despiden. Al siguiente dia comienza de nuevo la emigracion de la ciudad. El 16 abandonan las madres Concepciones su convento, y vése aquella procesion de doscientas mujeres que con las cabezas cubiertas, atraviesa á pié las calles de la capital para seguir al pueblo del Valle. A poco [ilegible] en las Carmelitas Descalzas que van á refugiarse á orillas del Caroata. Poco á poco va quedando la ciudad sin habitantes.

En la madrugada del 30 de abril tronada subterránea, como si se dispararan cañonazos de grueso calibre, se escucha en toda el área de Venezuela. Por un momento se cree que escuadra enemiga bombardeaba las costas, y por todas partes se aprestan para combatir las débiles fuerzas de la República. Era el volcan de San Vicente, en las pequeñas Antillas que, desde el 27, vomitaba ceniza y humo y arrojaba el 30 su lava incandescente. La tempestad subterránea encontraba al fin su respiradero, y despues de agitar una region de cuatrocientas leguas al Norte y Sur de Caracas; desde las orillas del Misissipi

hasta la cordillera oriental de Cundinamarca y llanuras del Meta; despues de haber sepultado cuarenta mil víctimas, dejaba tranquila á Venezuela. Desde aquel dia los temblores comenzaron a menguar hasta que desaparecieron años más tarde.

Veinte y ocho años despues de aquella mañana, en la misma fecha, 30 de abril de 1810, el Congreso de Venezuela decretaba honores inmortales á la memoria de aquél mancebo que en la plaza de San Jacinto habia dicho: *Si la naturaleza se opone la vencerémos y harémos que nos obedezca*. Y en realidad se opuso una y más veces y otras tantas lo venció… pero al fin fué vencida. No fué el terremoto de 1812 un castigo de Dios para los que derribaron la realeza en 1810 y crearon la República en 1811.

Al saber Humboldt, en París, la desgracia de Caracas comunicada por los diarios, esclama: "nuestros amigos han muerto, la casa que habitamos es un monton de escombros, la ciudad que describimos no existe". A poco recibe cartas de sus amigos que sobrevivieron á la catástrofe, entre ellos el señor Delpech, jefe de una de las familias distinguidas de Caracas, que le acompañó una descripción del terremoto. Cuando ocho años más tarde, Humboldt publica la narracion de su memorable viaje, despues de haber hablado de la desgracia de Venezuela, concluye con las siguientes frases. "Despues de haber hecho relacion de tantas calamidades conviene dar reposo a la imaginacion con recuerdos más consoladores. Cuando se supo en los Estados Unidos la gran catástrofe de Caracas, el Congreso reunido en Washington unánimemente decretó el envio de cinco navíos cargados de harina á las costas de Venezuela, para distribuirla entre los habitantes más indigentes. Un socorro tan generoso fué admitido con la más viva gratitud; y este acto solemne de un pueblo libre, esta señal del interes nacional de que ofrece pocos ejemplos reciente la civilizacion de nuestra vieja Europa, pareció precioso garante de la mutua benevolencia que para siempre deba unir á los pueblos de las dos Américas."

Poco á poco despues del 30 de abril comenzaron las familias á trasladarse á los escombros de la capital, mientras que el gobierno en Valencia, ciudad que casi nada sufrió con el terremoto, atendia á las necesidades de la guerra que tomaba proporciones amenazantes para la causa republicana. La opinion se habia ya decidido por España, en virtud de la influencia del clero y del desaliento general. Bien comprendió el gobierno tan escabrosa situacion, cuando quiso valerse del Prelado para calmar la supersticion pública e inculcar en la multitud ideas contrarias á las que se habian propalado desde la tarde del 26

de marzo. Todo lo aguardaba el gobierno del Pastor de la iglesia venezolana, pero la opinion de ésta era adversa. El mismo dia en que Caracas se estremecia de una manera inesperada, 4 de abril, escribia el Secretario de Estado, Muñoz Tébar al Prelado pidiéndole una pastoral consoladora. El 5, el mismo Secretario reitera la orden. En 10 de abril contesta Coll y Prat al gobierno, en sentido poco satisfactorio para éste. El 13 el Dr. Roscio trascribe al Prelado nueva orden de la Cámara de Representantes. El 26 contesta Coll y Prat prometiendo la pastoral. El 10 de mayo, en Caracas, reitera el Dr. Paúl al Prelado los deseos del gobierno. El 12 contesta el Arzobispo prometiendo de nuevo la pastoral que envia al fin en 8 de junio.

Como una bomba cae este documento en el gobierno venezolano. Es una violenta acusacion de las costumbres de Caracas, en aquella época, de su liviandad, desobediencia y corrupcion. "Caracas sin freno y sin temor por el camino de la iniquidad, dice; vuestra gloria estaba en añadir delitos á delitos, escándalo á la impudencia y la irreligion al sacrilegio. ¿Cuál otra sino la presente debia ser vuestra suerte?" Así continúa esta pieza histórica que no ha sido todavía publicada por completo. Su lectura hizo comprender que el Prelado era hostil á la causa republicana, y que si no azuzaba á su clero, á lo ménos lo toleraba. Tratóse en elgobierno de expulsarle y aún se llegaron á tomar medidas; pero espíritus rectos comprendieron que semejante paso era inconducente y lo estorbaron.

El 13 de junio, toque de general despierta, á media noche, á los habitantes de la arruinada ciudad. El 30 sublévase el castillo de Puerto Cabello. Un mes más tarde, 30 de julio, entraba Monteverde en Caracas, y salían presos y cargados de cadenas Miranda y sus compañeros, víctimas de la más negra perfidia que registran los fastos de aquella época tenebrosa.

Habia triunfado por completo la causa realista.

Una tarde del mes de octubre, la poblacion de Caracas asistia á una procesion solemne, cual nunca se habia visto en los dias de la Colonia. Despues de haberse entregado los moradores de la ciudad, durante los últimos quince dias del mes de octubre, á públicas preces, al ayuno, al sacramento de la penitencia, á escuchar en las plazas públicas y templos la palabra del Evangelio, y de haber recibido del Prelado la comunion, se reunieron para acompañar en la tarde del 30 la imagen del crucificado. El Ayuntamiento, el Dean y el Cabildo, las comunidades religiosas, las parroquias, el clero y un gentío inmenso, cruzaba las calles escombradas de la afligida ciudad. El Prelado vestido de

pontifical llevaba en las manos un gran crucifijo, y á su lado iban las autoridades militares de riguroso uniforme. Rezaban los clérigos á Coro, y despues de cada estacion en la cual se veia una consideracion sobre la pasion de Jesucristo, la concurrencia respondia, "Misericordia Señor", "Misericordia Señor". El recogimiento de la muchedumbre, el aspecto sombrío de las ruinas, la imagen del Dios-hombre enclavada en la cruz, el sollozo de las familias, la tristeza de la tarde, todo trasportaba el alma al tremendo dia de la catástrofe del 26 de marzo. Poco á poco fué debilitándose el rezo, y cuando se recogió la procesion á la entrada de la noche, resonaban por largo rato en los aires las últimas frases del concurso: "Misericordia Señor, misericordia".

¿Qué resta hoi de aquella ciudad bajo cuyos escombros desaparecieron diez mil víctimas? Casi toda ha sido reconstruida en el trascurso de setenta y siete años; pero todavía una que otra ruina acá y allá recuerdan el tremendo dia. En la Avenida Norte descuellan parte del antiguo convento de las Mercedes y la casa de Humboldt, en tanto que al Este de la capital existen las de la Casa de Misericordia que recuerda á las revoluciones de 1810. Pero hai otros escombros todavía más célebres y que serán recuerdo perpetuo de aquella época luctuosa: los de San Lázaro, recostados al pié del Avila, palacio de recreo y de gala de los mandarines de la Colonia, donde festejaban á los huéspedes ilustres que visitaban á Caracas. Allí estuvieron Humboldt, Vasconcelos, Emparan, Miranda y Bolívar, y los patricios de 1810, despues que proclamaron la independencia de Venezuela en 1811.

¿Qué mano se atreverá á desmoronar esos escombros? ¿No sintetizan ellos épocas de lágrimas y de persecuciones? Una ciudad antigua sin ruinas es un libro de historia con páginas en blanco. En los muros ennegrecidos de esas paredes esta escrita en la historia de los últimos años de la Colonia, de la Revolucion y de la República; nuestras conquistas y errores. En ella han escrito con sangre todos los partidos políticos y las generaciones que se han sucedido durante un siglo. Esas ruinas no son escombros, sino tumba que guarda los despojos de las víctimas y victimarios de las más tremenda época de América. Sobre esa tumba descuella la Musa de la historia, serena, inexorable, augusta; voz de la conciencia humana que ha fallado despues de mil desgracias, escollos éstas que, en el camino de las nobles causas, pone la Providencia, no como castigo, sino como estímulo para la realizacion de sus inescrutables designios.

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T.M., "El Jueves Santo de 1812 en la ciudad de Caracas", *La América. Crónica Hispano-Americana*, Madrid, 01 de abril de 1884, año XXV, Nº 6, pp. 11-13.

De un año á esta parte se repiten los temblores de tierra en varios puntos de la Península. En tiempos antiguos la tierra más castigada por estos fenómenos, aún no explicados suficientemente por la ciencia, era la de Portugal. Los terremotos de Lisboa han dejado historias y leyendas terribles, que colocan á la bella capital del Tajo, en el rango prestigioso de aquellas grandiosas metrópolis antiguas, consideradas como con celo y envidia por el celeste empíreo y visitadas con rigor por la cólera de lo alto, como Ninive, Babilonia, Hecatompilos, Pentápolis y varias otras ciudades sagradas del Oriente.

Los terremotos de Lisboa y los de varios puntos de América, siempre calenturienta y volcánica, dieron origen, además, á estudios sérios, á elucubraciones sombrías ó filosofías desesperadas sobre las leyes ciegas de la Naturaleza: cuyos ensayos sobre una manera nueva de concebir la creación en sus relaciones con el mundo moral, han dado á su vez orígen á las ciencias modernas, encauzadas en direcciones más racionales y conducentes al progreso de los conocimientos humanos.

Ahora los cataclismos que aterran más á los mortales se extreman preferentemente en las comarcas españolas, olvidando el Portugal, antiguo teatro de sus pavorosas tragedias. Las inundaciones de Murcia, de Sevilla y de otras provincias, á cuyas historias lastimosísimas se pueden adicionar como capítulos análogos, los incomparables huracanes de la Habana, los terremotos del departamento oriental de Cuba y los no ménos formidables de Manila, son los fenómenos apocalípticos que más páginas han dado á la historia de las horrendas vicisitudes y fatalidades del globo en el siglo del progreso. Sin que esto sea olvidar los recientes terremotos de Turquía, de Ischia y de Java.

A muchísimas personas de las que han presenciado y participado en estos terrores, desde el último Noviembre en Sevilla, en Huelva, y hace pocos dias en Alicante, no era lo que ménos impresionaba la intervencion de las iglesias y sus torres y sus imágenes para acentuar el lado más siniestro y misterioso de la súbita desventura. Algunos crucifijos se habian desencajado de sus cruces, y algunas dolorosas, cayendo de sus nichos, habian ahincado en el mármol de las baldosas las espadas simbólicas de sus pechos, como para ahondárselas más y acabar con su agonía. Las campanas de ciertas iglesias, como la de la Concepcion de Huelva, vibraron tímidamente, exhalaron quejidos premiosos, pero,

por lo mismo, de una manera más lúgubre, porque nada aterra tanto como el *sotio-voce* en instrumentos ó en torrentes destinados á clamorear con estrépitos avasalladores. El rumor del Rheinfall, percibido desde Undelfingen en el canton de Zurich, como á cuatro leguas de distancia en medio del silencio de la noche, deja oir frases fantásticas, avisos solemnes, como en una lengua antigua, sagrada, que no ha debido olvidarse, sobre todo en espíritus que sólo son meticulosos para los recuerdos de su historia, tradicionales. Las alucinaciones de la vista no son tan caprichosas é imponentes como las del oido en comarcas en donde los ecos, los senos concavados de abismos y bosques poseen músicas exclusivamente suyas, incomunicables.

Pero no es en las regiones norte-polares, ni en los pueblos de las zonas templadas, en donde impera más el predominio de lo sobrenatural sobre las inteligencias, combinándose con los fenómenos variados y siempre nuevos, nunca con igual aspecto é idénticas circunstancias repetidas, que modifican la atmósfera y el suelo en todas partes; no es allí en donde los prodigios del misterio producen más intensa y duradera impresión. Lo templado de la zona comunica tambien algo de su templanza y suavidad á los mismos fenómenos extraordinarios que la visitan. En las regiones intertropicales, en donde los cataclismos extreman y multiplican los lados siniestros de sus apariciones.

En donde las reverberaciones de la vida no conocen desmayos; en donde las noches son ausencias momentáneas del dia, y no muertes del sol; en donde lo ordinario es el milagro gozoso y pacífico, el menor asomo de la muerte que no traiga rumbo, y si estela de sombra, causa terrores y ruinas incalculables en un solo segundo. En aquella vida sólo existe en todo la sensibilidad de las pupilas; y basta una paja imperceptible, para que un millon de ojos y de astros se cierren allí y se deshagan en torrentes destructores de lágrimas.

En tierras ó cielos tan impresionables, las coincidencias de los misterios religiosos con los misterios naturales, son numerosísimas y de incalculable trascendencia. En Cuba, por ejemplo, no hay crucifijo de familia que no tenga milagros que contar. Toda efigie de esta clase, ya haya salido de los colmillos de un elefante ó del corazon de un cedro, participa de la eterna blecopira que afecta á los engendrados y nacidos en aquellas siestas y noches candentes.

Plántese en cualquier vereda ó en cualquier encrucijada de las que consienten aquellos exuberantes bosques, una cruz de madera seca, y, aunque sea para señalar el sitio en que fué asesinado un hombre, luego, sin tardanza de meses, los árboles circunvecinos enviarán lianas á decorar los descarnados brazos,

y el rio despedirá de sí un arroyo ó varios, regocijarles meandros, en curvas y zarameles reverentes, á prestar raíces y sávia á la cruz y transfigurarla en árbol nuevo.

Así como en algunas córtes de Europa se cree en la muerte de Cristo el dia de Jueves Santo, perdonando la vida á dos ó tres reos de muerte, en nuestras islas tropicales no se celebra la mañana de la resurrección sin levantar á muchos Lázaros del sepulcro. Lástimas que la mayor parte de estos Lázaros vengan luego á propagar su lepra, ya obrada por el milagro en tierra áridas españolas.

Pocas leyendas relativas á este panteismo, sostenido estrechamente por la naturaleza ecuatorial con las creencias y prácticas religiosas que á aquellos países se llevaron; nos darán tan cabal convencimiento de lo que hemos apuntado, como el recuerdo del terremoto de Caracas, la espléndida capital de Venezuela, el 26 de Marzo de 1812. Era Jueves Santo, y ningun pueblo, entre los más devotos y fervientes de la América Española, celebraba el culto de Semana Santa con más decididas conversiones á la vida de la fé.

Voy á escribir una noticia de aquel acontecimiento, procurando asimilarme la tristeza de mi padre cuando me la relataba, señalándome ruinas de las muchas casas y templos que allí edificaron sus mayores, y procuraré trazarla tambien con la brevedad con que otro testigo presencial del conflicto, el baron de Humboldt, perpetuó su recuerdo en una página de sus viajes: *Das Erdbeben von Caracas*.

Desde principios de 1811 hasta mediados de 1813, el corazon de América aceleró sus latidos, y no parecia sino que los tormentos de un Prometeo en los Andes habia llegado á conmover las arterias del Cotopaxi, del Tunguragua y del Popocatepec. Una vastísima extensión de tierra limitada por el meridiano de las islas Azores, por el inmenso valle del Ohio, por las cordilleras sin fin de Nueva-Granada, por las costas incomensurables de Venezuela, por los numerosos volcanes de las Antillas Mayores y Menores, fué sacudida á la vez, un dia tras otro, por largo espacio de tiempo, sin que la causa de aquel temblor continuo se atribuyera á otra cosa, en las explicaciones de los sabios de entonces, sino al flujo y reflujo del Océano de fuego en las entrañas de nuestro planeta.

El que se sintió en Caracas, en las Navidades de 1811, fué como el nacimiento alli de la gran novedad de que hasta entonces no se habia apercibido. Ignoraban todos en Costafirme las conmociones que antes y por muchos meses habian estado experimentando los monjes lejanos del Nuevo-Mundo, de un lado el volcan de la isla de San Vicente, y del otro la dilatadisima cuenca del

Missisipi, en donde, el 7 y el 8 de Febrero de 1812, la tierra ondulaba dia y noche como un mar hirviente, los terrores por allí trastornaron el cerebro á muchos habitantes de aquel país virgen, y de algunos hicieron apariciones fatídicas que vagaban locamente por la noche, lanzando alaridos presagiosos, como remedo de aquellas hermanas profetisas á quienes se definen de este modo en la tragedia de Macbeth:

¿Quién son esas
Con agostados rostros, que pavesas
Del blandon de la vida las creeria?
Tambien, como el mar, tiene
Su ebullición la tierra. ¡Quizás esos
Serán los borbotones que levanta
Su conmovida faz…!

En aquella época la provincia de Venezuela estaba enferma; grandes e irremediables sequías amarilleaban sus bosques, siempre verdes, y obligaban á sus ríos á esconderse bajo impuros légamos de fétidas emanaciones. Aquel ponderado paraíso estaba postrado con el vómito negro incurable. En el largo transcurso de medio año, cosa inaudita en la América del Sur, no había caido una gota de lluvia, ni en la populosa ciudad de Caracas, ni en doce leguas á la redonda.

Llegó el 26 de Marzo. La aurora sonrió como nunca. En las casas se preparaban los vestidos y las alhajas para los niños que habian estado enfermos y que habian hecho la promesa de, si sanaban (como, en efecto, habian sanado), asistir al entierro del Señor el Viernes Santo, representando á algunos de los personajes que figuraron en la Sagrada Pasion. Las dolorosas se probaban sus espadas, las Soledades admiraban el rico pañizuelo que habian de llevar en las palmas de ambas manos, junto al pecho, copiando escrupulosamente esta actitud amanerada de una imagen bizantinesca.

Los Ecce-Homos de ocho años, se hacian atar las manos con cordones ó cíngulos de oro, y ensayaban el modo de llevar delicadamente entre dos dedos la caña irrisoria, pero de plata esmaltada. Las Verónicas se ensayaban para la escena tiernísima de lenzuelo, recogiendo el sudor de la cansada víctima. Los Apóstoles se ajustaban sandalias de raso colorado con franjas tibiales, adornadas de gusanillo de oro y chispas de diamantes, para asistir á la ceremonia del lavatorio y consentir que el sacerdote les lavara los piececitos de jazmin. Y otros, hebreos de puro cristianos, lloraban por figurar de algun modo en los pasos procesionales de las festividades de Jueves, Viernes y Sábado Santo.

El resto del dia fué extraordinariamente caluroso. Hay una montaña cerca de la gran ciudad, que parece protegerla. Su aspecto, al ménos á los ojos del baron de Humbold [sic], es el de una silla salomónica gigantesca. Este sabio naturalista, que habia excavado parte de aquel terreno, aseguraba que escondia riquísimos veneros, y llama en sus apuntes á dicho monte, "silla de oro y piedras preciosas." Y el 26 de Marzo repetia, quejándose del calor: -"Parece que el Sol de Justicia ha bajado á sentarse á lo Salomon en el más lindo trono que le ofrece la tierra americana."

El azul del Cielo era profundo y estaba en profundo olvido de las nubes y de las tempestades. Las tres cuartas partes de la poblacion estaban congregadas en las iglesias. Los monumentos obeliscales de ritual eran, si maravillosos en unas, milagrosos en otras. Las Vírgenes de los altares lucian los aderezos de preciosa pedreria, de las familias más distinguidas de la poblacion

Nada, nada –repite Humbold [sic],– nada parecia anunciar á los caraqueños las calamidades de aquel Santo dia; nada hacía temer la intervencion repentina de la fatalidad.

"¿Pero qué es el acaso, qué es la fatalidad? Pregunta Schiller. No es más que la cantera que poco á poco, en edificios ó estátuas, va recibiendo forma y vida y racionalidad consciente, de manos del estatuario ó arquitecto universal. El acaso lo suministra la Providencia."

A las cuatro y media de la tarde, fué que se sintió una extraña ligera conmocion, una inesperada intervencion de las cosas inertes en la exaltación de vida que animaba á los fieles en adoración. Algunas antorchas de los altares se cayeron, para que los custodios suspendieran sus éxtasis y fueran á atizarlas ó aliviarlas; algunos cristales se rompieron en las vidrieras de los rosetones, como para animar á los corazones á dejarse herir por el rayo de amor divino. Algunas puertas crujieron y giraron sobre sus goznes por sí solas, como para predicar abrazos de reconciliación. Las lámparas colgantes, como flores ó pensamientos de oro del Cielo, que, dice el americano Longfellow, se columpiaron como agitadas por el aliento de arcángeles juguetones. La cruz, allá en el altar mayor, se inclinó á los fieles como una espiga enseñando su purisimo candeal, como una cepa sacudiendo ante los sedientos su racimo de esmeraldas balsámicas, ó amatistas líquidas de embriagadora pasion. Las campanas, no tocadas por ajena mano respondieron á las salmodías de los fieles religiosos, como responden las cuerdas de un harpa á la vibración de las cuerdas similares de otra harpa al unísono con ella.

Y aquella ilusion duró siete segundos.

A los siete segundos vino la segunda sacudida, bastante más larga, como de diez á doce segundos, acaso de más; y durante ella, ojos asustados buscaban ojos serenos, labios llenos de místicas sonrisas aún se resistian á cesar de sonreir, y corazones que oraban confiadamente, aún se negaban á suspender el vuelo de sus peregrinas elevaciones.

Este segundo temblor habia pasado ya, cuando algunos se atrevieron á decir: Ha pasado el mayor peligro; porque si, amigos mios, es innegable que no ha sido el cielo, ha sido la tierra la que ha temblado.

Pero no bien se habia manifestado en los semblantes la calma producida por estas seguridades dadas por los hombres de edad y de experiencia, cuando á modo de réplica iracunda de parte del infierno, se dejaron oir cien rayos, sin relámpagos que los precediera, sin aguacero que los siguiera, con un estampido aterrador, con nada comparable. Era algo más y mucho más plenisonante y plenipotente que los rugidos de cuatro torbellinos contrarios, que viniendo de los cuatro opuestos puntos cardinales, se pusieron en choque sobre un solo grado de la línea ecuatorial. A este crugir espantoso de la máquina universal acompañó por cuatro segundos un movimiento de la tierra, trepidante, de saltos y descensos rápidamente sucesivos, como los que suele hacer un cadáver arrojado al mar, sobre el vaiven de las ondas. Y luego venian sacudidas como de un mundo que se descarga del cielo que le pesa, de un sol que se desintegra de sus rayos luminosos ó de su calórico insufrible; sacudidas y saltos intermitentes, como de una creacion aspirando á la nada, pateando y revolcándose en la inmensidad; oscilaciones en direcciones opuestas, vaiven tan pronto de Norte á Sur, como de Oriente á Occidente. Gigantes ó Demonios invisibles estaban haciendo con la tierra para desencaarla [sic] de sus cimientos, lo que numeroso grupo de Hércules hacian con una encina de bosque vírgen para desencajarla de su alvéolo, para desprender su raigambre del suelo que la mantenia magestuosamente recta.

Nada podia resistir á aquel sacudimiento inexplicable de abajo arriba, de izquierda á derecha, de rabia centrípeta de menosprecio centrífugo, ni aquella locura de féndulo [sic] que en circular arrebato cruza sus trayectorias de un segundo con las del segundo siguiente.

La capital de Venezuela saltó y cayó en polvo sobre una circunferencia de muchas leguas. Infinidad de habitantes, más de doce mil, acaso, desaparecieron bajo las ruinas de iglesias, palacios, cuarteles, hospitales y moradas de humilde apariencia.

El mal satánico se presentó en el momento en que debia salir de la catedral una procesion. La procesion fué hácia el abismo. Cuatro mil personas se hundieron empujadas por las cúpulas que parecian volverse del revés, cambiando en convexidades dilatadas sus concavadas dilataciones, y por las altas torres que se doblaban como cirios de cera reblandecida.

La explosion fué más fuerte del lado del Norte, por donde se extendia, de una manera más libre y desahogada, la parte de la ciudad que iba acercando sus construcciones en anchas vías ascendentes al Tabor llamado de Avila y á la grandiosa Silla de Oro y preciosidades salomónicas. Las iglesias de La Trinidad y Alta-Gracia, que tenian ciento sesenta piés de elevacion, y cuyas espaciosas naves estaban sostenidas por columnas de doce y quince piés de espesor, se redujeron á ruinas, cuyos escombros apenas se elevaban á quince piés sobre el nivel de las plazas que las circundaban.

Aquella pasmosa reduccion de escombros fué tan considerable y tan sin explicación, que pocos meses despues de la catástrofe no se distinguían ni los menores vestigios de aquellos [sic] bóvedas soberbias y de aquellas columnatas destinadas á desafiar los siglos. No parecia sino que los grandes monumentos de Caracas, en vez de caer en los abismos que la tierra abria á sus piés, habian sido más bien arrebatados por los aires y lanzarlos á mares desconocidos.

El cuartel de San Carlos desapareció de este modo. Dos regimientos de infantería que estaban allí armados, y en traje de gala, dispuestos á salir de un momento á otro para ir á custodiar la procesion, desaparecieron bajo las moles de piedra del edificio, que se habia convertido en empedrado de una plaza extensísima. Un sepulcro ciclópeo, egipcio, construido y ocupado por sus muertos en un segundo. Para colmo de admiracion, solo un hombre escapó de aquel entierro. Y se le vió de pié, estático, sin habla, convertido en estátua del terror, por espacio de dos horas sobre el zócalo de una columna. Vivió años despues; pero no volvió á hablar nunca. Las nueve décimas partes de la hermosa ciudad de Caracas, emporio de la América del Sur, quedaron reducidas á la nada de un inmenso cementerio. Las casas que no vinieron abajo en los momentos de la explosion, iban cayendo despues unas tras otra con intervalos de cinco ó diez minutos, y remedando en el ruido de la caida los diparos de artillería que, á intervalos iguales, se hacen en las plazas fuertes por la muerte de algun magnate coronado. Las que no cayeron, quedáronse tan agrietadas y con inclinaciones tan amenazadoras, que ninguno de los supervivientes osaba proponer á los enfermos que se guareciesen en ellas.

Fijando en doce mil el número de las personas que perecieron en los primeros momentos, no será exagerado elevar á ocho mil el de aquellos que habian sido lesionados é iban sucumbiendo sucesivamente, uno y otro dia por grupos de cientos, hasta de tres meses despues, faltos de cuidados, de alimentos, de albergue, de razon, de instintos; huérfanos de toda misericordia.

La espesísima nube de polvo candente que se alzó sobre los escombros, oscureciendo y espesando la atmósfera de las cuatro de la tarde, poco antes diáfana y gloriosa de luz, sólo cayó del todo á la aparicion de la noche. Ninguna otra sacudida volvió á sentirse entonces. El aire se trasparentó como nunca. Ninguna noche habia parecido en aquel Cielo más azul, ni más rica de luceros centellantes. La luna llena jugueteaba con nubecillas blancas y aligeras, y sus vivos resplandores franjeaban con relámpagos de plata los contornos de la Silla. El aspecto divino del Cielo contrastaba dolorosamente con el de la tierra en desolacion, sembrada de ruinas y cadáveres. Veíanse por todas partes madres gemebundas, y dejando oir carcajadas histéricas, levantando en sus brazos hijos muertos, que ellas fuera de sí creian solamente moribundos y acobardados. Y les hablaban para animarlos, y les sonreian ó les reñian diciéndoles: Ya pasó lo peor, ya no hay más que temer. La copa de la ira se ha agotado. Nunca pronunciaron sus labios humanos con más terror los nombres de la Suprema Divinidad. Familias numerosas recorrian las calles delirantes, las unas huyendo de las otras, éstas cediendo al contagioso pánico de aquellas, y muchas diseminándose de pronto atraídos sus miembros por diversos objetos que á distancia y en sentidos opuestos simulaban séres humanos, ya el hijo, para unos; ya el padre, para otros; ya los ancianos, ya los niños, ya las esposas, ya los amigos que buscaban lanzando alaridos con nombres mimados y vocablos cariñosos, y á quienes esperaban encontrar todavía entre los grupos de supervivientes.

Todos preferian apiñarse en las calles ya sólo conocidas por los lineamientos de los escombros y las aceras que las contorneaban. Las desgracias que habian enlutado á Lisboa, el siglo pasado, las catástrofes anteriores de Mesina, las que en 1797 y años despues habian sumergido á Lima en los terrores pompeyanos, aglomeraron sus más horribles episodios para afligir á la vez con todos ellos á la ciudad de Caracas.

Los heridos, medio sepultados bajo las ruinas, imploraban á grito herido, cuándo con oraciones, cuándo con anatemas y conjuros desesperados, el socorro de los que pasaban cerca. Fué posible arrebatar de aquellos suplicios á más de dos mil agonizantes. Nunca se mostró la piedad humana más parecida al cielo de

aquella noche; nunca más serena, ni más conmovida, ni más conmovedora en su santo ejercicio; nunca más activa, ni más ingeniosa en su solicitud para dar con los enterrados vivos, mientras se oyeron gemidos de víctimas que podian indicar desde las entrañas de la tierra el punto en que estaban acabando de morir. Y faltaban los útiles más indispensables para las excavaciones, con el cuidado que reclamaban los que gemian dentro y debajo de las ruinas; faltaba lo necesario para registrar los pesadísimos escombros, para apuntalar aquí, para evitar un desplome allí, para contener una pared más allá. Habia que emplear manos ensangrentadas para quitar á la muerte los restos de un tremendo festin. Algunos se resignaban á perder un brazo para poder alargar el otro al enterrado que se afanaba por surgir á la vida. Algunos ántros no devolvieron sus presas, sino á condicion de cambiarlas por los salvadores y quedarse con éstos entre sus garras ó sus fáuces.

Entre los muchos que habian podido salir de los interiores el segundo antes de que éstos desaparecieran, se contaban muchísimos enfermos y baldados, que llevaban años sin haber podido hacer el menor esfuerzo por la vida. Así, el terror que á unos habia anonadado, aunque eran éstos los que gozaban de plena salud, fué el que devolvió nuevo vigor y como sobrenatural juventud á los que, segun los cálculos humanos, parecian marcados por ser las primeras víctimas. Los escapados del hospital, los heridos y los contrahechos, los varios ejemplares del paralítico de la piscina, que no habian podido correr á su Siloé, por falta de auxilios fraternales, salian ahora de la ciudad para sentarse á orillas de los riachuelos y gozar de la libertad de los campos. Allí no tenian más abrigo que el follaje de los árboles, ni más almohada que la mullida hierba, sobre la cual saltaban las aguas de los arroyos; pero nada de esto les afectaba; las precauciones de enfermos, así como los dolores propios de cada cual, habian sido olvidados y perdidos en el dolor universal del momento. Mas tarde fué que las antiguas dolencias recobraron sus derechos, y entonces se observó que no habian suspendido sus rigores por pocas horas ó por algunos dias, sino para caer de nuevo sobre los infelices con aumento de síntomas insoportables. Entonces tambien cayeron en la cuenta de que todo lo necesario á un alivio les faltaba por completo. Camas, vendas, hilas, las muletas que se creian olvidadas para siempre, y los báculos de los decrépitos, y los instrumentos de cirujía, y los bálsamos y otros medicamentos tan benéficos como costosos, y todo cuanto es de primera necesidad en un conflicto, yacia sepultado bajo las ruinas implacables, viéronse los infelices desprovistos hasta del alimento más indispensable.

Y para mayor agonía el agua tambien empezó á faltarle. Varios manantiales que ántes, en los dias felices, bajando de saludables fuentes, corrian jugueteando por amenos prados á llevar sus caudales á la capital bulliciosa, ahora habian torcido su curso ó retrocedian y se escondian debajo de tierra para huir de la ciudad maldita. Las trepidaciones del terreno habian roto además los conductos fontanales de mampostería, y el derrumbamiento de algunas colinas habian obstruido los manantiales preciosos.

Luego se hizo urgente la necesidad de llenar un deber para con los muertos, ordenado por la piedad, á la vez que por el temor de una peste que el aire saturado de putrefacción empezaba á anunciar. En la imposibilidad de dar sepultura pronta y conveniente á tantos miles de cadáveres, agotadas las fuerzas de los vivos, se dispusieron comisiones para que aquellos restos se quemaran, mientras los niños y los casi exánimes dormian en sitios apartados, detras de los montículos ó de los basureros de escombros.

Las hogueras se encendieron con restos de las casas queridas, y de muebles que encerraban recuerdos de pasadas venturas; y la tan lúgubre ceremonia duró muchísimos dias. En medio de tales y tan multiplicadas desventuras públicas, el pueblo se entregaba á prácticas religiosas y á rigores de penitencia que creian indispensables para aplacar la cólera celeste, las pobres mujeres se despojaban de sus lindas cabelleras, y andaban descalzas por encima de guijarros agudos ensangrentándose los delicados piés. Otros se reunian en procesiones y cantaban letanias y plegarias fúnebres; los más en el paroxismo del sufrimiento, ó arrebatados por lastimoso frenesí, hacian en voz alta, estentórea, que despertaba ecos desconocidos en las lejanas cuevas abrigadoras, la confesion de sus más repugnantes pecados; hacian la autopsia de sus propios corazones en medio de las plazas, corriendo despavoridos por las calles, y algunos clavados en el sitio mismo en que habian consumado hacia treinta ó cuarenta años el hecho execrable. Aconteció en aquella poblacion, durante aquellos dias medusianos indescriptibles, lo que ántes se habia notado en las catástrofes de las metrópolis del Asia fastuosa, y tambien luego en Quito el 4 de Febrero de 1797, despues de su memorable terremoto; hubo niños que encontraron un padre, una madre que hasta entónces habian negado todo afecto y cuidado á aquellos pedazos de sus entrañas. Personas consideradas siempre con veneracion, sujetos ejemplares á quienes nadie hubiera creido capaz de hurto, de rapiña, de ningun hecho vergonzozo abominable, prometian en voz alta, delante de todos, justas retribuciones, publicaban sus impurezas más ocultas y reclamaban el odio y la animadversion de sus conciudadanos. Familias desde

hacia tiempo enemistadas como en los grandes pueblos belicosos de la Italia de la Edad-Media, se reconciliaban al fin derramando lágrimas de tierna emocion y por el solo sentimiento sacratísimo de la comun desventura.

Pero si en la mayoría de aquellos infelices, este poderoso sentimiento parecia haber dulcificado los peores instintos y abierto los corazones á la conmiseracion y al respeto á la vida; en no pocos, á la verdad, la desgracia en su incremento produjo efectos contrarios, haciéndolos más duros é inhumanos que en los dias sin peligro. Se cumplia la terrible palabra: -"Al que tenga se le aumentará lo que posee; y al que nada posea, aún lo poquísimo que le queda le será quitado."

Si, en las grandes catástrofes señaladamente, las almas vulgares conservan más bien las fuerzas brutas que las bondades instintivas. Sucede con el infortunio, lo mismo que con las maravillas de la creación ó del arte: sólo un espíritu recto columbra en estas visitaciones divinas el rastro luminoso. En el estudio de las letras, de la ciencia, de los misterios de la naturaleza panorámica y fecunda, sólo un reducido número de séres racionales acepta las influencias bienhechoras que centuplican la nobleza de los sentimientos, que determinan más elevacion en las almas, que consagran la dignidad de los caractéres integros.

Pero dejemos estas reflexiones, para preguntarnos acongojados ¿por qué, por qué se han de repetir esas catástrofes sorprendentes que acusan la enfermedad de nuestro planeta y la pequeñez de sus habitantes privilegiados, y la perenne infancia á que parece condenada aún nuestra ciencia progresiva? ¿A que vienen esas irrisiones del destino, esas inconsecuencias de la vida en que fundamos todas nuestras esperanzas? En el momento mismo en que se trazan estas líneas con mano trémula, el telégrafo, esa meninge sutil del cerebro de nuestro mundo; la electricidad, ese astro de otro sistema, de otras alturas, que se deshizo de amor para venir á abrazar á la tierra y vivir con nosotros y de nosotros, de nuestro pensamiento, vida y alma, está hablando y llorando en nombre de Ischia, la bella inocente, porque contra ella vuelve á rugir el abismo, porque su tierra tiembla y su cielo sigue sereno viéndola temblar y caer agonizante. ¿Por qué, pues, cuando el hombre ha merecido un elemento nuevo de vida progresiva que asegura y estrecha los vínculos sublimes de la solidaridad entre los individuos y las naciones, no abundan más las alegrías y las bienaventuranzas, que el telégrafo repartiria entre muchos como las abundancias de un milagro? ¿Por qué, más bien el generoso telégrafo emplea sus alas, aunque de fuego, escondidas, para unir en sí lo humilde á lo generoso, trayendo en mayor abundancia las malas nuevas y los mensajes funestos? ¿Por qué la electricidad celeste, que pajarea feliz entre los alambres con que la

hacemos nuestra como al ruiseñor, se ve obligada, no á cantarnos himnos de victoria y de amor fraternal, sino lúgubres noticias como ésta: -Mi hermana rebelde, la que está escondida en las entrañas de la tierra, se está portando inhumanamente con un paraíso de Italia.

¡Oh, ciencia, explícanos algo que el corazon acepte gustoso; consuélanos con alguna esperanza que prometa un refugio firme contra la tierra que tiembla y se desmaya! A fé que no podrás hacer más que recordarnos parafraseada la balada india:

"Seguid, seguid, sin embargo, confiando á la tierra los cimientos vuestras moradas y el soporte de vuestras tiendas para el sueño de una noche. Seguid, seguid abandonando á los vientos la vela de vuestras naves, las aspas de vuestros molinos y los soberbios de colores de vuestra bandera, iris de paz.

"¡Oh, tú, pobre mujer, cuyo esposo acaba de perecer en un naufragio, cuya casa acaba de ser reducida á cenizas y cuyos animales domésticos que alimentaban a tu niño han huido espantados! ¿Por qué gimes y te vistes ropas de duelo?

"¿A quién acusas? ¿Al viento? ¿Al fuego? ¿Al hombre que á estas horas se ha apoderado de tu cabrita blanca y de tu vaca fecunda? ¿Quisieras, pues, que el viento no soplara? ¿Qué el fuego no quemara? ¿Qué los hombres no robaran? Pero si el viento no soplara, no hubiera traido muchas tardes al puerto la barca de tu marido. Pero si el fuego no abrasara, ni la lámpara que te alumbra de noche te alumbraria, ni tu hogar te daria calor saludable. Pero si el hombre no se apoderara de los bienes que se encuentra en su camino, cuando está devorado por el hambre, moriría más pronto y aborreceria la vida"

¡Pobre, miserable consuelo! Será filosófico, pero mi corazon rechaza lo irrisorio aunque lo ampare una filosofía, que pretende observar mis dolores personales y los de un pueblo inocente, en esa abstracción antipática que se llama el bien general. Dejadme, pues, creer en un Dios que tenga en reserva otros consuelos, que no tenga mi dolor por ménos grande que el de un mundo, que prosiguiendo sus planes eternos, no prescinda de mí, no cese de ocuparse, activamente de la última de las criaturas, y cuente en mis cabellos, y pese mis lágrimas, y respirando con doble amor, recoja en su pecho mis suspiros.

Dejadme creer á aquel que ha escrito este aforismo:

"¡Todas las cosas, en definitiva, concurren al bien de los que saben amar!"

1812 como ejemplo ilustrativo entre los terremotos más destructores

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Anónimo, "Earthquake", *Encyclopaedia Americana*, Philadelphia, 1830, vol. IV, p. 369.

Earthquake; a shaking of certain parts of the earth's surface, produced by causes not perceivable by our senses. This motion occurs in very different ways, and in various degrees of violence. Sometimes it is perpendicular, throwing portions of the ground into the air, and making others sink. Sometimes it is a horizontal, undulating motion, and sometimes it appears to be of a whirling nature. Sometimes it is quickly over; sometimes continues long, or recurs at intervals of weeks, days or months. At one time, it is confined within a small circle; at another, it extends for many miles. At one time, it is hardly perceptible; at another, it is so violent, that it not only demolishes the works of human art, but changes the appearance of the ground itself. Sometimes the surface of the ground remains unbroken; sometimes it bursts open into clefts and chasms; and then occasionally appears the phenomenon of the eruption of gases, and also of flames, with the ejection of water, mud and stones, as in volcanic eruptions. The eruptions of pro and permanent volcanoes are preceded by, and proportionate to, the agitations of the earth in their neighborhood. These observations furnish grounds for the conclusion that earthquakes cannot proceed from external causes, but arise from certain powers operating within the circumference or crust of the earth. Moreover, all the phenomena of earthquakes bear so much affinity to those of volcanoes, that there can hardly be a doubt, that both proceed from the same causes, acting differently, according to the difference of situation, or different nature of the surface on which they operate. A volcano differs from an earthquake, principally, by having a permanent crater, and by the reappearance of the eruptions in the same place, or in its immediate vicinity. All the other phenomena of a volcano, such as the subterranean thunder-like noises, the shaking, raising and bursting asunder of the earth, and the emission of elastic fluids, the fire and flames, the ejection, too, of mineral substances, all occur, now and then, more or less, in earthquakes as well as ill volcanic eruptions, even when at a distance from active volcanoes; and the genuine volcanic eruptions are, as has been remarked, accompanied or announced by shakings of the earth. All our observations go to prove, that volcanic eruptions, earthquakes, the heaving of the ground from

within, and the disruption of it in the same way, are produced by one and the same cause, by one and the same chemical process, which must have its seat at a great depth beneath the present surface of the earth. The most remarkable earthquakes of modern times are those which destroyed Lima, in 1746, and Lisbon, in 1755; in the latter, 20.000 persons were killed. It extended from Greenland to Africa and America. A similar fate befell Calabria, in 1783, the province of Caracas, in South America, in 1812, and Aleppo, in Syria, in 1822. Several earthquakes have taken place quite lately, in South America, one particularly dreadful at Lima. The city of Guatemala, also, was nearly destroyed in the spring of 1830, by earthquakes, which continued five days successively.

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Charles Lyell, "Principles of Geology, being an Attempt to explain the former Changes of the Earth's Surface, by reference to Causes now in Operation. By Charles Lyell Esq. F.R.S. 2 vols. 8vo, Vol. I London, 1830. Murray. [Second Notice]", *The Athenaeum*, Londres, 9 de octubre de 1830, vol. 1, pp. 628-629.[152]

We are rather late in giving our promised extracts from this valuable work, and must now be brief. The following are examples of the operation of each of the two principal agents of inorganic change, water and fire. On the progressive encroachments of the sea on the east coast of England:

"According to Bergman", a strip of land, with several villages, was carried away near the mouth of the Humber in 1475.

"The maritime district of Lincolnshire consists chiefly of lands which lie below the level of the sea, being protected by embankments. Great parts of this fenny tract were, at some unknown period, a woody country, but were afterwards inundated, and are now again recovered from the sea. Some of the fens were embanked and drained by the Romans; but after their departure the sea returned, and large tracts were covered with beds of silt containing marine shells, now again converted into productive lands. Many dreadful catastrophes are recorded by incursions of the sea, whereby several parishes have been at different times overwhelmed.

[152] N de A: La obra de Charles Lyell es mencionada, referida y/o citada en las entradas 62, 73, 97 y 98.

"We come next to the cliffs of Norfolk and Suffolk, where the decay is in general incessant and rapid. At Hunstanton, on the north, the undermining of the lower arenaceous beds at the foot of the cliff causes masses of red and white chalk to be precipitated from above. Between Hunstanton and Weybourne, low hills, or dunes, of blown sand, are formed along the shore, from fifty to sixty feet high. They are composed of dry sand, bound in a compact mass by the long creeping roots of the plant called Marram (Arundo arenaria). Such is the present set of the tides, that the harbours of Clay, Wells, and other places, are securely defended by these barriers; affording a clear proof that it is not the strength of the material at particular points that determines whether the sea shall be progressive or stationary, but the general contour of the coast. The waves constantly undermine the low chalk cliffs, covered with sand and clay, between Weybourne and Sherringham, a certain portion of them being annually removed. At the latter town I ascertained, in 1829, some facts which throw light on the rate at which the sea gains upon the land. It was computed, when the present inn was built, in 1805, that it would require seventy years for the sea to reach the spot; the mean loss of land being calculated, from previous observations, to be somewhat less than one yard annually. The distance between the house and the sea was fifty yards; but no allowance was made for the slope of the ground being *from* the sea, in consequence of which, the waste was naturally accelerated every year, as the cliff grew lower, there being at each succeeding period less matter to remove when portions of equal area fell down. Between the years 1824 and 1829, no less than seventeen yards were swept away, and only a small garden was then left between the building and the sea. There is now a depth of twenty feet (sufficient to flout a frigate) at one point in the harbour of that port, where, only forty-eight years ago, there stood a cliff fifty feet high, with houses upon it! If once in half a century an equal amount of change were produced at once by the momentary shock of an earthquake, history would be filled with records of such wonderful revolutions of the earth's surface, but, if the conversion of high land into deep sea be gradual, it excites only local attention. The flagstaff of the Preventive Service station, on the south side of this harbour, has, within the last fifteen years, been thrice removed inland, in consequence of the advance of the sea."

The following remarks on some of the regions where earthquakes and volcanic eruptions are simultaneously at work, changing the surface and appearance of the earth, bear Mr. Lyell out in his proposition, that the causes now in operation are sufficient to explain the former changes.

"Of these great regions, that of the Andes is one of the best defined. Repecting [sic] its southern extremity, we are still in need of more accurate information, some conceiving it to extend into Terra del Fuego and Patagonia. But if we begin with Chili, in the forty-sixth degree of south latitude, we find that, in proceeding from this point towards the north to the twenty-seventh degree, there is a line of volcanos so uninterrupted, that it is rare to find any intervening degree of latitude in which there is not an active vent. About twenty of these are now enumerated, but we may expect the number to augment greatly when the country has been more carefully examined, and throughout a longer period. How long an interval of rest entitles us to consider a volcano extinct, cannot yet be determined; but we know that, in Ischia, there intervened, between two consecutive eruptions, a pause of *seventeen centuries*; and a much longer period, perhaps, elapsed between the eruptions of Vesuvius before the earliest Greek colonies settled in Campania, and the renewal of its activity in the reign of Titus. It will be necessary, therefore, to wait for at least six times as many centuries as have elapsed since the discovery of America, before any one of the dormant craters of the Andes can be presumed to be entirely spent, unless there are some *geological* proofs of the last eruptions having belonged to a remote era. The Chilian volcanos rise up through granitic mountains. Villarica, one of the principal, continues burning without intermission, and is so high that it may be distinguished at the distance of one hundred and fifty miles. A year never passes in this province without some slight shocks of earthquakes; and about once in a century, or oftener, tremendous convulsions occur, by which, as we shall afterwards see, the land has been shaken from one extremity to the other, and continuous tracts, together with the bed of the Pacific, have been raised permanently from one to twenty feet and upwards above their former level. Hot springs are numerous in this district, as well as springs of naphtha and petroleum, and mineral waters of various kinds. If we pursue our course northwards, we find in Peru only one active volcano as yet known; but the province is so subject to earthquakes, that scarcely a week happens without a shock, and many of these have been so considerable as to create great changes of the surface. Proceeding farther north, we find in the middle of Quito, where the Andes attain their highest elevation, from the second degree of south, to the third degree of north latitude, Tunguragua, Cotopaxi, Antisana, and Piehinca, the three former of which throw out flames not unfrequently. From fissures on the side of Tunguragua, a deluge of mud (moya) descended in 1797, and filled valleys a thousand feet wide to the depth of six hundred feet, forming barriers whereby rivers were dammed up,

and lakes occasioned. Earthquakes have, in the same province, caused great revolutions in the physical features of the surface. Farther north, there are three volcanos in the province of Pasto, and three others in that of Popayan. In the provinces of Guatimala and Nicaragua, which he between the Isthmus of Panama and Mexico, there are no less than twenty-one active volcanos, all of them contained between the tenth and fifteenth degrees of north latitude. The great volcanic chain, after having pursued its course for several thousand miles from south to north, turns off in a side direction in Mexico, and is prolonged in a great plateau, between the eighteenth and twenty- second degrees of north latitude. This high table-land owes its present form to the circumstance of an ancient system of valleys, in a chain of primary mountains, having been tilled up, to the depth of many thousand feet, with various vulcanic products. Five active volcanos traverse Mexico from west to east Tuxtla, Orizaba, Popocatepetl, Jorullo, and Colima. Jorullo, which is in the centre of the great plateau, is no less than forty leagues from the nearest ocean an important circumstance, as showing that the proximity of the sea is not a necessary condition, although certainly a very general characteristic, of the position of active volcanos. The extraordinary eruption of this mountain, in 1759, will be described in the sequel. If the same parallel line which connects these five vents be prolonged, in a westerly direction, it cuts the volcanic group of islands, called the Isles of Revillagigedo. To the north of Mexico there are three, or, according to some, live volcanos, in the peninsula of California; but of these we have at present no detailed account. We have before mentioned the violent earthquakes which, in 1812, convulsed the valley of the Mississippi at New Madrid, for the space of three hundred miles in length, As this happened exactly at the same time as the great earthquake of Caraccas, it is probable that these two points are parts of one continuous volcanic region; for the whole circumference of the intervening Caribbean Sea must he considered as a theatre of earthquakes and volcanos. On the north lies the island of Jamaica, which, with a tract of the contiguous sea, has often experienced tremendous shocks; and these are frequent along a line extending from Jamaica to St. Domingo and Porto Rico. On the south of the same basin the shores and mountains of Colombia are perpetually convulsed. On the west, is the volcanic chain of Guatimala and Mexico, before traced out; and on the east, the West Indian isles, whew, in St. Vincent's and Guadaloupe, are active vents.

"Thus it will be seen that volcanos and earthquakes occur uninterruptedly, from Chili to the north of Mexico; and it seems probable that they will hereafter be

found to extend from Cape Horn to California, or even perhaps to New Madrid, in the United States, a distance as great as from the pole to the equator."

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Anónimo, "Some Account of Earthquakes", *Saturday Magazine*, Londres, 1833, vol. 2, Nº 48, pp. 121-128.

In a previous number, a brief account was given of the *causes* which produce both volcanoes and earthquakes; but though these tremendous visitations have a common origin[153], yet the appearances they present during their continuance, and their subsequent *effects*, are so different, that they should properly be described apart, in a paper intended only for the general reader.

When it is remembered that the very circumstance of a volcanic eruption, implies that a vent has been found, or made, for the mass of gaseous and fiery matter, which chemical agency has produced under the surface of the earth; it is not surprising that earthquakes to any alarming extent seldom accompany such catastrophes, or that they cease when the eruption takes place. It is in countries remote from active volcanoes, that the effects of the former are most widely and powerfully felt; in such, the efforts to escape, made by the imprisoned elements, convulse the ground for thousands of square leagues, bringing destruction to the habitations of man, and crushing him under the ruins of his own frail abodes; and when the overpowering force exerted by the subterranean matter rends the surface of the earth, chasms are opened, which in a few seconds often swallow up whole cities, with their devoted inhabitants, and a dreary plain, a dismal lake, or a yawning gulf remains to point out the spot, where but a few hours before stood a flourishing town, swarming with thousands of human beings.

A torrent of lava or a shower of ashes, often has, and may again destroy cities; but there are always some previous warnings which allow the inhabitants time to escape; consequently the destruction of human life by volcanic eruptions only, is trifling compared to that caused by earthquakes; added to which, the

[153] This common origin is proved by many circumstances; and the reader may be interested by the following facts illustrating this subject. The volcano of Pasto, east of the river Guaytara, sent out, without cessation, a tall column of smoke, for three months, in the year 1797: this suddenly ceased, at precisely the same moment that a violent earthquake occurred at sixty miles' distance, at Riobamba, which, together with a mud-eruption of the Moya, destroyed from thirty to forty thousand Indians. The sudden appearance of the lsland-Sabrina, in the Azores, on the 30th of January, 1811, was the forerunner of those fearful concussions which, further westward, shook the Antilles, the plains of the Ohio and Mississippi, and the opposite coast of Venezuela, in succession, without intermission, from May, 1811, to June, 1813.

devastations produced by the former are generally confined to the immediate neighbourhood of the mountain, whereas in the case of an earthquake, the suddenness of the crisis, and the extent of its influence, precludes the possibility of escaping the danger, while the mode of its approach, the rendering unstable "the fixed and firm foundations of the globe," so paralyzes with fear the minds of the victims, as to incapacitate them from making any efforts to avoid the coming danger.

In all ages this quantity of human suffering has excited sympathy, and called attention to these convulsions. In times of perfect ignorance concerning the laws of nature, they would probably have occasioned little remark, if their effects had been confined to the destruction of mountains, or the birth of new hills and lakes where none had before existed; events which in a greater or less degree always accompany these visitations.

It is for this reason that historical records of earthquakes are numerous; and of a few of these we propose to give such an account as our limits will allow; dwelling, for obvious reasons, chiefly on those which are most interesting for their moral, as well as physical effects.

Though the shocks of an earthquake are, as we before stated, fatally sudden in their approach, yet it must not be imagined that they inflict their visits without previous threats. These have been observed to be very similar in different countries and at remote periods, and generally consist in atmospherical, or, as they are termed, in meteorological appearances, which are now known to be intimately connected with changes in the electrical state of the earth and air; and very direct indications of these are always observable in volcanic eruptions as well as during and preceding earthquakes.

Variations in the usual course of the seasons, violent gusts of wind, or prætternatural calms, rains in countries or at times of the year in which they are usually unknown to occur, a mistiness of the air often continued for months, and the consequent lurid appearance of the sun's face, flashes of lightning or noxious vapours from the surface of the ground, with subterranean noises resembling the rolling of carriages, the discharge of artillery, or distant thunder, are indications of the approaching evil.

Pliny, in the second book of his *Natural History*, has given an account of the principal earthquakes in ancient times; but this is mixed up with so much matter obviously fabulous, that little instruction or rational amusement can be derived from it; one of the most authentic is that which occurred in the

year 17; and destroyed twelve cities of Asia Minor in one night. There exists a medal, struck during the reign of Tiberius, recording the rebuilding of these. The earthquake in the year 63, which partly destroyed, among others, the city of Pompeii, is familiarly known to our readers, from the interest excited by the discoveries which have been made there.

The city of Antioch affords an example of repeated suffering from earthquakes. In A. D. 115, it was destroyed by one which lasted several days; the Emperor Trajan happened to be in the town at the time with a large force, returning from one of his military expeditions; he escaped, it is said, with great difficulty, but an immense loss was sustained by his troops and the inhabitants. In 458, in the month of September, the city, which was once more flourishing, and thickly peopled, was again visited by a convulsion, which ruined it, and destroyed 40.000 inhabitants; and, before it could well recover this loss, in 525, under the Emperor Justin, a third earthquake, still more fatal, killed nearly 60.000[154]; but this is a trifling fatality in one city compared with that which has attended Lima, as we shall presently see.

The accounts of these remote convulsions are, however, too vague to be interesting†, we, therefore, pass them over, till we arrive at the one of Calabria in 1638; of this Kircher has given an account, having been a witness to its horrors, in a journey he made from Sicily to the continent during its continuance. He, and four other persons, left the harbour of Messina on the 21th of March, and had not proceeded far, when the air and ocean gave manifest signs of some approaching catastrophe: Etna was seen to cast forth great volumes of smoke, which obscured the island from their view; the strange disturbance of the sea, and the dreadful noises, induced them to land at Tropæa, which they no sooner gained, than a shock ensued, which destroyed the greater part of the place. Compelled to prosecute their voyage, now seeking safety on shore, and now returning to their vessel, as dangers alternately menaced them by land or at sea, they witnessed the destruction of Rochetta and other places, but, on arriving within sight of the city of St. Euphemia, whither they were bound, they perceived a dark lurid cloud resting on the spot, though the atmosphere was otherwise serene; when this cleared off, the city had disappeared, and a lake occupied its place, and, during the remainder of their voyage to Naples, where they were now obliged to proceed, the whole coast, for upwards of 200 miles, presented one picture of ruined cities and houseless wanderers.

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154 Gibbon states that the loss was 250.000, and accounts for this enormous number by the multitudes attracted to the city to celebrate the festival of the Ascension.

In 1693, after several previous shocks, one occurred on the 11th of January, which, in three or four minutes, entirely destroyed the city of CATANIA, and 19.000 inhabitants of the island of Sicily: the undulations of this were felt, it is said, in Germany, France, and even in England. Fifty-four towns of some magnitude were, more or less, sufferers by this earthquake, and the total loss of human life amounted, it is supposed, to nearly 100.000.

The earthquake at JAMAICA in the previous year, 1692, was still more dreadful: the earth rose and fell like waves of the sea, and hundreds of chasms were seen opening and closing alternately; many persons were swallowed up in these, others crushed to death, with their bodies half out and half in them, and some, even after being buried alive, were cast out again with torrents of water. Three-fourths of the buildings of Port Royal sank down with all their inhabitants under the water, and long after, the roofs and chimneys of many were perceivable, at the distance of thirty and forty feet below the surface. A space of ground, about a thousand acres in extent, sunk down during the first shock, the sea rolled over it, and a frigate, then in one of the docks, was washed by the wave over the tops of many buildings. On the north of the island, the plantations, which covered upwards of a thousand acres, were swallowed up, and a lake appeared in their place; this afterwards dried up, leaving nothing but sand and gravel, without a trace of a house or tree having ever occupied the spot. The chain of mountains which traverses the island presented the most fearful signs of the violence of the convulsion; they were almost entirely stripped of their verdure and their woods, which were brought down by the rivers in such quantities, that several hundred thousand tons of timbers were seen strewed on the face of the deep.

The first earthquake which is mentioned as having visited LIMA, since its establishment by the Spaniards, was in 1582 ; but was not of very serious consequence: six years after that time, however, one occurred, so fatal, that a solemn fast-was appointed to be annually kept, and is still observed, in commemoration of it. In 1609, Lima was again injured by a shock, which destroyed many houses. In November, 1630, such extensive damage was done to the town by an earthquake, that an annual festival is observed on that day, in acknowledgement for its not having been totally annihilated; in the same month, twenty-four years afterwards, the city was again visited, and many hundred houses thrown down; but time and warning were vouchsafed to the inhabitants, who, consequently, suffered but little. Another percussion took place in 1678; but that of October, 1687, was more violent than most, if not

all, which had preceded it. It commenced at four o'clock in the morning of the 28th, and by this first shock destroyed many of the public buildings and private houses, in which a great number of persons perished: two hours afterwards, the concussions returned so rapidly and so powerfully, that the whole town was laid in ruins; though, from the previous warning, few additional lives were lost. During this second shock, the sea, first retiring considerably, reflowed in such enormous waves, as to overwhelm the town of Callao, five miles distant from Lima, and all the adjacent country, with its unfortunate inhabitants. No less than six additional earthquakes were experienced at Lima between this time and that at which the following occurred.

The earthquake which desolated PERU, in 1746, is considered as one of the most severe that country ever experienced; it began on the 27th of October, and in the course of the first twenty-four hours, two hundred shocks were felt. The sea retired twice from the shore, and flowed in again on the land with such impetuosity, as totally to destroy Lima, and several other places. Not only were nineteen ships, out of twenty-three, in the harbour, sunk, but the other four were carried, by the power of the waves, a great distance up the country one of these was a frigate! Two hundred inhabitants alone were saved, out of four thousand who lived in the city; and these were rescued by the preservation of a small part of the fort of Vera Cruz, which was the only trace left of the situation of that once flourishing place.

In 1750, the ancient city of CONCEPTION, IN CHILI, was totally destroyed by an earthquake; the sea rolled over it, and the bed of the ocean was so elevated by the shocks that the port was rendered useless.

In 1759, SYRIA, and the adjacent countries, were devastated, during three months, by earthquakes, which extended over upwards of 90.000 square miles. Balbeck, Damascus, Tripoli, Sidon, Accon, and many other towns, were entirely or in great part destroyed; in each of which, thousands of inhabitants were victims. Twenty thousand are said to have perished in the valley of Balbeck alone.

As a proof of the ludicrous ideas on the subject of earthquakes prevalent till very lately, a little work, entitled *The General History of Earthquakes*, &c. &c. by R. B. 1734, may be referred to. In a chronological list of all the remarkable ones which have ever occurred, the author invariably narrates cotemporary historical events, as immediately caused by, or connected with, the commotions; as a specimen take the following, selected from hundreds more, equally authentic and rational. "In 1622 was a great earthquake in Italy; the shape

of an elephant was seen in the air, and three suns. Armies fighting, monstrous births, -waters turned into blood, unusual and impetuous tempests which overthrew several towers. At this time began the third civil war in France; the Prince of Condé is taken, and shot to death, with a pistol; the emperor prohibited the Protestant religion at Atken."

DESTRUCTION OF CARACCAS.

On the 26th of March, 1812, at five in the afternoon, after a calm but excessively sultry day, a tremulous motion in the ground was felt, sufficiently strong to set the church- bells ringing; this lasted five or six seconds, and the earth continued undulating like the sea in a calm for ten or twelve more; subterranean noises were then heard, and electric discharges perceived, more powerful than those during an average thunder-storm, and the agitation of the earth increased to such a degree, both of the oscillating and horizontal kind, that in the short space of a minute the whole city of Caraccas, with upwards of thirty other towns, and numerous villas, farms, and other buildings in the adjacent country, to an extent of 300 square miles, were completely overturned, and 80.000 persons killed, and thousands more wounded. This city stood at the foot of the declivity of the highest mountain in that country, called La Silla, and on the margin of an immense plain, through which several rivers flowed; it was elevated considerably above the level of the sea, and enjoyed a remarkably fine climate. The day of this awful catastrophe happened to be Good Friday, and the people were crowded in the churches, beneath which they were buried by thousands; two of these, La Trinidad and Alta Gracia, in the immediate neighbourhood of the mountain, experienced most forcibly the effects of the shock; they were upwards of 150 feet in height, and no portion of their ruins, exceeding five or six feet high, were left standing.

As soon as the first panic was over, the survivors set to work to rescue those who lay buried in the ruins and yet lived, or to collect the bodies of the dead for burial; but these were too numerous to admit of being interred, and, in order to avoid a pestilence from the decaying corpses, they were obliged to be burnt in piles with the timber from the ruins.

In such a country, the want of water was soon experienced as a great aggravation of the evil; for all the cisterns and conduits were ruined, and the springs and rivulets either dried up or diverted from their course. Hunger was next added to the other calamities; no provisions were saved, and none were brought to market, and many persons absolutely died from want of food.

The shocks continued for many months; some so violent as to rend several mountains asunder, frequently occurring at intervals of only five minutes for days together, and that was thought a very tranquil one on which *only* fifteen or twenty were experienced.

It is curious to remark the effects of such a calamity on the human mind, according as it is influenced by remorse, or fear. In less than two days after the first blow, two thousand individuals were married, who had previously lived in unhallowed union. Many poor relations, who had hitherto been neglected, were sought for and acknowledged by their wealthy kindred; neglected children were owned, and legitimate restitutions were made, and law-suits terminated; while the timid and the depraved either accused themselves of concealed crimes, owned to murders they had committed, others rushed to fresh excesses, and to the perpetration of new enormities.

An earthquake occurred in CHILI, on the 4th of April, 1819, of the effects and consequences of which Captain BASIL HALL gives some interesting particulars, in his work, intituled *Extracts of a Journal on the Coast of Chili*, &c. in 1821-22. From these we select the following.

"It was interesting to notice how constantly the earthquake occupied all people's thoughts at this place, however much they might seem to be engrossed by other objects. An English gentleman, residing at Copiapo, invited me to visit a family of his acquaintance, living in the undestroyed suburb Chimba, promising to show me the handsomest young woman in Chili. We found her very pretty and agreeable; but what entertained us was, her vehement desire to have a wider field for the display of her charms, the accounts she had heard from others, of the fashionable world of Santiago and Coquimbo, had so completely turned her head, that even earthquakes ceased to make the usual impression. 'I see,' said she, 'other people running out of their houses, full of terror, beating their breasts, and imploring mercy, and decency, of course, obliges me to do the same; but I feel no alarm; my thoughts are all at Coquimbo.' We consoled her as well as we could; and, as she had spoken of earthquakes, asked her if there had been one lately. 'No,' she replied, 'not for some time. I really do not think I have felt one myself for three days. Somebody said there was one last night; but I knew nothing of it. I am tired of these earthquakes, and would never think of them again, if I were at dear Coquimbo.'

"On putting the same question to another person, he said, they had not experienced one since April; meaning, as I discovered, April, 1819, two years and

a half before; not conceiving we could be interested in such petty shocks as would not demolish a town.

"While listening to these descriptions, we were much struck with the occasional introduction of minute characteristic circumstances. One of the party, for instance, was describing the effect of a severe shock, which, he said, happened at four o'clock. 'Oh, no,' said another, 'it was later, I assure you.' 'Indeed, it was not,' replied the first, 'do not you remember we were playing at bowls at the time, and when the sound was heard, I stopped playing, and you called out to me to look what o'clock it was.'

"Upon another occasion, our host said, I was just going to look what the hour was at which one of those sounds was first heard, when my attention was diverted from the watch by a hideous scream of terror from a person near me. He was such a little insignificant fellow, that I could not conceive such a yell could come from him; and so we all forgot the shock, in quizzing this little mannikin."

The quickness, with which natives of countries exposed to frequent earthquakes feel them, when strangers are not aware of their existence, is also mentioned by the same gentleman.

"In the course of a long walk which our party took after dinner, an earthquake was felt. We were walking slowly along, when the gentlemen stopped, and one of them seeing us look surprised at their doing so, cried out, 'Temblor,' (Earthquake). A sound like distant thunder was then heard for about a quarter of a minute; but it was impossible to say from whence it proceeded; and, though conscious that there was something unusual in the noise, I cannot say exactly in what respect it was particular. The residents declared that they felt the tremor; but none of us were sensible of any motion. This was the fifth occasion, since ray arrival in the country, on which I had been present at earthquakes, without ever feeling any of them in the slightest degree."

An earthquake commenced in Chili on the 19th of November, 1822, the first shocks of which were felt, at the same moment, over a distance of 1.200 miles, and the coast, for a length of 100 miles from Valparaiso, was raised more than three feet above its former level; part of the bed of the sea remained dry at high water, and there is reason to believe that a permanent change of surface, with respect to elevation, was effected over 100.000 square miles.

The shocks continued to the end of the ensuing September, and, even at that distance of time, two days never passed without one, and often two or three were felt in the course of twenty-four hours.

The following account of the effects experienced on this occasion are narrated by Mrs. Graham, in her *Journal of a Residence in Chili*, and convey a vivid idea of such an event; the authoress was at Quintero about thirty miles from Valparaiso.

"*November* 20th. Yesterday after dinner, Glennie having fallen into a sound sleep in his arm-chair by the fire-side, Mr. Bennet and I, attracted by the fineness of the evening, took our seats to the veranda, overlooking the bay; and for the first time since my arrival in Chili, I saw it lighten; the lightning continued to play over the Andes until after dark, when a delightful and calm moonlight night followed a quiet and moderately warm day. We returned reluctantly to the house on account of the invalid, and were sitting quietly conversing, when at a quarter past ten, the house received a violent shock, with a noise like the explosion of a mine; and Mr. Bennet starting up ran out, exclaiming 'An earthquake, an earthquake; for God's sake, follow me!' I, feeling more for Glennie than any thing, and fearing the night-air for him, sat still: he, looking at me to see what I would do, did the same; until the vibration still increasing, the chimneys fell, and I saw the walls of the house open. Mr. Bennet again cried from without, 'For God's sake, come away from the house!' So we rose and went to the veranda, meaning of course to go by the steps; but the vibration increased with such violence, that hearing the fall of a wall behind us, we jumped down from the little platform to the ground; and were scarcely there, when the motion of the earth changed from a quick vibration to a rolling like that of a ship at sea, so that it was with difficulty that Mr. Bennet and I supported Glennie. The shock lasted three minutes; and by the time it was over, every body in and about the house had collected on the lawn, expecting two persons, one the wife of a mason, who was shut up in a small room which she could not open; and the other Carillo, who in escaping from his room by the wall which fell, was buried in the ruins, but happily preserved by the lintel falling across him.

"Never shall I forget the horrible sensation of that night! In all other convulsions of nature, we feel or fancy that some exertion may be made to avert or mitigate danger; but from an earthquake there is neither shelter nor escape the mad 'disquietude' that agitates every heart, and looks out in every eye, are too awful to be described. Amid the noise of the destruction before and around us, I heard the lowings of the cattle all the night through: and I heard the screaming of the sea-fowl, which ceased not till morning. There was not a breath of air, yet the trees were so agitated that their topmost branches

seemed on the point of touching the ground. I got a man to hold a light, and venture with me to the inner rooms to fetch medicine. A second and a third shock had by this time taken place, but so much less violent than the first, that we had reasonable hopes that the worst was over, and we proceeded through the ruined sitting-rooms to cross the court where the wall had fallen, and as we reached the top of the ruins, another smart shock seemed to roll them from under our feet; at length we reached the first door of the sleeping- apartments, and on entering I saw the furniture displaced from the walls, but paid little attention to it; in the second, however, the displacing was more striking, and then it seemed to me that there was a regularity in the disposal of every thing; this was still more apparent in my own room, but it seemed in all to have been moved in the same direction. The night still continued serene, and though the moon went down early, the sky was light, and there was a faint aurora-australis. It was now twelve o'clock; the earth was still at unrest, and shocks accompanied by noises like the explosion of gunpowder, or rather like those accompanying the jets of fire from a volcano, returned every two minutes; and then, wearied out, I fell asleep; but a little before two, a loud explosion and a tremendous shock roused every one, and a horse and pig broke loose and came to take refuge among us. At four o'clock, there was another violent shock, and the interval had been filled with a constant trembling, with now and then a sort of cross motion, the general direction of the undulation being North and South. Since that hour, though there has been a continued series of agitations, such as to spill water from a glass, and though the ground is still trembling under me, there has been nothing to alarm us. At day-light, I went out of the tent to look at the earth, the dew was on the grass, and all looked beautiful as if the night's agitation had not taken place. Half past eight P. M., the evening is as fine as possible, the moon is up, and shines beautifully over the lake and the bay, the stars and the aurora-australis are also brilliant, and a soft southerly breeze has been blowing since daylight.

"*Thursday, November* 21. At half-past two, A.M., I was awoke by a severe shock; at ten minutes before three, a tremendous one, which made us feel anew that utter helplessness which is so appalling. Five others, in the course of the day, of different degrees of severity, were all that were in any degree alarming, but slight ones occurred every twenty or thirty minutes. I learn, not one house in the port remains habitable, though many retain their forms. There is not a living creature to be seen in the streets, but the hills are covered with wretches driven from their homes, whose mutual fears keep up mutual distractions.

The ships in the harbour are crowded with people; no provisions are to be had; the ovens are ruined, so that the bakers cannot work. We had the same prophecy of a greater shock; that it did not happen has been attributed to the interposition of our Lady of Quintero, who has a chapel at the old house, and her image has long been an object of peculiar veneration. All the women of the neighbourhood flocked thither on the first dreadful night, and with shrieks, cries, and endearing names, entreated her to come to their assistance: in the morning, when the priests were able to force the doors, obstructed by the fallen rubbish, they found her prostrate, with her head off, and several fingers broken; she was soon restored, however, to her pristine state, dressed in clean clothes, and placed in the attitude of benediction before the door of her shattered fane.

"Don Fausto reports from Quillota, that the 19th being a festival of St. Martin, the tutelary saint, the marketplace was crowded with people, and booths, and bowers of roses and myrtles ; under which all kinds of feasting, revelling, dancing, fiddling, masking, and every species of dissipation, or rather dissoluteness, was going on. The earthquake came! and in an instant all was changed. Instead of the sounds of the viol and the song, there arose a cry of '*misericordia*', and a beating of the breast, and a. prostration of the body: the thorns were platted into crowns, which the sufferers pressed, on their heads till the blood streamed down their faces, the roses being now trampled under foot. Some ran to their falling houses, to snatch thence their children, forgotten in the moments of festivity, but dear in danger. Among the rest, came Don Duenas: he had been in his house with his wife and child; he could not save both at once, and while he was bearing her out, the roof fell, and his infant was crushed. His loss of property had been immense. This man, then, with this load of affliction, came to Fawkner (deputy governor), and told him he had ordered already four bullocks to be killed and distributed to the poor; and desired him to remember, that though his losses had been severe, he was still, comparatively, a rich man, and therefore able, as well as willing, to assist his neighbours and fellow sufferers.

"*Saturday*, 24th. As I approached nearer, the tents and huts of the wretched fugitives claimed my attention; and there I saw the calamity in a light it had not hitherto appeared in. Rich and poor, young and old, masters and servants, huddled together, in intimacy frightful even here, where distinction of rank is by no means as broad as in Europe. I fear that whatever cause makes large bodies of men very miserable, makes them also very wicked. Poor Maria came to me evidently sick

at heart; I asked for her little boy, she burst into tears. He was sleeping in the rancho, on his little bed; she had been out at a neighbour's house, she ran home to seek her son: he lay on his bed, but a rafter had been shaken from its place, and had fallen on his little head; and from the face alone she could not have known her own child. They came to take the body, and bury it; she had not four dollars in the house; the priests, therefore, as she could not pay the fees, refused to bury it in consecrated ground; and 'they have thrown my child into a pit, like a dog, where the horses and the mules will walk over him, and where a Christian prayer will not reach him!' All comment on this would be idle.

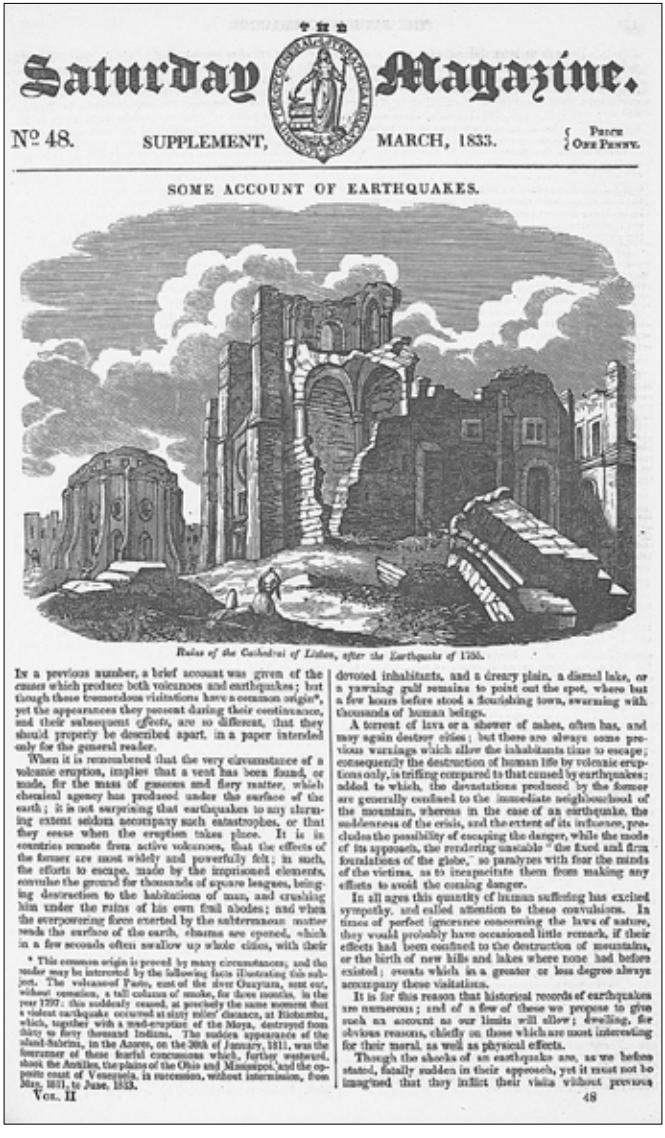
"*Monday,* 25th. I have been busy all day packing my books, &c., to remove, because my house has been let over my head to some persons, who, seeing how well it has stood, have bribed the landlord to let it to them *they are English!*"

Our limits will not allow of our giving further extracts from this lady's account, who remained in the country till January 17th, and has recorded many circumstances of great interest relating to this catastrophe.

The slight shocks occasionally felt in our own country may more properly be considered as the remote effects of a more powerful convulsion at some place situated within the various volcanic ranges by which we are surrounded, though distantly; and this is rendered more probable, by the circumstance of these feeble visits commonly agreeing in the time of their appearance with that of a violent commotion, of which the account is subsequently received from other countries Providentially, no greater damage has ever arisen from them than the shaking of houses, causing bells to ring, or furniture to move, &c. God has been pleased to exempt us from great calamities: but while it appears, from observation, that England is not, nor has been for many ages, within the sphere of volcanic activity, yet geological researches incontestably prove that there was a time, long before all human records, when this country, as well as others, was subjected to fiery eruptions, and, therefore, most probably to earthquakes. We have alluded in previous numbers to the convincing testimonies of this country having for ages enjoyed a tropical climate; and as far as experience goes, it appears that volcanic eruptions are *principally* felt in tropical or neighbouring countries. In the recurrence of those cycles in which the surface of the globe appears to be gradually but constantly changing its character and temperature in succession, it may be expected that this part of Europe may again be visited by these terrific powers; but these are rather speculations for the philosopher, than interesting to the common reader, and we therefore refrain from dwelling further on the subject.

After reading the foregoing accounts of the desolating effects of volcanoes and earthquakes, some natural and pardonable doubts may arise in the minds of many, who, though convinced of the uniform wisdom and benevolence of the whole scheme of creation, may yet be perplexed to trace them in this frequent recurrence of visitations, apparently only involving thousands, innocent as well as guilty, in one sudden destruction: but here, as in so many other cases, science and philosophy step in to dissipate these painful suggestions, and to vindicate that universal wisdom, by proving that without these catastrophes this globe would have been long age, and might yet become an uninhabitable waste.

Those inequalities of the earth's surface, which render it by variations in temperature and soil so eminently adapted to the existence of myriads of different races of beings, are constantly being reduced by the ceaseless action of air and water. The mountain rill, swollen by rains into a torrent, washes down fragments of rock detached by atmospherical causes; these are borne in time, by rivers, to the ocean, and the waves of this last are perpetually preying on the shores and cliffs, and gradually wasting away the elevated dry land; converting by degrees, continents into islands, and causing islands to disappear. These causes, if not counteracted, would, in time, reduce the whole surface of the planet to one nearly uniform level, possibly below that of the ocean, and thus render it uninhabitable but to few and inferior orders of beings. The antagonist power to this silent but ceaseless destruction, resides in the volcano and the earthquake, which are perpetually at work in restoring by violent efforts, these inequalities of level; either by gradually raising new mountains, by elevating islands from the bosom of the deep, or by raising extensive plains several feet at a time, above their former altitude; and thus the enlightened mind may perceive in these awful visitations, which bring death and ruin in their train, the efficient causes of the continued existence of millions of beings, to enjoy the bounties, and to testify to the power of the only true God.



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SOME ACCOUNT OF EARTHQUAKES.

Ruins of the Cathedral of Lisbon, after the Earthquake of 1755.

In a previous number, a brief account was given of the causes which produce both volcanoes and earthquakes; but though these tremendous visitations have a common origin*, yet the appearances they present during their continuance, and their subsequent *effects*, are so different, that they should properly be described apart, in a paper intended only for the general reader.

When it is remembered that the very circumstance of a volcanic eruption, implies that a vent has been found, or made, for the mass of gaseous and fiery matter, which chemical agency has produced under the surface of the earth; it is not surprising that earthquakes to any alarming extent seldom accompany such catastrophes, or that they cease when the eruption takes place. It is in countries remote from active volcanoes, that the effects of the former are most widely and powerfully felt; in such, the efforts to escape, made by the imprisoned elements, convulse the ground for thousands of square leagues, bringing destruction to the habitations of man, and crushing him under the ruins of his own frail abodes; and when the overpowering force exerted by the subterranean matter rends the surface of the earth, chasms are opened, which in a few seconds often swallow up whole cities, with their devoted inhabitants, and a dreary plain, a dismal lake, or a yawning gulf remains to point out the spot, where but a few hours before stood a flourishing town, swarming with thousands of human beings.

A torrent of lava or a shower of ashes, often has, and may again destroy cities; but these are always some previous warnings which allow the inhabitants time to escape; consequently the destruction of human life by volcanic eruptions only, is trifling compared to that caused by earthquakes; added to which, the devastations produced by the former are generally confined to the immediate neighbourhood of the mountain, whereas in the case of an earthquake, the suddenness of the crisis, and the extent of its influence, precludes the possibility of escaping the danger, while the mode of its approach, the rendering unstable "the fixed and firm foundations of the globe," so paralyzes with fear the minds of the victims, as to incapacitate them from making any efforts to avoid the coming danger.

In all ages this quantity of human suffering has excited sympathy, and called attention to these convulsions. In times of perfect ignorance concerning the laws of nature, they would probably have occasioned little remark, if their effects had been confined to the destruction of mountains, or the birth of new hills and lakes where none had before existed; events which in a greater or less degree always accompany these visitations.

It is for this reason that historical records of earthquakes are numerous; and of a few of these we propose to give such an account as our limits will allow; dwelling, for obvious reasons, chiefly on those which are most interesting for their moral, as well as physical effects.

Though the shocks of an earthquake are, as we before stated, fatally sudden in their approach, yet it must not be imagined that they inflict their visits without previous

* This common origin is proved by many circumstances; and the reader may be interested by the following facts illustrating this subject. The volcano of Pasto, east of the river Guayaura, sent out, without cessation, a tall column of smoke, for three months, in the year 1797: this suddenly ceased, at precisely the same moment that a violent earthquake occurred at sixty miles' distance, at Riobamba, which, together with a mud-eruption of the Moya, destroyed from thirty to forty thousand Indians. The sudden appearance of the island Sabrini, in the Azores, on the 30th of January, 1811, was the forerunner of those fearful concussions which, further westward, shook the Antilles, the plains of the Ohio and Mississippi, and the opposite coast of Venezuela, in succession, without intermission, from May, 1811, to June, 1813.

Figura 30: Portada de la revista *Saturday Magazine* para 1833, con detalles del escrito sobre terremotos.

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George Long, Society for the Diffusion of Useful Knowledge, "Earthquake", *The Penny Cyclopædia of the Society for the Diffusion of useful Knowledge*, Londres, 1837, vol. IX, pp. 245-246.

Earthquakes, are the most terrific of all natural phenomena. The solid surface of the globe is put in motion by them, and assumes an appearance which in some eases may be compared with the sea when agitated by the wind.

The least dangerous of these phænomena are those which by the Creoles of South America are called *Tremblores*, a term which may be translated by *tremors*. The surface of the earth is put in a trembling motion, by which such objects as are not well supported are thrown to the ground, and even walls are split, but the damage does not extend farther. Life is safe and property but slightly injured. These tremors are by far the most common kind of earthquakes, and occur in some countries of South America, especially in Chile, almost every day, at least in certain seasons.

The *terremotos* of the Creoles, or proper earthquakes, give to the surface either horizontal oscillations, not dissimilar to the waves of an agitated sea, or they consist in violent perpendicular upliftings, so that it would seem as if repeated explosions were exerting their force against the roof of a subterraneous cavern, threatening to burst it open and to blow into the air every thing placed over it By these earthquakes walls are overthrown, and fissures are produced in the ground. The latter are frequently more than a foot in width, and sometimes water gushes out of there like a fountain.

Nothing makes such an awful impression on the senses as an earthquake. The earth is violently convulsed, heaving up and down in a manner hardly conceivable by those who have not witnessed it the tottering buildings, the crashing of the timbers of the roofs, and the failing of the tiles, completely distract the senses. Fear drives men from their houses; but they do not always find safety out of doors. No person can stand without support: people cling to one another, to trees, or to posts. Some throw themselves on the ground; but the motion of the earth is so violent that they are obliged to stretch out their arms on each side to prevent themselves from being tossed over. Animals are equally alarmed. They stand with their legs spread out and their heads down, trembling violently. The air itself seems to participate in the convulsion, for the birds fly about wildly, meanwhile the sea retires from the shore; but after a few minutes it returns in a high wave, which advances like a watery wall with incredible velocity, and covers all those tracts which are not more than fifty

feet above high-water mark. It rashes back with equal velocity. This motion of the sea is repeated as long as the shocks of the earthquake are violent. Vessels sailing along a coast convulsed by an earthquake feel also a motion quite different from that produced by gales or currents. The loss of life by earthquakes is sometimes considerable. It is chiefly produced by the falling of the buildings when the shock is so unexpected that the inhabitants have not time to escape. In some cases the overflowing of the sea has been fatal to a great number of persons. People have also been swallowed up by the fissures caused by earthquakes.

Earthquakes are generally preceded and sometimes attended by a subterraneous noise, which is compared by some to that of a very heavy artillery wagon rolling quickly over a stone pavement at a distance; by others, to the echo of distant thunder in a mountainous country. It is worthy of remark that this noise is sometimes heard without any earthquake taking place, as in 1784 at Guanaxuato, in Mexico, and that it has been as audible in places situated at a considerable distance from the seat of the earthquake as in those which experienced the shocks. There are also several cases on record in which the earthquakes have not been attended by such subterraneous noise.

Considerable changes may be produced on the surface of the globe by earthquakes. It is said that by the earthquake of 1783 in Calabria some mountains changed their relative positions to one another; but this fact is not well established. It is, however, beyond all doubt that the coast of Chile has undergone a considerable change by earthquakes during the last fifteen years. In 1822 the coast north of Valparaiso, to the extent of fifty miles, was raised nearly three feet above its former level; in some places the rocks on the shore were raised four feet. In 1825 the island of S. Maria (near 37° 8. lat.) was upheaved nine feet so that the southern port of this island has almost been destroyed, and the soundings round the island have diminished a fathom and a half every where.

The single shocks of an earthquake last from a few seconds to two or three minutes. Sometimes they follow one another at short intervals. It is remarkable that generally either the first or one of the first shocks is the most violent and that they afterwards gradually decrease in force. Sometimes they return for several days, and even weeks; and in some places, as at Copiapó, in Chile, they are of daily occurrence.

Earthquakes are sometimes experienced over an immense tract of country. The last earthquake in Chile (in 1835) was felt at all places between the Island of Chiloe (40° S. lat.) and Copiapò (27° 8. lat); consequently over

thirteen degrees of latitude. It extended from the Island of Juan Fernandez to the town of Mendoza, on the east side of the range of the Andes, over ten degrees of longitude. But when earthquakes extend over such an immense tract of country, some districts are always convulsed with greater violence, and these may be considered as the centre of the earthquake. The farther a place is removed from these centres, the less violent as a general rule, are the shocks.

We know little, or rather nothing, of the origin or cause of earthquakes. It may, however, be considered as certain that they are due to the same agency which produces volcanic eruptions. These eruptions are frequently preceded by earthquakes; and whenever, in places situated near active volcanoes, it is observed that no smoke issues from their craters, the inhabitants begin to fear the approach of an earthquake.

It is not quite certain whether or not there is any connexion between the state of the atmosphere and the phænomena of earthquakes. It is not improbable that such is the case with the slighter shocks, the *tremblores*. They commonly occur, or at least are by far most frequent, at the time of the changes of the seasons, in Guatemala as well as in Chile. But the more violent concussions seem to be quite independent of the seasons, and they occur both in calm and cloudless weather and in storms and during rain. In some instances they have been preceded by luminous meteors.

Ancient authors, especially Thucydides, frequently mention earthquakes; but only in general terms. Yet we learn enough from these slight notices to show that they were often equal in violence to those which in modem times have convulsed the continent of Europe and Asia. (Thucyd. i. 101; iii. 89; v. 50; viii. 41). No detailed description of an earthquake in Europe or in the old continent exists before that which, on the 1st of November, 1755, almost destroyed the city of Lisbon. This is the most destructive earthquake which has ever occurred in Europe. The number of persons that perished by it is stated to have been 30.000. In February and March, 1783, the north-eastern part of Sicily and the southern portion of Calabria were convulsed by repeated and very violent shocks, which overthrew the town of Messina, and killed many thousands of its inhabitants, as well as many persons in Calabria. The last considerable earthquake in Europe extended over the middle of the kingdom of Naples, and was most destructive in the districts lying along the declivities of Mount Matese (41° 30' N. lat.). The number of persons who perished by it amounted to 3.274, besides 1.615 who were wounded.

On the first day of the present year (1837) the countries along the eastern extremity of the Mediterranean, especially Syria, were violently agitated by an earthquake. The towns of Damascus, Acre, Tyre, and Sidon, suffered great damage, and Tiberias and Safet were entirely destroyed. It is stated that about 6.000 lives were lost.

America is more subject to earthquakes than any portion of the Old Continent, but they are only strongly felt between 20° N. lat. and 40° S. lat; and it is not the whole country included between these latitudes that is visited by them, but only the table-lands of the Mexican isthmus, the Andes, and the countries bordering on them, and those which are adjacent to the Caribbean Sea. Mention of earthquakes in these countries occurs in the Spanish historians of the Conquest; but it would seem as if the earthquakes were less destructive formerly than in the last century. In 1717 the town of Guatemala was greatly damaged by an earthquake on the 29th of September; and on the 29th of June, 1773, the town was almost entirely destroyed Caracas was destroyed by an earthquake on the 26th of March, 1812, when upwards of 12.000 of its inhabitants were buried in the ruins; and the same town experienced, in 1826, another earthquake, which was hardly less destructive. Bogotá experienced a very severe shock in 1827. On the table-land of Quito violent earthquakes are frequent. In 1698, on the 20th of June, Lacatunga and Hambato were destroyed; and on the 4th of February, 1797, the town of Quito was neatly damaged, and Riobamba levelled to the ground. Not less than 40.000 persons are stated to have perished by this last earthquake on the table-land. Lima and the countries about it are likewise subject to frequent and violent earthquakes. The town of Lima was almost entirely destroyed on the 20th October, 1687, and again on the 28th October, 1746. In this latter catastrophe the port of Callao was inundated by the sea, and the whole population perished Arequipa has had its share of earthquakes; but the last violent one occurred in 1725. Copiapó was destroyed on the 11th of April, 1819, and again in 1822. By this last earthquake, which happened on the 19th of November, the town of Valparaiso was levelled to the ground. Santiago has suffered largely from the destructive effects of the earthquakes so frequent in Chile: on the 8th of July, 1730, it sustained great damages. But no place in Chile has so frequently been destroyed as Concepción. It was first destroyed by the united effects of repeated shocks and the inundation of the sea in 1730, and again in the same manner in 1761. After this the tows was rebuilt on another site; but this new town and report of Talcahuano were entirely demolished on the 20th of February, 1835. A most graphic description

of the dreadful earthquake is given in the' London Geographic Journal,' vol. VI p. 319, &c., to which we are much under for several valuable facts and remarks. The inundation: the sea during this calamity may be compared with the narrative of a similar event recorded by Thucydides (iii 89).

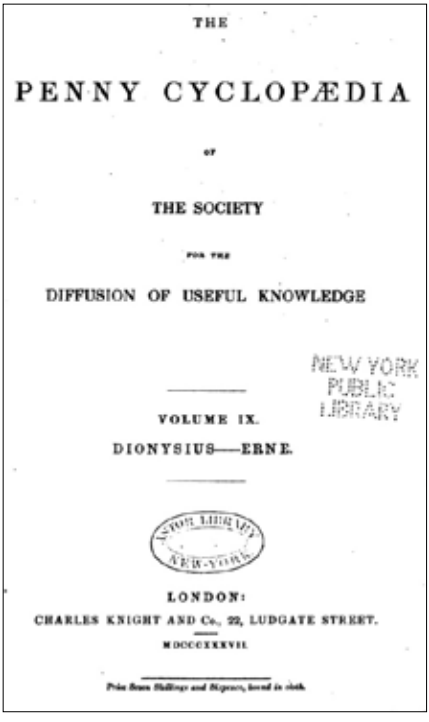
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Figura 31: Portada de *The Penny Cyclopædia of the Society for the Diffusion of useful Knowledge*, editada para 1837.

70

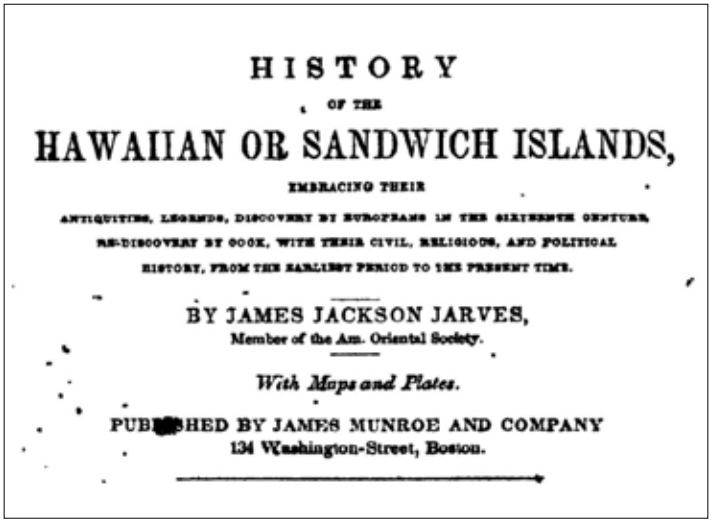
James Jackson Jarves, *History of the Hawaiian or Sandwich Islands*, published by James Munroe and Company, 134 Washington Street, Boston, 1844, p. 251.

[...]

There cannot be a doubt that to a great extent the interior of Hawaii is a vast globe of fire, against the sides of which the liquefied rocks dash their fiery spray, and roll with unceasing noise; and were it not for the number and magnitude of its vents, it would be shaken to pieces by successive earthquakes.

Those who live amid these scenes scarce bestow a thought upon the dangers which environ them. But Vesuvius after having been dormant for one thousand years, revived, and buried several cities in its devastating streams; and the inhabitants of Catania, in Sicily, regarded as fables the historical accounts of previous eruptions of Ætna, until they were themselves overwhelmed in a sudden and instantaneous destruction. In many places where volcanoes have become overgrown with wood, and covered even with elegant villas, they have with scarce a warning burst forth and laid waste whole districts, as in 1812, at St Vincents, West Indies, where nearly all the plantations on that island were destroyed, the lava flowing so rapidly as to reach the sea in four hours. When this eruption took place, the earthquakes at Caracas, four hundred miles distant, ceased, evidently showing that there was a connection between the two places. With such precedents it would certainly not be astonishing, if any of these craters, which are at present quiescent, should at any moment burst forth, and renew similar scenes of desolation; and even Kauai may give vent by some submarine communication to the fires of Hawaii.

[...]



HISTORY

OF THE

HAWAIIAN OR SANDWICH ISLANDS,

EMBRACING THEIR

ANTIQUITIES, LEGENDS, DISCOVERY BY EUROPEANS IN THE SIXTEENTH CENTURY,
RE-DISCOVERY BY COOK, WITH THEIR CIVIL, RELIGIOUS, AND POLITICAL
HISTORY, FROM THE EARLIEST PERIOD TO THE PRESENT TIME.

BY JAMES JACKSON JARVES,
Member of the Am. Oriental Society.

With Maps and Plates.

PUBLISHED BY JAMES MUNROE AND COMPANY
134 Washington-Street, Boston.

Figura 32: Detalles de la portada del texto de James Jackson Jarves, *History of the Hawaiian or Sandwich Islands*.

71

Anónimo, "Earthquake at Carracas and Laguira in 1812", *Municipal Gazette*, New York, N.Y., 1 de abril de 1848, vol. 1, Nº 41-63, pp. 864-865.

Accounts of the Earthquake at Laguira and Carracas in 1812, copied from the *Long Island Star* of that year.

Laguira, April 2d, 1812.[155]

"I cannot sufficiently thank the Almighty disposer of events for rescuing me from death while ii played no idle part in this place, on Thursday, 4 P. M. 26th March, a severe shock of an earthquake was fell here—it came from the east. On its first approach it appeared as though there were a discharge in the neighborhood ol some thousands of cannon, a moment after, the earth began to raise about eighteen inches and rose in waves for about two seconds, of at least ihat height, it continued altogether for about one and a half minutes during which lime ii prostrated more than iwn-ihirds ol the houses, and rendered the others untenable and killed at least one-half of the inhabitants and wounded very many. Neither the strongest fancy nor the brightest imagination can come any way near pourtraying the dismal aspect of the scene. Words lo describe it are not in use, you can form no idea of it. On every side were to be heard "my wife, my husband, my children, my sisters, my brothers, where are they! They are dead! O! They have perished!" These words were uttered in the strongest tones of anguish and despair. Carracas has lost 10.000 of its inhabitants. It was one of the Holidays, a day rendered remarkable in Christian annals, by being the anniversary of that day on which our Saviour was nailed to the Cross; an hour only before a representation of that ceremony was to have been carried through the streets. Every Church was full and every one was shaken to the earth. To the amount of 900 or 1.000 persons can be counted in two Churches, all having perished. Not a house in Carracas is inhabited. —The people there as well as here left the place for tents in the open fields. I was a witness to the interment of about 50, who on their knees were imploring the protection of the Divinity and who at a less distance than 20 steps wete covered by the falling of two houses. My Dear Friend it was dreadful to behold and never will the remembrance of it be effaced from my memory. The heart rending shrieks of those who had lost their friends,

[155] N de A: Extractos de esta nota también se encuentran publicados en *The Providence Gazette* ("From the Philadelphia Register. The Earthquake. Extract of a Letter from a gentleman at Laguira to his friend in this city, dated April 2"), Providence, Rhode Island, 2 de mayo de 1812, vol. XLVIII, p.1, y se hallan reproducidos aquí en la entrada 7.

joined to the dismal groans of the wounded and dying were enough to cause the strongest and most stubborn heart to feel the miseries of mankind. Even now every thing smells of death; no more than one-third of the unfortunates have been found, those that have been are either thrown into the sea or been burned. Laguira will never assume its former appearance; no, never; such a hope is vanity. The streets are filled with ruins. About twenty slight shakes have been felt since."

Ruins of Lagoira, April 2d, 1812.[156] "Dear Sir :—Many times in my life I have experienced the goodness of a merciful God towards me, but never so conspicuously as in my preservation during the tremendous exertion of his power which has shaken the mountains to their foundations and levelled the greatest part of this city, as also that of Carracas wilt the ground—thousands and tens of thousands have been buried and most of them now lie beneath the ruins!—The stench arising from the dead is terrible, such of them as could be come at have been thrown into the sea or collected into heaps and burned into ashes. It is imagined that seveneights of the houses in this city are demolished and of those which still stand there are not perhaps 20 that will be found tenable. The Custom House which was built very strong is not much injured— the house which I occupy is three stories high and was likewise very strong—it stood the shock without falling, but it is so much injured that I do not intend lo sleep in it, especially as we are constantly kept in a slate of alarm by the frequent shocks which are daily taking place even since the 26th ult. When the first great shock occurred I was ont of my house, and in my amazement I turned round and beheld it rocking like a cradle, which with the roarins of the earthquake, ihe screams of the people and, and the crushing of perhaps a thousand buildings, made the scene horrible beyond description."

"By the arrival of Captain Betts[157] from Laguira we learn that on the 26th of March, at 4 o'clock P. M., there was a severe shock of an earthquake which destroyed nearly the whole of the city of Carracas and all the town of Laguira with all the neighboring villages—ten thousand people were buried in the

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156 N de A: Esta carta también es reproducida, bajo la misma denominación, en el *Scots Magazine and Edinburgh Literary Miscellany* ("Earthquake at the Caraccas"), Edinburgh, agosto de 1812, pp. 592- 593, inserto aquí en la entrada 29; y en *Transactions of the Literary and Philosophical Society of New York* ("The Leading Facts relative to the Earthquakes which desolated Venezuela, in South America, in the months of March and April, 1812"), New York, 25 de marzo de 1815, vol. 1, pp. 308-315, copiado en la entrada 39.

157 N de A: Fragmentos de esta carta (que aquí aparece sin encabezado) también aparecen publicados en *The Weekly Register* ("Earthquake in Venezuela"), Baltimore, MD, 25 de abril de 1812, vol. II, Nº34, pp. 131-132, reproducido en la entrada 4.

ruins; 2.500 in Laguira; one American only perished, viz., Mr. Crowell, of New York. Two shocks were heard and lelt on the night following, nof heavy enough to do any damage. On the 27th the survivors were employed in digging the dead from under the ruins, putting them in large lighters, carrying them outside the shipping and burying them in the sea. On the 28th the sea was so rough as the prevent them taking the dead off, then they built a large fire near the wharf and commenced burning tbem and burned about 40 at a time in one fire. On the 29th the stench became so bad that they quit discharging the dead from under the ruins. —All the survivors pitched tents on the plains of Magatere. On the 4th of April there was a very hard shock which made the vessels tremble as if they had been on a reef ol rocks in a heavy sea—and from on board the Independence we could see the mountains move like a ship in a heavy sea and large pieces scaling off ihem. At half past 5, the Independence sailed so that we could not tell what damage was done."—Ball., paper.

"Letters from Porto Rico ol the 17th of April mention the arrival there of many distressed inhabitants, who have escaped from the late tremendous earthquake. They confirm the fate of Carracas and Laguira and add that Cumana, New Barcelona, Porto Cavallo, and Valencia were mostly destroyed, and that the interior town of of St. Philip, was entirely swallowed up."

Extract from a Letter dated Laguira, Jun. 18th, 1812.[158]

"The scene here is really distressing, out of 1.500 houses of which this plaee was composed not more than 500 remain, and it is generally believed that five-sevenths of the inhabitants have perished in the ruins. What contributed much to their misfortunes was the temporary loss of reason during the shock which lasted about one minute and a half. Before the Earthquake the atmosphere was sultry and very calm. The houses were chiefly built of clay, and now this once flourishing place exhibits little more than one greal sepulchre. The stupendous mountains and rocks in the neighborhood are rent in the most terrible manner and in different directions. —The principal shock was felt several minutes later here than at Carracas. The bodies of the unfortunate victims were collected in piles and burnt."

June 10. —"Capt. Lombard arrived at Boston from Laguyra informs that on the 7th of May, 60 miles South of Porto Rico, early in the morning, he discovered his decks, sails and rigging covered with ashes and which continued to fall

[158] N de A: Esta carta también es reproducida en *The Yankee* ("From the New York. Extract of a Letter from a Gentleman at Laguira to his brother in this city, date June 1812"), Boston, Massachusetts, 31 de julio de 1812, vol. I, p. 2, y se halla inserta en la entrada 27.

throughout the day. The atmosphere was so obssured by it that he could not take an observation. It is supposed this proceeded from the eruption of St. Vincents."

On this singular phenomena we found in the St. Thomas Gazette the following article:—"St. Thomas, May 7, 1812. —We stop the press to give our readers the following intelligence of a curious phenomena at Barbadoes, just received from the hand of a respec.able mercantile gentleman. Capi.Baker of the American Schooner Patty, who arrived on the 5th inst. at 9 o'clock in the morning, at St. Bartholomews, reports: that being on the 5th inst. at anchor in the road of Barbadoes, he experienced a heavy squall, which, instead of rain, consisted of a heavy shower of ashes. This rain of ashes commenced at 11 o'clock in the evening and continued till 4 o'clock in the afternoon of the next day; and from 8 in the morning till 3 o'clock the disc was so much obscured that it was impossible to see one's own hand. The consternation was great and general at Barbadoes, everybody repaired tothe Churche*. The shower of ashes had spread over the whole Island, and next morning the houses and streets were covered with it to the depth of more than 2 inches."

72

William C. Woodbridge, "Effects of internal fires; or, volcanoes and earthquakes"[159], *Modern School Geography, on the plan of comparison and classification; with an atlas, exhibiting, on a new plan, the physical and political characteristics of countries, comparative size of countries, towns, rivers and mountains*, Belknap and Hamersley, Hartford, 1848, 6ta edición, pp. 108-111.

[...]

363. The internal fires of the earth sometimes burst out, and this is called *an eruption*. The mountain or place from which they break out is called a volcano, like Mt. Etna. The opening is called the crater; and the engraving 70 shows the crater at the top of Mt. Etna.

[159] V. E. 363. What is an eruption, or what is a volcano? What is a crater? 364. What do some volcanoes throw out? What do others throw out? What is said of the ashes, lava, and mud thrown out from a volcano? Give examples. 365. What are earthquakes? What effects do they sometimes produce? 366. Do earthquakes ever produce openings or elevations of the earth? 367. What do earthquakes generally precede? When do they generally cease? 368. What does this show? How they are probably caused? 369. What do we thus perceive of the goodness of the Creator? 370. How many volcanoes are known to exist, and where? 371. What volcanoes in South America and Mexico? Where is this range continued? 372. What islands are volcanic? 373. What are the most ancient volcanoes known? 374. What is one of the most remarkable volcanoes in tbe world? Describe it. 375. What are the loftiest volcanoes known? 376. What is said of the extent of earthquakes? Give examples.

364. *Some volcanoes throw out* streams of red-hot, melted stones, *called lava*, and showers of stones and ushes. *Others throw out* only hot water and mud, as is generally the case with those of South America. The ashes, lava, and mud thrown out from a volcano, sometimes cover extensive tracts of country, and bury whole cities.

The cities of Herculaneum and Pompeii, in Italy, were buried in the ashes and lava of Vesuvius, A. D. 79; and the mud of volcanoes has desolated extensive regions in the Indian Archipelago.

365. *Earthquakes* are tremblings of the earth which usually take place when a volcano is not in eruption, and in many countries where none are found. *They sometimes cause* the earth to shake and heave, like the sea in a storm. They even throw down buildings, and often destroy whole cities in a moment.

366. Earthquakes sometimes open *chasms in the earth*, which throw out flames, and swallow up all that is around. In other cases, they throw up *nexo mountains and islands*, which are generally volcanic.

The city of Port Royal, in Jamaica, was swallowed up during an earthquake. The volcano of Jorullo, 1600 feet in height, was thrown up by an earthquake on a plain in Mexico, in 1759. Several of the Greek islands in the Aegean Sea arose in this way. In 1811, a new volcano rose up near the Azores; and in 1813, another near Sicily; but both have since disappeared.

367. Earthquakes generally precede the eruption of a volcano, and are most violent at a distance from it. They usually cease as soon as an eruption begins; and frequently begin when it ceases.

368. *This shows us*, that eruptions and earthquakes are both produced by the same internal fires. They are caused undoubtedly by the expansion or explosion of steam, or inflammable air; as in the bursting of a cannon, or of the boiler of a steam-engine.

369. *Hence we see*, also, that volcanoes are the safety-valves, or chimneys, through which these vapors find vent; and we perceive the goodness of the Creator, even in their terrible eruptions, which prevent the more extensive destruction of earthquakes. At the same time, we see in both some of the most striking exhibitions of his power. "He looketh on the earth, and it trembleth. He toucheth the hills, and they smoke."

370. More than 300 *volcanoes are known to exist* in the world; of which one third are in America, one third in the islands of Oceanica, and the remainder on the Eastern Continent and its neighboring islands.

371. *A range of volcanoes*, some burning, and others extinguished, extends along the Andes, from the southern part of South America to Mexico; and we find others in this range, near to Beering's Straits. *This range is continued* on the western coast of the Pacific Ocean, through Kainschatka and Japan, to the East India Islands.

372. Most of the islands of the Pacific, and many of the Atlantic and Indian Oceans, are also volcanic, or else composed of volcanic rocks.

373. *The most ancient volcanoes known* are Mt. Vesuvius in Italy, Mt. Etna in Sicily, and Stromboli, one of the Lipari Islands, near Sicily. Stromboli burns continually, and is called "the great lighthouse of the Mediterranean."

374. *One of the most remarkable volcanoes in the world* is that of Kilauea, in the Sandwich Islands, which burns continually, and whose crater contains a sea of red-hot, melted lava, sometimes several miles in diameter.

375. *The loftiest volcanoes known* are those of Orizaba in Mexico, and Antisana and Aconagua in South America, which are from 3 to 5 miles in height.

376. As volcanoes exist in most parts of the world, *earthquakes also frequently extend* to distant countries at the same time. *The earthquake of Lisbon* in 1755, in which St. Ubes, in Portugal, was swallowed up, was felt in New England; and that which destroyed Caraccas in South America, in 1812, and buried 20.000 people, was felt in many parts of the United States.

[...].

73

Anónimo, "Anecdotes of Earthquakes. By an Old Traveller", *New Monthly Magazine*, New York, agosto 1854, vol. 101, Nº CCCCIV, pp. 453-463.

If my own mother earth, from whence I sprung, Rise up, with rage unnatural, to devour her wretched offspring, whither shall I fly? Some say the earth.

Was feverous, and did shake.

There are few sensations more startling and unpleasant than that which is occasioned by even the slightest of those movements of the earth's surface to which we equally give the name of *earthquake*, what-ever may be the degree of their intensity, or the nature of their effects. Our imperfect knowledge of the causes which produce them, and of the laws of nature by which they are regulated, increases our alarm; and as we have no sure warning of their approach,

and are their helpless victims when they come, we may be thankful that they are not of more frequent occurrence. They are fearful in every way: for where they have once been destructively felt, they leave an impression as to the possibility of their return, which, at times, comes disagreeably across the mind, even in our moments of enjoyment.

A writer, whose work was noticed, last month[160], speaking of Lisbon, says: "Some traces of the great earthquake still remain; here and there a huge windowless, roofless, and room less mass, picturesque by moonlight, but saddening by day; fearful memento of wrath, stands to tell the tale of that terrible convulsion. Slight shocks are continually felt, and when I was in Lisbon, about five years ago, were so unusually powerful, that some fear was excited lest a recurrence of this calamity were imminent. The Portuguese have a theory, that nature takes a hundred years to produce an earthquake on a grand scale, and as that period had nearly elapsed, they were frightened in proportion. At Naples one cannot but be conscious that the city is built over 'hidden fires;' on one side is the ever active Vesuvius, and on the other the Solfatara, and an evident communication exists between them. Hot springs and steaming sulphur poison the air everywhere; but at Lisbon no such signs exist; *here* is nothing but a soil prolific beyond measure –no streams of lava– no hills of calcined stones, thrown up 1.500 feet in one night (as the Monte Nuovo, near Naples) –no smoking craters– no boiling water struggling into day. Still the belief that Lisbon will again be destroyed by a similar throe of nature is prevalent, and perpetuated year after year by the recurrence of slight shocks."

In treating of earthquakes, we cannot seek our materials in the remoter periods of history.

It is remarkable that in the records of the Old Testament there are only, I believe, three passages in which they are mentioned. One of them is part of the well-known description of the appearances attending the revelation of the Almighty will to Elijah. The others refer to the one event of an earthquake in the days of Uzziah, King of Judah not quite 800 years B.C. and from the language in which it is alluded to, we may infer that such convulsions were then of unusual occurrence.

It is in comparatively modern times that the old and crazy earth has had her shaking fits more frequent.

---

160 Hither and Thither.

When they are mentioned by the classical writers of antiquity it is generally without any detailed notices of their phenomena, and in connexion with other incidents.

Thucydides speaks of their frequency in Greece during the Peloponnesian war, and in one instance describes their more remarkable effects; chiefly the destruction of life and buildings occasioned by inundations on the coast; and he modestly suggests, that "in his own opinion" the shock drives the sea back, and this suddenly coming on again with a violent rush, causes the inundation; "which, without an earthquake," he thinks, "would never have happened." But he mentions the more noticeable fact, that "at Peparethus there was a retreat of the sea though no inundation followed."

Inscriptions have been found in temples both at Herculaneum and Pompeii, commemorating the rebuilding of these edifices after they had been thrown down by an earthquake, which happened in the reign of Nero: sixteen years before the destruction of the cities themselves by the eruption of Vesuvius. Yet there is no other account of such an event extant; and the indifference of the ancients in recording them is shown in the fact that even the appalling fate of these cities was only incidentally alluded to till Dion Cassius wrote his fabulous and exaggerated description, about 150 years after their destruction had taken place.

We are constantly reminded, however, of the frequency of such phenomena. The route through Italy, for instance, from Sienna to Rome, is marked throughout by great volcanic changes; and it is not very difficult to believe the tradition that the whole of the Bay of Naples is formed by one extensive crater.

In many instances the ingenuity of man has converted even these fearful ruins into sources of wealth. Without speaking of the well-known commerce in sulphur and other articles, from Naples and Sicily, I may mention that, amongst the mountains of Tuscany, the Count de Larderel has applied a process to the preparation of boracic acid, which is described in the Jurors' Reports of the Great Exhibition of 1851 as amongst "*the highest achievements of the useful arts.*" The vapour issuing from a volcanic soil is condensed; and the minute proportion of boracic acid which it contains is recovered by evaporation in a district without fuel, by the application of volcanic vapour itself as a source of heat. The substance thus obtained greatly exceeds in quantity the old and limited supply of borax from British India, and has extended its use in improving the manufactures of porcelain and of crystal.

In every country where organic changes so violent and extensive have occurred, there must have been earthquakes equally violent; for though it is possible that some of these phenomena have been produced by *electricity* alone, yet we are so often able to connect them with volcanic action that we must consider this as the most frequent, if not the only cause with which we are at present acquainted. We are reminded also by an eminent writer, to whose "Principles of Geology" I shall elsewhere refer, that in volcanic regions, though the points of *eruption* are but thinly scattered constituting mere spots on the surface of those districts yet the *subterraneous* movements extend simultaneously over immense areas. Those mere tremblings of the earth so common in South America are probably connected with eruptions in mountain-ranges that have never yet been explored. It does not advance us *very far* in our knowledge of the subject to assume that both volcanoes and earthquakes have a common origin; which often produces movements of the earth even unattended by volcanic eruption. As far as we can *trace* their connexion, this is most probably the fact; but there may be other causes which have still to be discovered.

An able writer in one of the early volumes of the *Edinburgh Review* while denying the theory that volcanic explosions are caused by "the eructations of a central fire, occupying the interior of the earth," and while showing that the lava thrown out by these convulsions could not be so produced admits that substances in a state of fusion may exist, which by the action of water pouring from above, or by the irruption of the sea, "might produce earthquakes, with furious emissions of gases and steam." Lyell gives his reasons, based upon electro-chemical influences, for attributing them to a similar cause.[161] In his "Geology of the Countries visited during the voyage of H.M.S *Beagle* round the World," Darwin supposes that, in Chili, there is a subterranean lake of lava of nearly double the area of the Black Sea, and "that the frequent quakings of the earth along this line of coast are caused by the rending of the strata, which is necessarily consequent on the tension of the land when upraised, and their injection by fluidified rock." But it is useless to theorize. In the present state of human knowledge, earthquakes are a description of phenomena of which we can merely record the facts.

One of the most remarkable earthquakes of antiquity of which we have any account was contemporaneous with the battle of Thrasimene, and was alluded to, incidentally, by Livy as showing the ardour of the fight. The passage is

[161] N de A: Se refiere a la obra de Charles Lyell "Principles of Geology", inserta aquí en la entrada 67.

translated by Lord Byron. "Such (he says) was their mutual animosity, so intent were they upon the battle, that the earthquake which overthrew in great part many of the cities of Italy, which turned the course of rapid streams, poured back the sea upon the rivers, and tore down the very mountains, was not felt by any of the combatants." We may repeat the description in Lord Byron's verse:

And such the storm of battle on this day,
And such the phrensy whose convulsion blinds
To all save carnage, that, beneath the fray,
An earthquake roll'd unheededly away!
None felt stern nature rocking at his feet,
And yawning forth a grave for those who lay
Upon their bucklers for a winding sheet;
Such is the absorbing hate when warring nations meet!
The earth to them was as a rolling bark
Which bore them to eternity; they saw
The ocean round, but had no time to mark
The motions of their vessel; nature's law,
In them suspended, reck'd not of the awe
Which reigns when mountains tremble; and the birds
Plunge in the clouds for refuge, and withdraw
From their down-toppling nests; and bellowing herds
Stumble o'er heaving plains, and man's dread hath no words.

The event to which these passages refer, occurred, it will be remembered, 217 years B.C.

Upon the earthquakes which marked the consummation of our Saviour's mission, I feel that this is not an occasion to dwell.

The next of which we have any record was in the seventeenth year of Christianity, when twelve cities of Asia Minor were almost simultaneously destroyed.

Of those which, in the year 365, ravaged nearly the whole of the Roman Empire, we are told that "in the second year of the reign of Valentinian and Valens, on the morning of the 21st day of July, the greatest part of the Roman world was shaken by a violent and destructive earthquake. The impression was communicated to the waters; the shores of the Mediterranean were left dry by the sudden retreat of the sea; great quantities of fish were caught with

the hand; large vessels were stranded; and a curious spectator (Ammianus) amused his eye, or rather his fancy, by contemplating the various appearance of valleys and mountains, which had never, since the formation of the globe, been exposed to the sun. But the tide soon returned with the weight of an immense and irresistible deluge, which was severely felt on the coasts of Sicily, of Dalmatia, of Greece, and of Egypt; large boats were transported and lodged on the roofs of houses, or at the distance of two miles from the shore; the people with their habitations were swept away by the waters; and the city of Alexandria annually commemorated the fatal day on which 50.000 persons had lost their lives in the inundation. This calamity, the report of which was magnified from one province to another, astonished and terrified the subjects of Rome; and their affrighted imagination enlarged the real extent of a momentary evil. They recollected the preceding earthquakes which had subverted the cities of Palestine and Bythinia; they considered these alarming strokes as the prelude only of still more dreadful calamities, and their fearful vanity was disposed to confound the symptoms of a declining empire and of a sinking world." In speaking of the similar convulsions which occurred about the year 526, the same historian observes, "that the *nature of the soil* may indicate the countries most exposed to these formidable concussions, since they are occasioned by subterraneous fires, and such fires are kindled by the union and fermentation of iron and sulphur." (We do not stop to question the correctness of his theory). "But their times and effects (he continues) appear to lie beyond the reach of human curiosity, and the philosopher will discreetly abstain from the prediction of earthquakes till he has counted the drops of water that silently filtrate on the inflammable mineral, and measured the caverns which increase by resistance the explosion of the imprisoned air. Without assigning the cause, history will distinguish the *periods* in which these calamitous events have been more or less frequent, and will observe that this fever of the earth raged with uncommon violence during the reign of Justinian." (It was of the close of this reign that he was writing). "Each year is marked by the repetition of earthquakes of such *duration* that Constantinople has been shaken above forty days, of suck *extent* that the shock has been communicated to the whole surface of the globe or, at least, of the Roman empire. An impulsive or vibratory motion was felt: enormous chasms were opened; huge and heavy bodies were discharged into the air; the sea alternately advanced and retreated beyond its ordinary bounds; and a mountain was torn from Libanus and cast into the waves, where it protected, as a mole, the new harbour of Botrys in Phoenicia. At Antioch its multitudes were swelled by the conflux

of strangers to the festival of the Ascension, and 250.000 persons are said to have perished."

To the many who unsatisfied with any briefer manual study at once both facts and language in the pages of Gibbon, I tought to apologize perhaps, for having made extracts so long from a work so easily accessible. As we approach nearer to our own times these convulsions continue frequent; and the discovery of America opens a new source of materials to swell the mournful history. It would be a painful and useless task to trace them in all their details. The disappearance of entire cities was not an unusual occurrence, and as many as 40.000 persons have perished at once. Sea ports have been swallowed up by the advancing waters, and the whole of their population drowned. In China, too, the records of these calamities carry us back to 1333; when there was a succession of shocks which continued for ten years; destroying its capital and multitudes of its crowded population.

If I had to refer to sources of more ample information, I should say as may easily be anticipated that the best history of these phenomena, and the most philosophical views as to their effects, with which I am acquainted, are to be found in the works of Sir Charles Lyell. Few, however, of the events he mentions throw any new light upon their causes, and I shall merely notice from these and several other authorities such of them as were attended with the most remarkable circumstances.

In 1759 there were destructive earthquakes in Syria; and at Balbec alone 20.000 persons are said to have perished. In 1783 Guatimala, with all its riches, and 8.000 families, was swallowed up; and every vestige of its former existence obliterated. The shocks felt in Calabria in the same year continued to the end of 1786, and extended over an area of 500 square miles. Deep fissures were produced; houses engulphed; new lakes formed; buildings moved entire to considerable distances; 40.000 persons perished at the time; and 20.000 more died from various consequences. A fourth of the inhabitants of some of the towns were buried alive. For some instants their voices were heard and recognized, but there was no means of saving them.

The earthquakes of Chili, in 1835, are chiefly noticeable from their having occurred during the voyage of the *Beagle*, and from their phenomena having thus been observed more scientifically than usual. But their more obvious effects in the destruction of entire towns; in the appearance of valuable merchandise, fragments of buildings, and articles of furniture (which had been

carried away by the advancing and retiring waters) still floating along the coast; and in the sad sight of structures, the labour of generations, crumbled in a moment into dust, are also ably and strikingly described. "Shortly after the shock, a great wave was seen from the distance of three or four miles, approaching in the middle of the bay with a smooth outline; but along the shore it tore up cottages and trees, as it swept onwards with irresistible force."

There were some incidents worthy of remark attendant upon an earthquake which took place in Antigua in 1843. Owing to its having occurred early in the forenoon, when few people were in the houses, there was very little loss of life; but the destruction of property has rarely been more extensive. There was scarcely a building on the island that was not thrown down or seriously injured. Of 172 sugar-mills only 23 remained capable of being worked; and of these not half had escaped damage. The walls of the cathedral (which was large enough to contain 1.800 persons) fell, in crumbling masses; and the roof, which still held together, rested upon them like a huge cover. In the open country, trees were seen to rise and descend vertically, several times, during the continuance of the vibrations.

Many of these convulsions, and in various parts of the world, have produced extensive and permanent changes of surface. This was particularly the case, more than once, during the first half of the present century, in different parts of Chili. At Valparaiso two entire streets were constructed on what was before the bottom of the sea; and the permanent alteration of level is conjectured to have extended over 100.000 square miles. The writer, from whom I have before quoted, thinks that the effects of these changes is eminently beneficial; and that they constitute an essential part of that mechanism by which the integrity of the habitable surface of the world is preserved, and the very existence and perpetuation of dry land secured.

But, after all that has since occurred, the most popularly-remembered of such events are still the earthquakes at Jamaica in 1692, when its loftiest mountains were torn asunder, and its finest harbour sunk, in a moment, into the sea; those in Sicily, the following year, when Catania and 140 other towns and villages, with upwards of 100.000 persons were destroyed; the fearful calamity at Lisbon in 1755, when 60.000 persons perished in about six minutes; and when many of the survivors would have perished also, but for the timely aid of British charity; and, lastly, the earthquakes which preceded the eruption of the Souffrière at St. Vincent in 1812.

It is becaues I myself witnessed some of the phenomena connected with these events, and because there were atmospheric circumstances not very dissimilar from those attendant upon the slight shocks which were not long since felt in England, that I have been induced to gather my recollections upon the subject, and to mix them up with the contents of my notebooks.

I was then residing on the southern coast of North America. The close of the previous year was accompanied, in those climates, by some remarkable phenomena. We may pass over the appearance of a comet and an eclipse of the sun as merely coincident, and witnessed in common with other countries. In addition to these, the small island where I was staying was completely deluged by one of those inundations of the sea that occasionally occur in tropical climates about the time of the autumnal equinox; and, excepting a space considerably less than a quarter of a mile, the wide waters of the Atlantic, and the mainland at some distance, were the only objects upon which the eye could rest. This inundation had scarcely subsided when the city of Charleston (my next place of sojourn) was visited by a tornado more dreadful in its extent and effects than any in the memory of its inhabitants. The wind which had been for some days light and variable, had shifted on the 8th to the north-east; and, blowing very fresh through the night, it continued in the same quarter all the day and night of the 9th. During the whole of this time there was an almost uninterrupted fall of rain; and on the morning of the 10th the wind blew with increased violence. About ten o'clock it shifted to the south-east, and soon after twelve it suddenly became calm. A heavy rumbling noise, resembling the sound of a carriage rapidly driven over a pavement, was then heard, and a tornado, extending only about one hundred yards in width, passed like lightning through a considerable section of the city, involving alike the habitations and inhabitants that were within its course in instant destruction. Proceeding up the harbour, the first object it struck was the flag-staff of one of the forts, which could have offered little surface of resistance, though of more than ordinary strength and thickness. This was snapped in a moment; and, with equal ease, houses of considerable size were not merely unroofed or injured, but completely overthrown like the playthings of an infant. Large beams of wood, and masses of lead and iron, were carried for several hundred yards and nearly buried in the walls of other buildings; yet so confined was its operation to a particular current, that corners and parts of houses were taken off, as cleanly as if divided by some mechanical instrument, and the remainder of the buildings were left uninjured. About twenty lives were lost, some

of them under remarkable circumstances. A lady was, with her sister, on a bed in an upper apartment when the tornado was approaching. The noise so alarmed a negro girl, her attendant, that she sought refuge under the bed upon which her mistress was lying. A stack of chimneys that had been struck, falling upon the roof, forced its way through the house to the ground, precipitating the floors along with it. The bed fell with them; the ladies (who were *nearest* the falling roof) escaped without injury; but the negro girl beneath was crushed to death. In another instance, a young female, who was attending her dying mother, was carried by the hurricane from the room in which she sat and dashed against a building at a very considerable distance; the bed of the invalid remaining in its place. In the interval between this calamity and the concussions of the earth (the first of which occurred on the 16th of December), various meteors and balls of fire of different sizes and appearances were observed. One of them, of a magnitude calculated to excite alarm, was seen by spectators who were a hundred miles asunder on the evening of the 21st of November, moving with great rapidity in a southwest direction. It illuminated the ground and the surface of the waters as if a torch of burning matter had been passing over them, and was conjectured (though it must have been vaguely) to have been about ten or fifteen feet in diameter. The season was unusually warm. Large apples, the produce of second crops, were seen in November; and on several plantations there were second crops of rice, which had not occurred for forty years. It may also be remarked, that there was considerably lees thunder during the year 1811 than usual; the number of days which commonly, in those climates, averages sixty, having only amounted to thirty-eight. Sir Charles Lyell considers many of these phenomena (Fires from beneath, and meteors from above) as, generally, the accompaniments of the convulsions which followed.

On the morning of the 16th of December, about three o'clock, the first shock of earthquake was felt. It awoke me, and was said to have been preceded by the usual rattling noise. Being inapprehensive of such an event, my first impression was that the house was falling, and the cracking of its timbers strengthened me in this impression. When I had reached the ground-floor, however (and the noise having subsided), I began to be doubtful how far I might be under the influence of some mental delusion; and, returning to my bed, 1 found it rocking from the effect of a second shock; and a third and fourth, a few minutes before and after eight o'clock, left me perfectly certain as to the cause of what had occurred. From this time to the 11th of February

fourteen distinct shocks were felt, their duration from twenty seconds to two minutes; with one exception, when the tremor did not entirely subside for seven minutes.

The motion was generally from east to west; but it was not uniform. In December it appeared to be undulating; in January violent and irregular; and in February it seemed similar to a sudden jerking to and fro of the earth's surface. As far as our observations extend, vertical movements on such occasions appear to be less destructive than horizontal; and if this (says Lyell) should generally be the case, the greatest alteration of level may be produced with the least injury to cities, or existing formations. Even between the concussions which I have been describing, a tremor was frequently perceptible, and light pendulous bodies were then in a state of continued vibration. The motion during the severer shocks was sufficiently violent to break the glasses in picture-frames hanging against the wall, and the pavements in several of the streets were cracked. Many persons, also, found it difficult to preserve themselves from being thrown down; and the guard stationed in one of the church steeples to look out for fires, gave notice to the men below that it was falling. The sky was generally, though not uniformly, dark and hazy, sometimes tinged with red, and the atmospheric changes were frequent and unusual. The shock of the 7th of February was attended by a noise like distant thunder, and that of the same evening was accompanied by a sound like the rushing of a violent wind, and with some sharp flashes of lightning.

The thermometer at eight o'clock on the evening of the 15th of December was 52 deg., and the barometer 30 deg. 45 min. The following morning, when the first shock took place, the barometer continued the same, but the thermometer had sunk to 46 deg. The last of these awful visitations was a slight tremor on the day following the more distant and fatal calamities to which I am now about to refer.

In our case they passed away without a single instance of serious personal injury, or of destruction of property; but, unaccustomed as the inhabitants had been to anything of a similar nature for there was no well-authenticated account of an earthquake having been felt in this part of America since its first discovery the consternation and alarm were very considerable. A proclamation was issued by the governor of the state, appointing the 11th of March as a day of humiliation, religious reflection, and prayer; and a tone of seriousness and pious feeling was for a long time perceptible where it had previously seldom existed.

The phenomena which I have been attempting to describe were experienced, in a greater or less degree, from the shores of the Carolinas to the valley of the Mississippi, during the three months which preceded the destructive earthquakes in Venezuela, and which were followed by the eruption of the Souffrière in St. Vincent.

On the 26th of March the earthquakes in Venezuela commenced with a severe shock, which destroyed, in little more than a minute, the city of Caraccas, together with the town of Laguira and the neighbouring villages, and 20.000 persons either perished with them or were left to a lingering death amongst their ruins.

I have not adverted to the horrors attending the earthquake at Lisbon. They were repeated at the destruction of Caraccas; and we need not dwell more than once on details so painful.

For those which follow, I am indebted to a distinguished Traveller[162] who had visited Caraccas before its ruin, and had afterwards carefully collected and compared the descriptions given by persons who had witnessed the fearful event.

"The air," he says, "was calm, and the sky unclouded. It was Holy Thursday, and a great part of the population was assembled in the churches. Nothing seemed to presage the calamities of the day. At seven minutes after four in the afternoon the first shock was felt; it was sufficiently powerful to make the bells of the churches toll; it lasted five or six seconds, during which time the ground was in a continued undulating movement, and seemed to heave up like a boiling liquid. The danger was thought to be past, when a tremendous subterraneous noise was heard, resembling the rolling of thunder, but louder and of longer continuance than that heard within the tropics in time of storms. This noise preceded a perpendicular motion of three or four seconds, followed by an undulatory movement somewhat longer. The shocks were in opposite directions, from north to south, and from east to west. Nothing could resist the movement from beneath upward, and the undulations crossing each other. The town of Caraccas was entirely overthrown. Between 9.000 and 10.000 of the inhabitants were buried under the ruins of the houses and churches. The procession (usual on Holy Thursday) had not yet set out; but the crowds

[162] N de A: Se refiere a Humboldt, del cual toma algunas citas y parafraseos que fueron publicados en su *Personal Narrative*, inserta aquí en la entrada 92. Hay referencias, citas y versiones de este texto también en las entradas 57, 60, 61, 64, 65, 73, 85, 87 y 97.

were so great in the churches that 3.000 or 4.000 persons were crushed by the fall of their vaulted roofs. Some of these edifices, more than 150 feet high, sunk with their pillars and columns into a mass of ruins scarcely exceeding five or six feet in elevation, and ultimately left scarcely any vestige of their remains. A regiment under arms to join the procession was buried under the fall of its barracks. Nine-tenths of the towns were entirely destroyed. All the calamities experienced in the great catastrophes of Lisbon, Messina, Lima, and Riobamba, were renewed on this fatal day. The wounded, buried under the ruins, implored by their cries the help of the passers-by, and nearly 2.000 were dug out.

"Implements for digging and clearing away the wreck were entirely wanting; and the people were obliged to use their bare hands to disinter the living. The wounded, as well as the sick patients who had escaped from the hospitals, were laid on the banks of the small river Guayra. They had no shelter but the trees.

"Beds, linen to dress wounds, instruments of surgery, medicines, and objects of the most urgent necessity, were buried under the ruins. Everything, even food, was, for the first days, wanting. Water was alike scarce. The commotion had rent the pipes of the fountains; the falling of the earth had choked up the springs that supplied them; and it became necessary, in order to have water, to go down to the river Guayra, which was considerably swollen; and even then the vessels to convey it were wanting."

An eye-witness, from whom I obtained an account at the time, said, "Those who were living were employed in digging out the dead, putting them in lighters, and burying them in the sea. When it became as rough as to prevent them being taken off, they made a large fire, and began burning forty at a time. It was shocking," he said, "at the close of day, to see heads, arms, and legs, that had remained unburnt, as the fire died away; and the effluvia was intolerable."

The moral and religious effect of these calamities (as described by Humboldt) was rather curious. Some, assembling in procession, sung funeral hymns; others, in a state of distraction, confessed themselves aloud in the streets; marriages were contracted between parties by whom the priestly benediction had been previously disregarded; and children found themselves suddenly acknowledged by parents to whom they had never before been aware of their relationship; restitutions were promised by persons who were hitherto unsuspected of fraud; and those who had long been at enmity were drawn together by the ties of a common calamity.

I am afraid that the virtue which had no purer origin would not be of long duration.

The effect upon men's minds during one of the most destructive of the earthquakes in Sicily was of a very opposite description. Amongst the poor wretches who had there escaped, the distinctions of rank and the restraints of law were disregarded; and murder, rapine, and licentiousness reigned amongst the smoking ruins; and yet the kind of religion was in both countries the same, and the habits of the people were not widely different. At the town of Concepcion, in Chili, in 1835, Mr. Darwin tells us of a more *mixed feeling*. "Thieves prowled about, and at each little trembling of the ground (after the fatal shock), with one hand they beat their breasts and cried "*Misericordia!*" and then with the other filched what they could from the ruins."

Fifteen or eighteen hours after the great catastrophe at Caraccas the ground remained tranquil. The night was fine and calm, and the peaceful serenity of the sky contrasted strangely with the misery and destruction which lay beneath. Commotions attended with a loud and long-continued subterranean noise were afterwards frequent, and one of them was almost as violent as that which had overthrown the capital. The inhabitants wandered into the country; but the villages and farms having suffered as much as the town itself, they found no shelter till they had passed the mountains and were in the valleys beyond them. Towards the close of the following month the eruption of the Souffrière in the island of St. Vincent took place; and the explosions were heard on the neighbouring continent, at a distance, in a direct line, of 210 leagues, and over a space of 4.000.

At the time of the earthquake at Lisbon, shocks were felt in other parts of Portugal, in Spain, and Northern Africa; and its effects were perceptible over a considerable part of Europe, and even in the West Indies. Two of our Scottish lakes (as we have all often read) rose and fell repeatedly on that fatal day; and ships at sea were affected as if they had struck on rocks, the crews in some instances being thrown down by the concussion. I am not aware of any volcanic eruption in the same year; but the great Mexican volcano of Jorullo was then accumulating its subterranean fires; and its first eruption was in 1759.

Judging from the past, we might have presumed that the movements which had been recently felt in England were not the effects, but the indications which *precede* some similar explosion. So far (early in 1854) no such event appears to have occurred; but there have been earthquakes of considerable

extent, and of a very serious character. Soon after the shocks which were felt in England, there were violent ones in some of the islands of the Indian Archipelago. An earthquake at Shiraz is said to have involved the entire destruction of the place and of its inhabitants. At Acapulco, in Mexico, the principal buildings were thrown down, and the ground opened in the public square and threw out volumes of smoke. Cumana, on the Spanish Main, was destroyed, and 4.000 persons perished amidst all the horrors attendant upon similar events. And, in Greece, the town of Thebes and its neighbouring villages became heaps of ruins; the springs which supplied them with water were stopped; and the inhabitants, struggling both with privation and disease, were in a miserable state of suffering.

In our own favoured land, exempt by the blessing of Heaven from so many calamities which are felt elsewhere, earthquakes have never caused destruction of property or life. Mr. Darwin speaks, with almost ludicrous exaggeration, of the disastrous consequences that would follow "if, beneath England, the now inert subterranean forces should exert those powers which most assuredly in former geological ages they *have* exerted." National bankruptcy the destruction of all public buildings and records taxes unpaid the subversion of the government rapine, pestilence, and famine are to follow the first shock; but judging from the fact that, during the last 800 years, fifty shocks, at least, have been harmlessly felt, we may hope, without presumption, that we have as little to apprehend hereafter as we have previously suffered. Even with reference to their most disastrous consequences in other portions of the globe, if we compare them with the various sources of human misery, we shall agree with the historian whom I have already quoted, that "the mischievous effects of an earthquake, or deluge, a hurricane, or the eruption of a volcano, bear a very inconsiderable proportion to the ordinary calamities of war" (or to the horrors of religious persecution); and that man "has much less to fear from the convulsions of the elements than from the passions of his fellow-creatures."

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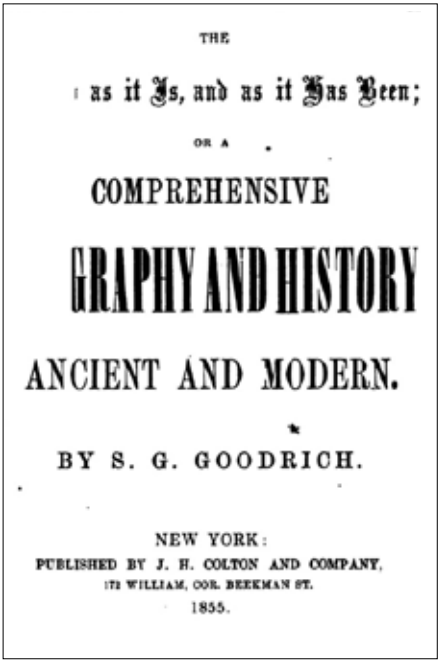
Samuel Griswold Goodrich, "Earthquake", *The World as it is*, *and as it has been*; *or a Comprehensive Geography and History Ancient and Modern*, New York, 1855, p. 100.

Earthquakes. Shocks of earthquakes have frequently been felt in this state. Several shocks were felt at Kaskaskia in 1804, by which the soldiers stationed there were aroused from sleep. In 1812, wide chasms opened in the earth, from which columns of water and sand burst forth; hills disappeared, and lakes took their place; the beds of lakes were raised, and became dry land; rivers changed their course, and the Mississippi flowed backward toward its source for a whole hour, until its accumulated waters gathered strength to break through the barrier that had damned them back; boats were dashed to pieces, electric fires flashed through the air, and rumblings were heard in the earth. Wide forests were also swallowed up. At the same time, violent agitations occurred in the West Indies, while the cities of Caracas and Laguyra were nearly destroyed.


THE

as it Is, and as it Has Been;

OR A

COMPREHENSIVE

GRAPHY AND HISTORY

ANCIENT AND MODERN.

BY S. G. GOODRICH.

NEW YORK:
PUBLISHED BY J. H. COLTON AND COMPANY,
172 WILLIAM, COR. BEEKMAN ST.
1855.

Figura 33: Portada del libro de Samuel Griswold Goodrich *The World as it is*, *and as it has been*; *or a Comprehensive Geography and History Ancient and Modern*.

Figura 34: Imagen de un condor y jaguar publicada en el libro *The World as it is*, *and as it has been*; *or a Comprehensive Geography and History Ancient and Modern* de Samuel Griswold Goodrich, p. 163.

Figura 35: Cuadro sobre el terremoto de Caracas publicado en el libro *The World as it is*, *and as it has been*; *or a Comprehensive Geography and History Ancient and Modern* de Samuel Griswold Goodrich, p. 162.

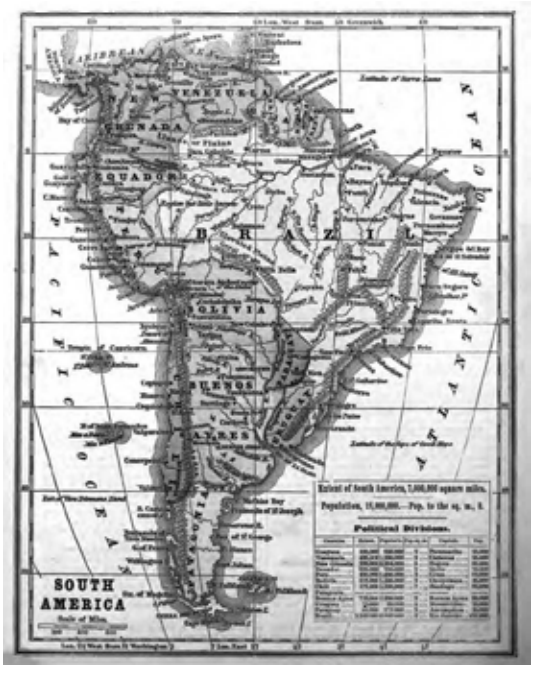


Figura 36: Mapa de Sudamérica publicado en el libro *The World as it is*, *and as it has been*; *or a Comprehensive Geography and History Ancient and Modern* de Samuel Griswold Goodrich, p. 158.

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Charles Dickens, "The Land of The Earthquake", *All The Year Round*, Londres, 7 de noviembre de 1868, pp. 510-512.

The Spaniards, in South America, were not without early intimation of the insecurity of the soil. Lima was founded in 1535, under the high-sounding title of Ciudad de los Reyes, or City of the Kings, since altered to its present name. In 1582, Lima had its first recorded attack of earthquake. The centre of the shock, however, was lower down along the coast, in the neighbourhood of Arequipa, founded by Pizarro some twelve months after the establishment of Lima. Arequipa was laid in ruins then, as now; but Lima escaped with a warning. Lima's turn, however, was not long in coming. Four years afterwards, it was laid prostrate; and so great was the catastrophe, even in that land of catastrophes, that the anniversary of that destruction is solemnly commemorated, to the present

time, on the day of the Visitation of Elizabeth. Lima had its third attack in 1609. In November, 1630, there was another earthquake; but so many of the citizens contrived to escape, that they, then and there, instituted the Festival of Nuestra Señora del Milagro, which is celebrated annually to this day.

Thenceforth, earthquake and city may be truly said to have entered into contest for possession of the soil. Earthquake returned to the charge in 1655, with such violence that, for the first time, the citizens camped for several days in the country districts around. When they returned, they found no stone standing on another; nevertheless, the city rose again. After this, there was no earthquake for some twenty years. Again, ten years later, in 1687, at four o'clock in the morning, houses and public edifices came tumbling down without the least previous intimation: the inhabitants, as usual, rushing into the squares and open spaces. The miserable consolation, however, of looking on in safety was this time denied them. At six in the morning the earthquake repeated its attack with renewed vigour, and the sea, retiring and rising in a wall of inky waters –as it did in the great earthquake of this year– dashed back with overwhelming force over the land. Callao, which had arisen as the port of Lima, a few miles from it, was entirely destroyed, and most of the inhabitants were carried away by the receding waters. The local records, preserved to us by Don Antonio de Ulloa, captain of his most Christian majesty's navy, mention this as the most disastrous visitation to that date. December, 1690, September, 1697, July, 1699, February, 1716, January, 1725, December, 1732, were all earthquake months in Lima. In 1734 and 1745 there were more earthquakes. On the 28th of October, 1746, at half-past ten at night, the first shock was felt of another earthquake, and within the space of three minutes all the buildings in the city, great and small, public and private, were heaps of ruins, burying with, them those inhabitants who had not been quick enough in escaping to the squares. Then succeeded a moment's calm, as when the heavy ordnance has opened the battle, and the lighter, but more numerous, musketry prepares to follow. Soon it began again, and the houseless homeless inhabitants counted two hundred distinct shocks within the following twenty-four hours. These shocks continued until the February of the following year, and were computed at four hundred and fifty in all. On this occasion the port of Callao sank quite down below the level of the sea. Nothing was left standing, save apiece of wall belonging to the fort of Santa Cruz, on which twenty-two persons contrived to save themselves. Of the twenty-three ships then in port, nineteen were wholly sunk, and the remaining four carried a considerable

distance inland. Of the four thousand inhabitants, which the port of Callao then numbered, only two hundred survived. In Lima, thirteen hundred dead bodies were excavated from the ruins, exclusive of great numbers of maimed, who afterwards died of their hurts. Commander Wilkes, of the United States exploring expedition of 1849, was able in that year to define the site of the old port of Callao beneath the sea.

So much for Lima. Let us next take the case of Caraccas, chief city of the Republic of Venezuela.

Ascension Day, 1812, rose fair and bright in that city. The air was calm the sky unclouded: it is an error to suppose that earthquakes are usually accompanied, or preceded, by any threatening appearance of the elements. Large numbers of the inhabitants were at church, in attendance on the services of the day. Suddenly, the bells tolled without touch of mortal hand: this was the first intimation of the earthquake, which, almost simultaneously, was upon the unhappy people. The movement of the earth –as in the late widespread catastrophe– was from north to south, with transverse jerks from east to west. These cross agitations of the surface, occurring with extreme rapidity, instantly prostrated everything animate and inanimate. The inhabitants were unable to crawl to the church doors, and those vast churches, which are characteristic of all South American cities, from the largest to the smallest, descended in ruins around them. Ten thousand persons are said to have been killed in the churches alone. The churches of La Trinidad and Alta Gracia, more than one hundred and fifty feet in height, with naves supported by pillars of twelve and fifteen feet in diameter, were reduced to masses of ruin little more than a man's height. In the barracks, a regiment of soldiers had just been drawn up under arms, ready to form part of a procession that was to take place after divine service. Scarcely a man of them was left. And all this was the work of a single minute. From the first tolling of a bell to the falling of the last stone of the city of Caraccas, one minute only elapsed. Many thousand persons were maimed and wounded, for whom there was no shelter, no medicine, no food, scarcely a drop of water. There were not even implements where with to extricate them from the ruins which lay upon them. The survivors dug out with their fingers two thousand of their crushed fellow- citizens, who had still some life remaining in them. The shock had broken the pipes conveying water; the falling in of the earth had choked up the springs which supplied them; there were no utensils in which to carry water from the river. The wounded and sick were carried to the river's bank, and there left under such protection as the

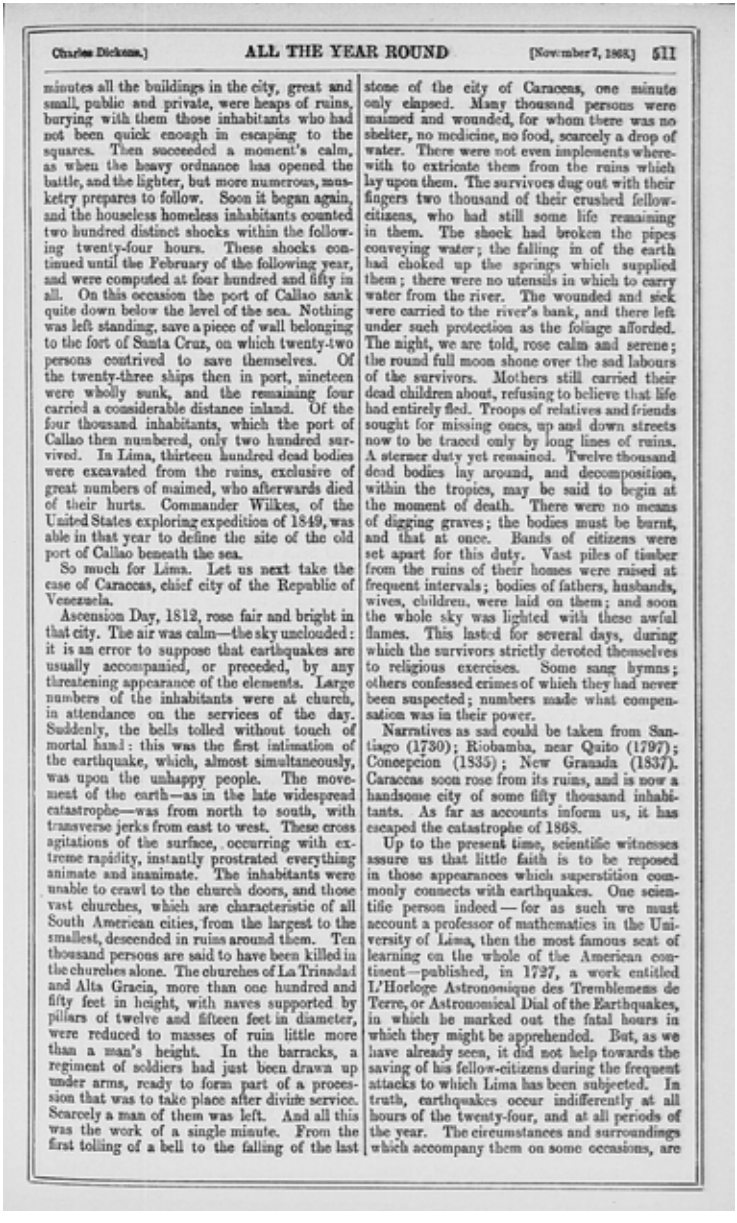
foliage afforded. The night, we are told, rose calm and serene; the round full moon shone over the sad labours of the survivors. Mothers still carried their dead children about; refusing to believe that life had entirely fled. Troops of relatives and friends sought for missing ones, up and down streets now to be traced only by long lines of ruins. A sterner duty yet remained. Twelve thousand dead bodies lay around, and decomposition, within the tropics, may be said to begin at the moment of death. There were no means of digging graves; the bodies must be burnt, and that at once. Bands of citizens were set apart for this duty. Vast piles of timber from the ruins of their homes were raised at frequent intervals; bodies of fathers, husbands, wives, children, were laid on them; and soon the whole sky was lighted with these awful flames. This lasted for several days, during which the survivors strictly devoted themselves to religious exercises. Some sang hymns; others confessed crimes of which they had never been suspected; numbers made what compensation was in their power.

Narratives as sad could be taken from Santiago (1730); Riobamba, near Quito (1797); Concepcion (1835); New Granada (1837). Caraccas soon rose from its ruins, and is now a handsome city of some fifty thousand inhabitants. As far as accounts inform us, it has escaped the catastrophe of 1868.

Up to the present time, scientific witnesses assure us that little faith is to be reposed in those appearances which superstition commonly connects with earthquakes. One scientific person indeed for as such we must account a professor of mathematics in the University of Lima, then the most famous seat of learning on the whole of the American continent published, in 1727, a work entitled L'Horloge Astronomique des Tremblemens de Terre, or Astronomical Dial of the Earthquakes, in which he marked out the fatal hours in which they might be apprehended. But, as we have already seen, it did not help towards the saving of his fellow-citizens during the frequent attacks to which Lima has been subjected. In truth, earthquakes occur indifferently at all hours of the twenty-four, and at all periods of the year. The circumstances and surroundings which accompany them on some occasions, are absolutely wanting in others. The subterranean sounds (bramidos) which at ordinary periods accompany great earthquakes cannot be said to be essentially connected with them. There may be earthquake without the peculiar rumblings, and the peculiar rumblings without earthquake. Thus, the earthquake of 4th February, 1797, which destroyed Riobamba, and which Humboldt called "one of the most fearful phenomena recorded in the physical history of our planet," was unaccompanied by any subterranean noise whatever. Again, in the elevated

table-land of Guanaxuato, subterranean thundering began about midnight of the 9th January, 1784, and continued without intermission for the space of a whole month, without any disturbing motion of the earth. The city lies among some of the richest silver mines in the world, and large quantities of silver, in bars, were stored within it. Nevertheless, the inhabitants forsook all, expecting the earthquake to be upon them every moment. But, within the city, there was no earthquake; and, at the bottom of the deepest mines, one thousand six hundred feet under ground, no shock was felt.

The earth movement appears to vary considerably. It has been already mentioned as occurring from north to south, with quick transverse jerks from east to west. But this is by no means always the case. The movement is sometimes upward, sometimes rotary. In the earthquake near Quito, already referred to, many bodies of inhabitants were thrown into the air: some being found on the hill of Cauca, several hundred feet in height, and on the opposite side of the river. A sailor in mid-ocean was violently flung into the rigging from the deck, as if a mine had exploded under the ship. In other instances, walls are observed to be twisted, although not thrown down; and rows of trees will be turned from their previous parallel direction. Stranger still is the facility with which objects on the surface of the earth have been found to shift from one place to another. The furniture of one house has been found on the ruins of a neigh- hour's; and, at Quito, the council of justice had, in many cases, to decide on the ownership of property, even including fields and growing crops, which had thus shifted their positions, without sustaining much apparent injury.



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minutes all the buildings in the city, great and small, public and private, were heaps of ruins, burying with them those inhabitants who had not been quick enough in escaping to the squares. Then succeeded a moment's calm, as when the heavy ordnance has opened the battle, and the lighter, but more numerous, musketry prepares to follow. Soon it began again, and the houseless homeless inhabitants counted two hundred distinct shocks within the following twenty-four hours. These shocks continued until the February of the following year, and were computed at four hundred and fifty in all. On this occasion the port of Callao sank quite down below the level of the sea. Nothing was left standing, save a piece of wall belonging to the fort of Santa Cruz, on which twenty-two persons contrived to save themselves. Of the twenty-three ships then in port, nineteen were wholly sunk, and the remaining four carried a considerable distance inland. Of the four thousand inhabitants, which the port of Callao then numbered, only two hundred survived. In Lima, thirteen hundred dead bodies were excavated from the ruins, exclusive of great numbers of maimed, who afterwards died of their hurts. Commander Wilkes, of the United States exploring expedition of 1849, was able in that year to define the site of the old port of Callao beneath the sea.

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Figura 37: Detalles del artículo de Charles Dickens sobre terremotos que publicó en el periódico británico de su propiedad, *All The Year Round*, para la entrega del 7 de noviembre de 1868.

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Schele de Vere, "The Earth in Trouble", *Putnam's Magazine*, New York, septiembre de 1869, vol. IV, Nº XXI, pp. 343-351.

There is no mistake about it; our mother Earth is in serious trouble, and her wisest children are at a loss how to account for her sudden restlessness. There are all the signs of feverish excitement great heat, strange utterances, and violent convulsions. A summer so hot as to become unusually destructive to human life has been followed by an unnaturally mild winter all through the temperate zone of the globe, and even the instincts of the brute creation seem to have been at fault for once. Terrific upheavings have terrified man, now breaking forth through the craters of active volcanoes, and now raising huge portions of firm land by fearful earthquakes. Is it a wonder that when our mother Earth is so evidently in trouble, her children also should be sorely troubled, and thoughtful minds should look once more for the speedy coming of the end of all things? When the Apostles themselves expected to witness the coming of the Lord, and a Luther could firmly believe in the near approach of the Last Judgment, we may well bear patiently with credulous Millerites, sitting in their white robes high up on broad branching trees to ascend the more promptly to heaven, and with all the sorrowful minds who in our day years, with the whole groaning creation, for speedy redemption!

Nor can we withhold our sympathy from those who describe, with feelings of indelible awe, what they suffered at the time of their first experience of an earthquake. While a bright sky and brilliant sunshine are flooding the exuberant beauty of a tropical landscape with gorgeous lights, and all Nature seems to enjoy in perfect peace the luxury of happy existence, they suddenly felt rather than heard a low, rumbling noise, which seems to rise from the very lowest depths of the earth. And all living beings, men as well as animals, are of a sudden filled with a strange anticipation of evil coming, vague, but sickening, and unconquerable by any effort of will. Before the mind can well judge of the strange and unwonted sensation, there comes long, subterranean thundering, clap upon clap, rolling nearer and nearer, and at each successive shock the heavens and the earth seem alike to shudder at the fearful approach of an unknown power. Every thing is shaken to the foundation; glasses and crockery-ware sound as if frolicking spirits were playing with them; bells are set ringing by invisible hands, doors open by themselves, and no one enters, the houses begin to groan and to crack in all their joints, and lean, like drunken men, first to one, and then to the other side. Tall steeples sway giddily to

and fro, and lofty arches in cathedrals and churches press out the keystone and come crashing down, burying thousands of terrified men, who had come to the sacred building to invoke help from on high, when all upon earth had left them helpless. All who can escape rush forth from beneath treacherous roofs, but out there it feels as if even "heaven's vault should crack;" the danger is not over, for the very soil beneath their feet swells and sinks like the waves of the sea, huge chasms open here and there, and dark abysses swallow old and young, rich and poor, without distinction and without mercy.

At last the soil begins to subside into the wonted quiet, and at the same moment, a tall, conical mountain, sometimes in sight of the panic-struck multitude, and sometimes at a distance of hundreds of miles, opens a wide, gaping mouth near the summit, and a power, which human ingenuity has as yet found no standard to measure, sends forth a magnificent bunch of bright flames, mingled in strange anomaly, with streaming vapors, rocks ground to atoms till they resemble ashes, and vast masses of a glowing substance, which are flung, jet after jet, till they seem to reach the welkin. And, high up in the air, the fiery bouquet, grandly beautiful in spite of its terrific nature, spreads out into an immense canopy, an ocean of clouds, dark above, but shining in incomparable splendor below, where the fire from the crater illumines it in richest glory, while flashes of lightning play unceasingly to and fro, and the half molten rocks rain down upon the earth, bursting and breaking like masses of brittle dusky glass. At the same time a torrent of ashes falls like a burning rain of withering fire upon the wretched landscape, and in an instant the whole region, for miles and miles all around, is covered with a weird shroud and sinks for ages into deathlike stillness!

But troubled Nature has not exhausted the efforts yet, by which she seeks relief from the mysterious suffering which she seems to undergo in the dark recesses of the earth. From the crater's brink, or from a sudden opening in the sides of the mountain, there comes gushing forth a broad stream of fiery lava, and hurries, as in furious madness, down the steep sides, carrying the torch of destruction to the forests, which in a moment flare up in a bright blaze, to fertile fields, changing them instantly from lovely pictures of peace and promise into desolate deserts, to lofty walls and solid mansions, which crumble and fall at the magic touch, never to rise again, and finally to the silent sea, into which it rolls its fiery waves with a fearful hissing and screeching, bringing even here death and destruction to all that lives and moves in the life-teeming waters.

And, as if the measure of horrors was not full yet, and overburdened Nature must give vent in new forms to its unbearable burden, the heavens darken, till night covers the earth, and a deluge of waters descends in vast sheets, flooding the fields that had barely begun to breathe once more freely, and mingling in horrible friendship with the masses of black ashes, so that the dark, hideous slime rolls in slow, but irresistible waves, over town and village, and fills cellars and rooms and streets and the very temples of the gods with its death-bringing horror. And not unfrequently the sea rushes up to meet in fatal embrace the waters from the clouds; trembling under the weird excitement and coming up in fierce, spasmodic jerks as the convulsions of the volcano near by shake it with sympathetic violence, it breaks down the ancient landmarks that have held it in bounds for countless ages, and retreating after a while with overwhelming violence, it bears the few survivors from the fury of fire into the fatal abyss of the ocean.

Amid such horrors the bravest of men loses heart, and with all his heaven-appointed powers he feels like a helpless infant. The brutes of the forest, the lion and the panther, forget their nature, and come from their dark dens to join in strange, new-born friendship, the flocks of peaceful cattle, and to seek with them, driven by an irresistible instinct, the shelter of human habitations and the protection of man. Eagles and vultures come down from their unseen paths in the clouds and their lofty eyries, and sit, marveling and trembling, by the side of pigeons and common fowls in paradisiacal peace.

It is this unique and uncontrollable sensation, felt when the material world makes for a moment its full dominion known and claims our earth-born nature as its own, which has, no doubt, led, from of old, to the almost unvarying creed of men, that the world will come to an end by fire. The Chaldæans, it is true, coupled the power of water with that of the burning element, and believed that the world would be destroyed by fire, when all the stars should meet in the constellation of Cancer, and once more by water when they meet in the constellation of Capricorn. The Parsees, worshippers of fire, have a similar doctrine, according to which the world will last twelve thousand years, after which. Ahriman, the Evil Spirit, will set it on fire by means of a comet, and, after a thorough purification, recreate it with Ormuzd, the Spirit of Good. Even the Orphic poems, of which nothing is left beyond a few quotations and allusions, are said to have sung of the end of winter in a great deluge, and of the end of the world's summer in a great conflagration. It is well known, on the other hand, that the Mosaic Genesis, based, perhaps, largely upon the

impression produced by the annual inundations of the Nile, admits of only one creative principle, that of water, which "brought forth" all things living but man, and hence laid the foundation of that system which is still warmly defended by the Neptunists of our day.

It is interesting to observe how, in a similar manner, the Greek Heraclitus drew his views from his observation of volcanic symptoms, and based upon them his theory, that the world not only owed its origin to fire, but was to be periodically purified and renewed by vast conflagrations. Fire was, to him, the only unchanging and everlasting element, and to its benign influences he was disposed to ascribe all that befalls our globe under the direction of relentless Fate.

Nor can it be doubted that the same impressions led originally to the almost sublime conceptions of the lower regions, which we find in Hellenic legends. It is well known, that they placed their Tartarus far down in the bowels of the earth, and represented it as an enormous abyss filled with eternal fire; the very position of the entrance to this lower world, in Southern Italy, points to that connection, as the active volcanoes of that region had, no doubt, originally suggested the whole conception. Far down, below those favored plains, they imagined the realm of Pluto, and looked upon Mount Vesuvius and Mount Etna as the colossal chimneys, giving vent to the smoke of the fire at which the Cyclops were forever busy forging the lightnings of Jupiter. How deeply rooted these fantastic and yet beautiful notions were in the minds of nations, we may judge from the fact that two hundred years after the rise of our faith the Roman historian, Dion Cassius, could still soberly speak of enormous giants rising from Mount Vesuvius, and scattering, amid the appalling sound of infernal trumpets, ashes and rocks over the blooming fields of Campania and the fair cities of Pompeii and Herculaneum! Our own Christian faith, finally, teaches us of the final destruction of our globe by the same terrible agent, when "the heavens shall pass away with a great noise, and the elements shall melt with fervent heat; the earth also, and all the works therein, shall be burned up."

If it is strange to sec how universal this fire worship is, which ascribes to this element, above all others, the power to create and to destroy our world, it is not less striking to observe to what eccentric views the same conviction has led both ancient and modern inquirers. Thus Aristotle oven was fond of imagining that the earth might be a living being, which changed like man, on the surface, only at much longer intervals. He knew perfectly well, that certain portions of land would gradually be covered with water, while parts of the sea would be laid bare and change into fertile lands; he knew equally well the

origin of volcanic islands, and describes correctly the sudden rise of Hiera, in the Pontus, which was born amid a fearful up heaving of the earth, its bursting open in the shape of a great crater, and the subsequent lifting up of a high mountain. All these phenomena were, to him, evidence of the inner life of the earth, which, he thought, manifested itself mainly by fire. Strabo went even beyond him, and while ascribing, with his illustrious predecessor, all earthquakes to the efforts made by masses of heated air within to break through the crust of the earth, he discerned the correct origin of great changes on the surface, and, for instance, saw in Sicily only a portion of the mainland, which had been detached from it by a violent volcanic up heaving.

The Romans did nothing for the better knowledge of Nature; their thoughts were exclusively given to the Empire, and social problems monopolized their attention. For centuries, therefore, natural science made no progress, and earthquakes were readily ascribed to rebellions in the demon world below and volcanic eruptions to the impatience, of chained spirits. Then came the rule of Neptune, when Vulcan was dethroned for a time, and all the great symptoms of life, which our mother Earth gives forth from time to time, were explained by the agency of water. Descartes was the first philosopher bold enough to leave the beaten track, and to plead once more the cause of fire; he openly declared his conviction, that the earth had once been a fiery meteor, like so many others, fragments of that original solid matter, which had been set in furious motion by an Almighty hand, and when heated by the terrible velocity with which it revolved in infinite space, divided into suns and stars. His doctrine was that the crust of the earth had afterwards gradually cooled off, but that in the interior there was still a vast central fire, which every now and then spontaneously bursts forth in eruptions and earthquakes.

The greater philosophers of later ages followed in the wake of Descartes, without adding strength to his arguments or facts to support his theory; it was only when the three great naturalists, Pallas, Saussure, and Werner, collected a number of carefully-made observations, that speculation was changed into conviction, and brilliant suggestions were tried and proved in the alembic of stern logic.

They did not change the original theory, but established it on a solid basis. They found, what we still believe, that the sea of liquid fire beneath the thin crust of the earth, on which we dwell with fancied security, is in a state of perpetual excitement, and hence continually presses or rises against the surface. When it touches it, we have an earthquake; when it is sufficiently excited to break through the crust, it forms a volcano.

According to the most recent theories, however, another new element has been added to these explanations of the inner life of our earth. We have learnt that it is not fire simply, which produces these agitations, but the same power which raises the waters of the ocean at regular intervals. It is well known that the tides are the effect of the attraction exercised by sun and moon, and that they are highest in the form of spring tides, when sun and moon combine to attract the waters. It is believed, now, that the liquid matter in the interior of the earth obeys the same laws of attraction, and rises and falls with the outer liquid, as the crust of the earth is, relatively speaking, a more thin covering, unable seriously to diminish, much less to check the powers of attraction exercised by the two great heavenly bodies. This view is confirmed by the fact, that earthquakes are most frequent when the tides are highest. Volcanic eruptions are, of course, effects of the same commotion below; they only save vast regions of land and water from being thus convulsed, by offering an open vent to the gases developed below.

All this newly-acquired knowledge, however, does not yet help us to avert the fearful destruction which generally follows the outbreaks of the hidden power within the earth. In vain do we see vast plains laid waste forever by the death-bringing substances ejected from hideous mud-volcanoes; in vain do towering mountains rise where formerly the eye swept over level lands as far as it could reach; in vain, even, do we descend to towns which once overflowed with life and exulted in their splendor, and which now are sad and silent, buried for ages and ages below the surface of the earth. At each new return of the terrible calamities attendant on such convulsions, we stand anew aghast, and feel how utterly helpless we are, how utterly ignorant even of Him, who "laid the foundations of the earth", and "who alone knows" whereupon are out at sea, to distant inland hills. But the concussion itself extended far beyond the usual limits. Most powerful, as was natural, in the centre of the commotion, the volcanic region near Arequipas, where the famous group of snow-covered volcanoes form so striking a feature of the landscape, it was felt for a distance of six hundred miles, both of latitude and of longitude. Electric lights were seen in the air at different places –an entirely new phenomenon, not hitherto observed in connection with such events– and even the famous Tambo d'Apo, a house of refuge on the very summit of the Cordilleras, was so violently shaken as to crumble into dust.

It appears, however, upon a careful sifting of the evidence, that after all, the earthquake itself did less harm than the sea. The enormous waves which

disobeyed the command, "Hitherto shalt thou come, but no farther, and here shall thy proud waves be stayed!" carried utter destruction wherever they touched man, or the work of man. Houses and churches, fields and forests, all were literally swept away, islands disappeared, mountains were levelled, and dire desolation imprinted on the scene of abundant prosperity. But the worst was, as ever, the passion of man, unchained at a moment when the fury of the elements seemed likewise to be unfettered. Accident in some cases, fell purpose in many more, set fires to buildings, and soon large portions of the doomed towns were ravaged by fire and water alike! The excited populace fell with savage eagerness upon the stores of liquor exposed in cellars and warehouses, and soon hell itself seemed to be let loose. The scenes enacted in some of the unfortunate towns are beyond the powers of description; men beastly drunk lay by the side of those they had murdered, and the demoniac powers of the earth, set free by an unknown hand for a moment, seemed to have roused with fearful success the demoniac instincts in the heart of man.

These terrible occurrences were soon followed by similar calamities in the northern part of our Continent. An enormous spring tide, on the 15th of August, terrified the people on the Californian coast, rising to a height of over sixty feet, and washing away fields and gardens for miles. The earthquakes of Peru seemed gradually to have worked their way northward; for in the middle of October, heavy commotions were felt, and on the twenty-first a violent earthquake shook San Francisco. The eastern part of the city was sorely tried; many houses fell, others cracked from the foundation to the roof, and hardly one could be found that had not suffered some injury. As the shocks continued, all business was suspended, and a few cases of death soon caused universal consternation. Half of the population ran into the streets, but hero also danger and death even lay in waiting; for in several districts the earth opened, and jets of water leaped up to a height of several feet, while in other places the ground suddenly sank several inches. All the clocks stopped at the moment of the first shock, and the telegraphic wires were so much injured that no communication could be had for some time. The City Hall was a complete ruin; the courts could not sit, and the prisoners were sent to the county jail; the patients at the navy hospitals had to be removed, and the Mint was closed, until it could be fully repaired. Here, also, the shocks extended to a very unusual distance far inland; and as they were felt at sea by sailors, who for a moment thought the vessel had touched a submarine rock, so they amazed miners in the interior, who expressed naively their indignation at such "indecent behavior of the old Earth."

The Pacific Ocean had a large share of the fearful commotion which caused such sad destruction on the adjoining continent. Already in March a hundred earthquake shocks had been felt in the volcanic island of Hawaii, connected with an unusually violent eruption of the far-famed Mauna Loa. Here also the earth opened in many places, and a tidal wave, sixty feet high, rose over the tops of lofty cocoa trees, and swept the foundations thereof fastened, or who laid the corner-stone thereof, when the morning stars sang together, and all the sons of God shouted for joy."

So we have felt again during the present year. For our mother Earth has been in great trouble during the last twelve months, and perhaps it may not be amiss briefly to record here the symptoms, which make us aware of the terrible commotion, which has apparently destroyed the peace ordinarily reigning within our globe.

Earthquakes have taken place in the West Indies and in South America, such as belong to the most terrific catastrophes recorded in the annals of the earth's history. Since the day on which Lisbon was swallowed up with thousands of helpless victims, and the calamity at Lima in 1740, since the South American coasts were devastated in 1797, and Caracas was utterly destroyed in 1812, no such overwhelming misfortune has befallen that doomed locality.

The air, we are told, had been for several days so hot and oppressive, that experienced natives foretold a volcanic eruption. On the 16th of August (1808) news was received in Valparaiso, that in several ports of Chili the sea had risen and overwhelmed the coast for fifteen miles, so as to wash away houses and magazines, and to land vessels high and dry far inland. Three days before the earth had begun to heave, and regular earthquakes had taken place at Callao, returning at intervals of five minutes. Enormous crevices opened, houses fell, churches crumbled to pieces, and men and brutes alike were frightened by the unseen enemy. The whole West coast, as far as high up in Peru, was thus shaken, and at various places the sea had made inroads upon the firm land. At the very first shock a number of towns in the interior were levelled with the ground, and ancient cathedrals that had stood like unchangeable landmarks for hundreds of years were changed into heaps of ruins and rubbish. More than thirty thousand human beings perished in a day, and the loss in material and merchandise is beyond all calculation. An enormous spring tide followed the earthquake, and overwhelming the frail bulwarks of a low coast, flooded the land far into the interior. Large vessels were thrown from their anchorage, and landed far up the country. A second gigantic wave, stretching a hundred

miles north and south, rose from the ocean, and fell with crushing power upon the ill-fated coast. Three war steamers were thus destroyed at Arica alone; among these our own ships, the Wateree and the Fredonia, the latter with nearly every soul on board. An English steamer, the Santiago, escaped by a marvel. She was apparently secure, riding on two powerful anchors; but suddenly a concussion was felt, which made the large ship twist and turn as if she were made of India rubber. All the passengers were tossed up to the height of two feet, and then fell flat down; at the same moment the heavy cables snapped as if they were thin wires, and the vessel was swept by a receding wave into the sea. Fortunately, they had steam up, and tried to gain the offing; but the next moment a second wave came, and drove her irresistibly towards the rocky shore. All faces were deadly pale, and the captain gave up all hope. But oh, wonder! the wave lifted the ship high up, and safely carried her on her gigantic shoulders across the rocky barrier, letting her gently down into on adjoining bay, from which she could subsequently escape into the open sea! Where the town of Chala stood, the ocean now floats heavy vessels, and Iquique was destroyed first by an earthquake, which lasted uninterruptedly for four minutes, and then by a wave of sixty feet height, which suddenly approached the land like a solid wall, and then fell, crushing all that it found in its way, together with more than a hundred men. Arica was so utterly destroyed, that even the places where certain prominent houses had stood, could no more be found; and the unfettered fury of the waves had lifted up heavy guns, and borne them scornfully from an island battery far houses and gardens, cattle and human beings before it with irresistible violence. A terrible shock prostrated houses and churches, while the crater of the great volcano was vomiting fire, rocks and lava, and a river of red hot lava flowed for nearly six miles to the sea, destroying every thing before it, and forming a new island far out in the ocean. In April, still more violent shocks occurred, during which the swinging motion of the earth was so dreadful that no person could stand, and old and young were made deadly sick. At the same time, tall hills were up heaved, and the tops detached, being thrown down into the valleys below, while out at sea new islands arose, several hundred feet high, and emitted for days a column of steam and smoke.

A few months before, similar phenomena had been noticed in British East India. Earthquakes were felt, though only slightly, in various districts of the northern provinces, and what was most curious, they seemed to be strictly limited to a narrow line running northeastward. In one region, near Chindwana, an entirely new feature was superadded to the more familiar horrors

of such catastrophes. Each shock was preceded by a heavy detonation, as if a whole park of artillery had been practicing in the neighborhood. Special agents were dispatched to observe the phenomenon, which the natives had reported for several months already, and they heard the same noise, and felt immediately afterwards the usual vertigo produced by slighter earthquakes.

Europe has escaped these disasters, with the exception of such slight shocks as were felt, at intervals, in the United States also, but without producing any other impression than that of a very unusual state of commotion in the interior of the earth. Premonitory symptoms had shown themselves already in the preceding year (1866) in the Azores, when violent earthquakes shook the islands, and the sea rose, between Terceira and Graicoas, amid terrific detonations, and cast up jets of water to an enormous height. In June, stones began to be mingled with the vapors, and the amazed spectators beheld the ocean in commotion, throwing up enormous blocks of stone amid dense vapors, and emitting so strong a sulphurous odor, that it could be borne only with difficulty near the shore. It is probable that the old world was saved the fatal effects of violent earthquakes by the readiness of Mt. Vesuvius to give egress to the rebellious powers from below. The ancient volcano had, early in the year 1868, already given signs of increased activity, and whilst the flow of lava had ceased, the last-formed cone began to give out thick black clouds of smoke, in which brilliantly glowing masses of rock were occasionally seen. On the first day of October the marvelously ingenious instruments devised by Lamont, began to indicate a disturbance below the soil, and a displacement of the surface, and the volcano became noisier than before. A small cone opened next, at the side, from the summit to the base, and lava issued forth, covering the former summit of Vesuvius. It was here, for the first time, that the renowned director of the Seis observatory, Palmieri, observed the periodic nature of these volcanic eruptions. Each day, the lava would cease to flow at certain hours and begin anew after a short interval; twice a day, also, the active cone would make an increased noise, and throw out its projectiles with greater violence. The correspondence thus shown between the volcanic ebb and tide and that of the sea, was still further illustrated by other changes in the flow of lava, by certain phenomena occurring at greater intervals, which careful observation proved to take place in unfailing sympathy with the motions of the moon.

In November, the mountain became highly excited. The stream of lava grew to larger dimensions. It was not, as is commonly imagined, a glowing, fluid mass, but appeared like a stone wall, from twenty to thirty feet high, consisting of vast

blocks of stone, which were partly black and partly glowing deep red, and this wall was borne on high by the liquid, burning lava underneath, and pushed continually forward by the immense weight of the fiery mass, that issued forth from the cone. Aided by the slope of the mountain side, it advanced visibly some two or three feet a minute, threatening death and destruction to all that stood in the way. A traveller, Mr. Boernstein, gives an animated description of a characteristic scene in its fearful progress. He had ascended the mountain as far as the *Casa del prete*, the priests house, which was on the point of being overwhelmed by the stream of lava, now nearly four hundred feet wide.

It stood in the centre of a noble vineyard. The furniture, and all that could be saved, had been carried away; the old priest, in a roundabout and shorts, with nothing but his velvet skull cap to designate him as a priest, was hard at work, with the help of a few men, to pull up the stakes, to which the vines were fastened, in order to save them at least for fuel. His black dog was continually running towards the house, barking anxiously, and then returning to his master, barking at him and pulling at him, as if he wished to warn him against the impending danger. For the terrible wall of hidden fire was within a foot of the parsonage. It was empty and deserted; only a pet cat was sitting comfortably on the sill of the upper story, to which an outer staircase gave access. The priest had just cast a last sorrowful look at his house, against the thick stone walls of which the lava was slowly rising higher and higher, and in his heart was bidding farewell to his home, where he had lived over since he had been a priest. His eye fell upon the cat. "Save the poor creature!" he cried, and one of the men hastened up the steps; but the cat, frightened by the strange face, ran swiftly into the house, and at the same moment, the stream of lava, overtopping the house by several feet, fell over forward and poured a Bea of flames upon the flat roof. The man on the steps leaped with a desperate effort to the ground, the priest and the by-standers crossed themselves, thick, black clouds of smoke poured forth from the windows, and a few minutes later the whole stately building had vanished, and a huge mass of glowing blocks of lava was steadily flowing over the place, that knew it no more.

At night, the stream presents a glorious sight. Dark in broad daylight, it now appears an ocean of fire, slowly advancing with irresistible power, and from its waves, as high as tall houses; there fall continually huge glowing blocks with a fearful crash, and roll down the precipices with terrific thunder. If it approaches a tree, there is a moment's delay, and immediately the leaves, dried by the fearful heat, blaze up like a thousand lights on a huge Christmas

tree; then the trunk flares up in a pillar of fire, and the crown sinks into the fiery sea. From time to time the glowing mass of the lava stream heaves and rises; suddenly a loud explosion is heard, and an immense column of bright fire shoots high up to the heavens, pent-up gases have freed themselves and exploded in the fiery heat. Or the stream falls into a well; the water is instantly converted into steam, and a white pillar of hissing vapor rises on high.

While Mount Vesuvius was thus relieving the Earth in trouble, certain phenomena of smaller dimensions, but perhaps of greater interest even, were engaging the attention of the learned world. In the first days of the year 1866, the inhabitants of Santorin, an island in the Grecian Archipelago, had seen with amazement a part of their bay converted into a sea of fire. It was not that they had not witnessed the like before. Their own home is the result of a sudden up heaving of the bottom of the sea, and from time immemorial their bay has been the scene of fantastic transformations. The ancients spoke with awe of the strange changes that took place there, the island of Anaphi, now called Nanfi, rose at the bidding of Apollo from the lowest deep; Pliny mentions fearful convulsions, which marked the year 19 of our era, and ever since new islets have appeared and vanished again in the adjoining waters. Now, for nearly a year, subterranean thunders had been heard, and at the time mentioned, tremendous explosions took place, red flames rose to the height of the and twenty feet from the sea itself, and a few days later, a new island ascended slowly, and grew visibly from hour to hour. The summit had the shape of a cone, and threw out an unceasing supply of stones, slime, and fire. During the following days, more islets presented themselves, and finally joined together by means of the vast masses of half-fluid material, that continued to flow from the crater. These new lands were nothing else but the summit of an immense volcano, which rested with its base on the bottom of the sea, while the summit, now for the first time, saw the light of day.

The power of man to accustom himself to any and every condition, in which he finds himself placed, is strikingly illustrated by the ten or twelve thousand inhabitants of Santorin. For three years now they have been living amid a continuous cannonade, surrounded by a sea on fire, and a volcano before their eyes, which does not cease day and night to throw out fiery projectiles amid heavy detonations. Jets of vapor are sent up to a height of five thousand feet, and a perpetual fire illumines the top of Mount George L, as the new island has since been called. Italian and Austrian engineers and savants from other countries have been sent there to watch the extraordinary scene, and they

report that the new island has risen already to a height of nearly five hundred feet, while it is still steadily increasing towards Santorin. If the work continues at the same rate, the little kingdom of Greece has found out a cheaper means to increase its territory than the costly and dangerous process of annexation. On the other hand, the apprehension has been expressed, that in the bay of Santorin, the waters of the sea may be deep enough to come in actual contact with the sea of fire in the interior of the earth, and that a fearful catastrophe may yet prove the old Greek doctrine of Hades and its horrors.

Whatever may be the true explanation of all these grave disturbances on our planet, whether we ascribe them, with the Neptunists, to the ebullition of heated waters, which seek an outlet, or with the Vulcanists, to the efforts of a sea of fire to break through the thin crust, and to hasten the day of final destruction, we cannot close our eyes to the fact, that our mother Earth is evidently in trouble. But let us not blame her if blooming landscapes are laid waste, towns overthrown, and human lives sacrificed by hecatombs. The loss is great, the calamity appalling, but it is the price paid by a few for the security of the race. If the craters of volcanoes did not offer an opening to the pent-up vapors in the interior of the earth, and allow the terrific power of confined steam, with which we have of late become familiar in making steam our servant, we would not be able to live on the earth. They are, as already Alexander von Humboldt asserted, the safety valves, which allow the steam to escape, and the heated vapors within to regain their equilibrium with the pressure of the atmosphere, and it is thanks to them only, perhaps, we owe that we are enabled, by God's mercy, to enjoy our life on earth, although we dwell on a thin, frail crust, over an ocean of molten fire!

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Anónimo, "The Earthquake of History", *Friend's Intelligencer*, Philadelphia, 11 de mayo de 1872, pp. 173-174.

It is estimated by geologists that more than one-eighth of the entire surface of the globe has been subjected to the disturbing influence of earthquake shocks. The most disastrous one of which there is any record was the third destruction of the City of Antioch, from this cause in 526 A. D. According to the great historian, Gibbon, 250.000 persons perished at this time, as thousands of strangers increased the population of the city, thronging to the festival of the Ascension, which occurred at the time. The earthquake and volcanic

eruptions which buried the cities of Pompeii and Herculaneum are too familiar to require allusion. Of the most disastrous of modern catastrophes of this sort have been those of Lisbon, in 1755, and of New Madrid, in Missouri, in 1811 [...].

1. A loud rumbling was followed almost immediately by a fearful shock, which demolished the principal buildings of the city, and in the short time of six minutes it is estimated that 60.000 persons were killed. The tide on the sea-coast ran out rapidly, leaving the bar perfectly dry, and as rapidly an enormous wave 30 feet in height rushed in again, sweeping everything before it. The mountains in the neighborhood were shaken violently, deep fissures rent in the valleys, crags toppled over, and rocks were hurled into the abysses, bearing everything with them. Thousands of people rushed for safety to the marble quay, which bad just been constructed at an enormous expense, when suddenly it sank, carrying its load with it, and over the spot the water stood 600 feet deep. All the shipping of the harbor was sunk instantly, and hardly a vestige of the life and prosperity of the famed capital remained. The most important of the earthquakes which have ever occurred in this country, of which we have any record, was that of New Madrid, Mo. Over 300 miles of country, from the mouth of the Ohio to that of the St. Francis rose and sank in undulations, lakes and fissures being alternately formed and filled up. These shocks were both perpendicular and horizontal, the latter being by far the more disastrous in their effects. The incessant quakings were kept up for several months, and the loss of life and property was enormous. The City of Caracas, in Venezuela, was overwhelmed in 1812, and 12.000 citizens buried in its ruins. All the Central and South American volcanic regions have frequently of late years been subjected to these shocks, and cities destroyed and thousands of lives lost. In the Caribbean Sea they are common occurrences, and their consequences often appalling. *Evening Bulletin*.

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Anónimo, "Earthquakes: Their Nature and Origin", *New York Observer and Chronicle*, New York, 17 de agosto de 1876, p. 261.

(We not long since announced the publication by the Messrs. Harper, of a new and enlarged edition of the volume by Professor Orton, of Vassar College, entitled "The Andes and the Amazon." It contains the scientific observations and personal experience of the author, during two expeditions to South

America. The volume is of great and varied interest from the beginning to the end. We make an extract on Earthquakes).

"In the fierceness of the shock, and the extent of the territory shaken, the earthquake of August, 1868, is without a parallel in the New World. The destruction of life (50.000 officially reported in Ecuador alone) has not been equaled in any other earthquake during this century. The tremor was felt over four republics, and from the Andes to the Sandwich Islands. The water-wave was felt on the coast of New Zealand sixteen hours after it had set a United States gunboat on the sand-hills of Arica. In some respects it is surpassed only by the Lisbon earthquake, which reached from Sweden to the West Indies, and from Barbary to Scotland. The loss of property seems to have been greatest in Peru and the loss of life greatest in Ecuador. The commotion seemed to be most violent along the Western Cordillera, though it was felt even on the Napo.

"There are few places where the crust of our planet is long at rest. Brazil, Egypt, Russia, and Greenland are comparatively free from earthquakes. But had we delicate instruments scattered throughout the world, upheaval and subsidence would doubtless be detected in every part of the so-called *terra firma*. The sea, and not the land, is the true image of stability.

"Time writes no wrinkle on thy azure brow:

Such as creation's dawn beheld, then rollest now."

Earthquakes have occurred in every period of geological history, and are independent of latitude. The first well- known earthquake came in the year 63, and shattered Pompeii and Herculaneum sixteen years before they were overwhelmed by the first recorded eruption of Vesuvius. The most celebrated earthquake, and perhaps the most terrible manifestation of force during the human period, was in 1755. The shook, which seemed to originate in the bed of the Atlantic, pervaded one twelfth of the earth's surface. Unhappy Lisbon stood in its path.

"An earthquake is a vertical vibration, having an undulatory progression. An example of the simple bounding movement occurred in 1797, when the city of Riobamba, in the Quito Valley, was buried under part of a mountain shaken down by the violent concussion, and men were tossed several hundred feet. We saw one massive structure which had nearly turned a somersault. The ordinary vibrations seldom exceed two feet in height. The wave-movement has a rate of from twenty to thirty miles a minute, depending on the elasticity

of the rock and the elevations on the surface. When two undulations cross each other, a rotary or twisting motion is produced. The waves are generally transmitted along the lines of primary mountain chains, which are doubtless seated on a fracture. The Lisbon waves moved from southwest to northwest, or parallel to the mountain system of the Old World; those of the United States, in 1843, ran parallel to the volcanic chain in Mexico. In South America they roll along the Andes. That of 1797 left its tracks along a westerly line from Tunguragua through Pelileo and Guano. It is a little singular, that while the late trembling at Quito seemed to come from the north, the great shook in Peru preceded that in Ecuador by three days. Though the origin of earthquakes is deep-seated, the oscillation is mostly superficial, as deep mines are little disturbed. The most damage is done where the sedimentary plains abut against the hard, upturned strata of the mountains. The shock is usually brief. That of Caracas lasted fifty seconds, that of Lisbon six minutes; but Humboldt witnessed one in South America which continued a quarter of an hour.

"Several hypotheses have been advanced to account for earthquakes. Rogers ascribes them to billowy pulsations in the molten matter upon which the flexible crust of the earth floats. Mallet thinks they may be viewed as an uncompleted effort to establish a volcana. Dana holds that they are occasioned by the folding up of the rocks in the slow process of cooling and consequent contraction of the earth's crust. In this process there would occur enormous fractures to relieve the tension; tilted strata would slip, and caverns give way. All this no doubt takes place; but the sudden, paroxysmal heavings incline us to refer the cause to the same eruptive impulse which makes Vesuvius and Cotopaxi discharge pent-up subterranean vapor and gas. The most destructive earthquakes occur when the overlying rocks do not break and give vent to the imprisoned gas. There is some connection between volcanoes and earthquakes; the former are, to a certain extent, 'safety-valves.' The column of smoke, from the volcano of Paste suddenly disappeared just before the great earthquake at Riobamba. In the spring of 1868 Pichincha and Cotopaxi showed signs of increasing activity, but in the summer became quiet again. Cotocachi and Sangai, 200 miles apart, were awaked simultaneously; the former, silent for centuries, sent forth dense masses of earth and volcanic matter to a distance of many miles, covering thousands of acres; the latter thundered every half hour instead of hourly, as before. Still, the greatest earthquakes do not occur in the vicinity of active volcanoes. Lisbon and Lima (where, on an average, forty-five shocks occur annually, and two fearful ones in a century)

are far distant from any volcanic vent; likewise Northern India, South Africa, Scotland, and the United States.

"An earthquake is beyond the reach of calculation. Professor Perry, of Dijon, France, is endeavoring to prove that there is a periodicity in earthquakes synchronous with that in the tides of the ocean, the greatest number occurring at the time of new and full moon. If this theory be sustained, we must admit the existence of a vast subterranean sea of lava. But all this is problematical. Earthquakes appear independently of the geology of a country, though the rate of undulation is modified by the mineral structure. Earthquake waves seem to move more rapidly through the comparatively undisturbed beds of the Mississippi Valley than through the contorted strata of Europe. Meteorology is unable to indicate a coming earthquake, for there is no sure prophecy in sultry weather, sirocco wind, and leaden sky. The Lisbon shock came without a warning. Sudden changes of the weather, however, often occur after an earthquake. Since the great convulsion of 1797, the climate of the Valley of Quito is said to be much colder. A heavy rain often follows a violent earthquake in Peru.

"No amount of familiarity with earthquakes enables one to laugh during the shock, or even at the subterranean thunders which sound like the clanking of chains in the realm of Pluto. All animated nature is terror-stricken. The horse trembles in his stall; the cow moans a low, melancholy tune; the dog sends forth an unearthly yell; sparrows drop from the trees, as if dead; crocodiles leave the trembling bed of the river and run with loud cries into the forest; and man himself becomes bewildered and loses all capacity. When the earth rocks beneath our feet (the motion resembling, in the words of Darwin, 'that felt by a person skating over thin ice which bends under the weight of his body'), something besides giddiness is produced. We feel our utter insignificance in the presence of a mysterious power that shakes the Andes like a reed. But more: there is on awful sensation of insecurity. 'A moment (says Humboldt) destroys the illusion of a whole life: our deceptive faith in the repose of nature vanishes, and we feel transported, as it were, into a region of unknown destructive forces.' A judgment day seems impending, and each moment is an age when one stands on a world convulsed."

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Anónimo, "About Earthquakes", *Ohio Farmer*, Ohio, 21 de marzo de 1885, p. 199.

It is very difficult to explain the causes which produce earthquakes. It has been clearly shown by scientific men that the globe we call the earth is not a solid mass. Its interior is supposed to be in a heated, fluid condition, and that the slow cooling process which is constantly going on causes the outer crust of the earth to contract suddenly at times, forming great fissures and under-ground caverns. It seems natural that such gigantic movements miles below the surface should produce subterranean noises and tremblings which can be felt by the inhabitants of the earth who live above the depths where these movements take place. And if the convulsion is accompanied by the explosion of vast volumes of gases, as is supposed sometimes to be the case, it is not strange that the surface of the earth gets violently shaken. Think how far away you can hear the noise and feel the jar of an explosion above ground, or even the firing of a large cannon, and then consider how insignificant are these small manifestations of human power as compared with the mighty workings of nature, and you will not wonder at the terrible convulsions which at times have shaken portions of the earth's surface, overthrowing cities and even mountains in a moment.

The most wonderful destruction of a mountain was that which took place on the 29th of August, 1883, when the island and volcano of Krakatoa, in the Strait of Sunda, vanished beneath the sea. In the afternoon of that day there came suddenly a tremendous burst of subterranean thunder, and immediately the volcano of Krakatoa threw forth an ink-black cloud which overspread the sky. In a few moments a large fertile section of the island of Java was turned into a barren waste by a violent earthquake, and many persons were killed. Terrible explosions took place in the mountain. Its great sloping sides were blown out into the water, and the volcano, together with the island upon which it had stood for unknown ages, crumbled away and disappeared. When the morning sun arose the ocean flowed over the spot where the mountain had stood, and the surface of the three hundred miles around was covered with floating ashes and pumice-stone, while a choking smell of sulphur pervaded the air.

There is no portion of the earth's surface where shocks of earthquakes are not occasionally felt, but, except in volcanic countries, the ground trembles so slightly that no damage is done. The inhabitants of those lands where great

earthquakes occur never know at what moment their homes may become a heap of ruins. The shock comes suddenly, and it often happens that after hearing the rumbling noise the people have no time to rush into the street before they are caught and crushed by falling walls.

Some terrible earthquakes have taken place on the western coast of South America. In 1746, Lima, a beautiful city in Peru, was entirely destroyed. In less than four minutes about three thousand houses and many large, magnificent churches became a heap of shapeless rubbish. At the same time a great tidal wave swept in from the Pacific Ocean and completely carried away the seaport of Callao. In the morning there was only a barren sand-bank where the night before had stood a populous town.

Lima and Callao were both rebuilt, and for more than a hundred years Peru was disturbed only by light shocks. But in August, 1868, a terrific earthquake destroyed nearly every building in the large city of Arequipa, which stood at the foot of Misti, a volcanic mountain for ages had the shock the summit of Misti burst out in smoke and cinders, and huge pieces of rock were hurled down its sides. It was at this time that a great tidal wave swept on to the Peruvian coast two hundred miles south of Arequipa, destroying the sea-port of Arica, and carrying inland several great vessels, among which was the United States war steamer Wateree. So great was the force of this terrible rush of waters that the huge vessel of war, with its heavy guns and equipments, was thrown half a mile into the interior of the town.

In March, 1812, the inhabitants of the city of Caracas, in Venezuela, were startled by a loud report like the sound of a thousand cannon, and immediately the ground arose in great waves. Buildings rocked and fell, and in a few moments nearly ten thousand people were killed. Shortly afterward the volcano of the island of St.Vincent broke out in a great eruption. This volcano had been quiet for centuries. It is said that on the day the eruption took place a little negro boy was herding cattle on the mountain. Stones began to fall around him. He thought some mischievous companion was pelting him from the cliffs above his head. But he soon discovered that it was not bad boys, but the mountain itself which hurled the stones. Soon the mountain began to roar and tremble, and for three days poured out showers of ashes and lava.

Many portions of Europe and Asia have also suffered from great earthquakes. The complete ruin of Lisbon by a terrific shock was one of the saddest events of the last century. Not alone the coast of Portugal, but a vast extent of land

and sea, was shaken by this earthquake. The great rock of Gibraltar trembled like an aspen leaf, and steam rose in many places from the Atlantic Ocean.

In central and southern Italy many notable earthquakes have taken place. One of the most severe of modern times occurred in March, 1881, when the pretty town of Casamicciola, on the island of Ischia, was ruined in a moment. At one o'clock on a sunny afternoon its inhabitants were tranquil and happy. Five minutes later their homes were nothing but heaps of stone and rubbish, it is a singular fact that the tower of the church remained standing, bearing aloft the great clock, the hands of which had stopped at the instant the fatal shock occurred. (*Harper's Young People*).

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Felix L. Oswald, "Earthquakes Studies", *North American Review*, New York, noviembre de 1886, vol. CXLIII, Nº CCCLX, pp. 521-524.

The physical history of every land has left many curious traces in the vernacular of its inhabitants, and, from the contemporary language of our own country, the Max Müllers of the future would readily infer that the home of the Anglo-Saxon race, and all its parent nations, must for ages have been a sea-girt, storm-swept, but almost entirely non-volcanic region. The Spanish Americans have some twenty terms for as many distinct varieties of earthquakes; we have hardly two, but we have at least two dozen words for all possible disturbances of the atmosphere, besides the synonyms borrowed from the mariners of foreign seas, the Chinese typhoons, the West Indian tornadoes, the monsoons of the Indian Ocean. In the same way, yearly visits to the Iceland seal-cliffs have enriched our nomenclature for the phenomena of the Arctic seas, and our American experience will yet give us a chance to enlarge our vocabulary of earthquake terms.

The completion of the Manzanillo branch of the Mexican Central Railroad will considerably promote that chance. The advocates of the "Subsidence Theory" distinguish between the jars produced by the occasional collapse of the primary rocks and the more frequent upheavals caused by the explosion of expansive vapors, and the coast regions of Colima and Michoacan arc chronically subject to the latter kind of disturbances. In 1759, the subterranean furnaces of Central America seemed to have suffered an obstruction of their usual vents, and the volcanic regions of the Pacific Slope were agitated

for weeks, till at last the pent-up forces exploded in the plains of Michoacan. A group of new hills rose like bubbles from a vat of seething pitch, and Mount Jorullo, the highest of the erupted mountains, became an active volcano, and continues to rise under the accumulation of its cinder hillocks. The others collapsed to the level of the Malpais, the volcanic "Badlands," of Michoacan, and it would seem as if the subterranean channels had again become partially obstructed, as their ejections force their upward way with a violence which every now and then jars the hills in a circle of half a hundred miles around the remaining vent. Near the village of Mescalita, southwest of the Badlands, the old military road to the Pacific crosses the famous Barranca of Santiago, an apparently bottomless chasm, receiving the drainage of several dozen lateral ravines, and near the brink of that abyss the traveler need rarely linger for more than a week to hear the boom of a rock-avalanche, either following or preceding the tremor of a volcanic concussion. Pew stone walls have resisted those concussions, judging from the number of ruins and the prevalence of log cabins in a region where stone buildings were once as common as in the neighborhood of Cadiz. The frequency of those shocks has taught the natives some useful lessons.

They have learned to diagnose the first symptoms of a dangerous earthquake. In nineteen out of twenty cases the degree of that danger is indicated by the *scale*, of the vibrations, the increasing or decreasing violence of the successive shocks. In the former ease the first concussion, or series of concussions, is a warning of worse things to come; in the latter a rule, with few exceptions, encourages the hope that Seismos has done his worst for that day, and probably for that month. For the same rule holds good for a protracted series of tremors. If a period of earthquakes begins with a day of destructive shocks, followed by a week of feeble reverberations, the omen gives promise of peace, and Wiggins' prediction of a very characteristic period of that sort being but the prelude of a far more ruinous upheaval would have made few dupes in any part of Spanish America.

Experience has also proved that earthquake shocks, as a rule, do not spread in eddies. The violence of the upheaval at any given point cannot be measured by the distance from an initiative center of the disturbance. The tremor may be felt with equal distinctness along a number of divergent lines, extending for a hundred miles or more from a common focus, but sparing the intermediate regions –regions of a geological character often apparently identical with that of the up heaved districts. A seismic wave may traverse a mountain

range at right angles with the main axis of its strata, break down cliffs which a ton of dynamite would have failed to move, and a few miles farther to the left or right spare a slender pinnacle of the same mineralogical formation. Even narrower areas have such safety-points. The great earthquake of 1812 spared the Calle de San Martin, a straggling hill street of Caracas, and spared it again in 1826, when in streets and lanes on both sides of the favored district not a house was left standing. On the small island of Sumbawa, a few villages on the north coast have thus far escaped the repeated cataclysms that rent the very rocks of the surrounding hills. A press-dispatch from Charleston ("New York Star," September 5), mentioned a building, considered a weak structure, which nevertheless escaped without any injury, while east, north and west of that building (on a corner of Market Street), massive blocks had been turned into a chaos of *débris*.

It is true, though, that the criteria of weakness or strength in resisting a tornado do not apply to the danger from earthquake shocks. The Charles-tonians wondered at the utter destruction of massive brick buildings and the comparative immunity of frame houses, which a hurricane would have carried away like so many bundles of wheat straw. The explanation is that an earthquake lacks the propulsive horizontal power of a storm, while its upheaval force is so absolutely irresistible that *weight* counts for nothing in securing the safety of a building. A light *coherent* structure will escape where a mountainous mass of brick would be shaken to pieces as easily as a heap of cobble-stones. A well-joined log cabin could be mode almost earthquake-proof. Its chimneys might collapse at the first shock, but the walls would hold their own, and the safety of the low and squat stone buildings of Spanish American earthquake cities is founded on the circumstance that a low wall of broad, flat stones can be rocked like a ship in a storm without outswaying its equilibrium. But if an exceptional concussion manages to accomplish that feat, such houses become the grave of all who have trusted to the safety of their massive walls; hence the fearful destruction of life in the South European and South American cities, which have now and then been visited by the resistless shocks of such earthquakes differing from a common tremor as the rush of the maelstrom differs from the ripple of a summer sea.

That concussions of that sort have caught thousands of human beings asleep might seem a conclusive proof that the caprices of the Titan, Seismos, cannot be predicted for a single hour; yet those who have suffered the most from his spite would be the last to admit that any serious earthquake ever failed to send

its warnings before, though they might confess that the symptoms of those warnings are neither infallible nor free from the ambiguity of certain weaker prognostics. A low barometer, for instance, may portend a storm, a period of tedious thaws, or a first-class earthquake. In a volcanic region a premonitory shock may be the death-knell of thousands, or as insignificant as a puff of wind on a breezy sea-coast. The "restlessness of animals" may indicate all sorts of things a storm, a forest fire, a heavy thunder-shower. The invasion of their eyries often sets water-fowl circling about the sky with ominous cries. The "sudden silence of locusts and crickets," which a Virginia correspondent of the New York "Slants Zeitung" noticed on the evening of the Charleston earthquake, is as often observed in any chilly night, or before a heavy gale. Domestic animals may become "restless" from a mere disorder of the digestive process.

The *niebla*, or earthquake haze, is a less ambiguous symptom. Both before and during volcanic disturbances, a curious, wide-spread mist has been so often observed in the plutonic mountain regions of Spanish America that the natives have come to regard it as an almost infallible omen cither of an earthquake or an unusually violent eruption. On the last day of August, it was observed all over the western Alleghanies, as far west as Huntsville, Alabama, as well as all along the coast-waters of our Atlantic border. Captain Smitherick, of the American bark "Robert Dixon," felt a shock as if the vessel had grounded, and remarks that "for a day or two the weather had been strangely murky, seeming to portend the approach of a storm." At the mouth of the Chesapeake Bay the United States revenue-cutter "Ewing" was overtaken by a storm, coming and going in abnormally fitful blasts, while the horizon was clouded by a grayish haze, which reminded one of the officers of the appearance of the sky on the eve of the great eruption of 1868, when a tidal wave nearly swamped the United States steamer "Watoree," then off Arica, on the coast of Peru. Before the earthquake of 1826, a similar mist was for weeks observed along the west coast of South America, and as far north as the West Indian archipelago, where the creoles regarded it with growing alarm, dreading another outbreak of the volcano which nearly exploded the island of Saint Vincent in 1812. In the volcanic uplands of Java, where it is an almost yearly phenomenon, the natives unhesitatingly ascribe it to the action of subterranean fires; and it should, indeed, be presumed that the expansive vapors, up heaving a continent, would now and then succeed in forcing their way through the fissures and caverns of a mountain region; and it is a curious fact

that the appearance of the earthquake haze often coincides with the sudden outburst of hot springs (or geysers, as in the valley of the Yellowstone).

It is not easy to see how either phenomenon could be explained by the *impending* "collapse of the primary rocks", wing to the gradual contraction of the earth's crust, which the advocates of the subsidence theory identify with the main cause of seismic disturbances. Nor could the subsidence of subterranean strata explain the peculiar long-continued rhythmical vibrations, which so often follow a severe earthquake shock, and which the originator of a more plausible theory explains as follows: "When the subterranean fires effect an irruption at the bottom of the sea, a vast volume of steam is evolved explosively, and being forced against the deep and cold water of the sea, a blow of the most tremendous sort is thus given at the volcanic focus, and transmitted outwardly as the earthquake shock. The surface of the ignited material, though now cooled down below the point at which steam can be generated rapidly, still *keeps up a fierce ebullition*, *which, is transmitted as the vibration after the shock*." (Mr. Henry Mallet's report to the British Association).

Whenever such steam explosions force their way into the rock-caverns of the nether world, the interaction of the irruptive force and the resisting pressure of the imprisoned air would explain the still more curious phenomenon of subterranean thunders which have often almost deafened the inhabitants of volcanic districts, as in 1842, when the Boars *(los Bramidos)* of Vera Paz stampeded the natives of a Guatemala mountain village, and continued for nearly half a month with ever increasing violence, though attended only by trifling tremors of the upper rock strata.

The progress of geology has encouraged the hope that its revelations will yet enable us to predict earthquakes with nearly as much certainty as our meteorologists have already learned to predict atmospheric disturbances. The possibility of such forecasts would, however, depend on a more precise determination of the primary causes of seismic phenomena, and an important step in that direction would be the explosion of sham theories, and what might be called the compromise tenets, attempting to bridge the chasms between science and mythology.

The serious refutation of such self-contradictory cant as the ratiocination of the astrological oracle-school would be an insult, not only to science, but to the memory of those quasi-scientific empirics who for hundreds of years made the aspect of the firmament the basis for speculations on all sorts of

natural and supernatural events, and could hardly have failed to recognize the synchronism of planetary conjunctions and such notable phenomena as earthquakes and earth-shaking hurricanes. But science may find it a harder task to explode the fallacies of logical inferences based on erroneous premises, and which, in spite of the evident unsoundness of that basis; still continue to obstruct the path to the goal of a tenable exegesis. That exegesis may prove to be at variance with all sorts of established dogmas; but, like the Copernican theory, it will prevail by solving many riddles.

Los sismos en las relaciones generales sobre Venezuela y Colombia

81

G. A. Thompson. "Guaira", *The Geographical and Historical Dictionary of America and the West Indies*, Londres, 1812, vol. II, pp. 183-184.

Since this article was prepared for press, we have to insert some particulars respecting the dreadful calamity with which the unfortunate city of Guaira has been visited. On the 26th March 1812, a most dreadful shock of an earthquake was felt here: it lasted about two minutes. The city was laid in ruins, and numbers of the inhabitants were killed and buried in them. The city of Caracas, we understand, has experienced a still worse fate, and has been totally abandoned by the unfortunate inhabitants. The rocks and mountains were rent asunder; and it is impossible for pen to describe the devastation occasioned by this horrible explosion. Hundreds of the inhabitants of Guaira were seen mixed with heaps of ruins, and many of them still yet alive with their heads out, imploring assistance from their fellow-citizens, who, instead of affording them aid, were throwing themselves prostrate before images, beating their breasts, and imploring for themselves the protection of their saints. When the alarm had in some degree subsided, the bodies of the dead were sought for; but we have not been able to ascertain the extent of the loss which this hapless city has sustained.

82

Anónimo, "History of Europe. Chap. XVI: Spanish America. Erroneous Policy of the Mother Country. Rise and Progress of the Revolutionary Movements in Venezuela. Miranda takes the Command. Earthquake at Caracas in March 1812, and consequent Submission of the Province", *The Edinburgh Annual Register, for 1811*, Edinburgh, 1813, vol. 14, parte 1, pp. 393-394.

In a Country so thinly peopled, and without manufactures, men could not be provided for war without taking them from agriculture; and while the new government raised soldiers by force, the crops were left to perish upon the ground for want of hands to gather them. This was soon felt in the treasury; there was also a growing discontent in the great body of the people, who now began to experience the privations and miseries of the revolution into which

they had been deceived, as well as hurried; and among the revolutionists themselves that disposition manifested itself which makes them the ministers of vengeance upon each other. Miranda, notwithstanding his late success, was denounced to the executive as a tyrant. The first cry in such cases is seldom successful, and before his party had lost their ascendancy, the catastrophe was produced by an event as awful as it was unexpected.

On March 26th, 1812, at seven minutes after four in the afternoon, an earthquake was felt over the whole captaincy. The shock was slight at first, but it increased during the space of a minute, and terminated in a sharp and jerking motion, which, in the course of two seconds, laid Guayra and Caracas, St Carlos, Barquisimeto, and many other towns, in ruins. The walls were thrown down, the fortifications destroyed, the road between Guayra and the capital broken up with chasms, or filled with the wreck of the mountain; at the former place above 1.500 persons perished, and more in the later. This dreadful visitation happened upon Holy Thursday; and it had been upon Holy Thursday that the independent party had first disclaimed the authority of the regency, and commenced their revolutionary career. The people who escaped instantly remembered this, and in the midst of the horrors around them, exclaimed, that it was a judgment upon them for their rebellion, and demanded the restoration of the old government. This was the general cry; and though the government published an edict, forbidding any person to say that the earthquake was a judicial punishment on pain of death, the opinion spread, and effectually paralyzed their strength. The people were the more confirmed in this belief, because Coro, Valencia, and Maracaybo, received no injury from the earthquake, though it was felt there.

83

Anónimo, "Notes of Colombia", *The United States Review and Literary Gazette*, Boston, marzo de 1827, vol. I, Nº 6, pp. 423-424.

La Guayra, with an incommodious and somewhat dangerous harbor, is the seat of a considerable commerce, particularly with the English West India Islands. It contains about four thousand and five hundred inhabitants, its population having been greatly thinned since 1810, by earthquakes, pestilence, and an exterminating war. Here the rain scarcely ever falls, and the average temperature is eighty- two degrees of Farenheit. The yellow fever was never known in the place until the opening of the port to foreign commerce; and

the inhabitants, who are zealous opposers of the theory of its domestic origin, maintain that it was first brought in a brig from Philadelphia. Yet this disease is rarely heard of beyond the ridge of mountains by which the city of Caracas is divided from this port.

From La Guayra, the traveller and his party proceeded, on mules, by the celebrated road to Caracas. This road is six or eight miles in length across the mountains; its width is generally twelve feet, and it is paved from end to end, in order to prevent its being washed away by the rains. The highest point in this pass is nearly five thousand feet above the level of the sea, and is reached by a steep and difficult ascent from La Guayra. A series of turns and windings then succeed, called by the expressive name of *Las Vueltas*, which keep for the distance of a mile and a half on the same level, and then the road descends rapidly to the valley of Caracas, where the city stands, at an elevation of two thousand nine hundred feet above the level of the sea. As the traveller approaches, he finds that one fifth of the city, consisting of its most elevated parts, extending up the side of the mountain at the foot of which the town is built, lies in ruins. Nearly the whole of the city was laid prostrate, and nine or ten thousand of its inhabitants perished in the great earthquake of 1812. Twenty thousand persons were destroyed in the province of Venezuela by this terrible convulsion of nature. The Congress of the United States was in session when the news of this calamity arrived, and forgetting in their sympathy all qualms about the constitutional right and the obligations of neutrality, for Venezuela was then in a state of rebellion, they instantly and unanimously resolved to send five vessels freighted with provisions to the relief of the sufferers. The Venezuelans are not ungrateful, and the benefaction is not forgotten.

84

James Bell, *A System of Geography, Popular and Scientific, or a Physical, Political and Statistical Account of the World and its Various Divisions*, Glasgow, 1832, vol IV, p. 30 y pp. 45-46.

[...]

An awful catastrophe soon took place, which terminated the career of Miranda, and for a season put the captaincy of Venezuela in complete possession of the royalists. This was the earthquake of 1812. Immediately after its occurrence, the cities round about hastened to send Monteverde, the royalist commander, their submission, and the advanced towards the capital, Caraccas,

while the congress, as a last remedy, made Miranda dictator, who proclaimed martial law.

[...].

Eatrhquakes. No country has been more frequently visited with destructive earthquakes than the coast of the Caraccas. To attempt to assign the physical cause of this frequency would be vain, as the cause of earthquakes is still involved in obscurity. The city and the province of Cumana, seem to be the quarter where these are felt in the greatest violence. They are connected with those in the West Indies, and are even suspected of having some connexion with the volcanic phenomena of the Andes. The great earthquake which destroyed so many cities and villages in the plain of Quito, in February, 1797, was followed by a visitation equally destructive, at Cumana, on the 14th of December, the same year. At the same period, the inhabitants of the Eastern Antilles were alarmed by shocks which continued eight months; and the volcano of Guadaloupe threw out pumice stones, ashes, and gusts of sulphureous weapons. In The Caracas, as in Peru and Chili, the shocks followed the course of the shore, and extend but little inland. They are generally preceded by subterraneous noises. The earthquake of 1766 was preceded by a drought of 15 months' continuance; the whole of the houses were overwhelmed in the space of a few minutes, and the shocks were hourly repeated during 14 months. In several parts of the providence of Cumana, the earth opened and threw out sulphurous waters, especially in a plain two leagues east of Cariaco, known by the name of the 'hollow ground,' because entirely undermined by hot springs. The year 1794, were mere horizontal oscillations: but on the above-mentioned disastrous 14th December, 1797, the shocks were vertical; and for the first time, the motion was felt by the heaving up of the ground. More than four-fifths of the cities were entirely destroyed; and the shock, attended by a very loud subterraneous noise, resembled the explosion of a mine at a great depth. Happily, the most violent shock was preceded by a slight undulating motion, so that the greater part of the people escaped to the streets, and a small number only of those who perished who had assembled in the churches. A most awful visitation of this kind took place in the province of Venezuela, on the 26th of March, 1812. The shock was slight at first, but it increased during the space of a minute, and terminated in a sharp and jerking motion, which in the course of two seconds laid Guayra, Caraccas, St Carlos, Barquisimeto, and many other towns in ruins. In Guayra above 1.500 persons perished and altogether more than 12.000 persons lost their lives in

this terrible catastrophe, which happened upon Holy Thursday. The total ruins of city of Caraccas, preceded the explosion of the Sufriere volcano, in the island of St Vincents, just 35 days -a fresh proof of the extraordinary connection, between these earthquakes and those of the West India Island; for the Sufriere had emitted no flames since 1718, till April, 1812, when the eruption was preceded by repeated earthquakes for 11 months.

Figura 38: Mapa que publica James Bell en su texto *A System of Geography, Popular and Scientific, or a Physical, Political and Statistical Account of the World and its Various Divisions*, p. 45.

85

Anónimo, "Earthquake of 1812", *Colombia. Comprising its Geography, History, and Topography*, Boston, 1833, pp. 114-124.[163]

The pen of M. Humboldt has supplied us with a vivid and affecting description of the awful convulsion which overwhelmed the town, and changed, in some places, the surface of the soil. A shock had been felt at Caracas in the month of December 1811. From that time, however, the inhabitants were undisturbed till, on the 7th and 8th of February, 1812, the earth was, day and night, in perpetual oscillation. A great drought prevailed at this period throughout the province. Not a drop of rain had fallen at Caracas, or for ninety leagues

[163] N de A: Este texto es publicado parcialmente también en *The Modern Traveller. A descripcion, Geographical, Historical and Topographical of the Various Countries of the Globe*, por Josiah Conder, Londres, 1830, pp. 121-132. La inserción del texto de Humboldt forma parte de la larga estela de citas, referencias y menciones al sabio alemán, tomadas de su *Personal Narrative*, la cual es insertada aquí en la entrada 92. Hay referencias, citas y versiones de este texto también en las entradas 57, 60, 61, 64, 65, 73, 78, 87 y 97.

round, during the five months which preceded the destruction of the capital. The 26th of March, the fatal day, was remarkably hot; the air was calm, the sky unclouded. "It was Holy Thursday, and a great part of the population was assembled in the churches. Nothing seemed to presage the calamities of the day. At seven minutes after four in the afternoon, the first shock was felt; it was sufficiently powerful to make the bells of the churches toll; it lasted five or six seconds, during which time the ground was in a continual undulating movement, and seemed to heave up like a boiling liquid. The danger was thought to be past, when a tremendous subterraneous noise was heard, resembling the rolling of thunder but louder, and of longer continuance than that heard [ilegible] the tropics in time of storms. This noise preceded a perpendicular motion of three or four seconds, [ilegible] by an undulatory movement somewhat longer. The shocks were in opposite directions, from north to south, and from east to west. Nothing could resist the movement from beneath upward and the undulations, crossing each other. The town of Caracas was entirely overthrown. Thousands of the inhabitants (between 9 and 10.000) were buried under the ruins; of the houses and churches. The procession had not yet set out, but the crowd was so great in the churches, that nearly 3 or 4.000 persons were crushed by the fell of their vaulted roofs. The explosion was stronger toward the north, in that part of the town situate nearest the mountain of Avila and the Silla. The churches of La Trinidad and Alta Gracia, which were more than 150 feet high, and the naves of which were supported by pillars of twelve or fifteen feet in diameter, left a mass of ruins scarcely exceeding five or six feet in elevation. The sinking of the ruins has been so considerable, that there now scarcely remain any vestiges of pillars or columns. The barracks, called *El Quartel de San Carlos*, situate further north of the church of the Trinity, on the road from the custom-house de la Pastora, almost entirely disappeared. A regiment of troops of the line, that was assembled under arms, ready to join the procession, was, with the exception of a few men, buried under the ruins of this great edifice. Nine-tenths of the fine town of Caracas were entirely destroyed. The walls of the Houses that were not thrown down, as those of the street San Juan, near the Capuchin Hospital, were cracked in such a manner, that it was impossible to sun the risk of inhabiting them. The effects of the earthquake were somewhat less violent in the western and southern parts of the city, between the principal square and the ravine of Caraguata. There, the cathedral, supported by enormous buttresses, remains standing. Estimating at 9 or 10.000 the number of the dead in the city of Caracas, we do not include those unhappy persons who, dangerously wounded, perished several months

after for want of food and proper care. The night of Holy Thursday presented the most distressing scene of desolation and sorrow. A thick cloud of dust, which, rising above the ruins, darkened the sky like a fog, had, settled on the ground. No shock was felt, and never was a night more calm or more serene. The moon, nearly full, illumined the rounded domes of the Silla, and the aspect of the sky formed a perfect contrast to that of the earth, covered with the dead, and heaped with ruins. Mothers were seen bearing in their arms their children, whom they hoped to recall to life. Desolate families wandered through the city, seeking a brother, a husband, a friend, of whose fate they were ignorant, and whom they believed to be lost in the crowd. The people pressed along the streets, which could no more be recognised but by long lines of ruins. All the calamities experienced in the great catastrophes of Lisbon, Messina, Lima, and Riobamba, were renewed on the fatal day of the 26th of March, 1812. The wounded, buried under the ruins, implored by their cries, the help of the passersby, and nearly two thousand were dug out. Never was pity displayed in a more affecting manner; never had it been seen more ingeniously active, than in the efforts employed to save the miserable victims whose groans reached the ear. Implements for digging and clearing away the ruins were entirely wanting; and the people were obliged to use their bare hands to disinter the living. The wounded, as well as the sick who had escaped from the hospitals, were laid on the banks of the small river Guayra. They found no shelter but the foliage of trees. Beds, linen to dress the wounds, instruments of surgery, medicines, and objects of the most urgent necessity, were buried under the ruins. Every thing, even food, was wanting during the first days. Water became alike scarce in the interior of the city. The commotion had rent the pipes of the fountains; the falling in of the earth had choked up the springs that supplied them; and it became necessary, in order to have water, to go down to the River Guayra, which was considerably swelled; and then vessels to convey the water were wanting. There remained a duty to be fulfilled toward the dead, enjoined at once by piety and the dread of infection. It being impossible to inter so many thousand corpses, half-buried under the ruins, commissaries were appointed to burn the bodies; and, for this purpose, funeral piles were erected between the heaps of ruins. This ceremony lasted several days. Amid so many public calamities, the people devoted themselves to those religious duties which they thought were the most fitted to appease the wrath of Heaven. Some, assembling in processions, sung funeral hymns; others, in a state of distraction, confessed themselves aloud in the streets. In this town was now repeated what had been remarked in the province of Quito, after

the tremendous earthquake of 1797; a number of marriages were contracted between persons who had neglected for many years to sanction their union by the sacerdotal benediction. Children found parents by whom they had never till then been acknowledged; restitutions were promised by persons who had never been accused of fraud; and families who had long been enemies, were drawn together by the tie of common calamity. If this feeling seemed to calm the passions of some, and open the heart to pity, it had a contrary effect on others, rendering them more rigid and inhuman. In great calamities, vulgar minds preserve still less goodness than strength. Misfortune acts in the same manner as the pursuits of literature and the study of nature; their happy influence is felt only by a few, giving more ardour to sentiment, more elevation to the thoughts, and more benevolence to the disposition.

"Shocks as violent as those which, in the space of one minute[164], overthrew the city of Caracas could not be confined to a small portion of the continent. Their fatal effects extended as far as the provinces of Venezuela, Varinas, and Maracaybo, along the coast; and still more to the inland mountains. La Guayra, Mayquetia, Antimano, Baruta, La Vega, San Felipe, and Merida, were almost entirely destroyed. The number of the dead exceeded 4 or 5.000 at La Guayra, and at the town of San Felipe, near the copper-mines, of Aroa. It appears that it was on a line running E.N.E. and W.S.W., from La Guayra and Caracas to the lofty mountains of Niquitao and Merida, that the violence of the earthquake was principally directed. It was felt in the kingdom of New Granada from the branches of the high Sierra de Santa Marta[165] as far as Santa Fé de Bogota and Honda, on the banks of the Magdalena, 180 leagues from Caracas. It was every where more violent in the cordilleras of gneiss and mica-slate, or immediately at their foot, than in the plains; and this difference was particularly striking in the savannas of Varinas and Casanara. (This is easily explained, according to the system of these geologists who admit, that all the chains of mountains, volcanic and not volcanic, have been formed by being raised up, as if through crevices). In the valleys of Aragua, situated between Caracas the town of San Felipe, the commotions were very weak; and La Victoria, Maracay, and Valencia, scarcely suffered at all, notwithstanding their proximity to the capital. At Valecillo, a few leagues from Valencia, the

164 "The duration of the earthquake, that is to say, the whole of the movements of undulation and rising (*undulacion y trepidacion*) which occasioned the horrible catastrophe of the 26th of March, 1812, was estimated by some at 50', by others at 1', 12''."

165 "As far as Villa de Los Remedios, and even to Carthagena."

earth opening, threw out such an immense quantity of water, that it formed a new torrent. The same phenomenon took place near Puerto Cabello.[166] On the other hand, the lake of Maracaybo diminished sensibly. At Coro, no commotion was felt, though the town is situate upon the coast, between other towns which suffered from the earthquake. Fishermen who had passed the day of the 26th of March in the island of Orchila, thirty leagues north-east of La Guayra, felt no shock. These differences in the direction and propagation of the shock are probably owing to the peculiar arrangement of the stony strata. These commotions were very violent beyond Caurimare, in the valley of Capaya, where they extended as far as the meridian of Cape Codera; but it is extremely remarkable, that they were very feeble on the coasts of Barcelona, Cumana, and Paria, though these coasts have formerly been often agitated by subterraneous commotions.

"Fifteen or eighteen hours after the great catastrophe, the ground remained tranquil. The night, as we have already observed, was fine and calm; and the commotions did not recommence till after the 27th. They were then attended with a very loud and long-continued subterranean noise (*bramido)* The inhabitants of Caracas wandered into the country; but the villages and farms having suffered as much as the town, they could find no shelter till they were beyond the mountains of Los Teques, in the valleys of Aragua, and in the llanos or savannas. No less than fifteen oscillations were often felt in one day. On the 5th of April, there was almost as violent an earthquake as that which overthrew the capital. During several hours, the ground was in a state of perpetual undulation. Large masses of earth fell in the mountains; and enormous rocks were detached from the Silla of Caracas. It was even asserted, and this opinion prevails still in the country, that the two domes of the Silla sunk fifty or sixty toises; but this assertion is founded on no measurement whatever. I am informed that in the province of Quito, also, the people, at every period of great commotions, imagine that the volcano of Tunguragua is diminished height.

"While violent commotions were felt at the same time in the valley of the Mississippi, in the island of St Vincent, and in the province of Venezuela, the inhabitants of Caracas, of Calabozo, situate in the midst of the steppes, and on the borders of the Rio Apura, in a space of 4.000 square leagues, were terrified, on the 30th of April, 1812, by a subterraneous noise, which resembled frequent

[166] "It is asserted, that in the mountains of Aroa, the ground, immediately after the great shocks, was found covered with a very fine and white earth, which appeared to have been projected through crevices."

discharges of the largest cannon. This noise began at two in the morning. It was accompanied by no shock, and, which is very remarkable, it was as loud on the coast as at eighty leagues' distance inland. It was every where believed to be transmitted through the air; and was so far from being thought a subterraneous noise, that at Caracas, as well as at Calabozo, preparations were made to put the place into a state of defence against an enemy, who seemed to be advancing with heavy artillery. Mr Palacio, crossing the Rio Apura below the Orivante, near the junction of the Rio Nula, was told by the inhabitants, that the '*firing of a cannon*' had been heard as distinctly at the western extremity of the province of Varinas, as at the port of La Guayra to the north of the chain of the coast.

"The day on which the inhabitants of Terra Firma were alarmed by this subterraneous noise, was that on which happened the great eruption of the volcano in the island of St Vincent. This mountain, near 500 toises high, had not thrown out any lava since the year 1718. Scarcely was any smoke perceived to issue from its top, when, in the month of May 1811, frequent shocks announced that the volcanic fire was either rekindled or directed anew toward that part of the West Indies. The first eruption did not take place till the 27th of April, 1812, at noon. It was only an ejection of ashes, but attended with a tremendous noise. On the 30th, the lava passed the brink of the crater, and, after a course of four hours, reached the sea. The noise of the explosion 'resembled that of alternate discharges of very large cannon and of musketry; and, which is well worthy of remark, it seemed much louder at sea, at a great distance from the island, than in sight of land, and near the burning volcano.'

"The distance in a straight line from the volcano of St Vincent to the Rio Apura, near the mouth of the Nula, is 210 leagues.[167] The explosions were consequently heard at a distance equal to that between Vesuvius and Paris. This phenomenon, connected with a great number of facts observed in the Cordilleras of the Andes, shews how much more extensive the subterranean sphere of activity of a volcano is, than we are disposed to admit from the small changes effected at the surface of the globe. The detonations heard during whole days together in the New World, 80, 100, or even 200 leagues distant from a crater, do not reach us by the propagation of the sound through the air; they are transmitted to us by the ground.[168]"

[167] Where the contrary is not expressly stated, nautical leagues of twenty to a degree, or 2.855 toises, are always to be understood.

[168] Humboldt, Pers. Narr. vol. iv. pp. 12-27.

[…]

The moral, or, rather, political effects of the earthquake of 1812, were scarcely less disastrous than the actual destruction of life which it occasioned. The provinces, of Venezuela had, on the 11th of July, 1811, by a public declaration of independence, thrown off the yoke of Spain. On the 23th of December, the new constitution had been agreed to by the congress, and its first session was to have been held at Valencia in March 1812. The cause wore at this period every appearance of prosperity. At the very moment of the earthquake, a battalion of troops under Colonel Xalon, stationed at Barquesimeto, were preparing to march in order to attack the royalists of Coro, when the barracks were thrown down, and a great part of the soldiers were buried under the ruins, their commander being severely wounded. The clergy of Caracas, which had been shorn of some of their privileges by the new constitution, immediately proclaimed that the earthquake was an evidence of the wrath of the Almighty.[169] A universal panic seized the minds of the people, and, unable to withstand the tide of public opinion which now set in against them, the congress adjourned their sessions. Miranda, on whom the supreme command of the army had devolved, found himself obliged to capitulate, on honourable terms, indeed, but which were most atrociously violated by the royalists. Cumana and Barcelona submitted in consequence to the authority of the infamous Monteverde, and the old government was without difficulty completely re-established throughout Venezuela. Every gaol was filled with the patriots, and the horrible atrocities acted in Caracas, with the avowed object of intimidating the insurgents throughout the Spanish colonies, led to that re-action which has [ilegible] issued in the establishment of the national independence.[170]

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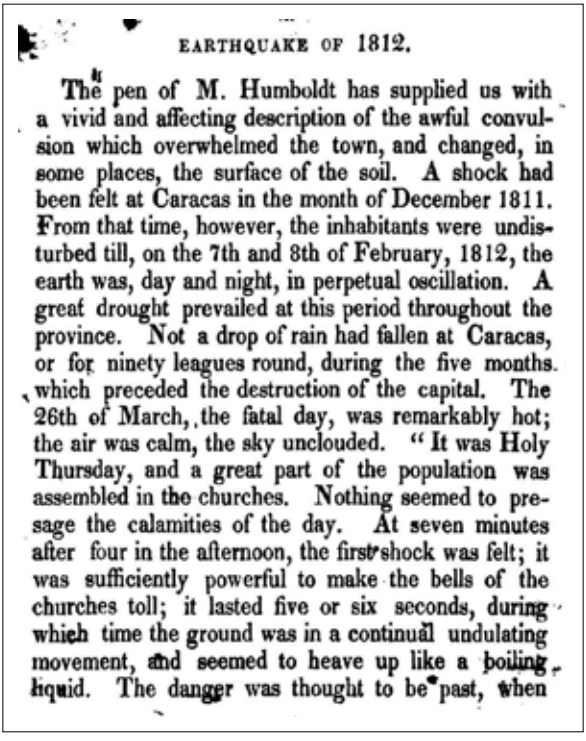
[169] Two hundred and seventy-nine years before (A.D. 1533), the sudden overflowing of the Cotopaxi had struck [ilegible] the Indians at the period of the arrival of the Spaniars, and the conquest of Quito was facilitated by the convulsion of nature. A panic terror, excited by the formal excommunication of the insurgents, is also believed to have paralised the operations of Hidalgo in the first revolution¬ary movements in Mexico.—See Mod. Trav. Mexico, vol. i, p. 99.

[170] "After the recital of so many calamities," says M. Humboldt, in concluding the melancholy detail of the effects of the earthquake, "it is soothing to repose the imagination on consolatory remembrances. When the great catastrophe of Caracas was known in the United States, the congress, assembled at Washington, unanimously agreed, that five ships laden with flour should be sent to the coast of Venezuela, to be distributed among the poorest inhabitants. So generous a supply was received with the warmest gratitude; and this solemn act of a free people, this mark of a national interest, of which the increasing civilisation of our old Europe displays but few recent examples seemed to be a valuable pledge of the mutual benevolence that ought forever to unite the nations of both Americas."



EARTHQUAKE OF 1812.

The pen of M. Humboldt has supplied us with a vivid and affecting description of the awful convulsion which overwhelmed the town, and changed, in some places, the surface of the soil. A shock had been felt at Caracas in the month of December 1811. From that time, however, the inhabitants were undisturbed till, on the 7th and 8th of February, 1812, the earth was, day and night, in perpetual oscillation. A great drought prevailed at this period throughout the province. Not a drop of rain had fallen at Caracas, or for ninety leagues round, during the five months which preceded the destruction of the capital. The 26th of March, the fatal day, was remarkably hot; the air was calm, the sky unclouded. "It was Holy Thursday, and a great part of the population was assembled in the churches. Nothing seemed to presage the calamities of the day. At seven minutes after four in the afternoon, the first shock was felt; it was sufficiently powerful to make the bells of the churches toll; it lasted five or six seconds, during which time the ground was in a continual undulating movement, and seemed to heave up like a boiling liquid. The danger was thought to be past, when

Figura 39: Detalle de los fragmentos de la narración de Humboldt insertos en el escrito de *Colombia. Comprising its Geography, History, and Topography*, p. 114.

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George Ripley and Charles A. Dana (eds.), "Caracas", *The New America Cyclopædia: a Popular Dictionary or General Knowledge*, New York, 1863, vol. IV, p. 413.

The town was visited by an earthquake in 1812, by which about 12.000 persons are said to have perished. The earthquake of 1826 also contributed to diminish the population and to injure town. It has, however, been rebuilt since, and the population is believed to have risen again to about 50.000, and by some authorities even to 68.000.

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Anónimo, "Little Venice", *The Eclectic Magazine of Foreign Literature*, New York, octubre de 1869, pp. 490-494.

[…]

Mr. Eastwick arrived at Caracas in the midst of a *fiesta*, which indeed it would seem difficult to avoid. South American Catholicism is very joyous and buoyant in its manifestations. Bell-ringing and fire-works are perpetually going on; and the women, who, at Caracas, are remarkably beautiful and graceful, are perpetually meeting together, and walking to the churches in bevies, a religious exorcise which is regarded with much approbation by the male sex. The Venezuelan ladies have dark complexions and little bloom, but they "whip creation," according to enthusiastic Yankee evidence, in the attractive particulars of large black eyes, brilliantly white teeth, slight waists, and faultless foot and ankles. The site of the Venezuelan capital is both strong and beautiful, but Valencia would be a better seat of government, as it possesses the richest soil and the best seaport in South America. The environs of the capital are sadly interesting, by reason of the traces at the awful earthquake of 1812, which did its work with suddenness almost as appalling as that which destroyed Manila. There is much simple force in this description: "On Holy Thursday, 26th March, 1812, the churches were crowded with ladies dressed in their gayest attire. The chapels of the convents were filled with nuns, the streets with people from the neighboring villages. At the barracks of San Carlos, a regiment of six hundred men wore mustering under the walls. There was not a cloud in the sky, or a thought of danger in the heart of any one. Suddenly the earth seemed to move upward, the church-bells tolled, and a tremendous subterranean noise was heard. The perpendicular motion lasted four seconds, and was instantly succeeded by a violent undulatory movement, which continued six seconds more. In those ten seconds that great city, with fifty thousand inhabitants, had become a heap of blood-stained ruins. The churches of Alta Gracia and Trinidad, with towers one hundred and fifty one feet high, were so completely levelled, that in their place only shapeless mounds remained, spread out to a great distance, but not more than five feet high, every convent was destroyed, and of the inmates scarcely one escaped. The barrack of San Carlos was hurled forward from its base, and of the six hundred soldiers mustering below its walls, not a man was left alive. A vast cloud of dust rose up to heaven, and with it ascended the shrieks of more than twenty thousand human beings dying or wounded in the ruins. Great

rocks came thundering down from the mountains, and at intervals explosions, like the discharge of innumerable pieces of artillery, were heard beneath the earth."[171] No wonder that the survivors were so terrified that they could not go to their customary work for long afterwards, but were continually absorbed with prayer and religious exorcises. But one would like to know who was the individual who, amid the horror and the appalling danger of the hour, timed the earthquake so neatly as to know it lasted just ten seconds.

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Thomas R. Dawley, Jr., "Some notes about Venezuela", *Cosmopolitan: a Monthly Illustrated Magazine*, New York, febrero de 1896, pp. 410-417.

Upon the extreme northern coast of South America lies that country which has been recently attracting the attention of three continents. It takes its name from the discovery, by the early voyagers, of a people living in huts constructed on piles driven into the shallow water along the shore of the great Lake Maracaybo. To this aboriginal village they gave the name of "Little Venice," or Venezuela, as it is rendered in Spanish. In time the name spread to the whole of the upper coast.

[…]

The next important epoch in Venezuelan history was when Simon Bolivar undertook and accomplished the liberation of the people. In July, 1811, the declaration of independence was signed in Caracas, but the maintenance of the independence so declared involved a continuous war for ten years. Finally, at the battle of Carabobo, the Bolivar forces completely routed the royalist army, and the freedom of the republic of Venezuela, bought with the blood of patriots, was assured. It was not until the year 1845, however, that the Spanish government acknowledged Venezuela's independence, a treaty of peace being that year signed at Madrid. Later on an English pirate marched to the city of Caracas and took possession. The Venezuelan forces had gone to meet the adventurer but, unfortunately, had taken the wrong road; they however succeeded in driving out the freebooters without great loss to themselves.

[171] N de A: Esta es otra de las tantas veces que Humboldt es citado, referido o mencionado, a pesar de que en este caso no se le da el crédito a su texto. Hay menciones al sabio alemán tomadas de su *Personal Narrative* en las entradas 57, 60, 61, 64, 65, 73, 78, 85, 87, 92 y 97.

The city of Caracas has been twice entirely destroyed by earthquakes. On the 26th of March, 1812, two successive upheavals occurred, each of ten seconds duration. The city was totally demolished, and more than ten thousand people were buried in the ruins. The greater number of those who survived perished from hunger or from the pestilence which followed.

PORTACHUELO—CARACAS.

SOME NOTES ABOUT VENEZUELA.

By Thomas R. Dawley, Jr.

UPON the extreme northern coast of South America lies that country which has been recently attracting the attention of three continents. It takes its name from the discovery, by the early voyagers, of a people living in huts constructed on piles driven into the shallow water along the shore of the great Lake Maracaybo. To this aboriginal village they gave the name of "Little Venice," or Venezuela, as it is rendered in Spanish. In time the name spread to the whole of the upper coast.

The federation of states, which now constitutes the republic of Venezuela, forms a country larger in extent than all of France, Germany, and the Netherlands together. Its neighbor, which is apparently causing so much trouble, is situated farther down the coast, and bounds Venezuela on the east. The name given to this part of the continent by the Indians of Venezuela and the West Indies was Guiana, meaning the wild coast, which the Indians described as a very mysterious land filled with man-eating Caribs. This wild coast extends from the mouth of the Orinoco to Brazil, from which it is separated by the divide of the Acaray mountains on the south and the Oyapok river on the east. Politically, it is divided into Spanish, English, Dutch, and French Guiana.

While the principal mountains of Venezuela rise directly out of the sea and spread out toward the interior, gradually sinking down to the basin of the Orinoco, the coast of Guiana commences as a mud flat which barely rises above the sea-level. Between the northern mountains of Venezuela and its southern divide are immense tracts of pasture lands, called llanos, interspersed with the splendid forests of the tropics. On the other hand, the mountains of Guiana are situated far in the interior, accessible only after weeks of travel through an unexplored and sparsely inhabited wilderness.

The denudation of the mountains under the heavy rainfall, which here averages annually from one hundred to one hundred and thirty inches, has during the centuries deposited débris along the coast, until the primitive sandy shore of Guiana is found about twenty miles inland. Wherever the land begins to rise from these mud deposits, grand clumps of the Eta palm rear their heads, until a wall of exuberant forest closes in the background.

Then comes the white beach of long ages ago. Miles of this sand, as clean as the driven snow, greet the traveler, throwing up an almost blinding glare under the noonday sun. The native Indian, accustomed to go barefooted all his life, is un-

Figura 40: Detalles de la primera página de la revista *Cosmopolitan: a Monthly Illustrated Magazine*, para febrero de 1896.

KING AND QUEEN OF THE "CARIB" INDIANS.

Figura 41: Imagen de los indígenas Caribes publicada en la revista *Cosmopolitan: a Monthly Illustrated Magazine*, p. 2.

VENEZUELAN STAGE-COACH.

Figura 42: Imagen sobre Venezuela publicada en la revista *Cosmopolitan: a Monthly Illustrated Magazine*, p. 3.

A CARACAS COURTYARD.

Figura 43: Vista sobre un patio de Caracas publicada en la revista *Cosmopolitan: a Monthly Illustrated Magazine*, p. 3.

LA GUAYRA.

Figura 44: Vista de La Guaira publicada en la revista *Cosmopolitan: a Monthly Illustrated Magazine*, p. 4.

without reason that the English colonists desire to hold on to such valuable mineral bearing land.

The English, Spanish, French, and Dutch came into the territory east of Venezuela almost simultaneously. It was a period of wars. The chief pleasure of these neighbors was its bloody attacks and equally bloody reprisals. The history of the world contains no stories of butcheries more cold-blooded than those which took place in these latitudes. The incomers fought, and stole, and plundered.

It was in this vicinity that Morgan operated, burning Maracaybo, sacking the city of Puerto Bello, and committing such acts of pillage as to render his name a terror. Here also moved that French fiend incarnate, Lolonois, whose cruelties stand unequaled.

We hear of the Dutch principally as sturdy traders. From about 1580 they bartered with the natives along the coast of Guiana. At first the Dutchman made his exchanges and returned home to come again next year. After a while he found it to his advantage to leave an assortment

RAILROAD TERMINUS AT LA GUAYRA.

Figura 45: Vista sobre el terminal del ferrocarril en La Guaira publicada en la revista *Cosmopolitan: a Monthly Illustrated Magazine*, p. 6.

STATUE OF BOLIVAR.

Figura 46: Estatua de Bolívar publicada en la revista *Cosmopolitan:a Monthly Illustrated Magazine*, p. 7.

Escritos científicos

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Anónimo, *Aurora de Chile. Periódico Ministerial y Político*, Chile, 28 de enero de 1813, tomo 2, Nº 4, pp. 1-2.

El temblor de Venezuela ha despertado el fanatismo, y ha sido un escandalo para los enemigos de la libertad publica, mirandolo como un efecto de la cólera celeste. Un modo de pensar tan indigno de unos tiempos de tanta ilustracion y filosofia, prueba bien la necesidad de que se hagan en lengua vulgar los buenos estudios, para que se generalizen los conocimientos; é igualmente debe existir la vigilancia de la administracion.

Los terremotos no son mas que fenomenos de la naturaleza, pero fenomenos terribles. Por ellos experimenta la faz nuestro globo las mas funestas revoluciones, y presenta á la vista del fisico, en una infinidad de lugares, un asombroso monton de ruinas y destrozos: ciudades derribadas, montes hendidos, trasladados, arruinados; provincias enteras sumergidas, inmersos distritos arrancados del continente; dilatados paises sepultados baxo de las aguas; otros descubiertos; islas que repentinamente han salido de las entrañas de los mares.Tal es el espectaculo horroroso que presentan los temblores.

Las causas de que proceden, son la inflamacion de las materias conbustibles, contenidas en las entrañas de la tierra: el ayre encerrado en sus cabidades, dilatado por estos incendios y que hace violentos esfuerzos por ensancharse y huir: el agua reducida á vapores, y que eleva don prodigiosa fuerza quanto se opone á su expansion; y en fin la electricidad, causa fecunda de los fenomenos mas asombrosos, del relampago, del trueno y del rayo; materia que llena la inmensidad de los espacios, siempre dispuesta á moverse y á mover á otros cuerpos, y que animada del movimiento se inflama, é independiente de toda inflamacion estremece, en instantes indivisibles, y hasta unas distancias prodigiosas, masas enormes.

En efecto, la tierra en infinitos parages esta llena de materias combustibles. Lo anterior del globo encierra inmensas capas de hulla, de montones de betunes, de turbas, de azufre, de alambre, de sulfates, ó alcaparrosas, de piritas &c., materias todas muy á proposito para exitar incendios y conservarlos.

Las substancias bituminosas y aluminosas que acompañan á las minas de alambre y de carbon de tierra, despues de amontonadas y expuestas por algun tiempo al sol y á la llubia, se encienden por si mismas, y despiden llamas, cuyos fenomenos son los mismos que los que presenta la Quimica en sus inflamaciones de los aceytes por los acidos y en los piroforos. Sabemos que hay subterraneos de minas que suelen estar llenos de vapores que prenden facilmente produciendo efectos violentos y terribles: algunos de estos vapores se inflaman por si mismos en encontrando á otros, ó en mezclandose con el ayre puro al que ponen en gran expansion, produciendo un trueno subterraneo. Estos vapores resultan principalmente de la descomposicion de las piritas, que se hallan diseminadas con abundancia en todas las partes de la tierra. Todos saben que si se hace una mezcla de una parte de carbon de tierra y de dos partes de la pirita que da sulfate, resulta una masa, que amontonada, se enciende por si misma al cabo de cierto tiempo, y se consume enteramente. El arte ha sabido imitar en pequeño lo que hace en grande la naturaleza: mesclando azufre y limaduras de hierro, se tiene una masa humedeciendolas, que enterrada, produce los efectos de los temblores y volcanes despues de cierto tiempo.

Lo interior de la tierra contiene cantidades mui considerables de ayre y de fluidos elasticos, que se contienen en las grutas y cavidades de que abunda; ellos salen con silvido y apagan las luces al romper las piedras en muchas minas. Este ayre, ayudado de la accion del fuego, se esfuerza en todas direcciones para habrirse paso, y sus esfuerzos son proporcionados á la cantidad de materias encendidas, al volumen de ayre puesto en expansion y á la resistencia que oponen las rocas que lo rodean. Nadie ignora los prodigiosos efectos que debe producir el ayre en este estado, y ellos deben operarse necesariamente en lo interior de la tierra.

El agua, que contiene sus profundidades, concurre mui eficazmente á la produccion de los terremotos. La accion del fuego reduce el agua á vapores, ya poca fisica que se sepa, se comprehendera que nadie puede compararse con la fuerza irresistible de estos vapores, puestos en expansion, quando no tienen salida; todo lo qual acreditan, entre otros experimentos, los de la maquina de Papin, los efectos de la bomba de fuego &c. El agua pues reducira á vapores por el calor en las cavidades de la tierra no hallando salida, levanta los peñascos, y produce bamboleos violentos. Seran tambien sus efectos prodigiosos, si llega á caer sobre las materias inflamadas, en cuyo caso se verificaran terribles explosiones: asi si cae un poco de agua sobre un metal en fusion, saltan los talleres, y se originan efectos tristes y formidables.

Interesa tocar una de las circunstancias que acompañan á los terremotos. Sus sacudidas y estragos siguen por lo regular una direccion señalada, con lo que sucede que un temblor conserva edificios y paredes, que no estan colocados en aquella direccion, y destruye enteramente á los que se hallan en direccion opuesta, asi aquel gran terremoto, que tomó principio en los incendios del volcan de Tunguragua, arruino lastimosamente á Riobamba, Ambato &a. y dexo sin lesion á Quito, Ibarra y á muchos otros pueblos.

Todas las partes de la tierra se han visto agitadas por terremotos en diferentes tiempos con mas ó menos violencia. En el imperio de Tiberio se demolieron trece ciudades populosas del Asia con muerte de innumerables habitantes. La celebre ciudad de Antioquia experimento igual suerte, y á penas pudo escapar del desastre el Emperador Trajano, que se hallaba en ella. En 742 hubo un terremoto universal en Egipto y en todo el oriente, arruinandose en una sola noche cerca de seis cientas ciudades, con muerte de un prodigioso numero de hombres. En 1755 se arruino Lisboa por un temblor que se extendio hasta las extremidades de Europa. En el las aguas del mar se elevaron prodigiosamente y se arrojaron con violencia sobre las costas occidentales del continente europeo: las aguas del Tajo subieron repetidas veces para causar inundaciones. Este mismo temblor se sintio en Africa con violencia y estragos espantosos. Pero fuera mui largo referir todos los temblores que han esparcidos la muerte y el horror por todos los puntos de la tierra, y de que tantos monumentos nos conservan una melancolia memoria. El furor de los elementos no respeta las obras debiles de los hombres, pues estremece y destruye la base solida que les sirve de apoyo, despedazando perpetuamente las entañas de la tierra con violentos incendios, hasta que al cabo muden su centro de gravedad, y haciendose entonces su revolucion diaria sobre un exe diferente, corra la naturaleza el circulo de sus revoluciones.

La America es una de las partes del mundo mas expuestas á estos infaustos accidentes por la inmensa y prodigiosa abundancia de minerales que encierra en sus entrañas. Ella es cierto que abunda en volcanes, los quales son un beneficio de la naturaleza, que dan salida al fuego, al ayre, ý al agua reducida á vapores, con lo que impiden en ciertos tiempos la subversion total del pais. Pero por la accion del fuego se arruina lo interior de los mismos volcanes; tierra y peñascos se precipitan sobre las materias inflamadas, y en fusion; la salida de los fluidos enrarecidos se impide; toda estos agentes poderosos hacen esfuerzos por salir, y proceden terribles conmociones á la erupcion de los volcanes. Por eso hay tanta relacion entre estas erupciones y los temblores. Las

erupciones del Cotopaxi, del Tunguragua, del Pichincha, han sido acompañadas de espantosos terremotos, que se han sentido con viveza, y á veces con estrago en todas la extension de la zona ardiente.

AURORA DE CHILE

¡LUCE BEET POPULOS, SOMNOS EXPELLAT, ET UMBRAS!

No. 4. *Jueves* 28 *de Enero de* 1813. Tomo 2.

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Las substancias bituminosas y aluminosas que acompañan á las minas de alumbre y de carbon de tierra, despues de amontonadas y expuestas por algun tiempo al sol y á la lluvia, se encienden por si mismas, y despiden llamas; cuyos fenomenos son los mismos que los que presenta la Química en sus inflamaciones de los aceytes por los acidos y en los piróforos. Sabemos que hay subterraneos de minas que suelen estar llenos de vapores que prenden facilmente produciendo efectos violentos y terribles: algunos de estos vapores se inflaman por si mismos en encontrando á otros, ó en mezclandose con el ayre puro al que ponen en gran expasion, produciendo un trueno subterraneo. Estos vapores resultan principalmente de la descompicion de las piritas, que se hallan diseminadas con abundancia en todas las partes de la tierra. Todos saben que si se hace una mezcla de una parte de carbon de tierra y de dos partes de la pirita que da selfato, resulta una masa, que amontonada, se enciende por si misma al cabo de cierto tiempo, y se consume enteramente. El arte ha sabido imitar en pequeño lo que hace en grande la naturaleza: mezclando azufre y limaduras de hierro, se tiene una masa humedeciendolas, que enterrada, produce los efectos de los temblores y volcanes despues de cierto tiempo.

Lo interior de la tierra contiene cantidades mui considerables de ayre y de fluidos elasticos, que se contienen en las grutas y cavidades de que abunda; ellos salen con silvido y apagan las luces al romper las piedras en muchas minas. Este ayre, ayudado de la accion del fuego, se esfuerza en todas direcciones para haberse paso, y sus esfuerzos son proporcionados á la cantidad de materias encendidas, al volumen de ayre puesto en expansion, y á la resistencia que oponen las rocas que lo rodean. Nadie ignora los prodigiosos efectos que debe producir el ayre en este estado, y ellos deben operarse necesariamente en lo interior de la tierra.

El agua, que contienen sus profundidades, concurre mui eficazmente á la produccion de los terremotos. La accion del fuego reduce el agua á vapores, y á poca fisica que se sepa, se comprehenderá que nada puede compararse con la fuerza irresistible de estos vapores, puestos en expansion, quando no tienen salida; todo lo qual acreditan, entre otros experimentos, los de la máquina

Figura 47: Portada del periódico *Aurora de Chile* del 28 de enero de 1813.

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Anónimo, "Terremotos, vibraciones de la tierra", en Anónimo, [Louis Delpeche] *Descripción del horrible terremoto, que ha rabiado el año pasado en la provincia de Caraccas en América, y que destruyó la linda ciudad del mismo nombre, así como muchos otros sitios de esta próspera y grande provincia. Asimismo como algunas reflexiones sobre terremotos en general*. 1813.[172]

El horrible terremoto que ocurrió el año pasado en el paisaje de Caraccas, y que destruyó la linda ciudad del mismo nombre, así como muchos otros sitios de esta próspera y grande provincia, hasta la fecha ha sido descrito solamente superficialmente en diarios europeos.

[...]

El horrendo fenómeno, en el cual una parte mayor o menor de la superficie de la tierra es sacudida con vehemencia durante un tiempo largo o corto, y por el cual se generaron una cantidad de los más destacados cambios en nuestra tierra, atrae demasiado la atención del investigador de la naturaleza, a que no quisiera investigar las razones de su accionar. Trechos enteros de la tierra con sus ciudades y pueblos han sido sepultados por terremotos, así como superficies de tierra cubiertas por el agua del mar se convirtieron en tierra seca, colinas y montañas se dividieron y se convirtieron en ciénagas y lagos. Varias islas del océano deben su existencia solo a estas vibraciones violentas, varias montañas rocosas, que resistieron por mil años y quedaron imperturbables frente a cualquier fuerza humana, se partieron y se desintegraron en escombros o desaparecieron de la superficie; corrientes impetuosas, a cuyo curso el hombre no podía darle un destino, se vieron detenidos en su curso y recibieron otro cauce. Aquellos países se ven expuestos a las destrucciones del terremoto de manera preferencial, que se ubican en las orillas del mar, y que se ubican en la cercanía de volcanes o montañas que lanzan fuego. A estos países pertenece en primera instancia la por lo demás bendecida Calabria y la vecina isla de Sicilia, ubicada en la parte baja de Italia. Desde los primeros tiempos se expresaron aquí los horrendos efectos de los terremotos. Desde que los hombres habitan esta región, se desencadenaron los terremotos allí, y desde la antigüedad se afirmó que Sicilia había estado unido en tiempos

[172] N de A: Este texto forma parte de la mencionada *Descripción del horrible terremoto*..., como se señala en el encabezado, la cual pertenece originalmente a Louis Delpeche, tal como se explicó en la entrada Nº 37 donde se aclaran todas las referencias del caso. El editor que realizó esto, incluyó sus reflexiones luego de haber traducido la narración de Delpeche en una inserción hacia el final de esa publicación bajo el título de "Erdbeben, Erderschütterung." La traducción del alemán al español que aquí se presenta pertenece a Michael Schmitz.

pasados con la tierra firme de Italia, pero había sido desprendido de ella por una horrenda vibración de la tierra.

En estas regiones, por lo demás de la naturaleza tan agradecidos, se encuentran dos volcanes; en la tierra firme, cerca de la capital Nápoli, el Vesuvio, y en Sicilia el Aetna, mucho más grande. Como el suelo bendecido, el clima maravilloso y en suma la ubicación feliz de esta tierra atraían desde tiempos tempranos a los hombres a cultivar, también acá, ciudades enteras han sido víctima de terremotos a menudo. Según los cuentos de los viejos escritores, las dos ciudades Herculanum y Pompeji fueron primero, bajo el gobierno de Nero, casi en su totalidad destruidas por terremoto, y 16 años después, sepultadas por ceniza volcánica por una erupción del Vesuvio. Estas ciudades, que, en la segunda mitad del siglo 18, fueron desenterrados y liberadas parcialmente de los escombros debajo, nos han provistas monumentos muy importantes de la antigüedad. Desde estas erupciones horrendas se experimentaron un montón uno tras otro, cuya larga serie persigue hasta nuestros tiempos.

No menos horrendo se desencadenaron los terremotos incluso ahora en otras partes distantes de la tierra, por ejemplo en Perú. En tiempos pasados, es decir hace varios milenios, los terremotos deben haber sido más frecuentes en nuestra tierra, que actualmente; por que solo en Alemania y el sur de Francia, como en muchos países europeos y fuera de Europa, se muestran huellas claras de ello.

Los terremotos más horribles ocurrieron en los años 1746, 1755, 1774 y 1783. Por el primero fueron devastados Callao y Lima en Perú, ciudades que ya desde su nacimiento han sido expuestos a fuertes acometicimientos. El 1ro de noviembre de 1755, Lisboa fue destruida por un horrendo terremoto, que se sintió al mismo tiempo en gran parte de la superficie de la tierra, desde Groenlandia hasta África. Las destrucciones horrendas que causó el terremoto 1783 en Calabria, todavía quedan en memoria fresca.

Cuando Lisboa fue destruida, todavía en Alemania, Noruega, Suecia y en Suiza se percibieron movimientos extraños del agua. Pero en diferentes sitios en Francia, y casi en toda España y en una parte considerable del norte de África, se sintieron efectos serios. Sí incluso en América se manifestaron al mismo tiempo huellas de las vibraciones. El fenómeno extraordinario fue acompañado por un levantamiento violento del mar, que tenía como consecuencia una inundación casi generalizada de la costa occidental de nuestra tierra firme. Las aguas del Tajo se derramaron varias veces encima de los escombros de la ciudad ya destruida.

Se observó que los terremotos muchas veces siguieron a años húmedos, y frecuentemente les precedieron estrellas fugaces, bolas de fuego y otros meteoros brillantes, así como vapores con olor a azufre, un aire caliente y sofocante que convirtió la luz del sol en rojizo con nubes espesas y negras; pero también se conocen suficientes ejemplos, en los cuales los terremotos ocurrieron en un aire despejado y tranquilo. Los animales les tienen un presentimiento, que lo manifiestan por un lloriqueo y aullido angustioso; las aves vuelan en el aire de un lado al otro; muchas veces se puede escuchar un estruendo subterráneo, que se parece al crujido de disparar de un cañon grande. En muchos sitios retroceden las aguas de los ríos, de los pozos y fuentes, y muchas veces se ajustan recién después de un tiempo, enturbiados por arena y tierra. Casi siempre, los terremotos están asociados con movimientos fuertes del mar. Los barcos en los puertos se chocan, e incluso en alta mar sufren vibraciones extrañas.

El efecto de los terremotos se manifiesta por tres tipos de movimientos, de los cuales a veces solo se siente uno, muchas veces pero los tres. El primero consiste en vibraciones horizontales del piso, que, en caso de que sean violentos y persistentes, destruyen el suelo y todo que se encuentra encima. El segundo consiste en golpes hacia arriba, que empujan la corteza hacia arriba, no pocas veces también la rompe, y que se hunde solo parcialmente o por completo. El agua, por su liquidez, sigue a estos movimientos con más rapidez que la corteza terrestre, así como se retiró de repente el Tajo en Lisboa, para volver a subir, dentro de 4 minutos, 30 pies encima de su altura usual. El tercer movimiento parece a una explosión, o a una violenta voladura que actúa en todas las direcciones, con lo cual frecuentemente brotan llamas de la tierra, y arrojó agua, ceniza, tierra y piedras por las aperturas quebrantadas. Este último movimiento tiene el mayor parecido con las erupciones volcánicas. Estas explosiones fueron las que destruyeron en 1646 a la mayor parte de Lima dentro de 3 minutos, inundaron a Callao, hundieron a 24 barcos, y dejaron escapar de las 4.000 personas solamente 200. En la noche entraron 4 volcanes en erupción, que es el grado mayor y más horrendo del terremoto, y, después de alcanzarlo, generalmente se atenuaron. Muchas veces, los golpes de las vibraciones de la tierra apenas siguen después de intervalos interinos largos, pero muchas veces también muy rápidamente uno tras otro. En Lima se sintieron más de 200 en un lapso de 24 horas. Casi siempre toman una cierta raya, por lo cual podrán quedar perdonadas edificaciones cercanas que se encuentran fuera de esta raya. También la duración de los terremotos es muy diversa. En Sudamérica, algunos se desencadenaron por años y casi a

diario se sentía su dimensión. La mayoría de los terremotos es restringida a ciertas, no muy extensos trechos, y solamente de vez en cuando se extienden muy lejos. Así menciona Plinius un terremoto que tuvo lugar en el año 17 AD en Asia Menor, y que se extendía unas 300 millas en diámetro. Ya en tiempos anteriores se esforzaba de identificar las causas de estos horrendos fenómenos. Al comienzo, cuando todavía se consideraba el fuego central en el interior, se derivaban los terremotos de allí. Sin embargo, poco a poco se comprendía lo absurdo y arbitrario de esta explicación, y se comenzaba de ayudarse los orígenes de los terremotos más cercano a la superficie de la tierra. Por una parte, se colocaba allí mismo el fuego interior más cercano a la superficie, por otra parte se trataba de ayudarse con vientos y vapores, que se pensaba están encerrados en cavernas y caminos subterráneos. Posteriormente se deducía las causas de minerales inflamables que se encuentran debajo la tierra y que se encendía por alguna circunstancia.

Más tarde se tomaba su refugio en la electricidad y buscaba derivar los terremotos de allí. Así suponía por ejemplo Beccaria, que el equilibrio de la electricidad había sido perturbado en el fondo profundo de la tierra, y que éste se levantaba por varios golpes estremecedores hacia la atmósfera u otras partes de la superficie de la tierra. Invocaba con eso diferentes circunstancias que acompañaban la mayoría de las erupciones del Vesuvio, por ejemplo los rayos frecuentes que se notaban en ellas, seguidas por estruendos como truenos, y que los golpes de los terremotos no son un levantamiento paulatino, sino vibraciones repentinas, parecidas a golpes eléctricos. Para poner el Orión de los terremotos aún más a la luz, Beccaria y Cavallo realizaron experimentos eléctricos que deberían comprobar claramente sus afirmaciones; sin embargo, el último mismo confesó que sus experimentos no llevaron a nada más que suposiciones y que solamente quiere originar otras investigaciones con ellos. Abbé Bertholon de St. Lazare, y junto con el varios naturalistas franceses, buscaban las causas de los terremotos solo en la electricidad. Ahora mismo, Bertholon basaba un experimento en su opinión, según el cual se podría derivar los terremotos. Propone para este fin una larga barra de hierro, que debería enterrarse lo más profundo posible, provista en el lado superior, así como en el lado enterrado, con una corona de varias puntas. El lado inferior de la barra debería, con sus puntas en todas las direcciones, mantener una conexión conductiva con la materia eléctrica que se encuentra en la tierra y hacer que la electricidad del interior de la tierra se encuentre en equilibrio constante con la atmósfera o, en caso de una perturbación de la misma, abrirse un camino

inofensivo para su paso. En Alemania, esta propuesta ha tenido aceptación, por lo cual se recomendó, para alcanzar tal fin, erigir pirámides en las zonas que están expuestas a las vibraciones de la tierra.

Se comprende fácilmente, que toda esta propuesta se basa en los mismos principios que los pararrayos; solo que la identidad de los terremotos con tormentas subterráneas no es nada más que hipótesis, mientras que la identidad de las tormentas con la electricidad está plenamente comprobada. Aún si en caso de terremotos se perciben fenómenos eléctricos, lo que no puede negarse, de ninguna manera la electricidad es la causa principal de estos horrendos fenómenos naturales; antes bien es evidente, de su conexión con los volcanes y, generalmente con un suelo en el cual se encuentran aberturas, cavernas, materiales inflamables e inflamaciones y calentamientos subterráneos, que deben ser efectos del fuego subterráneo, que también es el motivo de los volcanes y de los manantiales calientes.

Si nos imaginamos este fuego subterráneo en conexión con aire y agua, entonces encontramos en él motivos suficientes para la creación de los terremotos. La fuerza, que pueden ejercer los vapores confinados contra objetos que se resisten a su propagación, es increíble, y la potencia del agua y sus vapores, confinado en un espacio angosto y calentado hasta el ardor, es tan enorme, que no puede ser calculada. Una potencia parecida también manifiesta, como es conocido, aire confinada y calentada. En el caso de terremoto pueden actuar ambos, tanto agua como aire. Como el primero se convierte a vapores debido a inflamaciones subterráneas, estos se deben procurarse ellos mismos una salida a través de explosiones violentas, ya que no encuentran salida en las aberturas subterráneas de manera de un ascenso paulatino. Lo mismo hace el aire que se expande al máximo en las aberturas subterráneas debido al calor.

Se puede hacerse una idea en pequeño de la tremenda potencia de agua convertida en vapores, si se vierte agua en metal fundido. En ciertas circunstancias, hasta una sola gota es capaz de hacer mucho.

El origen de los terremotos deja explicarse tan franco y natural de las causas expuestas, se encuentran sin embargo problemas en la explicación de la expansión y propagación extraordinariamente rápida de las mismas. En el mismo instante que fue destrozado Lisboa, ya se sintieron los efectos del terremoto en América. ¿No debería actuar acá la electricidad? De hecho, esta rápida propagación parece mucho a un golpe eléctrico y es bien posible, que

también actúan fenómenos eléctricos juntos, pero también podría ser, que las aberturas subterráneas se extienden muy lejos, y entonces esta rápida propagación también podría explicarse bien sin electricidad.

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Manuel Palacio Fajardo, "An Account of the Earthquake of Caraccas", *The Journal of Science and the Arts*, Londres, 1817, vol. II, Art. XIX, Nº III, pp. 400-402.[173]

The ridge of mountains which branches out from the Andes near the isthmus of Panama, and which, taking the direction of the eastern coast, crosses part of New Granada, and Venezuela, seems to have been the seat of that earthquake which on the 26th March, 1812, destroyed many populous towns of the province of Caraccas. It is this branch of the Cordilliera that forms the Sierra-nevada of Chita, that of Merida-de-Maracaybo, and the height called La-Silla-de-Caracca; and it is between these three remarkable points that the mines of gold of Pamplona, the mineral water of Merida-de-Maracaybo, and the mines of copper of Aroa, are found. Between the picturesque Sierra-nevada of Merida-de-Maracaybo, and La-Silla-de-Caraccas where spring is perpetual, the earthquake was most strongly felt.

At the southeast of this ridge of mountains, there are plains of an immense extent, covered with different species of grasses, and watered by innumerable torrents, which falling from the mountains, and uniting in different bodies, majestically enter the Orinoco. These plains were likewise convulsed for above one hundred and twenty leagues in Venezuela: the towns situate immediately at the foot of the Cordilliera, or in the valleys between them, suffered most severely: those seated in the plains did not suffer considerable injury, though violently shaken. For five months a continued drought had parched the earth, no rain having fallen, and in the preceding month of December, a slight shock of an earthquake had been felt at Caraccas. It was on the eve

[173] N de A: Existe una traducción al español realizada por Franco Urbani y publicada en el *Boletín de Historia de las Geociencias en Venezuela* (Caracas, Nº 74, 1991, pp. 222-229), dentro del artículo titulado "Manuel Palacio Fajardo (1784-1819) y su contribución a las ciencias naturales." Palacio Fajardo posee otras referecias en estas trasncripciones; en la entrada 42 se inserta un extracto de su *Outline of the Revolution in Spanish America* (New York, 1817); en la entrada 47 se observa la transcripción de un extracto del texto anterior; en la entrada 92 es citado directamente por Humboldt en su *Personal Narrative*, cuando hace mención al manuscrito titulado "Apuntamientos sobre las principales circunstancias del terremoto de Caracas"; y en la entrada 95 su artículo publicado en *The Quarterly Review*, precisamente, es referido por Leigh Hunt.

of the crucifixion, when Catholics assembled together in their churches to commemorate with public prayers and processions the sufferings and merits of their Redeemer that this sad catastrophe happened. The weather was fine, the air serene, when between four and five P.M. a hollow sound like the roar of a cannon was heard, which was followed by a violent oscillatory motion from west to east, which lasted about seventeen seconds, and which stopped all the public clocks; the convulsion diminished for some moments, but was succeeded by a more violent shock than the first for twenty seconds almost, keeping the same direction; a calm followed, which lasted about fourteen seconds, after which the most alarming trepidation of the earth took place for fifteen seconds. The total duration about one minute and fifteen seconds. The inhabitants of Caraccas, struck with terror, unitedly and loudly implored the protection of heaven; some ran wildly through the streets; some remained immoveable with astonishment; while others crowding into the churches, sought refuge at the foot of the altar. The crash of falling buildings, the clouds of dust from their ruins, which filled the air, the anxious cries of mothers, who inquired in vain for their children lost in the tumult, increased the horrors of this sad day. To this scene of disorder succeeded the most horrible despair. Dead bodies, wounded persons, crying for protection, presented themselves every where to those who had escaped from the catastrophe, and who could not turn their eyes from these objects of pity and horror without meeting with heaps of ruin, which had buried hundreds of unfortunate persons, whose lamentations uselessly pierced their hearts, for it was impossible to give relief or assistance to all.

It has been computed that in this calamitous day, near twenty thousand persons perished at Venezuela. A great part of the veteran troops were of this number; and all the arms destined for the defence of their country were buried under the ruins of the barracks. The towns of Caraccas, Merida-de-Maracaybo, and Laguaira were totally destroyed; those of Barquirineto, Sanfelipe, and others, suffered considerably. It is to be remarked that Truxillo, which is situate between Merida-de-Maracaybo, and Sanfelipe, experienced very little damage. At the last place, near the mines of Aroa, the first signal they had of the earthquake was an electric shock, which deprived many persons of their power of motion; and in Valencia, Caraccas, and the neighbouring country, the inhabitants were for about twenty days after the earthquake, in an extraordinary state of irritability. Many persons, who suffered from intermittent fevers, recovered immediately in consequence of the effect of the earthquake.

At Vallecillo, near Valencia, a rivulet spouted out from a hill, which continued to flow for some hours after the earthquake, and which I visited a few days after. The river Guaira, which runs through the valley of Caraccas, was greatly swelled soon after the earthquake, and remained in that state for several days. The water of the bay of Maracaybo withdrew considerably, and it is said that the mountain Avila, which separates Caraccas from Laguaira, sunk several feet into the earth.

The earthquakes continued for many days, we may say, without interruption; they diminished as it were by degrees, though the last were remarkably strong. So late as the month of October of the same year there was a violent shock. The earthquake of the 26th March was felt at Santafé-de-Bogotá, and even at Carthagena, though it was very little felt at Cumana.

In the following April a volcano burst out in the island of St. Vicent. About the time of the eruption, a noise like that of a cannon was heard at Caraccas and Laguaira, which caused a general alarm, the inhabitants of each place supposing that the neighbouring town was attacked by the enemy. This roaring noise was distinctly heard, where the river Nula falls into the Apure, which is more than one hundred leagues from Caraccas.

In the same year, 1812, many strong shocks of an earthquake were felt at Jamaica, and Curacoa.

The earthquake of the 26th March alarmed so deeply the inhabitants of Venezuela that they expected to see the earth open and swallow them at every convulsion, and it having happened on the anniversary of their political revolution, made them suppose it had incurred the displeasure of the Almighty. The clergy who were enemies to the revolution, as their privilege had been diminished by the new constitution of Venezuela, availed themselves of the disposition of the people, and preached every where against the new republic. Such was the beginning of the civil war at Venezuela; a war which has desolated those beautiful countries, and which has destroyed the tenth part of their population.

M. Palacio Faxar [por Fajardo].

London, the 1st December, 1816.

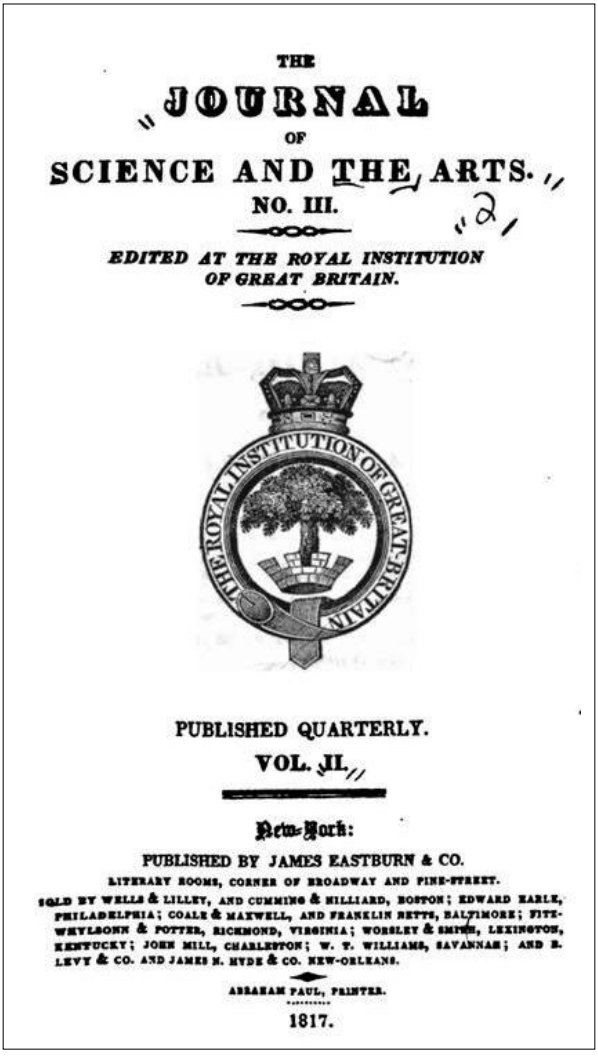

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Figura 48: Portada de la revista *The Journal of Science and the Arts*, volumen II, 1817.

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Alejandro de Humboldt, *Personal Narrative of travels to the Equinoctial Regions of the New Continent during the years 1799-1804 by Alexander de Humboldt and Aimé Bonpland; with maps, plans, &c. written in French by Alexander de Humboldt and translated into English by Helen Maria Williams*, Longman, Hurst, Rees, Orme, and Brown, Paternoster Row, Londres, 1819, vol. II (Libro V, Capítulo XIV, Earthquakes at Caraccas. — Connection of this phenomenon with the volcanic eruptions of the West India islands, pp. 1-55).[174]

[…]

In retracing changes of so general an interest, I shall be led to notice events, that took place long after my return to Europe. I shall pass over in silence the popular commotions, and the modifications which the state of society has undergone. Modern nations, careful of their own remembrance, snatch from oblivion the history of human revolutions, which is that of ardent, passions, and inveterate hatred. It is not the same with respect to the revolutions of the physical world. These are described with the least accuracy, when they happen to coincide with the period of civil dissentions. Earthquakes and the eruptions of volcanoes strike the imagination by the evils, which are their necessary consequence. Tradition seizes in preference whatever is vague and marvellous; and amid great public calamities, as in private misfortunes, man seems to shun that light, which leads us to discover the real causes of events, and recognise the circumstances by which they are attended. I have thought proper to record in this work all I have been able to collect with certainty respecting the earthquake of the 26th of March, 1812, which destroyed the town

[174] N de A: La primera versión de la obra de Humboldt se publicó en francés, en tres volúmenes, entre los años 1814 y 1825, bajo el título *Voyage de Humboldt et Bompland. Première partie. Relation historique* (Chez N. Maze, Libraire, rue Git-leCoeur, Nº4, Paris); allí, el capítulo referente al terremoto de 1812 y sus relaciones con los fenómenos volcánicos de las Antillas, aparece en el tomo II, pp. 1-28, publicado en 1819. Una primera y cuidadosa traducción de la obra al inglés fue realizada en Londres por Helen Maria Williams, con el título de *Personal Narrative of travels to the Equinoctial Regions of the New Continent during the years 1799-1804* (Londres: Longman, Hurst, Rees, Orme, and Brown, Paternoster Row). El capítulo del terremoto aparece en el tomo IV, pp. 1-55. Esta es la versión que se transcribe aquí. Otras versiones resumidas fueron publicadas en *The Annual Register, or a view of the History, Politics and Literature*, bajo el título de "Earthquake in the Caraccas (Humboldt's Travels)", Printed for Baldwin, Cradock, and Joy Londres, 1819, pp. 501-503; así como en el *The Edinburgh Philosophical Journal* (Edimburgo, 1819, vol 1, pp. 272-280), con el nombre "Account of the Earthquake which destroyed Caraccas on the 26th March 1812". La mejor traducción al español de la obra de Humboldt es la realizada por Lisandro Alvarado, Eduardo Röhl y José Nucete Sardi, publicada con el título de *Viaje a las regiones equinocciales del Nuevo Continente*, con ediciones del Ministerio de Educación de 1941 y 1956 (Caracas), y una última de 1991 por la Editorial Monte Ávila (Caracas). La relación del terremoto de Caracas aparece en el tomo III, pp. 7-36. Hay menciones a Humboldt, con especial referencia a este texto, en las entradas 57, 60, 61, 64, 65, 73, 78, 85, 87, 88 y 97.

of Caraccas; and by which more than twenty thousand persons perished almost at the same instant in the province of Venezuela. The intercourse which I have kept up with persons of all classes has enabled me, to compare the description of many eyewitnesses, and to interrogate them on objects, that may throw light on physical science in general. The traveller, being the historian of nature, should authenticate the dates of great catastrophes, examine their connection and mutual relations, and mark in the rapid course of ages, in this continual progress of successive changes, those fixed points, with which other catastrophes may one day be compared. All epochas approach each other in the immensity of time comprehended in the history of nature. Years passed away seem but a few instants; and if the physical descriptions of a country do not excite a very powerful and general interest, they have at least the advantage of never becoming old. Similar considerations, no doubt, led Mr. de la Condamine to describe in his *Voyage à Equateur*, the memorable eruptions of the volcano of Cotopaxi, which took place long after his departure from Quito. Following the example of this celebrated traveller, I think I shall the less deserve blame, as the events which I am going to relate will serve to elucidate the theory of volcanic reactions, or the influence of a system of volcanoes on a vast space of circumjacent country.

At the time that Mr. Bonpland and myself inhabited the provinces of New Andalusia, Nueva Barcelona, and Caraccas, a general opinion prevailed, that the easternmost parts of these coasts were the most exposed to the destructive effects of earthquakes. The inhabitants of Cumana dreaded the valley of Caraccas, on account of its damp and variable climate, and its gloomy and foggy sky; while the inhabitants of that temperate valley considered Cumana as a town, where only a burning air was breathed, and where the soil is periodically agitated by violent commotions. Forgetful of the overthrow of Riobamba, and other very elevated towns; ignorant that the peninsula of Araya, composed of mica-slate, has partaken of the commotions of the calcareous coast of Cumana; well-informed persons thought they perceived motives of security in the structure of the primitive rocks of Caraccas, as well as in the elevated situation of this valley. Religious ceremonies celebrated at La Guayra, and even in the capital, in the middle of the night[175], recalled no doubt to their memory that the province of Venezuela had been subject at

[175] For instance, the nocturnal procession of the 21st of October, instituted in commemoration of the great earthquake, which took place on that day of the month, at one in the morning, in 1778. Other very violent shocks were those of 1641, 1703, and 1802.

intervals to earthquakes; but dangers that seldom recur are slightly feared. Cruel experience destroyed, in 1811, the charm of theory, and of popular opinions. Caraccas, situate in the mountains, three degrees west of Cumana, and five degrees west of the volcanoes of the Caribbee islands, has felt greater shocks, than were ever experienced on the coast of Paria or New Andalusia.

At my arrival in Terra Firma, I was struck with the connection of two physical events, the destruction of Cumana on the 14th of December, 1797, and the eruption of the volcanoes in the smaller West India islands.[176] This connection has been again manifested in the destruction of Caraccas on the 26th of March, 1812. The volcano of Guadaloupe seemed to have reacted, in 1797, on the coasts of Cumana. Fifteen years after, it was a volcano situate nearer the continent, that of St. Vincent's, which appeared to have extended its influence as far as Caraccas and the banks of the Apure. It is possible, that at these two epochas the centre of the explosion was at an immense depth, equally distant from the regions toward which the motion was propagated at the surface of the globe.

From the beginning of 1811 till 1813, a vast extent of the Earth[177], limited by the meridian of the Azores, the valley of the Ohio, the Cordilleras of New Grenada, the coasts of Venezuela, and the volcanoes of the smaller West India islands, has been shaken almost at the same time by commotions, which may be attributed to subterraneous fires. The following series of phenomena seems to indicate communications at enormous distances. On the 30th of January, 1811, a submarine volcano appeared near the island of St. Michael, one of the Azores. At a place, where the sea was sixty fathoms deep, a rock appeared above the surface of the waters. The heaving up of the softened crust of the globe appeara to have preceded the eruption of flames by the crater,[178] as had already been observed at the volcanoes of Jorullo in Mexico, and at the apparition of the little island of Kameni near Santorino. The new islet of the Azores was at first nothing more than a shoal; but on the 15th of January an eruption, which lasted six days, enlarged its extent, and carried it progressively to the height of fifty toises above the surface of the sea. This new land, of which captain Tillard hastened, to take possession in the name of the British government, calling it *Sabrina Island*, was nine hundred toises in diameter. It has again, it seems, been swallowed up by the ocean. This is the third time,

176 See vol. II, p. 231.

177 Between the latitudes of 5° and 86° North, and the meridians of 31° and 91° West from Paris.

178 See vol. I, p. 240.

that submarine volcanoes have presented this extraordinary spectacle near the island of St. Michael; and, as if the eruptions of these volcanoes were subject to a regular period, owing to a certain accumulation of elastic fluids, the island raised up has appeared at intervals of ninety-one or ninety-two years. It is to be regretted, that, notwithstanding the proximity of the spot, no European government, or learned society, has sent natural philosophers and geologists to the Azores, to investigate a phenomenon, which would throw so much light on the history of volcanoes, and on that of the globe in general.

At the time of the appearance of the new island of Sabrina, the smaller West India islands, situate eight hundred leagues to the south-west of the Azores, experienced frequent earthquakes. More than two hundred shocks were felt from the month of May 1811, to Appr 1812, in the island of St. Vincent; one of the three where there are still active volcanoes. The commotion did not remain circumscribed to that insular portion of eastern America. From the 16th of December 1811, the earth was almost incessantly agitated in the valleys of the Missisippi, the Arkansas, and the Ohio. The oscillations were more feeble on the east of the Alleghanies, than to the west of these mountains, in Tennessee and Kentucky. They were accompanied by a great subterraneous noise, coming from the south-west. At the spots between New Madrid and Little Prairie, as at the Saline, north of Cincinnati, in latitude 37° 45', the shocks were felt every day, nay almost every hour, during several months. The whole of these phenomena lasted from the 16th of December 1811, till the year 1813. The commotion, confined at first to the south, in the valley of the lower Missisippi, appeared to advance slowly toward the north. At the same period, when this long series of earthquakes began in the *Transalleghanian States*, in the month of December 1811, the town of Caraccas felt the first shock in calm and serene weather. This coincidence of phenomena was probahly not accidental; for we must not forget, that, notwithstanding the distance which separates these countries, the low grounds of Louisiana, and the coasts of Venezuela and Cumana, belong to the same basin, that of the Gulf of Mexico. This *Mediterranean sea, with several outlets*, runs from the south-east to the north-west; and an ancient prolongation of it seems to be found in those vast plains, rising gradually thirty, fifty, and eighty toises above the level of the ocean, covered with secondary formations, and watered by the Ohio, the Missouri, the Arkansas, and the Missisippi. When we consider geologically *the basin of' the Caribbean sea, and of the Gulf of Mexico*, we find it bounded on the south by the chain of the coast of Venezuela and the Cordilleras of Merida

and Pamplona; on the east by the moun-tains of the West India islands, and the Alleghanies; on the west by the Andes of Mexico, and the Stony Mountains; and on the north by the very inconsiderable elevations which separate the Canadian lakes from the rivers that flow into the Missisippi. More than two thirds of this basin are covered with water. It is bordered by two ranges of active volcanoes; to the east, in the Caribbee islands, between the latitudes of 13° and 16°; and to the west in the Cordilleras of Nicaragua, Guatimala, and Mexico, between 11° and 20'. When we reflect, that the great earthquake at Lisbon, of the 1st of November 1755, was felt almost at the same moment on the coasts of Sweden, at lake Ontario, and at the island of Martinico, it will not appear too daring to suppose, that all this basin of the West Indies, from Cumana and Caraccas as far as the plains of Louisiana, may be simultaneously agitated by commotions proceeding from the same centre of action.

An opinion very generally prevails on the coasts of Terra Firma, that earthquakes become more frequent, when electric explosions have been very rare during some years. It is thought to have been observed, at Cumana and Caraccas, that the rains were less frequently attended with thunder from the year 1792; and the total destruction'of Cumana in 1797, and the commotions felt[179] in 1800, 1801, and 1802, at Maracaibo, Porto Cabello, and Caraccas, have not failed to be attributed to "an accumulation of electricity in the interior of the Earth." It would be difficult for a person, who has lived a long time in New Andalusia, or in the low regions of Peru, to deny, that the season the most to be dreaded from the frequency of earthquakes is that of the beginning of the rains, which is however the time of thunder storms. The atmosphere, and the slate of the surface of the globe, seem to have an influence unknown to us on the changes produced at great depths; and I believe, that the connection, which some persons pretend to recognize between the absence of thunder storms and the frequency of earthquakes, is rather a physical hypothesis framed by the half-learned of the country, than the result of long experience. The coincidence of certain phenomena may be favoured by chance. The extraordinary commotions felt almost continually during two years on the borders of the Missisippi and the Ohio, and which coincided in 1812 with those of the valley of Caraccas, were preceded at Louisiana by a year almost exempt from thunder storms.[180] Every mind was again struck with this phenomenon. We cannot deem it strange, that in the country of Franklin

[179] De Pons, vol. i, p. 123.

[180] *Trans. of New York*, vol. i, p. 285; *Drake*, p. 210.

a great predilection is retained for explanations founded on the theory of electricity.

The shock felt at Caraccas, in the month of December, 1811, was the only one, that preceded the horrible catastrophe of the 26th of March, 1812. The inhabitants of Terra Firma were ignorant of the agitations of the volcano in the island of St. Vincent on one side, and on the other, of those that were felt in the basin of the Missisippi, where, on the 7th and 8th of February, 1812, the earth was day and night in perpetual oscillation. A great drought prevailed at this period in the province of Venezuela. Not a single drop of rain had fallen at Caraccas, or in the country ninety leagues round, during the five months which preceded the destruction of the capital. The 26th of March was a remarkably hot day. The air was calm, and the sky unclouded. It was Holy Thursday, and a great part of the population was assembled in the churches. Nothing seemed to presage the calamities of the day. At seven minutes after four in the afternoon the first shock was felt; it was sufficiently powerful, to make the bells of the churches toll; it lasted five or six seconds, during which time the ground was in a continual undulating movement, and seemed to heave up like a boiling liquid. The danger was thought to be past, when a tremendous subterraneous noise was heard, resembling the rolling of thunder, but louder, and of longer continuance, than that heard within the tropics in time of storms. This noise preceded a perpendicular motion of three or four seconds, followed by an undulatory movement somewhat longer. The shocks were in opposite directions, from north to south, and from east to west. Nothing could resist the movement from beneath upward, and undulations crossing each other. The town of Caraccas was entirely overthrown. Thousands of the inhabitants (between nine and ten thousand) were buried under the ruins of the houses and churches. The procession had not yet set out; but the crowd was so great in the churches, that nearly three or four thousand persons were crushed by the fall of their vaulted roofs. The explosion was stronger toward the north, in that part of the town situate nearest the mountain of Avila, and the Silla. The churches of la Trinidad - and Alta Gracia, which were more than one hundred and fifty feet high, and the naves of which were supported by pillars of twelve or fifteen feet diameter, left a mass of ruins'scarcely exceeding five or six feet in elevation. The sinking of the ruins has been so considerable, that there now scarcely remain any vestiges of pillars or columns. The barracks, called *El Quartel de San Carlos*, situate farther north of the church of the Trinity, on the road from the Custom-house de la Pastora,

almost entirely disappeared. A regiment of troops of the line, that was assembled under arms, ready to join the procession, was, with the exception of a few men, buried under the ruins of this great edifice. Nine tenths of the fine town of Caraccas were entirely destroyed. The walls of the houses that were not thrown down, as those of the street San Juan, near the Capuchin Hospital, were cracked in such a manner, that it was impossible to run the risk of inhabiting them. The effects of the earthquake were somewhat less violent in the western and southern parts of the city, between the principal square and the ravin of Caraguata. There, the cathedral, supported by enormous buttresses, remains standing.[181]

Estimating at nine or ten thousand the number of the dead in the city of Caraccas, we do not include those unhappy persons, who, dangerously wounded, perished several months after, for want of food and proper care. The night of Holy Thursday presented the most distressing scene of desolation and sorrow. That thick cloud of dust, which, rising above the ruins, darkened the sky like a fog, had settled on the ground. No shock was felt, and never was a night more calm, or more serene. The Moon, nearly full, illumined the rounded domes of the Silla, and the aspect of the sky formed a perfect contrast to that of the earth, covered with the dead, and heaped with ruins. Mothers were seen bearing in their arms their children, whom they hoped to recall to life. Desolate families wandered through the city, seeking a brother, a husband, a friend, of whose fate they were ignorant, and whom they believed to be lost in the crowd. 'The people pressed along the streets, which could no more be recognized but by long lines of ruins.'

All the calamities experienced in the great catastrophes of Lisbon, Messina, Lima, arid Riobamba were renewed on the fatal day of the 26th of March, 1812. "The wounded, buried under the ruins, implored by their cries the help of the passers by, and nearly two thousand were dug out. Never was pity displayed in a more affecting manner; never had it been seen more ingeniously active, than in the efforts employed to save the miserable victims, whose groans reached the ear. Implements for digging, and clearing away the ruins were entirely wanting; and the people were obliged to use their bare hands, to disinter the living. The wounded, as well as the sick who had escaped from the hospitals, were laid on the banks of the small river Guayra, They found no shelter but the foliage of trees. Beds, linen to dress the wounds, instruments

181 *Sur le Tremblement de Terre de Venezuela, en 1812, par M. Delpeche*. MS.

of surgery, medicines, and objects of the most urgent necessity, were buried under the ruins. Every thing, even food, was wanting during the first days. Water became alike scarce in the interior of the city. The commotion had rent the pipes of the fountains; the falling in of the earth had choaked up the springs that supplied them; and it became necessary, in order to have water, to go down to the river Guayra, which was considerably swelled; and then vessels to convey the water were wanting.

"There remained a duty to be fulfilled toward the dead, enjoined at once by piety, and the dread of infection. It being impossible to inter so many thousand corpses, half-buried under the ruins, commissaries were appointed to burn the bodies: and for this purpose funeral piles were erected between the heaps of ruins. This ceremony lasted several days. Amid so many public calamities, the people devoted themselves to those religious duties, which they thought were the most fitted to appease the wrath of Heaven. Some, assembling in processions, sung funeral hymns; others, m a state of distraction, confessed themselves aloud in the streets. In this town was now repeated what had been remarked in the province of Quito, after the tremendous earthquake of 1797; a number of marriages were contracted between persons, who had neglected for many years to sanction their union by the sacerdotal benediction. Children found parents, by whom they had never till then been acknowledged; restitutions were promised by persons, who had never been accused of fraud; and families, who had long been enemies, were drawn together by the tie of common calamity." If this feeling seemed to calm the passions of some, and open the heart to pity, it had a contrary effect on others, rendering them more rigid and inhuman. In great calamities vulgar minds preserve still less goodness than.strength: misfortune acts in the same manner, as the pursuits of literature and the study of nature; their happy influence is felt only by a few, giving more ardour to sentiment, more elevation to the thoughts, and more benevolence to the disposition.

"Shocks as violent as those, which in the space of one minute[182] overthrew the city of Caraccas, could not be confined to a small portion of the continent. Their fatal effects extended as far as the provinces of Venezuela, Varinas, and Maracaybo, along the coast; and still more to the inland mountains. La Guayra, Mayquetia, Antimano, Baruta, La Vega, San Felipe, and Merida,

[182] The duration of the earthquake, that is to say the whole of the movements of undulation and rising (*undulacion y trepidación*), which occasioned the horrible catastrophe of the 26th of March, 1812, was estimated by some at 50", by others at 1' 12".

were almost entirely destroyed. The number of the dead exceeded four or five thousand at La Guayra, and at the town of San Felipe, near the copper mines of Aroa. It appears that it was on a line running EastNorth-East, and West-South-West, from La Guayra and Caraccas to the lofty mountains of Niquitao and Merida, that the violence of the earthquake was principally directed. It was felt in the kingdom of New Grenada from the branches of the high Sierra de Santa Martha[183] as far as Santa Fe de Bogota and Honda, on the banks of the Magdalena, one hundred and eighty leagues from Caraccas. It was every where more violent in the Cordilleras of gneiss and mica-slate, or immediately at their foot, than in the plains: and this difference was particularly striking in the savannahs of Varinas and Casanara. (This is easily explained according to the system of those geologists, who admit, that all the chains of mountains, volcanic and not volcanic, have been formed by being raised up, as if through crevices). In the vallies of Aragua, situate between Caraccas and the town of San Felipe, the commotions were very weak: and La Victoria, Maracay, and Valencia, scarcely suffered at all, notwithstanding their proximity to the capital. At Valecillo, a few leagues from Valencia, the earth, opening, threw out such an immense quantity of water, that it formed a new torrent. The same phenomenon took place near Porto-Cabello.[184] On the other band, the lake of Maracaybo diminished sensibly. At Coro no commotion was felt, though the town is situate upon the coast, between other towns which suffered from the earthquake".[185] "Fishermen, who had passed the day of the 26th of March in the island of Orchila, thirty leagues North-East of La Guayra, felt no shock. These differences, in the direction and propagation of the shock, are probably owing to the peculiar arrangement of the stony strata.

Having thus traced the effects of the earthquake to the West of Caraccas, as far as the snowy mountains of Santa Marta, and the table land of Santa Fe de Bogota, we will proceed to consider their action on the country East of the capital. The commotions were very violent beyond Caurimare, in the valley of Capaya, where they extended as far as the meridian of Cape Codera: but it is extremely remarkable, that they were very feeble on the coasts of Nueva Barcelona, Cumana, and Paria; though these coasts are the continuation of the shore of La Guayra, and formerly known to have been often agitated

183 As far as Villa de Los Remedios, and even to Carthagena.

184 It is asserted, that in the mountains of Aroa, the ground, immediately after the great shocks, was found covered with a very fine and white earth, which appeared to have been projected through crevices.

185 *Apuntamientos sobre las principals circuinstancias del Terremoto de Caracas, por Don Manuel Palacio Faxardo*. MS.

by subterraneous commotions. Admitting, that the destruction of the four towns of Caraccas, La Guayra, San Felipe, and Merida, may be attributed to a volcanic focus placed under or near the island of St. Vincent, it may be conceived, that the motion might have been propagated from North-East to North-West[186] in a line passing through the islands of Los Hermanos, near Blanquilla, without touching the coasts of Araya, Cumana, and Nueva Barcelona. This propagation of the shock might even have taken place, without the intermediate points at the surface of the Globe, the Hermanos Islands for instance, having felt any commotion. This phenomenon is frequently remarked at Peru and Mexico, in earthquakes which have followed during ages a determinate direction. The inhabitants of the Andes say with simplicity, speaking of an intermediary ground, which is not affected by the general motion, "that it forms a bridge" (*que hace puente*): as if they meant to indicate by this expression, that the undulations are propagated at an immense depth under an inert rock.

Fifteen or eighteen hours after the great catastrophe, the ground remained tranquil. The night, as we have already observed, was fine and calm; and the commotions did not recommence till after the 27th. They were then attended with a very loud and long continued subterranean noise (*bramido*). The inhabitants of Caraccas wandered into the country; but the villages and farms having suffered as much as the town, they could find no shelter till they were beyond the mountains of Los Teques, in the valleys of Aragua, and in the Llanos or Savannahs. No less than fifteen oscillations were often felt in one day. On the 5th of April there was almost as violent an earthquake, as that which overthrew the capital. During several hours the ground was in a state of perpetual undulation. Large masses of earth fell in the mountains; and enormous rocks were detached from the Silla of Caraccas. It was even asserted, and this opinion prevails still in the country, that the two domes of the Silla sunk fifty or sixty toises; but this assertion is founded on no measurement whatever. I am informed, that in the province of Quito also, the people, at every period of great commotions, imagine, that the volcano of Tunguragua is diminished in height.—It has been affirmed, in many descriptions published of the destruction of Caraccas, "that the mountain of the Silla is an extinguished volcano; that a great quantity of volcanic substances are found on the road from La Guayra to Caraccas[187]; that the rocks do not present any

[186] Nearly in a line directed South, 64° West.

[187] See the account given by Mr. Drouet of Guadaloupe, translated in the *Trans. of New York*, vol. i, p, 308.

regular stratification; and that every thing bears the stamp of the action of fire." It is even added, "that, twelve years before the great catastrophe, Mr. Bonpland and myself, from our physical and mineralogical researches, had considered the Silla as a very dangerous neighbour to the city, because that mountain contained a great quantity of sulphur, and that the commotions must comefromthe North-East." It is seldom that natural philosophers have to justify themselves for an accomplished prediction; but I think it my duty to combat ideas, that are too easily adopted on the *local causes* of earthquakes.

In all those places where the soil has been incessantly agitated for whole months, as at Jamaica in 1693, Lisbon in 1755, Cumana in 1766, and Piedmont in 1808, a volcano is expected to open. People forget, that it is far from the surface of the Earth we must seek the focus or centre of action; that, according to undeniable evidence, the undulations are propagated almost at the same instant across seas of an immense depth, at a distance of a thousand leagues; and that the greatest commotions take place not at the foot of active volcanoes, but in chains of mountains composed of the most heterogeneous rocks. We have given in the preceding book a geognostical description of the country round Caraccas; we there find gneiss, and mica-slates, containing beds of primitive limestone. The strata are scarcely more fractured or irregularly inclined than near Freyberg in Saxony, or wherever mountains of primitive formation rise abruptly to great heights. I there found neither basaltes nor dolerite, nor even trachytes or trapporphyries; nor in general any trace of an extinguished volcano, unless we choose to consider the diabases or primitive gruenstein, contained in gneiss, as masses of lava, which have filled up fissures. These diabases are the same as those of Bohemia, Saxony, and Franconia; and whatever opinion is entertained on the ancient causes of the oxidation of the Globe at its surface, all those primitive mountains, which contain mixtures of hornblende and feldspar, either in veins, or in balls with concentric layers, will not, I suppose, be called volcanic formations. Mont Blanc and Mont d'Or will not be ranged in the same class. The partizans of a universal volcanism, or of the ingenious Huttonian theory, themselves make a distinction between the lavas, which were melted under the simple pressure of the atmosphere at the surface of the Globe, and those layers formed by fire beneath the immense weight of the ocean and superincumbent rocks. They

The author, in giving to the Silla nine hundred toises of *absolute* height, has confounded the height of the mountain, in my measurement, above the level of the sea, with its height above the valley of Caraccas, which makes a difference of four hundred and sixty toises.

would not confound Auvergne and the granitic valley of Caraccas under the same denomination, that of a country of extinct volcanoes.

I never could have uttered the opinion, that the Silla and the Cerro de Avila, mountains of gneiss and mica-slate, were a dangerous vicinage for the capital, because they contained a great deal of pyrites in *subordinate beds* of primitive limestone. But I remember having said, during my stay at Caraccas, that the eastern extremity of Terra Firma appeared, since the great earthquake of Quito, in a state of agitation, which led to an apprehension, that the province of Venezuela would gradually be subjected to violent commotions. I added, that when a country had been long subject to frequent shocks, new subterraneous communications seemed to open with neighbouring countries; and that the volcanoes of the West India islands, lying in the direction of the Silla, to the North-East of the city, were perhaps the vents by which, at the time of an eruption, those elastic fluids gushed out, that cause the earthquakes on the coasts of the continent. These considerations, founded on a local knowledge of the place, and on simple analogies, are very far from a prediction justified by the course of physical events.

While violent commotions were felt at the same time in the valley of the Missisippi, in the island of St. Vincent, and in the province of Venezuela, the inhabitants of Caraccas, of Calabozo, situate in the midst of the steppes, and on the borders of the rio Apura, in a space of four thousand square leagues, were terrified on the 30th of April, 1812, by a subterraneous noise, which resembled frequent discharges of the, largest cannon. This noise began at two in the morning. It was accompanied by no shock; and, which is very remarkable, it was as loud on the coast as at eighty leagues distance inland. It was every where believed to be transmitted through the air; and was so far from being thought a subterraneous noise, that at Caraccas, as well as at Calabozo, preparations were made to put the place into a state of defence against an enemy, who seemed to be advancing with heavy artillery. Mr. Palacio, crossing the rio Apura below the Orivante, near the junction of the rio Nula, was told by the inhabitants, that the "*firing of cannon*" had been heard as distinctly at the western extremity of the province of Varinas, as at the port of La Guayra to the North of the chain of the coast.

The day on which the inhabitants of Terra Firma were alarmed by a subterraneous noise was that on which happened the great eruption of the volcano in the island of St. Vincent. This mountain, near five hundred toises high, had not thrown out any lava since the year 1718. Scarcely was any smoke

perceived to issue from it's top, when, in the month of May, 1811, frequent shocks announced, that the volcanic fire was either rekindled, or directed anew toward that part of the West Indies. The first eruption did not take place till the 27th of April, 1812, at noon. It was only an ejection of ashes, but attended with a tremendous noise. On the 30th, the lava passed the brink of the crater, and, after a course of four hours, reached the sea. The noise of the explosion "resembled that of alternate discharges of very large cannon and of musketry; and, which is well worthy of remark, it seemed much louder at sea, at a great distance from the island, than in sight of land, and near the burning volcano."

The distance in a straight line from the volcano of St. Vincent to the rio Apura, near the mouth of the Nula, is two hundred and ten leagues.[188] The explosions were consequently heard at a distance equal to that between Vesuvius and Paris. This phenomenon, connected with a great number of facts observed in the Cordilleras of the Andes, shows how much more extensive the subterranean sphere of activity of a volcano is, than we are disposed to admit from the small changes effected at the surface of the Globe. The detonations heard during whole days together in the New World, eighty, one hundred, or even two hundred leagues distant from a crater, do not reach us by the propagation of the sound through the air; they are transmitted to us by the ground, perhaps in the very place where we happen to be. If the eruptions of the volcano of St. Vincent, Cotopaxi, or Tunguragua, resounded from afar, like a cannon of an immense magnitude, the noise ought to have increased in the inverse ratio of the distance: but observations prove, that this augmentation does not take place. I must further observe, that Mr. Bonpland and I, going from Guayaquil to the coast of Mexico, crossed latitudes in the South Sea, where all the mariners of our ship were affrighted by a hollow sound, that came from the depth of the ocean, and was transmitted to us by the waters. It was the period of a new eruption of Cotopaxi, and we were as far distant from that volcano, as Etna from the city of Naples. The little town of Honda, on the banks of the Magdalena, is not less than one hundred and forty-five leagues from Cotopaxi; and yet in the great explosions of this volcano, in 1744, a subterraneous noise was heard at Honda, and supposed to be-discharges of heavy artillery. The monks of St. Francis spread the news, that the town of Carthagena was besieged and bombarded by the English;

[188] Where the contrary is not expressly stated, nautical leagues of twenty to a degree, or two thousand eight hundred and fifty-five toises, are always to be understood.

and the intelligence was believed throughout the country. Now the volcano of Cotopaxi is a Cone, more than one thousand eight hundred toises above the basin of Honda, and rises from a table-land, the elevation of which is more than one thousand five hundred toises above the valley of the Magdalena. In all the colossal mountains of Quito, of the province of Los Pastos, and of Popayan, crevices and valleys without number are interposed. It cannot be admitted, under these circumstances, that the noise could be transmitted through the air, or by the superior surface of the Globe, and that it came from that point, where the cone and crater of Cotopaxi are placed. It appears probable, that the higher part of the kingdom of Quito and the neighbouring Cordilleras, far from being a group of distinct volcanoes, constitute a single swollen mass, an enormous volcanic wall, stretching from South to North, and the crest of which exhibits a surface of more than six hundred square leagues. Cotopaxi, Tunguragua, Antisana, and Pichincha, are placed on this same vault, on this raised ground. They are differently named, although they are only different summits of the same volcanic mass. The fire issues sometimes from one, sometimes from another of these summits. The obstructed craters appear to us to be extinguished volcanoes; but we may presume, that, while Cotopaxi or Tunguragua have only one or two eruptions in the course of a century, the fire is not less continually active under the town of Quito, under Pichincha and Imbaburu.

Advancing toward the North, we find, between the volcano of Cotopaxi and the town of Honda, two other systems of volcanic mountains, those of Los Pastos and of Popayan. The connection of these systems was manifested in the Andes in an incontestible manner by a phenomenon, which I have already had occasion to notice, in speaking of the last destruction of Cumana, Since the month of November, 1796, a thick column of smoke had issued from the volcano of Pasto, West of the town of that name, and near the valley of rio Guaytara. The mouths of the volcano are lateral, and placed on its western declivity, yet during three successive months the column rose so much higher than the ridge of the mountain, that it was constantly visible to the inhabitants of the town of Pasto. They related to us their astonishment, when, on the 4th of February, 1797, they observed the smoke disappear in an instant, without feeling any shock whatever. At that very moment, sixty-five leagues to the South, between Chimborazo, Tunguragua, and the Altar (Capacurcu), the town of Riobamba was overthrown by the most dreadful earthquake, of which tradition has transmitted the history. Is it possible to doubt from this

coincidence of phenomena, that the vapours, issuing from the small apertures or ventanillas of the volcano of Pasto, had an influence on the pressure of those elastic fluids, which shook the ground of the kingdom of Quito, and destroyed in a few minutes thirty or forty thousand inhabitants?

In order to explain these great effects of *volcanic reactions*, and to prove, that the group or system of the volcanoes of the West India Islands may sometimes shake the continent, it was necessary to cite the Cordillera of the Andes. Geological reasoning can be supported only on the analogy of facts that are recent, and consequently well authenticated: and in what other region of the Globe could we find greater and at the same time more varied volcanic phenomena, than in that double chain of mountains heaved up by fire? In that land, where Nature has covered every summit and every valley with her marvels? If we consider a burning crater only as an isolated phenomenon, if We satisfy ourselves with examining the mass of stony substances which it has thrown up, the volcanic action at the surface of the Globe will appear neither very powerful, nor very extensive. But the image of this action swells in the mind, when we study the relations that link together volcanoes of the same group; for instance those of Naples and Sicily, of the Canary islands, of the Azores, of the Caribbee islands, of Mexico, of Guatimala, and of the table-land of Quito; when we examine either the reactions of these different systems of volcanoes on one another, or the distance to which, by subterranean communications, they at the same moment shake the Earth.

[…]

After the recital of so many calamities, it is soothing to repose the imagination on consolatory remembrances. When the great catastrophe of Caraccas was known in the United States, the Congress, assembled at Washington, unanimously decreed, that five ships laden with flour should be sent to the coast of Venezuela, to be distributed among the poorest inhabitants. So generous a supply was received with the warmest gratitude; and this solemn act of a free people, this mark of a national interest, of which the increasing civilization of our old Europe displays but few recent examples seemed to be a valuable pledge of the mutual benevolence, that ought for ever to unite the nations of both Americas.

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Jean Baptiste Boussingault, "Caracas. Temblores de Tierra. Ascensión de la Silla", en *Boussingault Memorias*, Ediciones Centauro, Caracas 1974, pp. 177-179.[189]

Caracas, capital de la antigua provincia de Venezuela, situada a los 10º31' de latitud Norte y a los 69º25' de longitud occidental del meridiano de París, fue fundada en 1567. En 1800 tenía 40.000 habitantes; contaba con ocho iglesias, cinco conventos, una sala de espectáculos, plazas públicas hermosas, aunque sin sombra, como las prefieren los españoles, casas de un solo piso, de arquitectura morisca, elegantes y sencillas, y calles tiradas a cordel, que enmarcan las **cuadras**[190] o sean los cuadriláteros formados por grupos de casas, lo cual le presta esa monotonía común a todas las ciudades de América Meridional.

Cuando la vimos por primera vez su aspecto era muy otro: la había destrozado una terrible conmoción subterránea en la que perecieron de pronto 12.000 de sus habitantes.

En medio de las ruinas de esta ciudad habité yo en 1822.

En diversas épocas el suelo de Venezuela ha sido fuertemente sacudido: en 1641, en 1703, en 1776 y en 1812. La ceremonia religiosa que se celebra todos los años el 21 de octubre en la noche, recuerda uno de los peores terremotos, el de 1775.

En la tarde del 26 de marzo de 1812, a las cuatro y siete minutos, tembló la tierra en Caracas. Tan violenta fue la sacudida que todas las campanas sonaron al vuelo. Inmediatamente después sobrevino otra de diez a doce segundos

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189 N de A: Las *Memorias* de Boussingault fueron editadas originalmente en Paris entre 1892 y 1903. Boussingault estuvo en Caracas en 1822. En 1849 publicó, junto a S. D. Roulin, el libro *Viajes científicos a los Andes Ecuatoriales. Coleccion de Memorias sobre Física, Química e Historia Natural de la Nueva Granada, Ecuador y Venezuela*, con traducción de J. Acosta, París, Librería Castellana, 2, Calle Saint-Germain-des-Prés. Lasserre, Editor. Allí, el célebre francés diría brevemente lo siguiente acerca del sismo de 1812 entre las páginas 51 y 52: "El terremoto que destruyó á Caracas en 1812 ejerció su acción siguiendo la cordillera oriental de los Andes, haciendo caer como un juego de naipes todas las ciudades situadas en aquella dirección. Se ha observado en la América del Sur que los terremotos se sienten principalmente en los terrenos de montañas, y la causa que los produce obra de un modo tan constante, que da lugar á pensar que si se llevase un registro de los terremotos se vería que en una ú otra parte la tierra no cesa de temblar." En 1949 se realizó una edición en Venezuela de las obras de Boussingault, con traducción del francés por parte de Enrique Planchart, la cual iba a ser editada por el Ministerio de Educación. Por entonces, Augusto Mijares era el ministro en ejercicio (lo fue entre 1949 y 1955), y al conocer el contenido de las *Memorias* decidió ordenar incinerarlas por hallarlas lesivas a la memoria del Libertador, especialmente en los pasajes dedicados a Manuelita Sáenz, a quien describía con comportamientos licenciosos y libertinos, algo que enardeció al ministro Mijares. Las *Memorias* verían la luz en Venezuela finalmente hacia 1974, con una edición de la Editorial Centauro.

190 N de A: Así en el original.

de duración. Parecía haber pasado el peligro, cuando de pronto se oyó un espantoso mugido subterráneo, un bramido semejante al del trueno. Agitado el suelo por movimientos convulsivos, las campanas volvieron a sonar por sí solas, en fúnebre doblar. Muchos de sus habitantes quedaron sepultados bajos las ruinas. Era Jueves Santo: Tres o cuatro mil fieles perecieron aplastados bajo las bóvedas de las iglesias. La única que quedó en pie fue la Catedral, sostenida por sus sólidos contrafuertes.

[...].

El terremoto que destruyó a Caracas se sintió en la Cordillera oriental hasta Bogotá, es decir en la dirección O.-S.-O., a más de doscientas leguas de distancia.

En 1822, cuando llegué a Caracas, hubiera creído que la catástrofe era de la víspera, a no ser por las calles limpias de escombros. Me hospedé cerca del antiguo cuartel San Carlos, donde se veían, formando pirámides, las osamentas de los soldados, sacadas de los escombros. La torre cuadrada de un convento, que tenía un reloj de cuatro cuadrantes, resistió al terremoto; pero el reloj se detuvo a las cuatro y siete. Todavía hoy las agujas inmóviles señalan las horas de la destrucción de Caracas.

El terremoto, entre todos los fenómenos naturales, es quizás el que mayor impacto produce, justamente por ser el más inesperado: nada permite preverlo, no tiene indicio precursor. Tanto es así que mientras estuve en La Guaira y en Caracas hubo temblores y no me dí cuenta de ellos sino por la inquietud de la gente y sus gritos de "¡Tiembla! ¡Tiembla!"

[...].

"Cordillera Oriental de los Andes. Su constitución geológica. Efectos del terremoto de 1812 observados en varias localidades. La Sierra Nevada de Mérida. Laguna de Urao", *Boussingault Memorias*, pp. 232; 244-246; 266-267.[191]

En la Cordillera Oriental, siguiendo hasta Bogotá, debíamos continuar la nivelación barométrica comenzada en La Guaira. Además del interés de conocer el relieve de la cadena de montañas y la altura de pueblos y ciudades, se trataba de observar los efectos del terremoto de 1812 durante todo nuestro trayecto en la cordillera, cuidando de señalar la naturaleza de las rocas, con el propósito de ver si la base, el soporte geológico de una ciudad, tiene real influencia sobre las consecuencias de una fuerte conmoción subterránea; esto es,

[191] N de A: Boussingault estuvo en Mérida hacia 1823.

si como comenzábamos a suponerlo, los terrenos de aluvión o aun los terrenos sedimentarios del gran espesor impiden, o al menos atenúan, la propagación de las vibraciones; en una palabra, si existen realmente terrenos que **hacen puente,**[192] según la expresión de los habitantes de los Andes, y protegen los edificios construidos sobre ellos. Esto parecía confirmar lo ya visto desde el comienzo de nuestro viaje. La Guaira, Maiquetía, Caracas, fundadas sobre gneis y granito quedaron casi completamente destruidas; mientras Antímano, San Mateo, Turmero, Maracay y Valencia conservaron todos sus edificios en pie a pesar de que el sacudimiento fue suficientemente fuerte para atemorizar a los habitantes. Ahora bien, el terreno de los valles de Aragua consiste en una toba calcárea o calcáreo desagregado o bien terreno de aluvión.

[…].

El terremoto de 1812 destruyó la mayor parte de la ciudad. Muchas fueron las víctimas, contándose entre ellas el Obispo, quien pereció saliendo de su palacio. La población no era de más de 6.000 habitantes. Tuvimos algunas dificultades para encontrar alojamiento en medio de las ruinas.

Nos acogió, al fin, el jefe político, funcionario cuyo cargo equivale en cierto modo al de subprefecto. Era platero de profesión y gran aficionado a las riñas de gallos. Una docena de campeones amarrados en el patio y atendidos por un negrito cantaban continuamente.

A pesar de la catástrofe, Mérida posee todavía una Universidad, numerosos canónigos y un convento de monjas. Acabábamos de instalarnos, cuando la superiora del convento nos invitó a presentarnos en el locutorio para vernos. Impropio hubiera sido no atender a esta invitación. Las religiosas se hallaban detrás de una reja, velada por una cortina. Una voz nasal nos rogaba caminar, volvernos, etc., para examinarnos completamente. Al otro lado de la cortina se oían risas y cuchicheos. Rivero hizo funcionar una caja de música y tuvo el mayor éxito. Intenté descorrer un tanto la cortina que nos privaba de la vista de aquellas santas mujeres, pero en el acto recibí un pinchazo en la mano dado con toda precisión. Al cabo nos retiramos, y, apenas habíamos llegado a la casa, recibimos de parte de la abadesa un surtido de golosinas excelentes. Bien lo valía nuestra exhibición.

[192] N de A: Así en el original.

[...].

La meseta de Mérida está comprendida entre dos ríos, o mejor dicho dos torrentes: el Chama y el Albarregas, que se unen cerca de la aldea de Punta. El terreno está formado por una arenisca semejante a la de Agua Obispo, dispuesta en capas completamente inclinadas, donde hemos observados afloramientos de hulla; pero esta arenisca reposa sobre esquistos pizarrosos y sobre gneis. La formación sedimentaria tiene poco espesor y por esta razón, el terremoto de 1812 sacudió tan fuertemente el suelo de Mérida. Debo añadir que sus habitantes aún no se habían repuesto del espanto que les causó un temblor de tierra ocurrido el Sábado Santo de 1823.

[...].

De los hechos principales observados durante esta exploración, resulta:

1º. Que los edificios destruidos o averiados por el terremoto que destruyó a Caracas en 1812, reposaban sobre rocas cristalinas, gneis, granito, micasquisto, o sobre depósitos sedimentarios, arenisca y calcárea de poco espesor y vecinos a rocas cristalinas.

2º. Que los edificios asentados sobre depósitos sedimentarios distantes de las rocas cristalinas, que por razón de tal distancia tiene gran espesor, resistieron los sacudmientos del suelo o por lo menos no sufrieron greves daños.

Parece, pues, que las capas de arenisca, las de calcáreo y las de aluvión, en condiciones de suficiente aislamientos del gneis, del granito o de los esquistos micáceos, atenuaron los sacudimientos subterráneos, engendrados, ciertamente, en las rocas cristalinas; y que los depósitos arenáseos o calcáreos, **hicieron puente**[193], según la feliz expresión de los habitantes de los Andes. Puede considerarse que en su constitución geológica, la Cordillera Oriental tiene por base gneis, granito, micasquistos y sienita, la cual presenta, en la provincia de Pamplona, muchos yacimientos auríferos; sobre esta base existen importantes depósitos de arenisca y de calcáreo.

[193] N de A: Así en el original.

94

Friedrich Kries, *De las causas de los terremotos y de los fenómenos magnéticos*, Leipzig, 1827, pp. 6-7 y 26-27.[194]

[...]

Casi igual en duración fue el horrendo terremoto que trajo la destrucción a Caracas.

Se inició el 26 de marzo 1812, después de las 4 horas de la tarde y destruyó en pocos minutos, aparte de la ciudad de Caracas, más de treinta ciudades más y haciendas, y debajo de sus escombros, miles de personas encontraron su muerte.

[...].

Los terremotos, ya varias veces mencionados, de 1770 en los Estados Pontíficos, de 1811 en el Erzgebirge, y del 20 de febrero de 1818 en Sicilia ocurrieron con tiempo tranquilo, y en el terremoto de 1812 en la Lausitz estaba el aire, como se dice, bien frío, pero no era tiempo de tempestad, sino el cielo estaba despejado.

En eso coinciden la mayoría de los terremotos, que inmediatamente antes del primer golpe se escucha un rugido subterráneo, como el trueno o el matraqueo de un carrete; solo que varía en fuerza y duración entre los diferentes terremotos. Se puede considerar como el inicio mismo del estallido. Sin embargo, la fuerza del mismo, como recuerda HUMBOLDT, no siempre corresponde a la vehemencia de las vibraciones.

Y en Quito, en Caracas, en las Antillas se ha escuchado tal rugido, como de armamento crudo, mucho después de que cedieran los golpes; y en otros casos perduró el rugido subterráneo durante meses, sin que ocurriera ninguna vibración.[195]

Pero la característica extraño de un terremoto es la vibración del suelo. En este temblar, retemblar y oscilar del suelo, se encuentra en realidad el fenómeno de un terremoto. Sin embargo, en diferentes terremotos se encuentran todavía ciertas diferencias en la fuerza y duración de este movimiento, por lo cual no siempre se siente de la misma manera.

[...].

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[194] N de A: Título original: *Von den Ursachen der Erdbeben und von den magnetischen Erscheinungen*. Traducción del alemán realizada por Michael Schmitz.

[195] Voyage etc. Tom. I. pag. 313. Tom II. pag. I8.

Von den
Ursachen der Erdbeben
und von den
magnetischen Erscheinungen.

Zwey Preisschriften
von
Friedrich Kries.
Professor am Gymnasium zu Gotha.

Mit 1 Steintafel.

Leipzig,
bey Friedrich Fleischer.
1827.

Figura 49: Portada del texto de Friedrich Kries *Von den Ursachen der Erdbeben und von den magnetischen Erscheinungen*.

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Leigh Hunt, "Table Talk: Benefits of Ventilation", *Leigh Hunt's London Journal*, Londres, 29 de octubre de 1834, Nº31, p. 248.

Benefits of Ventilation. For several weeks before the plague broke out in London, in 1665 there was a uninterrupetd calm, so that there was not even sufficient motion in the air to turn a vane. And at the season in which the last plague visited Vienna there had been no wind for three months. To produce agitation in the air, fires were formerly lighted, and pieces of artillery discharged, means altogether inefficient to cause a considerable commotion in the atmosphere at large, though a fire is extremely serviceable in renewing the air of apartments in houses: the only means adequate to this end are beyond our control, though they frequently take place at the moments of the utmost need: these are storms and hurricanes which, however desolating in their immediate effects, are instruments of great, though less obvious good. After the hurricane

which proved so destructive to the inhabitants of the West Indies, in 1780, less disease occurred than had been known before; even those who laboured under sickness at the time were benefited by it; fever, diarrheas and dysenteries, but, above all, disorders affecting the lungs, were cured. Cases of intermittent fever were observed to be cured by an earthquake at Caracas, in March, 1812. ('See Brandt's Quarterly Journal of Science' for 1817, vol. II. p. 401).[196] After the expectation of a storm, plants give out more oxygen, which accounts for the delightful and life-giving freshness of the air, of which every one is sensible who walks out into the fields immediately afterwards. One of the most convincing proofs of the different Influence of foul and pure air is to be found in the 'Report of the Lying-in Hospital of Dublin.' In the space of four years, ending in 1784, in a badly ventilated house, there died 2.944 children out of 7.650. But after freer ventilation, the deaths in the same period of time, and in a like number of children, amounted only to 279. Attention to this point will prove a protection from numerous causes of disease. The annual mortality of Manchester, in 1757, was 1 in 25, and in 1729, 1 in 28; but in 1811, it was 1 in 74; a charge mainly attributable to the improvements in ventilation effected by Drs Percival and Ferrier.

LEIGH HUNT'S

LONDON JOURNAL.

WEDNESDAY, OCT. 29, 1834. No. 31. PRICE THREE HALFPENCE.

Figura 50: Detalles de la portada de la revista *Leigh Hunt's London Journal* del 29 de octubre de 1834.

[196] N de A: Se trata del artículo de Manuel Palacio Fajardo inserto en la entrada 91: "An Account of the Earthquake of Caraccas", publicado en *The Journal of Science and the Arts*, Londres, 1817, vol. II, Art. XIX, Nº III, pp. 400-402. Resulta pertinente aclarar que el título de esta publicación es tal como se presenta en esta nota, y no Brandt's Quarterly Journal of Science, como le llama Leigh Hunt. El asunto es que en la portada de la publicación se aprecia que dice "Publisher Querterly", y es por ello que se menciona con frecuencia como "The Querterly Journal..."

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Alejandro Ibarra, "Temblores y terremotos en Caracas", *El Independiente*, Caracas, 26 de marzo de 1862, Nº 580, pp. 2-3.

Desde el 16 de Diciembre del año próximo pasado y especialmente desde el 15 hasta el 20 de Febrero de este año, se sintieron temblores en esta ciudad, que por su continuación y la fuerza de algunos de sus sacudimientos llegaron á alarmar la población, hasta el punto de temer mucho fuesen estos fenómenos precursores de una catástrofe, semejante á las que Carácas y otros pueblos de la República han sufrido más de una vez por los grandes temblores ó terremotos como los llamamos. Este temor, que parece continúa y que en realidad no tiene otro fundamento que el de la simple posibilidad, mui bien puede ser en esta ocasion, el efecto de la misma idea que de la repeticion de estas horribles catástrofes se haya podido formar á la vista todavía sus devastadores y espantosos estragos, y bajo la influencia de una terrible espectativa, creada en su mayor parte, sin duda, por equivocadas y aun falsas tradiciones.

Casi fuera del alcance de la lógica por lo misterioso de sus causas, por su violenta é imprevista verificación y por otras circunstancias no ménos particulares y difíciles de apreciar, que acompañan, preceden y siguen á los grandes temblores, no es posible alcanzar acerca de su repeticion, sino apenas algunas probabilidades; al paso que por aquellas mismas circunstancias, dan lugar estos fenómenos á fatales conjeturas y aun á arbitrarias y caprichosas predicciones, destituidas de fundamento, pero sí acogidas con facilidad por el mismo temor que la idea de su verificacion infunden y por la tendencia de nuestro espíritu al conocimiento de las leyes de todo fenómeno y de los naturales especialmente. De aquellas probabilidades hai algunas respecto de Carácas que contradicen la próxima repeticion de una catástrofe como la que algunos temen, si es que para ella y para esta triste presuncion han de servir de fundamento los hechos bien averiguados relacionados con la naturaleza y los modos de obrar las causas que la ciencia atribuye á los temblores, y ademas muchas circunstancias, cuya apreciacion no es indiferente en el estudio de estos fenómenos. Por tanto, y como no sean de la ocasion, ni de estos apuntes de circunstancias, sino los resultados y algunas observaciones tan solamente, estractaremos, al hacer algunas de estas, con relacion á los últimos temblores que se han sentido en Carácas y á la espectativa en que han puesto parte de la poblacion, aquello mas necesario de lo que se encuentra en unos apuntes, que por via de estudio hicimos desde 1853, con motivo del gran terremoto que el 15 de julio del mismo año arruinó á la tan desgracia como heroica ciudad de Cumaná.

Por lo demas, nada tiene de estraño este temor entre nosotros, cuando las epidemias de terror, que bien pueden llamarse así infundidas por la idea de repeticion de estos fenómenos y otros de una probabilidad infinitamente menor, con frecuencia se presentan en aquellos pueblos, que por su edad y su civilizacion están ménos escusados que nosotros de padecerlas; y cuando hasta los mismos progresos de la ciencia, las observaciones, los hechos y las predicciones inconsultamente apreciadas y aplicadas á la inmediata deduccion de proposiciones absolutas en materias de esta naturaleza, han contribuido en la misma Europa á la creacion de estos pánicos, que han llegado algunas veces á convertirse en verdaderas calamidades públicas. El año de 1855, con motivo de algunos temblores que se sintieron en la Suiza y del terremoto que arruinó la ciudad de Brousse en el Asia menor, y ademas por hacer un siglo completo del gran terremoto de Lisboa, acaecido el 10 de Noviembre de 1755, se apoderó especialmente de los habitantes de Paris cierto pánico que llamó la atencion de las academias y motivó los escritos de que para destruirlo publicaron estas corporaciones, como los de Babinet por ejemplo. En la segunda mitad del siglo pasado y en la primera de este, gran parte de la Europa se llenó de temor esperando el fin del mundo para esa época, por el choque de un cometa con la tierra, y mui especialmente para el año de 1832, pues teniéndose ya para entónces demostrado que eran cuerpos que se movian en órbitas mas ó ménos prolongadas que podian penetrar en la tierra, y predicha la vuelta de uno (el de Biela) para aquel año, hasta por la imprenta se publicaba el próximo fin del mundo, ocasionado por el choque en su vuelta de este cometa con la tierra, llegando á tal punto las preocupaciones del pueblo de Paris con este motivo, que la Oficina de Longitudes juzgó conveniente consignar en el anuario del mismo año de 1832 todo lo que la ciencia habia podido descubrir de preciso, de incontestable, de matemático sobre la marcha de aquel astro, con cuyo objeto fué publicada en dicho anuario la bella memoria de Aragó sobre los cometas […]. Así, pues, en Carácas, donde las ruinas manifiestan todavía los destructores estragos de los temblores, y donde las referencias antiguas y contemporáneas contribuyen con fundamento á aumentar el terror que infunde la idea de la repeticion de estas catástrofes, nada tiene de particular que por esta idea se encuentre hoi preocupada una parte de la poblacion, y mucho ménos se dan por ciertos, como parece en esta vez, algunos hechos que no lo son, y se admiten como positivas sus relaciones y coincidencias con otros casuales ó que no han existido; pero cuya afirmacion contribuye bajo este punto de vista á conservar por mas tiempo la terrible espectativa en que hoi se encuentran muchos esperando un fuerte y próximo sacudimiento de nuestro suelo.

El número y sucesion de los sacudimientos que motivan estos apuntes en la equivocada creencia de que asi han tenido lugar precediendo á los terremotos de Carácas: el recuerdo del gran cometa de 1811 ó el año anterior al terremoto de 1812, de que hoi hace cincuenta años, unido al del que acababa de visitarnos el año pasado: las equivocadas tradiciones respecto de los terremotos de Carácas con la supuesta repeticion regular de estos fenómenos; y finalmente, entre otras cosas mas, las supuestas tradiciones de estas catástrofes cada medio siglo de origen y autoridad desconocidos, son las causas principales del temor que sigue preocupando parte de los habitantes de la ciudad, que espera, segun se dice, por este tiempo un terremoto, y sobre las cuales haremos algunas observaciones, fijando ántes ciertas ideas y consideraciones generales y particulares que son indispensables para este objeto.

(Continuará).

"Temblores y terremotos en Caracas. (Continuación)", *El Independiente*, Caracas, 27 de marzo de 1862, Nº 581, p. 4.

De los temblores, como sacudimientos convulsivos terrestres, capaces de producir los mas violentos y espantosos efectos en el suelo y hasta en el interior del globo, no debe hacerse su descripcion entre nosotros, siendo por desgracia y por esperiencia bien conocidos de los habitantes de Venezuela, á quienes como á los de muchos pueblos del mundo les ha tocado en la presente […] [ilegible] […] accidentes del mundo físico, son fenómenos terrestres que la ciencia comprende entre los meteoros, ó entre aquellos fenómenos pasajeros, é imprevistos, que teniendo lugar en la atmósfera ó en la parte sólida del globo diversifican ó varian el aspecto de este, segun los climas, las estaciones y la estructura íntima del suelo. La Meteorología, ó bien la Física terrestre, la Geografía física, ó la Geología, segun hayan preferido llamarla los sabios, es la ciencia que los estudia y cuya importancia crece todos los dias por la influencia é intervencion que tienen en la vida del globo, si así puede llamarse, y en la de los séres organizados que lo pueblan, los meteoros, entre los cuales como fenómenos destructores de la especie humana, ni el rayo, ni las inundaciones ni las mismas erupciones volcánicas pueden igualarse á los temblores.

Para determinar la causa y dar la esplicacion científica de los temblores, se ha ocurrido siempre á las hipótesis, correspondientes mas ó ménos al estado de los conocimientos de cada época con respecto á la constitución interior del globo, y á la mejor observacion de los hechos con relacion á la naturaleza de los ajentes á cuya accion puede atribuirse los grandes fenómenos terrestres,

desarrollada en las profundidades insondables del mismo globo. Entre estas hipótesis, la del calor ó fuego central, imaginada por Buffon para esplicarse la formacion de la tierra en su orígen, y luego establecida por La-Place con el mismo objeto, pero bajo otros puntos de vista y otras condiciones, es la admitida por los geólogos modernos; así para darse razon de la constitucion interior del globo que revelan los hechos geológicos, como para esplicar el fenómeno de los temblores y de los volcanes, que son los principales de los que tienen su oríjen en el interior de este mismo y se deben precisamente á enormes potencias que allí tambien deben encontrarse en actividad.

Esta hipótesis, tal como existe hoy, supone la tierra en el estado actual compuesta de una capa ó costra sólida, cuyo espesor no pasa de 60 kilómetros (12 leguas) y formada por el enfriamiento lento del globo: que debajo de esta cubierta ó corteza terrestre sólida, se encuentra otra capa de materia líquida en fusion mas densa que la capa sólida, generalmente llamada lava; y finalmente, que debajo de esta capa, se encuentra el verdadero núcleo encandecente [sic] del globo compuesto de una materia mas compacta y mas pesada que la anterior, pero dotada al mismo tiempo de una gran potencia elástica gaceosa. La lava, pues, segun esta hipótesis, flota sobre el gaz mas compacto y pesado que ella y que forma el núcleo del globo, como la parte sólida de la tierra ó sean los continentes, y lo que constituye el fondo de los mares flota sobre la lava, mas compacta y mas pesada tambien que la materia de aquellas, viniendo á ser por tal suposicion el conjunto de la tierra como una basta esfera de fuego, cubierta de una película comparable á la que envuelve una ciruela ó una semilla de nuestro tártago, bien que comparativamente la parte sólida del globo, segun los geólogos, sea ménos espesa que la película de los frutos ordinarios y especialmente que la de una naranja, con la cual se compara la tierra frecuentemente.

Por esta suposicion comprobada casi hasta la evidencia por lo hechos, esplican los geólogos modernos el fenómeno de los temblores y de los volcanes, partiendo de la formacion, segun ella, de la capa sólida terrestre: de los diversos estados que por la misma ha debido pasar, y del actual ó en que se debe encontrar en su parte mas profunda, combinados con el de la masa líquida ígnea que forma la lava sobre la cual ella flota y la materia gaceosa elástica de su núcleo. En efecto, la costra ó capa terrestre que hoi forma los continentes y el fondo de los mares, ha debido formarse por el lento enfriamiento del globo, y han debido preceder á su estado actual numerosas recaidas de las partes que la constituyen hácia el núcleo de aquel, disminuido el volúmen de este núcleo

por el mismo enfriamiento y quedando muchos fragmentos de terreno sólido mal agregados entre sí y próximos á desprenderse y volver á caer hácia el mismo núcleo, cuando los agentes mecánicos procedentes de este vengan á conmoverlos en el estado de equilibrio incierto en que se encuentra, causando al desprenderse ó al recibir la accion mecánica de estos agentes, resentimientos ó conmociones que, propagándose á mayor ó ménor distancia en la parte sólida de la tierra hasta la superficie del suelo, producen el fenómeno de los temblores: cuando la caida de las masas continentales hácia el centro de la tierra se hace á la vez y en una sola pieza sin choques ni saltos, los movimientos del suelo no tienen nada de peligroso; pero si se verifican de otra manera tendrán lugar entónces los bruscos repetidos y prolongados sacudimientos terrestres que constituyen los grandes temblores ó terremotos, causando tales estragos que pueden cambiar hasta el aspecto físico de uno ó muchos lugares á la vez.

Del mismo modo siendo la materia encandecente [sic] y que se halla en un estado de elasticidad enérgica, segun la hipótesis admitida, desde el momento en que una fractura mecánica cualquiera hienda la corteza del globo, la lava y el fluido central deben lanzarse impetuosamente por ella fuera de la tierra, y producir entónces el fenómeno de los volcanes. La lava y lo que generalmente se llama ceniza de los volcanes: el modo con que ellas salen de estos; y las formas que toman, luego que se hallan en la atmósfera y que pierden la fuerza primitiva terrestre, que los arroja hácia afuera, ó su enérgica elasticidad, son una prueba, entre muchas otras, tanto de la existencia de la masa líquida encandecida, como de la fluida densa y elástica que compone la masa interior de la tierra.

El fundamento de esta hipótesis y sus consecuencias se encuentran hoi apoyadas por muchos hechos procedentes de la esperiencia y de la ciencia al mismo tiempo. Por lo que hace á la existencia de la materia ígnea central del globo y á la fuerza elástica de la misma establecida por Humboldt y que La Place ha demostrado, pruébanlo á no dejar duda, las masas de fuego que surgen empujadas de dentro hácia fuera de la tierra, luego que se establece alguna comunicacion entre el interior de esta y su superficie; y por lo que mira al estado de elasticidad enérgica de la materia ígnea del núcleo, Cagniard de la Tour ha demostrado que los líquidos sometidos á la accion del calor bajo fuertes presiones se hacen por la atraccion tan compactos como los líquidos, á la vez que adquieren el resorte de los gaces y de los vapores; y que por consiguiente, la lijereza no es un atributo constante del estado elástico. Ahora por lo que hace á la estabilidad de la corteza ó parte sólida del globo, es un

hecho que se ha revelado en todos tiempos por las elevaciones y depresiones que antiguamente y nuestros tiempos se dejan notar en el suelo, con los cuales concurren otros á demostrarla, como son: las perturbaciones inesplicables de los instrumentos astronómicos fijados de un modo permanente y de cuya exactitud por estas variaciones han llegado á dudar los astrónomos. Como un hecho ya reconocido, y para calcular estos pequeños movimientos constantes de la tierra, Mr. Levelier se ocupa de instalar instrumentos que los indiquen con precision en el Observatorio Imperial de Paris.

(Continuará).

"Temblores y terremotos en Caracas. (Continuación)", *El Independiente*, Caracas, 28 de marzo de 1862, Nº 582, pp. 2-3.

Supuesta la causa hipotética general de los temblores, para determinar en cuanto sea posible la inmediata probable de estos fenómenos en Carácas, debe partirse precisamente de los mismos hechos que los constituyen y caracterizan, y de las demas circunstancias relativas especialmente á la situacion de esta ciudad: á las relaciones que puede haber entre su territorio y otros inmediatos, que son conmovidos frecuentemente por estos sacudimientos: y á las relaciones que se noten entre otros fenómenos geológicos y los temblores, cuando estos han tenido lugar en Carácas.

El movimiento convulsivo que caracteriza los temblores, así como la direccion en que se propaga, no son siempre los mismos; pues unas veces los primeros tienen lugar horizontalmente y por ondulaciones semejantes á la direccion que siguen las olas del mar: otras verticalmente, elevándose y deprimiéndose alternativamente las diversas partes del suelo que conmueven; y otras, en fin, comunicando un movimiento circular á las masas pesadas alrededor de un punto de ellas mismas. El primero de estos movimientos, que se llama ondulacion, se siente con frecuencia en Caracas: es tal vez el que causa ménos estragos aun cuando se prolongue por algunos segundos, y fué un temblor de esta especie el que se sintió el 15 de Julio de 1853, á tiempo que estaba haciendo uno de los mas grandes y el mas reciente terremoto de Cumaná. El segundo, cuando es mui desarreglado y violento se llama de palpitacion, el cual no se sabe al ménos de una manera positiva que haya tenido lugar en Carácas: causa mas estragos que el de ondulación: y parece, segun informes y los hechos que se refieren, que en lo general fué de esta especie el movimiento que dominó durante aquel horrible terremoto de Cumaná ó del 15 de Julio de 1853. El tercero, que es una verdadera convulsion, se considera como el

resultado simultáneo de los dos anteriores: es el que causa los mas grandes y horrorosos estragos por corto que sea; y fué de esta especie el que en 26 de Marzo de 1812 arruinó por segunda vez esta ciudad después de su fundacion, y cuyo terrible recuerdo hacemos hoi á los 50 años.

Ademas de estos tres movimientos que distinguen los italianos, se sienten en Carácas algunos de otra especie, como son aquellos que parecen el resultado de rápidas y cortas vibraciones horizontales, que imitan perfectamente lo que en propiedad se llama temblor ó movimiento de trepidacion; y otro que se siente como una simple ó instantánea conmocion de abajo hácia arriba, sin dar signos de ondulacion ni de palpitacion , y como ocasionada por el sacudimiento de una masa líquida y mui densa sobre la parte inferior y mas profunda del suelo. Son de la primera especie todos los movimientos ó los temblores á los cuales se anticipa ó acompaña y aun sucede una especie de ruido ó zumbido: son mui frecuentes en Carácas y parece que han sido de esta especie casi todos los que acabamos de sentir en Febrero. Los de la segunda se sienten poco aquí; pero son mui frecuentes, repitiéndose algunas veces muchos en pocas horas, en los lugares inmediatos á Carácas que se encuentran en los terrenos mas accidentados sobre el ramal de la cordillera, que al Sur de esta ciudad, corre de Oeste á Este, y mui particularmente en los pueblos de Baruta y el Hatillo.

Por lo que hace á la direccion de los temblores en Carácas ha sido con mas frecuencia de Norte á Sur ó de N. E. á S. O.: de Este á Oeste; y de Oeste á Este tambien, habiendo variado algunas veces durante un mismo terremoto; pero hasta ahora, no se ha observado que la direccion de ninguno haya sido de Sur á Norte, lo que no deja de decir bastante acerca de la formacion del suelo de Venezuela en las épocas de la naturaleza que han precedido á la presente. El temblor que se sintió en Carácas el 15 de Julio de 1853 tuvo lugar sensiblemente en la primera direccion, ó de N. E. á S. O., y en el gran terremoto de Carácas de 1812 fueron segun se dice de Norte á Sur primero y despues de Este á Oeste. Que los temblores siguen o se propagan en Carácas en alguna direccion es un hecho, observado tambien en todas partes y comprobado hasta la evidencia por las ruinas, cuando han llegado á causarlas. La fractura de la torre de Altagracia indica todavía la direccion de los sacudimientos que esperimentó esta ciudad por el terremoto de 1812. Las ruinas de Cumaná que causó su último terremoto se encuentran segun informes casi todas en una direccion de N. á S.; y en la pequeña isla de Teos, segun Texier, señalan todavía la direccion de los sacudimientos que destruyen allí los templos de

Delos y de Baco: las columnas de estos templos, como las de Apolo Dídimo, derribadas en otra catastrofe semejante, se encuentran del mismo modo; pero en la direccion de E. á O., bien indicada por su longitud de cincuenta pies. Con todo cuando los terremotos son largos ó se suceden instantáneamente sus movimientos cambian estos frecuentemente de direccion; y es entónces que tienen lugar las convulsiones, que se quebrantan los edificios por todas partes y que crece el número y horror de sus estragos. De esto han sido un fatal ejemplo en 1812 Carácas, San Felipe, Barquisimeto, Mérida y otros pueblos de la República; y recientemente Cumaná en 1853, cuando dominando en las convulsiones que sufrió el 15 de Julio el movimiento de palpitacion, brotaban de la tierra algunos cuerpos, arrojados por esta impetuosamente, como algunos cimientos y maderos que se encontraban clavados en el suelo, llegando hasta cambiar de posicion muchos de las que estaban fuera, ya arrojados y aun quebrantados por las mismas convulciones que los desenterraban.

La intencidad del movimiento de los temblores es tan variable en Carácas, como en todos los territorios en que tienen lugar estos fenómenos; y son sus estragos los que la determinan aproximadamente, cuando son mui grandes. M. Nicolas de Santi de Rímini pretendia haber encontrado un aparato propio para dar á conocer la direccion y la intensidad de los temblores; pero hasta ahora ignoramos qué suceso haya tenido esta pretension. Ultimamente, en cuanto á la distancia á que se estiende el movimiento de estos fenómenos en Carácas es mui variable; pero sí debe depender de la fuerza y mui especialmente, de la profundidad á que se encuentra la causa que los produce.

(Continuará).

"Temblores y terremotos en Caracas. (Continuación)", *El Independiente*, Caracas, 29 de marzo de 1862, Nº 583, pp. 2-3.

Ahora en cuanto á la situacion de Carácas ó de su territorio con respecto á otros, donde se sienten frecuentemente temblores y se ofrecen otros fenómenos geológicos, es necesidad hacer algunas observaciones como se ha indicado. Carácas, situada sobre el ramal oriental de los Andes, ó sobre la cordillera que lleva su nombre y se entronca con esta en Barquisimeto, debe participar precisamente de los grandes accidentes, que por el estado crítico de las causas que los produce deben tener lugar en el interior de esta cordillera ó á profundidades correspondientes á ellas, siempre que directa ó indirectamente no intervengan otras causas capaces de interrumpir, debilitar ó cambiar en otra

direccion los efectos de aquellos accidentes, pues es mas probable, que la existencia de esta cordillera haya tenido lugar al mismo tiempo y por las mismas causas que la general de los Andes.

Esta cordillera, que por su parte occidental tiene muchos volcanes en actividad de los mas elevados del globo, como el Antisana, el Cotopaxi en actividad casi constante desde 1742, y otros apagados como el Chimborazo, los ofrece no solo como grandes respiraderos de inmensas cavernas, ocupadas ó llenas de las mismas materias que vomitan, sino colocados en líneas rectas ó en series únicas ó paralelas. Del mismo modo la cordillera de las pequeñas Antillas, que si no es en realidad, se considera como la continuación submarina de la cordillera principal de Carácas, ofrece tambien volcanes en actividad mas o ménos constantes como el Morne-Garou en la montaña mas elevada de la isla de San Vicente. El de la isla de Santa Lucía, y otros; de manera que toda la cordillera litoral de Venezuela ó de Carácas, se encuentra formando el territorio intermedio entre dos montañosos tambien y seguramente de contemporánea elevacion. Y si á esto se agrega, que la serie de Quito, compuesta de muchos y de los mayores volcanes de la cordillera, como son el Sangay, el Tunguragua, el Cotopaxi, el Antisana, el de Pasto y el Purasé corresponde toda ella segun los geólogos á una sola cavidad volcánica y ademas, que esta se halla en comunicacion con la serie de las Antillas, como parece demostrarlo así el volcan que se halla á inmediaciones de Rio-fragua ó el único de aquella serie que se separa de su direccion general, buscando la cordillera principal de Carácas, y por consiguiente, la de la serie de las Antillas; no se podrá considerar destituida de fundamento la suposicion de que Carácas, como todos los demas pueblos de la República que se encuentran sobre el ramal oriental de los Andes, está situada sobre un terreno de formacion igual á la de todas las montañas de la presente época de la naturaleza (la cuarta segun los geólogos); y que la causa de los volcanes apagados y en actividad que existen en aquella cordillera, es la misma que agitándola mas ó ménos por una multitud de circunstancias que existen, tal vez desde su formacion y en lo mas profundo de ella, es la que produce como causa principal los temblores y mui especialmente los terremotos en Carácas. Ademas de otros hechos que concurren á probar casi directamente la anterior probabilidad, los sacudimientos de los terremotos que ha sufrido Carácas se han estendido á distancias considerables por la misma cordillera, al mismo tiempo que la energía de ellos, no solo ha disminuido á cierta distancia de aquellas series volcánicas, cuando no proceden inmediatamente de ellas, sino que han sido poco sensibles ó nulos en

las planicies ó en los llanos. La distancia á que se encuentra Carácas de los primeros volcanes de las Antillas (el de la isla de Santa Lucía y el de la de San Vicente) es poco mas o ménos la misma que aquella á que se encuentra Mérida de los primeros volcanes de la serie de Quito, el de Pasto y el de Purasé.

El terremoto de 1812, no sólo se sintió en la parte más elevada de la cordillera de Carácas ó costanera de Venezuela, sino en la parte alpina de la República, perteneciente á la cordillera de los Andes, alcanzando hasta más allá de Bogotá, es decir, hasta la parte de aquella cordillera que corresponde á la serie volcánica de Quito. Fué mas fuerte tambien en la cordillera de Carácas á partir del cabo Codera hácia su entroncamiento con la principal de los Andes, conservando en toda ella su energía las convulsiones de la tierra y especialmente en aquellos puntos en que, aparte otras circunstancias, aumenta el maziso y elevacion de la cordillera, como sucedió en San Felipe, en Barquisimeto y en Mérida. La disminucion de las aguas del lago de Maracaibo en esta misma ocasion, prueban que su lecho, rodeado ó formado mas bien entre la cordillera, habia sufrido alguna ruina, dándole paso por ella á sus aguas hácia el interior de la tierra; y aunque es cierto que muchos pueblos inmediatos á la cordillera y aun situados sobre ella casi no sintieron movimiento alguno, ademas de que no es posible descubrir fácilmente todas las causas que hayan podido influir en esta feliz esclusion, mas de una vez se ha verificado en varias partes. Es de notarse tambien, en apoyo de la probabilidad indicada, que antes del terremoto de 1812 temblaba poco en Carácas, hablándose tan solamente para aquella época de un pequeño temblor que se sintió en Noviembre de 1811; al paso que los frecuentes y recios sacudimientos que siguieron á aquel terremoto, y que segun noticias llegaron á contarse hasta ochenta en veinticuatro horas, no tuvieron término hasta el 30 de Abril del mismo año, en que tuvo lugar la completa errupcion del volcan Morne-Garou en la isla de San Vicente, despues de haber sido anunciada por ruidos subterráneos, especialmente en la madrugada de aquel dia, que se sintieron hasta en los llanos de Apure; pues aunque este volcan comenzara á vomitar cenizas y llamas desde el 27, no llegó á vomitar lava hasta el 30 á las siete de la mañana, despues que por la parte Noroeste se rompió la montaña. En Lima no cesaren los grandes sacudimientos que sufria hace poco esta ciudad hasta que cinco volcanes, de los que se hallan á sus inmediaciones no entraron en actividad; y los habitantes de las islas de Sandwich, tenian tal esperiencia de este hecho, que temiendo los temblores, cuando veian sus volcanes inactivos por mucho tiempo, arrojaban entre los cráteres víctimas humanas, con las cuales creian apaciguar sus dividinades.

El primero de estos hechos combinado con otros, y todo lo demas que se ha dicho, confirman la probabilidad indicada, de que la causa principal de los terremotos en Carácas, es la que agita las series volcánicas de Quito y las Antillas; y que estando Carácas cerca de la serie de estas y á una distancia casi igual á la que se encuentra Mérida de la serie de Quito, prescindiendo de otras causas y circunstancias desconocidas, no es estraño que en Carácas y en Mérida se sientan los sacudimientos consecuentes á la agitacion de las causas subterráneas que se desahogaban por los volcanes de ambas series, sin que esto obste para que se sientan en una de estas ciudades y no en la otra los sacudimientos correspondientes á su serie inmediata: bien que por su situacion, seguramente entre otras razones, se sientan en Mérida algunas veces los terremotos que pueden llamarse de Carácas. En efecto, Carácas fué destruida por el gran terremoto de 1641, y por primera vez, sin que haya noticia de que se hubiera sentido siquiera algun movimiento en Mérida: en 1644 fué destruida tambien por primera vez Mérida por el terremoto que destruyó á Cuenca, y sin que tampoco se hubiese sentido el menor movimiento en Carácas; y el 26 de Marzo de 1812 fueron destruidas las dos por el mismo terremoto y por segunda vez.

En cuanto á los temblores que se sienten en Carácas, cuya fuerza y movimiento no pasa de una simple conmocion, puede atribuírseles la misma causa que á los mas grandes ó á los terremotos, pero obrando de otra manera: bien porque sean simples resentimientos ó conmociones de una parte sólida del globo, á virtud de los desprendimientos ó recaidas de los fragmentos continentales hácia el centro de la tierra, ó el choque de estos mismos fragmentos con la parte sólida, inmediatamente despues de desprendidos: bien porque girando los continentes, como lo proponen y aun demuestran los geólogos modernos, con mas velocidad que la masa líquida sobre la cual flotan, vengan á chocar sus partes sumerjidas en esta masa con los mismos fragmentos continentales que han caido en ella y arrastra en su movimiento, produciendo así los temblores y aquellos ruidos que muchas veces los acompañan, ó que se han sentido sin que haya habido movimiento ni conmocion.

(Continuará).

"Temblores y terremotos en Caracas. (Continuación)", *El Independiente*, Caracas, 31 de marzo de 1862, Nº 584, p. 3.

Ademas de los temblores, cuya causa inmediata en Carácas es la general que agita el suelo de la cordillera que lleva su nombre, se sienten otros que son, como la propagacion por su territorio, de los sacudimientos procedentes, su-

puesta la causa principal de los temblores, de otro sistema de causas locales particulares distinto del anterior ya indicado. De esta especie son los temblores, que teniendo su origen en el territorio de Cumaná ó en sus inmediaciones, se propagan por nuestro territorio y se sienten en Carácas como ondulaciones terrestres, largas y fuertes muchas veces; pero que hasta ahora no han causado estragos aquí, no obstante que al mismo tiempo los hayan causado horrorosos y devastadores allá. Por lo cual, así como por su importancia geológica y las probabilidades que se pueden deducir respecto de la existencia de estos dos sistemas de causas que conmueven frecuentemente nuestro suelo, es necesario hacer mencion con todas sus circunstancias mas notables de los principales terremotos que han tenido lugar en Carácas y en Cumaná, notando y describiendo en cuanto sea posible los fenómenos geológicos que las han acompañado, precedido ó sucedido; y haciendo las observaciones necesarias sobre el modo de obrar aquellos dos centros de accion subterránea á que parece se deben inmediatamente los sacudimientos que sufre nuestro suelo y el de Cumaná, indicando por la comparacion y apreciacion de los hechos particularmente y otras circunstancias, las causas concurrentes para que sus estragos hayan sido tan grandes especialmente en Carácas.

Entre todos los pueblos de Venezuela, ha sido hasta ahora la ciudad de Cumaná la que mas ha sufrido el terrible azote de los temblores; y aunque Carácas y otros lugares de la cordillera los han sufrido tambien, no por esto ni otras circunstancias locales, existentes entre los territorios de Carácas y Cumaná, puede suponerse con fundamento que sea una misma la causa inmediata de los temblores en los circuitos, ó en la estension de territorio, á que corresponde cada una de estas ciudades, consideradas hasta aquí como centros de ellos ó como puntos de vista, elegidos para hacer las observaciones posibles, acerca del modo con que se ofrece en cada uno el fenómeno de los temblores. Por el contrario, por la misma observacion y comparacion de los hechos parece del todo indudable: que la causa que produce inmediatamente los temblores en Cumaná, no es la misma que la que los produce en Carácas, al ménos en la mayor parte de los casos y especialmente cuando en esta son mas grandes: que la causa que los produce en Cumaná es una causa local, al ménos comparada con la que los produce en Carácas; y que no porque sean ellas distintas, pueden dejar de sentirse sus efectos algunas veces por una especie de propagacion de uno á otro circuito, favorecida tambien por la localidad y otras circunstancias territoriales.

En efecto, los terremotos mas violentos que se han esperimentado en Cumaná y que la han arruinado varias veces, se han sentido cuando mas en Carácas como simples temblores de movimiento ondulatorio y á cuyos sacudimientos no se ha seguido ninguna ruina, ni desgracias de las que causan estos fenómenos, sucediendo lo mismo y aun todavía ménos en Cumaná cuando no solo Carácas, sino otros pueblos de la cordillera que distan de esta ciudad hasta el cuádruplo de lo que Cumaná, han sido arruinados por otros terremotos al mismo tiempo.

Despues de la fundacion de Carácas (25 de Julio de 1566, segun unos; y segun otros ó segun la tradicion popular, en dia incierto en el año de 1567) han hecho en Cumaná ademas de otros temblores fuertes cinco terremotos que son: el de 1766 el 21 de Octubre: el de 1794: el de 1797: el de 1839; y el del 15 de Julio de 1853, de los cuales parece, segun los datos que tenemos, que solo dos, ó sean los de 1766 y 1753 nomas, se han hecho sentir en Carácas por movimientos largos y fuertes de oscilacion, pero que no han causado la menor ruina, siendo de notarse que de estos terremotos de Cumaná, fué el de 1797 una verdadera y horrorosa catástrofe.

Por lo que mira á Carácas despues de su fundacion no han hecho, ademas de varios temblores fuertes, sino dos terremotos que son: el de 1641 y el de 1812. De estos terremotos no se sabe á punto fijo que el primero se haya sentido en Cumaná, al ménos como causa de una catástrofe igual á la que en ella han causado otros; pues habiendo arruinado á Carácas no se hace mencion de este terremoto en Cumaná, al ménos como se hace de otro mui anterior á la fundacion de Carácas y fué el de 1530, que arruinó en la boca del rio la primera fortaleza construida en la costa firme. Del mismo modo el de 1812 conocido entre los geólogos por el que arruinó á Carácas, apénas se hizo sentir por un lijero sacudimiento en Cumaná, no obstante que sus efectos destructores se hubieran estendido por toda la cordillera de Carácas y hasta la de los Andes mas allá de Bogotá, es decir, hasta mas de doscientas leguas de Carácas, cuando de esta ciudad á Cumaná apénas hai cincuenta. Del mismo modo que estos grandes temblores, otros pequeños prueban todavía mas la existencia independiente de estos dos focos convulsivos de los territorios de Carácas y Cumaná. El tres de Agosto del mismo año de 1853 hizo otro temblor en Cumaná tan grande casi como el del 15 de Julio, ó del mes anterior; y sin embargo en Carácas no se sintió el menor movimiento causado por este gran temblor; y el mui fuerte que hizo aquí en la noche del 17 de Agosto de 54, que alarmó bastante la ciudad, no se sintió en Cumaná, pudiendo asegurarse por observaciones repetidas, que

muchos temblores fuertes que tienen lugar en Cumaná, no se sienten aquí, y todavía ménos los de Carácas allá.

Respecto del modo con que se ha ofrecido el fenómeno de los temblores en Cumaná y sus efectos, no solo se pueden sacar nuevas pruebas a favor de la existencia de los dos diferentes sistemas de causas de temblores en el territorio de la República, sino que, el de las que obran en Cumaná es mui local; y que así como todavía parece revelar lo que sido nuestro continente por la parte septentrional, no nos deja concebir muchas esperanzas acerca de la tranquila permanencia del territorio de aquella ciudad, tan digna de mejor suerte, pues como dice la historia, hasta sus templos los ha visto salpicados con la sangre de sus hijos en defensa de la libertad é independencia de la patria.

(Continuará).

"Temblores y terremotos en Caracas. (Continuación)", *El Independiente*, Caracas, 01 de abril de 1862, Nº 585, pp. 2-3.

El movimiento de los temblores de Carácas, ya se ha dicho que es regularmente el de oscilacion ú ondulacion y trepidacion; pero en Cumaná, al menos desde el terremoto de 1794, es el de palpitacion, segun informes y otros datos, el que ha dominado en sus grandes terremotos y especialmente en aquel y en el del 15 de Julio de 1853. Durante este terremoto se hizo notable este movimiento no solo por los cuerpos que levantó del suelo, sino aun por los que se encontraban enterrados en él. Hubo casa quedó despues del terremoto tan conmovido su suelo, que aparecieron colocados unos sobre otros por el movimiento de la tierra hasta cuatro y cinco ladrillos: cuerpos tan densos como unos centavos de cobre que se encontraban en el fondo de un estanque, parece que han saltado y salido fuera de este por el movimiento de la tierra, y muchos cimientos, estantes y aun árboles brotaban de la tierra atormentada por el temblor como á impulsos de una fuerza esplosiva situada por debajo y á poca distancia del suelo.

Se dice que entre las ruinas del hermoso edificio que sirvió de cuartel, se advertia hasta mucho tiempo despues, que uno de los fragmentos de sus paredes de mampostería inmediatos á la puerta y como de tres varas cuadradas y cerca de una de espesor, se habia sentado por el movimiento sobre el lado, que ántes era su altura, lo cual se conocia perfectamente por la pintura del sócalo de la pared. En Carácas no se presentó ninguno de estos fenómenos el año de 1812: cayeron la mayor parte de los edificios, pero por movimientos

oscilatorios bastante fuertes para quebrantar aquellos por su violencia y duracion. En Cumaná vertia la tierra por muchas grietas aguas termales ó calientes, y aun sulfurosas ó como las que en muchas partes de su territorio corren constantemente; cuando en Carácas , aunque se abrieron varias grietas y llegó á verter agua de algunas, especialmente de los cerros, no fué agua caliente ó termal ni tampoco se llegó á saber que se hubiesen aumentado las fuentes de esta naturaleza existentes en la cordillera, como las de Mariara, las de San Juan de los Morros y las de la montaña del Altar; al paso que en Cumaná no solo aumentaron aguas despues del terremoto, sino que desde mucho ántes de este se habia notado ya por varias personas el aumento del agua contenida en pozos naturales ó artificiales. Muchos de estos llegaron á rebosar como si se les llenase por debajo, llegando á suceder que durante el terremoto se elevó el fondo de un algibe, hasta el punto de obstruirlo llenándolo completamente de tierra.

Los terremotos en Cumaná producen ó tienen un efecto sensible sobre las aguas del mar en sus costas; cuando en los grandes terremotos de Carácas, como en el del año de 1812, no se sabe que halla habido el menor indicio de una alteracion repentina causada en el nivel de las aguas del mar ni aun de poco duracion siquiera. El terremoto de 1530 hizo levantar las aguas del mar de Cumaná hasta diez y seis pies sobre su nivel, y en el del 15 de Julio de 1853, particularmente en el golfo de Cariaco, no solo se retiraron las aguas dejando embarcaciones y peces en seco, sino que ellas no volvieron hasta el cabo de minutos, inundando por supuesto en su reflujo hasta una altura, que por los datos que tenemos, no se ha podido fijar todavía; pero en el cual fueron arrojados muchos peces por el mar. El terremoto de 1812 fué tan fuerte en la Guaira como en Carácas, y no se sabe que hubiera habido entónces ninguna especie de alteracion en el nivel de las aguas del mar, ni ménos fenómenos tan marcados, como los que se notan en Cumaná y se acaban de referir. Si á estas consideraciones se agregan otras, como la poca distancia á que se estienden los terremotos de Cumaná, no obstante la violencia y la fuerza de sus sacudimientos: que sus estragos son mas grandes hácia la costa meridional y oriental del golfo de Cariaco, y especialmente de toda la parte inferior del territorio mas bajo y cuyas aguas vierten en el mismo golfo, y otra porcion de circunstancias, referidas á la naturaleza, elevacion superficial y recientes degradaciones, grandes grietas, aguas termales y sulfurosas, materias betuminosas, hundimientos contemporáneos, como el de Tinapui, hácia el interior en la costa, como el del terreno que llamaban el Dique en 1853, los fenómenos que

presentan el serro Areo; son bastantes, sin entrar en demostraciones que no son de la ocasion, para admitir casi como una verdad: que la causa ó el sistema de causas que constituye el foco convulsivo inmediato de los temblores y especialmente de los terremotos en Cumaná, es distinto del que los produce en Carácas, sin que esto obste para que se sientan por propagacion, como se ha indicado en los dos territorios, los sacudimientos que tengan su origen en uno: que la causa de los mismos fenómenos en Carácas, ademas de corresponder en gran parte á la general, por lo ménos de la que obra en la cordillera de los Andes y su dependencia, se encuentra á una gran profundidad, miéntras que las que las produce en Cumaná, parece no solo mui local sino mui inmediata al suelo ó á la superficie de su territorio; pudiendo ser mui bien el efecto de las materias interiores del globo, obrando por alguna fractura mecánica, por la cual se haya hendido la copa sólida del globo en aquel territorio; como lo prueban especialmente las grietas y degradaciones de todo el territorio cuyas aguas vierten al golfo de Cariaco y al de Paria y también entre otras muchas cosas mas, las aguas termales que impetuosamente arrojó la tierra por muchas partes y por muchos dias aun despues del terremoto de 1853, y en la sabana que llaman del Barbudo, al Norte de la ciudad y las erupciones de azufre y otras materias que en cantidad considerable tuvieron lugar tanto en el terremoto de 1839, como en el de 1853 en los cerros que están al sur de la laguna de Buena-Vista, conservándose por mucho tiempo despues en fusion, particularmente el azufre, y desprendiéndose todavía por las bocas de donde salieron aquellas materias, vapores nauceabundos y aun sufocantes.

Por estos mismos hechos, el lugar de donde se verifican y el aspecto físico del territorio del Norte de la provincia, es mui probable que la fractura de la capa terrestre indicada, se encuentre en la direccion del golfo de Cariaco, y que si no se estiende hasta el golfo Triste, como que se va aumentando en esta direccion; de lo cual pueden ser indicaciones actualmente las lagunas de Buena-vista ó Campoma y la de Putucual; así como las sustancias betuminosas, que, especialmente en los terremotos, aparece en el fondo de estas lagunas. Parece tambien por todo esto y otra porcion de observaciones que pudieron hacerse, que la causa inmediata de los terremotos en Cumaná es todavía una de aquellas que en épocas anteriores á la presente intervino en la formacion de esta parte del continente; y que en la actual, obrando sobre ella con preferencia y por las mismas causas que obró así en su formacion, tiende hoi ó en la presente época de un modo sensible á cambiar todavía el aspecto de la superficie del globo por esta parte, así como obra todavía por los volcanes y

por cualquier otra, donde el estado de discontinuidad de la costra ó de la corteza de la tierra se lo permite. Por lo cual es mui probable: que con el tiempo pueda quedar separada algun dia del continente y formando una isla, como las de Margarita y Trinidad, todo el territorio cuyas estremidades forman hoi las penínsulas de Araya y de Paria. Las grietas dilatadas y profundas que se han abierto y se abren constantemente en todos los territorios de Cumaná, en el territorio y aun en la tierra que separa las aguas del golfo de Cariaco de las del de Paria ó Triste, manifiestan la tendencia que hai en el territorio indicado á desprenderse del resto del continente, como en tiempos anteriores puede haber sucedido con el que hoy forma la cordillera de las Antillas y con el de las islas mas inmediatas á las costas septentrionales de Venezuela; y esto, seguramente por la agitacion de la causa de los temblores en sus grandes é imprevistas crisis. Las grietas que al Este del golfo se abrieron en el terremoto de 1853 eran y aun son de leguas de largo, de profundidad en muchas partes desconocidas no obstante su ancho, y todas en la direccion de la laguna de Putucual, de donde sale el rio San Juan que desemboca en el golfo de Paria. Estas grietas no solo se ven en la parte baja del terreno, sino en la alta, ofreciendo los serros hendidos por ellas en varias partes y en la direccion mencionada. Concurre tambien en favor de de esta probabilidad, el que todos los terremotos y especialmente el de 1853, son mas fuertes y han hecho mayores estragos en Cariaco y en Casanai; llegando á ser tan grandes los sacudimientos en estos dos pueblos, y particularmente en Casanai, que muchas personas vieron los árboles azotar el suelo con su copa, al paso que en el pueblo de San José, que está fuera de este circuito y como á dos leguas en línea recta, no fué gran cosa el terremoto, lo mismo que en Carúpano y en los demas pueblos de las costas de Paria.

Finalmente, por lo que hace á los estragos del terremoto que arruinó a Cumaná el año de 1853, pueden verse las tristes y dolorosas descripciones que de él se publican inmediatamente despues de tan funesto suceso, por personas competentes y aun por testigos presenciales de él; y la oda "A LA DESVENTURADA CUMANÁ", en que el jóven caraqueño H. M. de la Guardia cantó horrores de aquella terrible catástrofe y el duelo y la desolacion que por ella sobrevino á la ciertamente tan desventurada, como heroica ciudad de Cumaná.

Ruinas, mudos despojos,
Polvo que esparce caprichoso el viento
De Dios á los enojos,
Tan solo ven a mis ojos
Donde ayer Cumaná tuvo su asiento.
(Continuará).

"Temblores y terremotos en Caracas. (Continuación)", *El Independiente*, Caracas, 02 de abril de 1862, Nº 586, p. 4.

Mas de una vez por un principio inductivo y por la tendencia natural de nuestro espíritu hácia el conocimiento regular de los hechos, se ha intentado buscar la lei que siguen las grandes crísis de las causas productoras de los temblores; y partiendo para esto, como representativas dichas crísis del resultado simultáneo y necesario de la accion combinada de los ajentes á que se deben, del tiempo, al cabo del cual ellos tienen lugar y se manifiestan por sus grandes y terribles efectos. Pero como esto no sea posible, al ménos de un modo absoluto, faltando la seguridad de la identidad y permanencia de las causas que los producen, al ménos de las ocasionales, que no solo pueden ser accidentales, sino incapaces de repetirse por lo ménos con iguales condiciones, como sería por ejemplo: el desprendimiento de una parte de los continentes hácia el centro de la tierra: el choque de los fragmentos de estos mismos continentes con sus partes sumergidas en la masa fluida ígnea sobre que flota: las erupciones de los volcanes: la sesacion de estas por la estincion ó inactividad de los mismos; y otras semejantes, no es el tiempo, al cabo del cual han tenido lugar estas crísis, de donde se puede inferir directamente la lei que sigan en su verificacion, y desde luego, los períodos al cabo de las cuales ellos deban repetirse. La misma esperiencia concurre á probar esta verdad, pues aunque la ciudad de Copiapó fué destruida por un terremoto el año de 1773, despues por otro en 1796, y últimamente por uno estraordinario, cuyos movimientos, se asegura, duraron sobre un cuarto de hora, en 1819, es decir: por tres terremotos, que á partir del primero se verificaron los otros dos cada veintitrés años, es este tal vez el único caso que se presenta en concurrencia con la multitud, si no fuere con la totalidad en contra de la periodicidad regular de los terremotos.

Son una prueba tambien de esto las mismas erupciones de los volcanes, como fenómenos producidos por la misma causa que los temblores, y en las cuales casi nunca se nota esta periodicidad, al mismo tiempo que, como se ha indicado, estas erupciones pueden tener su influencia por su falta ó existencia en el vigor del desarrollo de la accion de los ajentes, á que aquellos como los temblores deben seguramente su existencia, sucediendo las mas veces que estas erupciones ponen término por lo regular á una serie de temblores, y en general ellas no han coincidido con los terremotos mas grandes, al ménos de una manera bien combrada [sic]. Sin embargo, bajo la suposicion de que alguna lei se pueda inferir del tiempo que haya transcurrido de uno á otro de los terremotos que han hecho en Carácas, y sin perder de vista lo que se ha dicho anteriormente, y con especialidad acerca de los focos de temblores de Carácas y Cumaná, veremos hasta dónde pueden llegar prudentemente nuestras conjeturas sobre la repeticion de un terremoto en Carácas, para lo cual, y siendo tan importante saber cuáles han sido los verdaderos terremotos que ha sufrido esta ciudad, haremos una breve descripción, segun las tradiciones y los datos que tenemos de los que por sus efectos, que es lo que mejor los califica, han sido verdaderos terremotos, haciendo algunas observaciones sobre otras causas de género distinto, pero que concurren con los sacudimientos terrestres á hacer mas grandes y horrorosos los estragos que han causado y pueden causar los terremotos, especialmente en Carácas.

Despues de la fundacion de Carácas, como se ha dicho, no se han esperimentado en esta ciudad sino dos terremotos; pues aunque se dice vulgarmente que el del 21 de Octubre de 1766 fué un terremoto, no fué sino un simple temblor, siendo sus sacudimientos la propagacion por el territorio de Carácas del gran terremoto que en esos momentos se verificaba en la ciudad y territorio correspondiente á Cumaná. Aquellos dos terremotos son pues el de 1641, conocido con el nombre de San Bernabé; y el de 1812, conocido entre nosotros con el nombre de terremoto del Juéves Santo, y entre los geólogos, por el que destruyó á Carácas.

Terremoto de 1641 *ó de San Bernabé*. Este terremoto ó el primero de que se tiene noticias que haya hecho en Carácas despues de su fundacion, tuvo lugar el 11 de Junio de aquel año, como á las nueve de la mañana; y segun las tradiciones y apuntes que sobre él han alcanzado hasta época, fué tan grande que arruinó esta ciudad, hasta el punto de no dejar en pié y en buen estado, sino cinco casas, que para entónces ya había muchas, teniendo la ciudad sobre un siglo de fundada. Cayeron las iglesias de San Sebastian (hoi San Mauricio) la mas

antigua de todas y edificada por el mismo Don Diego Lozada, fundador de Carácas: la de San Pablo[197], la de San Francisco, donde parece que murieron como quinientas personas. Sufrió bastante la de Catedral, que ya lo era para entonces.[198] Sufrió tambien mucho el templo y convento de San Jacinto ó de Domínicos[199]: el de las Mercedes.[200] La fábrica del Colegio Seminario que habia emprendido el Obispo Frai Mauro Tovar, vino al suelo, por lo cual no la pudo continuar sino bajo las forma toscas y con dimensiones propias para resistir en los sucesivo, como ha resistido los terremotos. De las ruinas de este terremoto parace que ya no quedan vestigios, pues la última ha existido hasta el año de 1858, y fué el solar, donde existia la casa del Gobernador ó del Gobierno, construida tambien por el fundador Don Diego Lozada y situado en la esquina al Noreste de la casa, hoi Palacio de Gobierno. La impresion que causó en los habitantes de la ciudad fué proporcional á la novedad y á la magnitud de un acontecimiento tan grande, como espantoso, y al horror que causaron sus estragos; y si esta catástrofe hizo poner de manifiesto el piadoso temor de la primitiva sociedad caraqueña, la ocasión no fué ménos propicia para dar á conocer la moralidad de los hombres que la componian. El producto de las limosnas que se recogieron en Catedral, no solo bastaron para ausiliar la parte de la poblacion necesitada, sino para donar cantidades de consideracion á los templos, y para perpetuar con fiestas religiosas la memoria de tan terrible acontecimiento[201]; y no obstante que hubieran quedado en descubierto y en abandono todas las habitaciones, no se probó que durante aquella horrorosa confusion, ni despues, nadie hubiere tomado lo mas insignificante de todo lo que, por ella, se habia abandonado y quedado como á disposicion de todos.

(Continuará).

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197 Edificada en 1580 con motivo de una horrorosa peste de viruelas y sarampion, que redujo casi á la mitad la poblacion indígena de la provincia.

198 Por la traslacion que en 1636 hizo de la silla á esta ciudad de la de Coro, el Obispo Don Juan López Aburto de la Mata, aprobada en 20 de Junio de 1637.

199 Religion que vino aquí desde 1608.

200 Para entónces una casa de hospedería para dichos religiosos, edificada con licencia en 1638 y la que arruinó este terremoto. El año de 1642 se concedió permiso á estos frailes para fundar conventos, y despues de un litigio con el Obispo Fr. Mauro Tovar, comenzaron á fundar en 1651 los religiosos su convento, donde llaman todavía Catia de los frailes, al Oeste de Carácas, donde se mantuvieron hasta el año de 1681 en que se trasladó el convento á donde hoi existen sus ruinas, hechas por el terremoto de 1812, y donde se acaba de reedificar el templo que siempre lleva el nombre de Nuestra Señora de las Mercedes.

201 Una fiesta en San Jacinto á Nuestra Señora del Rosario llamada de los temblores.

"Temblores y terremotos en Caracas. (Continuación)", *El Independiente*, Caracas, 03 de abril de 1862, Nº 587, pp. 3-4.

Terremoto de 1812 *ó del Juéves Santo*.

Tuvo lugar este terremoto el 26 de Marzo de 1812 á las 4 y 7 minutos de la tarde: se considera como el más grande que ha sufrido esta ciudad, al ménos desde 1641. Ningún fenómeno particular se ofreció como precursor de tan grande como terrible acontecimiento; y apénas se dice de un pequeño temblor que hizo en Diciembre del año anterior. El dia no ofreció nada de notable tampoco, y todas las apariencias atmosféricas eran las correspondientes á la estacion y á las alteraciones naturales en la pureza y trasparencia del aire, consecuentes á las quemas que entre otras operaciones entran en los trabajos agrícolas de esa época.

Los primeros sacudimientos fueron de Norte á Sur, y bastantes fuertes, segun se dice para hacer sonar las campanas de las iglesias: cambiaron despues de Este á Oeste; y últimamente, teniendo lugar en una y otra direccion al mismo tiempo, se produjeron las mas violentas y recias convulsiones; á que no pudiendo resistir la mayor parte de los edificios, los que no fueron aterrados casi instantáneamente, quedaron conmovidos, resentidos y aun en parte desplomados. La tierra misma se abrió por varias partes, quebrantada por tan rudas como destructoras convulsiones. La fractura de la torre del templo de Altagracia manifiesta todavía la direccion por lo ménos media de las ondulaciones que la partieron; lo mismo que la de Catedral, que como para que se le marcase la hora tan menguada para Carácas, se inclinó tan solamente al N. O., partida por su primer cuerpo de arriba á abajo y de S. á N., no obstante su altura (150 pies), el peso de las once campanas que carga y el de la estatua de bronce que representa la fé y está colocada en su terminacion, y aquellos sacudimientos, á que ni las montañas resistieron sin resentirse y aun degradarse. A los 20 ó 30 segundos, que parece duraron sin cesar tan recias convulsiones, eran ya ruinas como las ocho décimas partes de la ciudad, de donde la autoridad pública ordenó por bando á la hora del suceso, que saliesen los que se habian salvado de aquella horrorosa catástrofe. Tal era el estado en que se encontraban los edificios que quedaron en pié y el triste cuadro que la ciudad presentaba, convertida en un vasto cementerio, en que acababan de ser sepultados de improviso de diez á doce mil de sus habitantes, ó la cuarta parte de su poblacion; y donde en medio de la destruccion, del espanto y desolacion en que el fracaso habia cambiado la fiesta sagrada del Juéves Santo, veíanse a los ministros del Altar, trepando sin atender al peligro por entre los escombros y las ruinas, para

prestar los auxilios de su ministerio á los moribundos; y con la pala y la barra, llena de piadoso ardor, veíase tambien á la juventud caraqueña y en ella al Libertador, á la cual pertenecia, removiendo infatigables aquellos escombros por entre las ruinas de la ciudad, para sacar á los desgraciados que enterrados en vida por estas, se podian encontrar siguiendo el profundo y doloroso gemido de su terrible padecer. La noche de aquel aciago dia fué de las mas hermosas, y la luna, tan clara como las de Enero, servia de pálida lumbrera á aquel campo confuso de ruinas, y á los que por su piedad encontró el sol todavía al dia siguiente removiendo los escombros en que á su caida el dia anterior se habia convertido Carácas. Solo faltaba para que el dolor y el horror llegasen á su mayor grado, que la piedad impotente para sepultar tantos cuerpos, tuviese que elegir entre la peste y el horror de poner fuego á los cadáveres, como si estuviera decretado que aquel lúgubre y espantoso cuadro luciese, para los que habian escapado de la catástrofe, á la luz de grandes piras, formadas por los restos de la parte de la humanidad mas querida para ellos.

El 27 ó el dia despues comenzaron de nuevo los sacudimientos y se repitieron con tanta frecuencia, que en los siguientes, muchas personas aseguran, que la tierra casi no dejaba de temblar, ademas de los mui fuertes sacudimientos, que por su potencia se podian distinguir en número considerable y acompañados particularmente estos de ruidos, que parecian cañonazos á gran distancia hasta el 4 de Abril, en que entre la 2 y las 3 de la tarde, hizo uno tan estraordinario, que muchos lo consideraron como otro terremoto casi igual al del 26 del mes anterior. Cayeron durante él muchas casas, en que perecieron algunos, que contrastando con la moralidad de la mayor parte de los habitantes de Carácas, se encontraban en el interior de aquellas, aprovechándose vergonzosamente del abandono en que habia quedado la ciudad. Con este sacudimiento la torre de Catedral, que desde el 26 habia quedado inclinada al Noroeste, volvió á tomar su posicion vertical; lo cual fué en aquellos terribles momentos y en medio de aquellas ondulaciones esterminadoras que parecia no se iban á acabar, como el iris de paz en las grandes lluvias del diluvio. Con todo, los temblores continuaron, aunque no tan fuertes ni tan repetidos; pero los ruidos se aumentaron, hasta el 30 de Abril por la madrugada, en que se sintieron estos mismos como grandes descargas de gruesa artillería y casi sin causar sacudimiento alguno. Este mismo dia fué el en que, despues de su erupcion de 1718, volvió á aparecer en actividad el volcan de Morne-Garou en la isla de San Vicente, una de las pequeñas Antillas. Desde este dia cesaron los temblores en Carácas, por lo cual fueron volviendo á la ciudad sus habitantes, que estaban diseminados

en los campos y tan aterrorizados, que les parecia imposible volver á vivir sin ella; pues hasta las monjas se salieron de ella retirándose á los campos.

Entre los edificios grandes y mas notables que cayeron en este terremoto, se encuentran: el templo de la Pastora[202]: el de la Trinidad toda de bóveda con exepcion de la capilla llamada de los Remedios: el de las Mercedes junto con su hermoso convento y cuya nave principal era en parte de bóveda de ladrillo y el resto tambien de bóveda pero de madera[203]: el hermoso templo de Altagracia, ménos la fachada, todo de bóveda, tanto arriba como abajo[204]: el de San Mauricio, cuya nave mayor era tambien de bóveda[205]: el templo y gran parte del convento de San Jacinto[206]: gran parte del templo y hospital de San Lázaro[207]: gran parte tambien del templo y convento de Capuchinos, hoi de San Juan: parte del templo de Candelaria, especialmente su torre y hermosa fachada toda de ladrillo[208]; y del de Santa Rosalía[209]. De los templos, resistieron: la Catedral, pero quedando mui resentida, quebrantados ó partidos muchos de sus arcos y desplomados algunos.[210] San Francisco resistió tambien, pero el 4 de Abril cayó el presbiterio y algo del convento[211]: el templo de las

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202 Erigido y bendecido el 8 de Abril de 1745.

203 Como se ha dicho mas ántes, se trasladaron a este edificio los religiosos de este convento de 1681, y llevábale nombre de Casa Grande ó Convento Mayor. Después de su destruccion por este terremoto de 1812 se reedificó el templo y se bendijo el 25 de marzo de 1857.

204 Fundado en 1656. En 1750 fué erigido en parroquia; y despues de su destruccion por este terremoto ó de 1812 se reedificó y bendijo en Septiembre de 1856.

205 Reedificado en 1667 despues de su destruccion por el terremoto de 1641. Hoi se encuentra tambien reedificada despues de su segunda destruccion el año de 1812.

206 Primer Convento que se fundó en esta ciudad: no se sabe cuando; pero para el año de 1600 estaba ya fundado, segun un espediente que correspondió á San Francisco. Llamábase tambien Casa Grande ó Convento Mayor.

207 Mandado a fundar por cédula el 7 de Enero de 1759.

208 Fundada en 1708; y en 1750 fué erigida en parroquia.

209 Fué primero una hermita en 1696, hecha con motivo de una peste de que morian muchos y se les enterraba en el lugar donde está hoi el templo. La edificó el señor Baños y Sotomayor, siendo Obispo de esta ciudad. En 1732 se amplió dicha iglesia con motivo del establecimiento en ella de las Monjas Carmelitas.

210 Por lo cual se rebajó y se aseguró con una faja de hierro la cúpula del crucero, y se quitó la boleada de cañon que cubria el presbiterio y las dos que de la misma especie estaban al Norte y al Sur del mismo crucero. Los arcos de la nave principal inmediatos á la fachada, que por estos fué rebajada, fueron encimbrados [sic], vaciados y vueltos á llenar por haber quedado hendidos é inclinados hácia el Oeste. Puede decirse, que esta vez se reedificó el templo, (año de 1814), bajo la direccion del señor Agustín Herrera.

211 Segundo convento que se fundó en fecha incierta. Por un espediente que se formó entre el Guardian y el señor Francisco Rodríguez del Toro, consta: que para 1600 estaba ya fundado dicho convento; y se llamaba Convento Máximo.

Monjas Concepciones[212]: el templo y convento de las Carmelitas[213]: el templo de San Pablo, el de San Felipe Neri[214]; y la hermosa capilla del Seminario, cuya cúpula y la de la capilla de los terceros de San Francisco son las dos mas hermosas, que le han quedado desde entónces y hasta hoi á Carácas. Cayeron tambien, entre otros muchos edificios grandes, el de la Pólvora, al Nororeste de Carácas y el de San Lázaro nuevo al Noreste de la misma, y ámbos á estramuros de la ciudad: el hermoso y estenso cuartel de San Cárlos de dos cuerpos y en el cual quedaron sepultados bajo sus ruinas como quinientos hombres: el Teatro: toda la arquería hácia el Sur de la Plaza Mayor, (hoi plaza Bolívar): la Cárcel: el hospital de Caridad de San Pablo: y otros muchos. Resistieron: el edificio del Seminario, el Palacio Arzobispal, el Parque de artillería y otros edificios grandes; pero mui bien construidos. La ciudad quedó arruinada en mas de sus ocho décimas partes, y no han bastado cincuenta años todavía, para levantar las tres cuartas de sus ruinas, no obstante, que con pocas escepciones se haya estado fabricando sobre ellas de entónces acá; y es tambien á uno de nuestros jóvenes poetas de aquella época, Ramón García de Sena, que cantó junto con las de la guerra las desgracias de Carácas por este terremoto, á quien debemos la espresiva pintura que ha llegado hasta nosotros, de tan estraordinaria como espantosa catástrofe, dándola á conocer mui bien desde la primera octava de su cancion.

Ven á ver pasajero sensible,
Ven á ver con espanto y dolor,
Las reliquias de un pueblo infelice;
Que CARACAS por nombre llevó:
Ven á ver su grandeza y su fausto,
Convertido en miseria y horror,
Y con llanto perpetuo lamenta
Su destino severo y atroz.

Deben los caraqueños y el mundo científico principalmente á las afecciones, que por estos paises y al entusiasmo que por la ciencia tenia el sabio Baron A. de Humboldt la descripcion casi completa de esta tan estraordinaria como

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212 Comenzado á fabricar en 1619: se permitió que entrasen monjas á él en 1629; y se erigió en convento el 8 de Diciembre de 1636.

213 El 19 de Marzo de 1732 se estableció este convento en el edificio de Santa Rosalía; y en el que hoi se encuentra, el 12 de Octubre de 1736. la iglesia se concluyó el 11 de Octubre de 1739.

214 Erigido en 18 de Diciembre de 1771.

horrorosa catástrofe; y en la cual, no solo se deja ver el interes científico del ilustre viajero, sino el deseo de que se conozcan de estos paises intertropicales hasta sus desgracias, y mui especialmente de Carácas y Cumaná. El nombre de Humboldt, para una gran parte de los suramericanos debe ocupar un lugar entre Colon y Bolívar: porque si Colon descubrió este continente y Bolívar realizó la libertad de una gran parte de la América del Sur, Humboldt la ha hecho conocer por sus esmeradas, ilustradas y aun afectuosas descripciones en el antiguo mundo.

(Continuará).

"Temblores y terremotos en Caracas. (Continuación)", *El Independiente*, Caracas, 04 de abril de 1862, Nº 588, pp. 3-4.

Despues de este terremoto han hecho muchos temblores en Carácas, en distintas épocas, y aunque algunos bien fuertes, no hai motivo, por lo que se ha dicho, para considerarlos, por esto, como el efecto de una causa desarrollada con posterioridad á él, siendo constante la tradicion, respecto de los temblores y de su frecuencia en Carácas, desde los primitivos pobladores de este pais. Por manera que los temblores en Carácas ni su frecuente repeticion deben alarmarnos, considerándolos como precursores de alguno grande, ó como el de 1812; así porque mas de una vez ha temblado de este modo y nunca ha sucedido á semejantes temblores un terremoto, segun las tradiciones y la historia, como porque tampoco en otras ocasiones y en que han sido mas frecuentes y mayores que en Febrero de este año, no se ha alarmado, como ahora, la poblacion. En 1849 tembló en Marzo, en Abril, y tanto del 27 al 30 de Noviembre, que en este dia se contaron hasta mas de diez sacudimientos notables, acompañados de zumbidos ó ruidos subterráneos; durando la repeticion de estos movimientos y de este modo hasta el 1º de Diciembre, en que hicieron tres. Por consiguiente, segun la esperiencia que tenemos de los temblores, su sucesiva repeticion no es una señal ó un fenómeno precursor, entre nosotros al ménos y hasta aquí, segun la esperiencia, de un próximo terremoto, y ménos segun la misma, cuando tanto para el terremoto de 1641, como para el de 1812, precedió mas bien que repetidos sacudimientos del suelo una larga tranquilidad de este, si se eceptuan los pequeños movimientos, que meses anteriores precedieron á uno y otro, y como cosa propia de la constitucion de nuestro suelo, con relacion á las causas que lo conmueven mas ó ménos frecuentemente.

Del mismo modo, si admitiendo la periodicidad de las crísis de las causas que producen los temblores, esta se quiera deducir de la esperiencia ó de los hechos, siendo esto como el efecto representativo de dichas causas, se verán tambien, que por este respecto y discurriendo bajo este supuesto no es de esperarse tampoco próximo terremoto en Carácas. En efecto; si como se ha visto despues de la fundacion de Carácas, el terremoto de 1641 fué el primero que tuvo lugar en esta ciudad y el de 1812 el segundo y el último hasta ahora, porque el del 21 de Octubre de 1766 no ha sido tal terremoto para Carácas, ni por su orígen, ni por sus estragos[215], resulta: que entre aquellos dos han transcurrido 171 años; y que por consiguiente, en el caso de admitir la periodicidad de estos fenómenos, no seria de esperarse un terremoto en Carácas ántes de 121 años. Y si no la periodicidad, y si otra lei, siguiera la repeticion de los terremotos en Carácas, faltarían en esta suposicion otros hechos de esta especie, para avanzar una opinion, según ella: puesto que no se tiene noticia de otro terremoto en esta ciudad, ni aun por tradicion de los primitivos pobladores de su territorio anteriores á la conquista. Ademas, admitidas estas crísis como causa de los terremotos, y ellas como dependientes de la misma de los volcanes, debe mas bien suponerse: que los terremotos deben verificarse en épocas cada vez mas distantes como parece probarlo así: la estincion de muchos volcanes activos: las erupciones de estos mismos cada vez mas dilatadas y ménos abundantes, con pocas ecepciones: la decreciente energía de la fuerza á que se deben estas; y el aumento del número de los volcanes activos en esta época, que se cuentan como doscientos, es todavía mas que probable que la

[215] El temblor del 21 de Octubre de 1766, entre las 4 y las 5 de la mañana, conocido con el nombre de "Terremoto de Santa Ursula", no fué sino la propagacion, como se ha dicho, del terremoto que en esos momentos hizó en Cumaná. Su movimiento, segun se dice, fué compuesto de ondulaciones lentas, y tan largas, que muchas personas las sintieron, aun despues de haber salido de sus habitaciones y encontrarse en lugares de salvamento. No causó estrago ninguno: apénas cayeron unas tejas del campanario de San Jacinto; y solo se encontró en peligro de ser dañado por estas el religioso domínico, que estaba preparando la salida del Rosario, llamado de los temblores, y establecido desde el terremoto de 1641.

Este temblor, no obstante, causó gran impresion en los habitantes de Carácas, ya porque hacian 125 años que no temblaba de aquel modo, como por una circunstancia, segun se dice, que influyó en el animo de los habitantes de esta ciudad. Y fué: encontrándose en Valencia el obispo entónces Don Diego Antonio Diez de Madroñero, este escribió á Carácas, dias ántes del temblor, exitando á la oracion y penitencia, porque creia que esta ciudad estaba amenazada de una próxima desgracia. Donde sí fué un verdadero terremoto y arruinó una gran parte de la ciudad fué en Cumaná y á sus inmediaciones: hubo allí lugares en que los serros arrojaron asfalto y petróleo, sucediendo que en la misma costa del territorio de Carácas, se sintieron tanto mas fuertes los sacudimientos, cuanto mas cerca se estaba de Cumaná. Aconteció así en Curiepe, donde todavía se recuerdan de ellos, sacando Rosarios á las cuatro de la mañana el dia de Santa Ursula, ó el 21 de Octubre en conmemoracion del de 1766.

repeticion de un terremoto en Carácas, partiendo de las mismas suposiciones porque se teme, debe estar todavía mui distante, ó deben pasar para ella mas de 121 años.

Ahora, en cuanto á la repeticion imprevista de un terremoto en Carácas por efecto de los accidentes que, por la constitucion del mismo globo y la naturaleza de los agentes que la mantienen y modifican, pueden tener lugar, no hai nada que lógicamente se pueda oponer; pero tampoco hai nada, que del mismo modo se pueda aducir, para afirmar su verificacion. El desprendimiento de los fragmentos continentales: la reposicion de equilibrio de estos mismos: su choque con la parte sumergida de las grandes masas que se desprenden: la dislocacion de estas mismas, sus hundimientos, sus elevaciones parciales; y otros fenómenos de esta especie, pequeños para la naturaleza, pero extraordinarios y terribles para el hombre, que solo es grande por su inteligencia, bien pueden producir una catástrofe, como la que se teme, en cualquier tiempo. Pero existiendo esta misma posibilidad y con igual fundamento para lo contrario, y si nos atenemos á los hechos que prueban todos los dias, que el mundo en su época actual está destinado á ser morada del hombre; y que el continente americano especialmente, se modifica cada vez mas y naturalmente en este sentido, como lo prueba con sus exepciones, cuya causa es desconocida para nosotros, la inactividad y la disminucion de la energía en la accion de los mismos, no habrá en rigor una dificultad, para que la segunda posibilidad se considere con mas fundamento que la primera; y para que todo lo que tienda á destruir el sér para quien está destinado hoi el mundo, se considere de mas difícil verificacion, que lo que tiende directa ó indirectamente á conservarlo.

(Continuará).

"Temblores y terremotos en Caracas. (Continuación)", *El Independiente*, Caracas, 08 de abril de 1862, Nº 591, pp. 3-4.

Si el fenómeno de los temblores es el fenómeno mas grande de los terrestres por la naturaleza y estension de sus efectos, es sin duda tambien el mas terrible y el mas desastroso para el hombre. Como terrible, baste decir que hasta el amor de madre suele desaparecer en el momento que hace un temblor, y que hasta los animales se amedrentan; y como desastroso, baste decir tambien, que estremeciéndose y quebrantándose la tierra por sus sacudimientos, el hombre, sus obras y todo lo que existe y vive en ella se encuentra, cuando ménos, en peligro de perecer. En el globo, y como una miniatura para la inmensa naturaleza de las grandes catástrofes porque este ha pasado en sus

anteriores revoluciones, cambian los temblores el aspecto físico de un pais por sus estragos sobre la parte sólida de aquel, hundiendo sus montañas, elevando en colinas el suelo, abriendo prolongadas, anchas y profundas grietas, deteniendo ó cambiando el curso de los rios, secando unos lagos, formando otros, estinguiendo las fuentes y haciendo otras nuevas; y en fin, causando otra porcion de fenómenos que los historiadores de todos los tiempos refieren, que los poetas han cantado celebrando estas catástrofes y que la ciencia hoi recoje y registra, como simples fenómenos geológicos para estudiarlos y reconocerlos.

En cuanto al hombre, y como el fenómeno terrestre mas destructor de la especie humana y de sus obras, los temblores como sabemos, devastan en pocos segundos ciudades enteras, que no pudiendo resistirlos por su violencia, acaban por sepultar bajo sus ruinas hasta por millares sus habitantes, como Carácas[216], á lo cual no dejan de contribuir otras causas que hasta en cierto punto dependen del hombre, y que desde luego puede evitar. La naturaleza, condiciones y accidentes del terreno en que se situan ó se edifican las poblaciones, y como mas dependientes del hombre todavía la disposicion de aquellas y la construccion, son las principales causas de esta especie, que han contribuido en todos los tiempos á aumentar los estragos de los temblores. El tamaño de los edificios antiguos y aun los mas elegantes revelan, por sus dimensiones especialmente, el cuidado que se tenia de no esponerlos por estas á su destruccion en aquellos lugares en que con frecuencia era conmovido el suelo por los temblores; y es por esto que los famosos edificios griegos aparecian tan pequeños, comparados con otros como los de Roma, donde la estabilidad del suelo permitia darles dimensiones mayores. El templo de Teséo en Aténas al lado de la inmensa basílica de San Pedro en Roma, no es todavía segun se dice, como el cuerpo de un niño comparado con el de un gigante. Pero si las dimensiones

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[216] Corre en algunas descripciones hechas en Europa del terremoto de Carácas de 1812, que perecieron por él en esta ciudad 25.000 personas; y que saliendo de su palacio el Obispo para llenar su sagrado ministerio, estuvo de tal modo detenido en su salida por el pueblo que reclamaba sus socorros espirituales que fué alcanzado y muerto por los fragmentos de las paredes, de las cuales no se habia podido apartar suficientemente, por aquella causa.

Por lo que hace á lo primero solo murieron de 10 á 12 mil, sin que por esto dejara de ser aquella catástrofe de las mas grandes que ha habido de su especie; pues la mayor que registra la historia moderna de los temblores fué la de la gran ciudad de Jeddo (en el Japon) ciudad tan estensa i casi tan poblada como Pekin, y en la cual perecieron 200.000 de sus habitantes, cifra mucho menor, con respecto á la totalidad de la poblacion de Jedd, que la de 10 ó 12 mil, respecto de 40 ó 50 mil á que alcanzaba la poblacion de Carácas en 1812. Y por lo que hace á lo segundo, que para exajerar tal vez el pánico que se apodera de estas poblaciones en los terremotos se ha dicho, podemos asegurar: que el piadoso temor de este pueblo no lo llevó hasta el punto de ponerse en semejante peligro, y ménos para que por él hubiera muerto del modo que se dice su prelado, que entónces lo era el Sr. Coll y Prat.

exajeradas e inconsultas, bajo estos respectos, son verdaderamente peligrosas para los edificios; la ruina de estos por su mala construccion es segura. Las catástrofes de 1641 y de 1812 han sido por desgracia para Carácas una prueba de esta verdad[217]; así como tambien, la influencia que tuvieron en sus estragos, las demas condiciones del terreno y de la situacion de la ciudad en sus diversos cuarteles. Su parte alta situada al Norte y mas cerca ó casi al pié del Avila, en un terreno bastante accidentado, con doble pendiente hácia el Sur y hácia el Este, arenoso y flojo, sufrió mucho mas que la baja, distante de aquella montaña, y situada en un terreno ménos accidentado, mas plano y mas compacto, pudiéndose decir que la primera quedó totalmente destruida; y que en la otra, donde quiera que se encontraron edificios de mala construccion, vinieron á tierra, al mismo tiempo que los de buena, inmediatos á ellos, resistieron y se conservaron enteros.

En ámbos terremotos fué mui notable esto último, resistiendo los edificios antiguo ó moderno, pero de buena construccion, los fuertes movimientos de ámbos; cuando otros inmediatos antiguos ó modernos tambien, caian, junto á aquellos, por su mala construccion, desbaratados por el temblor, llegándose á notar en un mismo edificio el fenómeno de la resistencia de unas partes y de la caida de otras, segun las condiciones, en que, por su construccion, se encontraban para resistir mas ó ménos, á los sacudimientos que las conmovían, en lo cual comprendemos los materiales, que por su naturaleza, estado y aun

[217] De que se fundó esta ciudad á que tuvo lugar el terremoto de 1641 trascurrieron 74 años; y aunque no se sabe qué poblacion tuviera entónces, ni cuántas casas habia, existiendo algunos templos y estando ya la Silla en Carácas, debia ser precisamente de alguna consideracion su caserío. De este quedaron, como se ha dicho, algunos edificios en pie, como la Catedral, y cayeron los demas, que si hubieran sido de la misma construccion que aquellos, seguramente que habrian resistido tambien el temblor. La ausencia de toda idea de terremotos durante esta época, y el deseo de fundar la ciudad, sin duda que contribuiria bastante, para que al fabricar, no se cuidasen mucho sus pobladores de la construccion; y tan fué así, que las fábricas que se hicieron inmediatamente despues de este terremoto, no solo tienen una construccion pesada y sólida como para resistirlos, sino que resistieron efectivamente al del año de 1812, como ha sucedido con el edificio del Seminario y otros, reconstruidos ó construidos inmediatamente despues de él.
Igualmente de 1641 á 1812 trascurrieron 171 años, tiempo suficiente para haber hecho olvidar la idea del primer terremoto, y en el cual, no solo se reedificó toda la antigua ciudad arruinada, sino que se fabricó tanto, que caseríos que estaban fuera de ella, como el de Candelaria, por ejemplo, pudieron acercarse por su aumento y el de la ciudad hasta reunirse con esta, siendo para entónces ya Carácas, una de las mas grandes y pobladas ciudades de la América del Sur; pues aunque no tuviera sino como de 40 ó 50 mil almas sus casas eran desahogadas y espaciosas, teniendo ademas cada familia la suya. Pero es lo cierto, que en 1812 cayeron las ocho décimas partes de la ciudad; y que comparando las fábricas mas antiguas que resistieron , con las modernas, se encuentra, que casi todas estas vinieron al suelo, con exepcion de las bien fabricadas; cuando de aquellas, no obstante los años que tenian algunas, casi no ofrecieron signos de haberse resentido.

su forma han debido influir precisamente en la destruccion de la poblacion de esta ciudad, y mui particularmente en 1812. Como una prueba de la resistencia que da la forma á los edificios, son un ejemplo las construcciones góticas, que resisten mucho mas que las griegas á los temblores; y por lo que hace á la calidad condiciones de los materiales y á la construccion, muchos de los edificios que cayeron en 1812, lo han dado á conocer perfectamente.[218] Ademas de la construccion, los lugares de refugio contribuyen mucho á la salvacion de gran parte de las poblaciones en los momentos de una catástrofe, ocasionada por los temblores.[219]

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[218] La poca profundidad de los cimientos ó su falta muchas veces: los materiales de diversa densidad, de y forma hasta de naturaleza impropia, que indistintamente se empleaban para fabricarlos muros principales aun de los grandes edificios: el poco espesor de aquellos, el uso de lo que llamamos mezclote en lugar de mezcla: y otras faltas mas, relativas al arte de fabricar, fueron otras tantas causas sin duda que contribuyeron á aumentar los estragos del terremoto de 1812. Un ejemplo de todo esto se ofreció en el templo de Altagracia, cuyos muros especialmente el del Sur y seguramente el del Norte tambien construidos como se acaba de decir, vinieron á tierra y con ellos todo el templo; al mismo tiempo que su bella portada, que es de buena construccion resistió los sacudimientos del temblor y el estremecimiento que á la verdad debió causar la caida de sus techos, embovedados y de mui mazisa y cargada construccion. Del mismo modo en el convento de San Jacinto, cuya fábrica nueva interior estaba construida con malos materiales, vino al suelo, conservándose la antigua esterior que habia resistido al terremoto de 1641; y la que se hizo inmediatamente despues, pesada y tosca, pero de sólida construccion, siendo de notarse, que los muros construidos con adoves crudos hechos de barro puro y de paja, resistieron perfectamente, cuando las mamposterías mal construidas con mezclote fueron cuarteadas si desencajadas y desbaratadas no cayeron, descompuesto ya el mezclote y sueltos los cuerpos que entraban en la formacion.

[219] A las siete plazas grandes y á las siete pequeñas que tenia Carácas, en 1812 y que solo tiene todavía hoy, se debió en gran parte, que el número de las víctimas que hizo el terremoto de aquel año no hubiese sido mayor; por lo cual es una verdadera necesidad, que en Carácas, como en todas las ciudades amenazadas de terremotos, se destinen por lo ménos nuevos lugares para plazas, u otros objetos, donde se pueda refugiar la poblacion en caso de un terremoto; y con lo cual, al mismo tiempo que se hermosea y desahoga la ciudad á proporcion que se vaya aumentando el caserío se contribuirá tambien á la salubridad. Y aunque no se pueda esperar que por el modo con que hoy se fabrica en Carácas se aumenten los estragos en el caso fatal de que hiciese un terremoto, porque en general hoy se construye con bastante solidez; sí es de sentirse que á estas buenas construcciones que van condensando la poblacion y aumentando su caserío, no se junte la designacion y conservacion de aquellos lugares de refugio y de desahogo, y la direccion regular de las nuevas calles siguiendo á las antiguas, formadas á cordel, y con el ancho que exije una ciudad como Carácas y que se da generalmente á todas las ciudades modernas, ó con la continuacion de las antiguas, como sucede actualmente en esta ciudad.

No está demas advertir: que aunque entre las ruinas del terremoto de 1812 han aparecido algunas de buena construccion, esto dependió de otra circunstancia y de otro género muy distinto. El terror que la poblacion tenia por los edificios que amenazaban ruina en aquellos momentos posteriores al terremoto, esplotado por el interes, fueron la causa en la mayor parte de las ruinas de esta especie que se encuentran y particularmente por donde ménos estragos hiciera el terremoto, como al Sur y parte baja de la ciudad. La industria introducida por unos estrangeros para echar abajo por medio de sogas y ganchos los edificios casi enteros, vino á ser otra especie de terremoto; así por la directa destruccion de aquellos, como por la conmocion que á su caida causaban en los demas, habiéndose pretendido hasta volar la torre de Catedral, que si no hubiese sido por el maestro mayor Juan Agustín Herrera,

Por último, con relacion á la causa de los temblores en general, y para lo cual hemos preferido la hipótesis del fuego central, faltan todavía muchos datos, que al ménos en cuanto al modo con que se produce el fenómeno, quede tan esplicado, como parece que lo está hoi el de los volcanes. Las descripciones antiguas, reducidas casi esclusivamente á la relacion ó pintura de los horrores de las catástrofes que causaban con relacion al hombre tan solamente, no han proporcionado á la ciencia moderna, sino simples datos para llegar á inducciones de poco valor científico todavía. Si se hubieran hecho constantemente sobre estos fenómenos las observaciones á que ellos dan lugar, así como de otros meteoros como los aureolitas, por ejemplo, se habria podido tal vez por lo ménos saber: si en la época en que vivimos, las causas aun desconocidas de los temblores, adquieren mayor actividad, ó si, como es mas probable, se amortizan, ó se mantienen estacionarias ó en igual grado: si ellas cambian de lugar: si ellas tienen alguna conexion con otros meteoros ó accidentes naturales: si son periódicas ó no: si son capaces de causar algun cambiamento en el clima; y finalmente, otra porcion de cuestiones semejantes, á cuya solucion, si debe tender la ciencia para el adelanto en el conocimiento de la naturaleza y sus fenómenos mas estraordinarios, por la influencia que ella debe tener hasta en la vida social, no está ménos obligada á encontrarle y mui particularmente la moderna: ciencia llamada al mismo tiempo, que á fijar por medio de la razon y sobre los mas sólidos fundamentos los derechos imprescriptibles de la humanidad, á encontrar y proporcionar con sus trabajos y descubrimientos, los elementos y los medios de conservarse ella y sus obras. Pero sea porque la Europa, si se exeptúa la línea volcánica del mediterráneo, no tiene donde observar y estudiar en grande escala el fenómeno de los temblores, ó mas bien el conjunto de los grandes fenómenos geológicos: sea porque cada continente tenga su mision y reservada tambien su parte hasta en el estudio y comprension de la misma naturaleza; es de esperarse que la solucion de algunas de aquellas cuestiones y otras semejantes, toque darla en algun tiempo á los hijos de la América del Sur y seguramente á aquellos, que si han tenido el triste privilegio de sufrir el terrible azote de los temblores, tienen tambien á su vista las magníficas cúpulas traquíticas [sic] y porfíricas de los Andes, coronadas por los fuegos y vapores subterráneos que algun dia les revelarán su verdadero orígen y tal vez la causa misteriosa de los temblores.

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quien la rebajó por dentro de ella misma, se habria llevado á efecto la destruccion de ese hermoso y elegante edificio del mismo modo que se habria arruinado la mayor parte de la ciudad que habia quedado, si por los esfuerzos del mismo Herrera la autoridad no hubiera tomado medidas para detener el curso de aquella destructora industria.

Gobierno y que bien pronto
construirse, haya unido la
r, es decir, Caracas al puerto
Venezuela desplegará su co-
quirirá considerable importan-
ea no tiene sino 21 kilómetros,
se han principiado á hacer;
no tardará en ejecutarse. El
enson la había proyectado des-
ro obligado á dejar la América
su patria, en la cual le agrar-
ebridad, debió abandonar su
n todo, sus planos han sido en-
los archivos de su familia y
ablemente á los nuevos inge-
ses ó ingleses que el Gobierno
a llame á Caracas.
60 mil habitantes de que se
población de esta capital, son
al dulce, honrado y tranquilo.
ia, su aptitud para toda espe-
olio social y moral, no se re-
dalmiento en que ellos viven,
o están del progreso europeo.
s católica, pero la libertad de
reconocida por la ley.
rio se divide en 21 provincias y
s, ademas de 71 islas disemina-
istancia de sus costas. Cará-
na Universidad, un Banco re-
establecido, un Seminario y un
cuanto á las producciones, los
eguran ya á Venezuela un rico
esportacion; sus salinas son
nuevas minas descubiertas en la
n casi tanto oro como la Aus-

samente enviada al Ministro de Relaciones Esteriores del Rei de Italia, en contestacion á la circular que el Baron de Ricasoli dirigia á los Agentes Diplomáticos italianos cerca de los Gobiernos estranjeros.

M. de Thémines.

EXHIBICION EN LONDRES.

Uno de los comisionados por el Gobierno de Venezuela para representarla en aquella gran solemnidad, escribe de Lóndres con fecha 2 del corriente, á un amigo suyo de esta capital, lo que sigue:

"Del 4 U. las mas espresivas gracias por mi nombramiento de comisionado para la Esposicion, y no pueda inaugurar mejor las obligaciones que como tal me he impuesto, que encargarle á U. se sirva comunicar al Secretario de la Comision local de Venezuela, de hacer lo posible para reunir acá cuantos efectos naturales y artificiales produzca ese bella país. Enterado como lo estoi de los recursos que ofrece, y convencido de que una entre las cosas que ahí se botan las hai que pueden fácilmente constituir un ramo importante de esportacion, me tomo la libertad de recomendar á quien corresponda que pasen una ó dos docenas de *troncos* de plátano por entre los tambores ó cilindros de un trapiche comun de azúcar, (para lo cual se dejan bien flojos, esto es, dejando como una pulgada de espacio entre ellos) y lo resultante, que es el tronco platanero menos el zumo estraido por el trapiche, se tome á secar al sol, y

TEMBLORES Y TERREMOTOS

EN CARACAS.

Desde el 16 de Diciembre del año próximo pasado y especialmente desde el 15 hasta el 20 de Febrero de este año, se sintieron temblores en esta ciudad, que por su continuacion y la fuerza de algunos de sus sacudimientos llegaron á alarmar la poblacion, hasta el punto de temer muchos fuesen estos fenómenos precursores de una catástrofe, semejante á las que Caracas y otros pueblos de la República han sufrido mas de una vez por los grandes temblores ó terremotos como los llamamos. Este temor, que parece continúa y que en realidad no tiene otro fundamento que el de la simple posibilidad, mal bien puede ser en esta ocasion, el efecto de la misma idea que de la repeticion de estas horribles catástrofes se haya podido formar á la vista todavía sus devastadores y espantosos estragos, y bajo la influencia de una terrible espectativa, creada en su mayor parte, sin duda, por equivocadas y aun falsas tradiciones.

Casi fuera del alcance de la lógica por lo misterioso de sus causas, por su violenta é imprevista verificacion y por otras circunstancias no menos particulares y difíciles de apreciar, que acompañan, preceden y siguen á los grandes temblores, no es posible alcanzar acerca de su repeticion, sino apenas

Figura 51: Detalles de la primera de diez entregas del trabajo "Temblores y terremotos" de Alejandro Ibarra publicado en *El Independiente* de Caracas, entre marzo y abril 1862.

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Arístides Rojas, *Fragmento de un estudio geológico sobre los terremotos y temblores de tierra en Venezuela*, Imprenta Bolívar, Caracas, 1865, pp.7-26.[220]

I

El Vulcanismo. Los terremotos y las erupciones volcánicas. Grande área de conmociones entre las dos Américas. Terremoto de Carácas y de las regiones del Mississipi en 1812. Erupcion del volcan San Vicente en las Pequeñas Antillas. Opiniones de Humboldt. Duracion-intensidad de la erupcion. Direccion de sus cenizas. Descubrimiento de la contra-corriente de los vientos alíseos. Consideraciones de Dove.

La célebre catástrofe de 1812 destruyó la ciudad de Carácas y una parte de los pueblos de Venezuela, no es un acontecimiento aislado en la historia geológica de nuestro planeta. Causas generales, complexas y misteriosas en su accion, pero ostensibles en sus resultados, obrando en las profundidades de la tierra, engendran fenómenos múltiples que se ostentan en variadas formas. Ya sea que los continentes ó las islas se levanten, ó se sumerjan; ya sea que las erupciones volcánicas destruyan con el fuego del planeta las creaciones del hombre; ya que los terremotos y temblores de tierra conmuevan y sepulten las ciudades, infundiendo el espanto y el terror; ya en fin, que el levantamiento de las costas se efectúe de una manera lenta y casi visible a los ojos del hombre; todos y cada uno de estos fenómenos no son sino la resultante de una causa única, el *vulcanismo,* ó como lo define Humboldt, la reacción del interior de un planeta contra su corteza.

En los primitivos tiempos de la historia de la tierra, las revoluciones á que esta estuvo sometida, se exhibieron con un carácter de terrible grandeza: á proporcion que el curso de los siglos fué consolidando los continentes y estableciendo de una manera sólida el imperio de la tierra sobre el de las aguas, las revoluciones geológicas fueron cambiando de forma, y hoi, salvo una nueva catástrofe general que no es dado prever á la inteligencia humana, puede ya asegurarse, que las revoluciones son pacíficas y que las fuerzas elásticas del corazon del planeta, en cumplimiento de fines providenciales, levantan lentamente los continentes en medio de una paz no interrumpida, de la misma manera que en los archipiélagos, la vida orgánica, en el silencio de una noche

[220] N de A: Este trabajo de Arístides Rojas apareció publicado originalmente en *El Federalista* para el mismo año; posteriormente se editó en Madrid en la *Revista Hispano-Americana* para la Entrega 7, año II, tomo III, Nº 17 del 12 de agosto de 1865, pp. 251-260.

eterna, levanta los escollos, rellena los bajíos, une los estrechos y conquista al fin el imperio de las aguas con nuevas comarcas salidas del seno del abismo.

Créese generalmente que el terremoto de Carácas, que precedió 33 dias á la erupción volcánica del Morne-Garou, fué ocasionado por esta última. Este es un error que la ciencia moderna se encarga de combatir. Todos los fenómenos que desde 1811 hasta 1813 se exhibieron en esta gran parte del océano Atlántico, resguardada por las dos Américas: es decir, la aparición de la isla Sabrina en las Azores, los primeros temblores de las Antillas y de Carácas á fines de 1811; mas despues las grandes conmociones en los valles del Ohío y del Mississipi; el terremoto de Carácas en 1812; y finalmente, la erupción del San Vicente 33 dias despues, son el resultado de fuerzas elásticas que viniendo del interior del globo hicieron reacción contra esta extensa área del nuevo hemisferio entre las dos Américas.

Esta región, teatro de uno do los mas terribles sacudimientos que registra la historia de la tierra, está comprendida al Norte y Oeste por una gran parte de la América del Norte y golfo de Méjico, abraza el Atlántico oriental hasta mas allá del meridiano de las Azores, miéntras hácia el Sur, perdiéndose en dilatados horizontes, llega hasta los Andes granadinos.

Es en medio de esta célebre región que sobresalen los volcanes de las pequeñas Antillas, no como un reflejo de la grandeza que caracteriza á los de los Andes, sino como respiraderos naturales que neutralizan en parte ó evitan las grandes conmociones que las fuerzas plutónicas engendran en una región cuyos contornos están desprovistos de chimeneas volcánicas.

Humboldt cree que la aurora boreal es el fenómeno que da fin á una tempestad magnética, en el centro de la tierra; de la misma manera que el rayo en las elevadas regiones de la atmósfera, es el fenómeno que da fin a una tempestad eléctrica.[221] ¿Seria aventurado decir que una erupcion volcánica es el fenómeno que da fin á una tempestad séismica en las regiones profundas del globo?[222] ¿Esa emision de gases, de llamas, de aguas termales y de variadas sustancias, que se desprenden de las grietas y hendeduras de la tierra despues de los grandes temblores y terremotos, así como las erupciones volcánicas, no podrian considerarse como las diversas secreciones exteriores de una actividad ígnea obrando en el corazon del planeta? Sin esas sustancias fluidas y gaseosas con

[221] Humboldt. Cosmos.

[222] Séismico, viene del griego seisis, que significa sacudimiento, conmocion, rotura. De aquí *seismómetro*, instrumento para medir el choque de un temblor de tierra ó de cualquiera otra concusion.

que las fuerzas elásticas desahogan el exceso de la vida interior ¿no estaria la tierra sometida á un cosntante y terrible cataclismo?

En las regiones de la Italia meridional, segun Daubeny[223], el aumento é intensidad de las conmociones subterráneas es un indicio de que las descargas van á ponerse en libertad por las bocas encendidas del Etna ó del Vesubio. Durante el terrible de Lisboa en 1755, el Vesubio se exhibió con nueva apariencia en la columna de vapores que despedia su cráter; y durante aquel destruyó á Calábria en 1783, el Strombolt en la Italia occidental exhibió la mas antigua erupcion que se conserva en la memoria de los hombres.

Son mui curiosos los fenómenos que precedieron y siguieron al célebre terremoto de Santiago de Cuba en Agosto de 1852. En 17 de Febrero tuvo lugar una notable erupcion del volcan Mowna-Loa, en las islas Sandwich. El 7 de Julio un gran temblor de tierra recorre la isla de Cuba de uno á otro extremo; era el precursor de la espantosa catástrofe que debia destruir, cincuenta y cinco dias mas tarde, á la ciudad de Santiago. Segun Poey[224], este terremoto recorrió gran parte de la superficie del globo. El 17 de Agosto se sintió en Cerveta (España): el 18, en Santo Domingo; en Austria, un temblor hizo sonar las campanas de las iglesias; el 19, gran terremoto de Santiago de Cuba; el 25 temblor en Georgia (Estados Unidos), y el 16 de Setiembre, Manila experimenta el sacudimiento mas violento de que tienen noticia sus habitantes. Pero lo mas curioso en la sucesion de estos fenómenos es, que ocho horas despues de la catástrofe de Santiago de Cuba, el Etna dió principio á una de sus mas terribles erupciones: puede decirse, que el terremoto fué sincrónico con la erupción del volcan que continuó hasta el 17 de Noviembre del mismo año. De manera, que la gran tempestad séismica que habia principiado con la erupción del Mowna-Loa terminaba con la del Etna, despues de haber conmovido una zona de paralelos, desde las regiones Norte del Pacífico hasta el Mediterráneo.

Darwin enumera una serie de hechos semejantes, conexionados con el terremoto de la Concepción (Océano Pacífico) en 1835.[225]

En 21 de Enero de 1834, un gran terremoto destruyó á la ciudad de Santiago cerca de Pasto. Mas despues, en 22 de Mayo fué igualmente destruida por

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223 Daubeny. A description of active and extinct volcanos.

224 Poey. Tableau des tremblements de terre á Pile de Cuba.

225 Darwin. Journal of researches Turing the voyage of Beagle round the World. Perrey. Catalogue des tremblements de terre au Chile.

otro terremoto Santa Marta; y mas tarde Jamaica, en Setiembre 7. Cuatro meses despues, en Enero 1835, los volcanes Osorno, Aconcagua y Coseguina, en latitudes opuestas, encendían simultáneamente sus cráteres.

En 12 de Febrero de 1835., un violento temblor de tierra se hizo sentir en las costas de las Guayanas. En 20 del mismo mes la isla de Juan Fernández tuvo una erupción submarina. La Concepción y otras ciudades del Pacífico fueron destruidas, y al mismo tiempo se levantaban las costas: era el momento en que los volcanes de las cordilleras de Chile entraban en erupción. Mas tarde, Noviembre 11, muchos temblores de tierra anunciaron que el Osorno y el Corcovado despertaban con terrible furia. En la lucha, el primero se hunde (Diciembre 5) y una grande explosion le acompaña en su caida. Era el fin de una gran tempestad séismica que agitaba una zona de meridianos bajo el hemisferio americano.

No hai terremoto que no haya exhibido, á falta de erupciones volcánicas inmediatas, desprendimiento de llamas, emanaciones gaseosas, torrentes de agua y de lodo, brotando de las grietas de la costra terrestre fracturada. Por otra parte, según Daubeny, cuando la descarga de vapores desaparece de las cimas del Tunguragua ó del Cotopaxi, se experimentan temblores de tierra en las regiones vecinas. "En la mañana en que la ciudad de Riobamba fué destruida por el mas funesto terremoto de cuantos recuerda la tradición, los habitantes de Pasto vieron desaparecer súbitamente la columna de gases, que despues de tres meses se elevaba sin interrupcion sobre su montaña volcánica."[226] Las poblaciones; que habitan los alrededores de un volcan, dice Perrey, creen que no tienen que temer ninguna conmocion subterránea desastrosa cuando los ven humear. Respiran libremente, nada tenemos que temerles, dicen entónces los pueblos de América, hablando de sus temibles vecinos.[227]

Si nos limitamos ahora á la region que durante tres años fué teatro de grandes catástrofes y cuyo estudio nos interesa considerar, tendremos, según Humboldt[228], en el siguiente órden cronológico, la historia de los fenómenos.

1811. Enero 30. Aparicion de la isla Sabrina en las Azores, que se elevó mas el 13 de Junio. Mayo 15. Principio en San Vicente de los temblores que duraron hasta Mayo de 1812. Diciembre. Temblor de tierra en Carácas. 1812. Marzo 26. Destruccion de Carácas, y temblores de tierra que le siguieron. Abril 30.

[226] Humboldt. Melanges de Phisique, etc.

[227] Perrey. Propositions sur les tremblements de terre.

[228] Humboldt. Tableau de la nature.

Erupcion del Morne-Garou, y el mismo dia ruidos subterráneos en Carácas y otros lugares de Venezuela.

Como se ve, la erupcion del Morne-Garou fué el fenómeno que puso fin á una tempestad séismica, que durante mucho tiempo ejercia su furia contra una de las mas importantes secciones del nuevo hemisferio. ¿Qué habria sucedido si las ondas elásticas recorriendo en su interior diferentes concavidades, no hubieran encontrado el respiradero de San Vicente, ó algun otro de las pequeñas Antillas para dar paso al fuego central? Este hubiera continuado en todas direcciones, y buscando salida, destruido de nuevo á Venezuela, ó siguiendo al Este, se habria abierto paso por el terreno volcánico de Cumaná; ó enlazándose hácia el Sur con las ondas que agitan la inmensa region de los Andes, para perderse al fin por una de sus numerosas chimeneas volcánicas.

El volcan de San Vicente, con una elevacion sobre el nivel del mar de 3.000 piés, segun unos, y de 4.740 á 5.000, segun otros, tuvo una erupcion que precedió á la de 1812. Fué aquella que en la noche del 6 al 7 de Marzo de 1718, causó un gran terremoto acompañado de furioso huracan. Según el padre Lavat, citado por Poey[229], el gran Morne, situado en la extremidad Oeste de la isla, se hundió de repente en la tierra y desapareció; una gran cantidad de cenizas se elevó en la atmósfera, y fueron conducidas hasta ciento treinta leguas hácia el Oeste. A esta distancia se percibieron relámpagos y se escucharon ruidos subterráneos que semejaban truenos.

Esta erupción, limitada en sus estragos á la isla de San Vicente, parece no haber ejercido ninguna influencia perisférica. El sacudimiento se sintió en la Martinica, y, exceptuando estas dos islas, no hubo en todo el resto de las Antillas la mas pequeña conmocion.

No así la erupción de 1812. Casi un siglo se iba á completar desde la primera erupción, cuando en Mayo do 1811 principiaron á exhibirse los primeros síntomas de que el volcan despertaba de su largo sueño. La primera erupción, dice Humboldt[230], tuvo efecto el 27 de Abril de 1812 ni medio dia; y aunque no era mas que un vómito de cenizas, fué sin embargo acompañada de un estruendo espantoso. El dia 30 salió la lava del cráter y llegó hasta el mar despues de cuatro horas de marcha. "El ruido de la explosion simuló descargas alternativas de artillería y mosquetería; y lo que es mui digno de observarse, es que pareció mucho mas fuerte en alta mar, á una gran distancia de la isla,

[229] Poey. Catalogue cronologique des tremblements de terre Dans les Indes Occidenteles.

[230] Humboldt. Relation historique.

que á la vista de tierra cerca del mismo volcan inflamado." En las ciudades situadas en las llanuras del Apure, en una extensión de cuatro mil leguas cuadradas, sintióse un ruido subterráneo que parecia descargas reiteradas de artillería de grueso calibre; este estrépito comenzó á las dos de la madrugada, no acompañado de sacudimiento, siendo de notar que se oyó con igual fuerza, en las costas, como en el interior de las tierras á ochenta leguas de distancia. Se le creia trasmitido por el aire y se estaba tan léjos de considerarle como un ruido subterráneo, que en Caracas y Calabozo se hicieron preparativos militares, como para poner en defensa la plaza contra un enemigo que avanzaba con gruesa artillería."

"Desde el volcan de San Vicente, añade Humboldt, hasta el rio Apure, cerca de la embocadura del Nula, hai una distancia de 210 leguas en línea recta; por consiguiente, las explosiones se oyeron á una distancia igual á la que hai del Vesubio á Paris."

Desde principios de Mayo de 1811 hasta Abril de 1812, se sintieron, según Mallet[231], mas de doscientos temblores de tierra en las pequeñas Antillas. El 1º de Mayo, ruidos subterráneos se dejan oir en la cordillera costanera de Venezuela. En este día el general Miranda subía con tropas la cuesta dé las Cocuizas en direccion a Valencia. A los primeros ruidos que simulan descargas de fusilería, el avisado general se alerta, y cree que va á tener un próximo encuentro con tropas enemigas. Los ecos continúan nutridos, y el ruido se asemeja á descargas de artillería. Miranda hace alto en la altura de las Lajas, y creyendo que la Guaira está en aquellos momentos atacada por una fuerte escuadra, envia un oficial á Carácas en solicitud de nuevas. A poco el oficial regresa anunciando que una paz profunda reina en todas partes. Miranda comprende entonces que se trata de una erupcion volcánica lejana. Cuyos ruidos subterráneos se escuchan a distancia. ¿Qué le importa el tiempo y el lugar? Es un trastorno en la naturaleza, que no puede deternerlo ni estorbarlo en su propósito. Las tropas continúan.

Era precisamente el momento en que la prolongada erupcion del San Vicente tocaba á su fin, y en que las fuerzas elásticas del interior del globo en postrer esfuerzo de espansion buscaban las regiones del aire engendrado esos mismos ruidos subterráneos que tres dias antes se habian escuchado en las estepas del Apure. Un dia mas, y el Morne-Garou entraba de nuevo en ese segundo sueño que cuenta ya cincuenta y tres años.

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[231] Poey. Catalogue chronologique.

¿Cuál fué la direccion que siguieron las diversas sustancias lanzadas por el San Vicente, durante todo el tiempo de su erupcion? Sin titubear y tomando apoyo en leyes físicas reconocidas, diríase de pronto, que ellas debieron tomar una direccion hácia el Oeste, porque estando esta isla bajo el influjo de las corrientes alisias que corren de Este á Oeste, estas deberian arrastrar todas las sustancias que encontraran á su paso. Pero sucedió precisamente todo lo contrario, y la lava y las cenizas vomitadas en gran cantidad tomaron una direccion al Este y cubrieron la isla de la Barbada que está situada á barlovento de San Vicente. Este curioso fenómeno hasta entónces desconocido, vino á revelar una nueva lei meteorológica de grande importancia de la física del globo: la existencia de una contra-corriente de los alisios, en las elevadas regiones de la atmósfera. Cuando Humboldt ascendió al pico de Tenerife, dice Milner[232], el viento del Oeste soplaba con una violencia tal, que apénas pudo sostenerse de pie, aunque las partes bajas de la isla estuviesen bajo la influencia de la corriente constante de Nordeste; y se ha observado muchas veces que en las elevadas regiones de la isla canaria, se ha experimentado un viento contrario á aquel que reina sobre la superficie general.

Al considerar el origen de esta contra-corriente, Dove, ese reformador de la meteorología moderna, dice: "Un hecho que testifica la existencia de esta corriente, es el movimiento de las nubes en las altas regiones en sentido contrario de las corrientes alisias que han sido observadas en la superficie de la tierra, y expresamente mencionadas por muchos navegantes. De estos citaremos tan solo á Basil Hall y Paludan. Fendler en la colonia Tovar, (Venezuela), ha probado la existencia de la corriente con observaciones numéricas, llevadas durante una larga serie de años. El nivel en que esta corriente principia es tan elevado, que no se ha averiguado con certidumbre, en las ascensiones á los mas elevados picos de las cordilleras en las cercanías á la región de las calmas; pero su existencia es ya un hecho demostrado en esta región. En las noches del 30 de Abril y 1° de Mayo de 1812, se oyeron en la Barbada explosiones como de gruesa artillería, que llegaron al punto de poner en armas la guarnición del fuerte Santa Ana. Al rayar el dia del 1° de Mayo, el horizonte se presentó claro hácia el Oriente, miéntras el resto del cielo se cubria de negras nubes. La oscuridad se extendió prontamente á todo el firmamento y llegó á tal grado de intensidad, que las ventanas de los aposentos no pudieron distinguirse; miéntras los árboles se encorvaron bajo el peso de la lluvia de cenizas que cayó sobre ellos. ¿De dónde provenían estas? En los meses de Abril y Mayo

[232] Milner. The Gallery of nature.

los vientos alisios se encuentran tan elevados, que era natural conjeturar que venían de los volcanes de las Azores. Pero no fué así. El verdadero origen de las cenizas era el volcan del Morne-Garou, en la isla de San Vicente, que está situado á cien millas al Oeste de la Barbada, y de donde es imposible comunicarse con esta, sin atravesar un camino mui tortuoso á causa de la dirección de los alisios. Las cenizas del volcan habian sido lanzadas por la violencia de la erupción al través de los alisios inferiores hasta la contra-corriente superior. Por segunda vez en 20 de Enero de 1835, el istmo de la América central fué sacudido por un temblor de tierra que acompañó á la erupción del Coseguina en el lago de Nicaragua. La violencia de la erupción fué tan enorme, que los ruidos se escucharon en Santa Fe de Bogotá, situada á una distancia de 1.000 millas ; miéntras la nube de cenizas era tan densa que el puerto de mar la Union, en la bahía de Conchagua, estuvo sumergido en tinieblas durante cuarenta y tres horas. Cayeron igualmente cenizas en Kingston y en otros lugares de Jamaica, revelando á sus habitantes, que las explosiones que habian oido no eran de artillería. Estas cenizas no pueden haber sido conducidas á la Jamaica sino por la contra-corriente de los alisios, porque ella se encuentra situada al Nordeste de Nicaragua."

"El hecho de que las cenizas de los volcanes Morne-Garou y Coseguina hayan alcanzado hasta la contra-corriente superior, prueba que las erupciones deben haber sido de una violencia extraordinaria."[233]

II

Teoría del levantamiento de las montañas. Los sistemas de cordilleras y las corrientes ígneas del globo. Aplicaciones de la teoría al estudio de los fenómenos volcánicos de las Antillas y costas de Venezuela. Pentágono de las Antillas y círculos volcánicos del Atlántico. Su conexion con los focos volcánicos del globo.

Al considerar esta region de América, cuyas catástrofes durante dos años no han borrado aun de nuestra memoria, debo, para el completo estudio de los fenómenos, considerar las relaciones que ligando en la superficie las diferentes líneas de fracturas y de estratificacion, sirven como de guia en las excavaciones y profundidades desconocidas del interior del globo.

Pero ántes de entrar en materia, juzgo necesario para la completa inteligencia de los fenómenos, recordar la sabia teoría de Elie de Beaumont, á saber: la

[233] Dove. The Law of storms, etc.

formacion de la RED PENTAGONAL, que envuelve la esfera, y la direccion de los 159 círculos que le constituyen cruzándola en todas direcciones y estableciendo en ella el órden cronológico en que se han producido todas las arrugas de la corteza terrestre; la discontinuidad y el desórden aparente de los pliegues que forman los eslabones de las montañas; sus diferencias de posición; los puntos de menor resistencia; fenómenos todos relacionados con causas mecánicas y con fuerzas en el interior del planeta.[234]

Deduciendo Beaumont la explicación de su ingeniosa teoría de la regularidad que presentan los ángulos de las grandes cadenas de montañas y su paralelismo con los grandes círculos de la esfera, ha podido estudiar la dirección de los veintiún sistemas de montañas de la Europa, y ha encontrado que los ángulos formados entre sí por los círculos primitivos tienen un valor constante,

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[234] Elie de Beaumont, estudiando todas las arrugas de la corteza terrestre, la direccion y el paralelismo de los diferentes sistemas de montañas, atendiendo á que los 15 grandes círculos que dividen la esfera, se cortan de 5 en 5 puntos de aquella, formando ángulos de 36º que la dividen á la vez en 20 triángulos equiláteros y en 12 pentágonos esféricos regulares; ó en otros términos, atendiendo á que los 15 grandes círculos que dividen la superficie de la esfera en 120 triángulos rectángulos escalenos, iguales en superficie y simétricos de 2 en 2, puedan considerarse ad libitum como formando por su justa posicion natural, 30 losangos, 20 triángulos equiláteros ó 12 pentágonos esféricos regulares, tiene motivo para sospechar que bajo el punto de vista de la mecánica y de la geometría aplicadas á la geología, el pentágono es la figura mas característica, y designa por lo tanto, la red formada por los 15 grandes círculos primitivos y por los que le son accesorios, bajo la denominacion de RED PENTAGONAL (reseau pentagonal).

Los efectos de la contraccion de la masa interna, dice Beaumont, sobre la corteza entera del globo, aunque tendiendo á producir una compresion y no una separacion, guardan una analogía con aquellos que resultan de la separacion producida por la division del basalto en prismas de 3, de 4, y muchas veces de 6 caras. Es verdad que en lo expuesto se trata de pentágonos y de diversas combinaciones en que entra el número de 5, en lugar del *exágono regular*, que en el estado normal del fenómeno sirve de base á los prismas basálticos; pero esta diferencia no es sino cambio de forma, que las propiedades de la esfera introducen en 1 manifestación de una misma tendencia fundamental. El basalto se divide en prismas exágonos, porque el triángulo equilátero, el cuadrado y el exágono son los únicos polígonos regulares que pueden servir para dividir un plano en partes iguales entre sí, como se ve en los aposentos cuadrados: por otra parte, entre estos tres polígonos, el exágono es el que tiene mayor número de lados, y el perímetro mínimo para una superficie dada. A causa del exceso esférico, la esfera no puede ser dividida en exágonos regulares ni en cuadriláteros con ángulos rectos, sino en triángulas equiláteros, en cuadriláteros con ángulos de 120" y en pentágonos regulares por los arcos de sus grandes círculos.

De aquí resulta que los 15 círculos que dividen la esfera en 12 pentágonos regulares gozan de una propiedad de contorno mínimo, que hace el sistema de líneas de mas fácil división. Si, todas las arrugas de la corteza terrestre se hubieran producido simultáneamente, estos 15 círculos no serian los únicos que sobre esta existieran; mas como su producción ha sido sucesiva, los círculos octaédricos, los dodecaédricos y otros, han sido probablemente intermediarios necesarios para pasar de uno á otro de los círculos fundamentales Todo en conjunto constituye una especie de *clavero* en el que la naturaleza, siempre en accion, ejecuta desde que el globo terrestre principió á enfriarse, una especie de armonía secular (Beaumont. Systeme de montagnes).

y quo las cadenas están reunidas en grupos que forman casi ángulos rectos. Comparando estos ángulos con el simple pentágono quo envuelve la esfera, y dividiéndola en 120 triángulos escalenos de igual magnitud, el autor ha encontrado que los ángulos en que los 15 grandes círculos están incorporados, son de 36, 60, 72 y 90 grados. Estos hechos, en relación con otros fenómenos geográficos, han servido á Elie de Beaumont para considerar la formacion de las montañas como resultado de los pliegues ó duplicaciones causadas por la contracción sucesiva de la masa del globo en el curso de su enfriamiento.[235]

Proyectando de una manera gnómica, es decir, proyectando la superficie de la esfera sobre uno de sus planos tangentes por la prolongacion pura y simple de los rayos posteriores de su centro, Beaumont ha formado la red pentagonal de la Europa, y la condicion á que la ha sometido es la siguiente. "Uno de los puntos T polo de los 30 dodecaedros romboidales cae en el centro del Etna, de tal manera, que dos de los círculos principales del haz un dodecaedro romboidal, y uno de los 15 círculos primitivos que se cortan en ángulo recto, representan, el uno, el eje volcánico del Mediterráneo, que une el Etna y el pico de Tenerife; el otro el sistema del Tenare, quo une sucesivamente el volcan siciliano á las islas Eolianas, el Vesubio y al Mowna-Loa de las islas Sandwich. Por otra parte, siendo esta cima, uno de los puntos importantes de la red teórica, en ella vienen á encontrarse muchos otros círculos y el Etna, volcan central por excelencia, es de esta manera como un punto de reunion de gran número de planos, que representan la direccion en que se ha hendido la corteza."[236]

Basado en esta sabia teoría reconocida hoi por la ciencia, es que Saint-Claire Deville estudiando las diversas líneas de estratificacion que recorrió en 1843 el célebre terremoto de la Guadalupe, ha llegado á descubrir la relacion que existe entre las conmociones volcánicas de las pequeñas Antillas con el litoral oriental de Venezuela.

Estudiando la cuestion, este sabio geológo encontró que dos direcciones notables y divergentes se ostentan al primer punto de vista en los estragos causados por el terremoto: la una es de O. 22º N. á E. 22º S.; la otra representa las costas enteramente desmanteladas. Esta línea que coincide con la direccion del calcáreo moderno de las Antillas, corre O. 35º N. á E. 35º S. La primera no difiere, segun Deville, de la línea de las costas orientales de Venezuela en que

[235] Beaumont. Systeme de montagnes. Wells. Annual of scientifique Discovery for 1852.

[236] Saint-Claire Deville. Bulletin de la Societé geologique de France, 1858.

se sintió el sacudimiento del 8 de Febrero en la Guadalupe, y que constituye, según este sabio, el carácter dominante desde el cabo de San Roque hasta la punta septentrional de Cuba y de la Florida.

"El terremoto de Carácas en 1812, añade, ofreceria por su parte algo de análogo. M. de Humboldt, en su relacion histórica, ha señalado un conjunto de fechas que parecia establecer una semejanza de causa entre el levantamiento de la isla Sabrina, en las Azores, el temblor de tierra de San Vicente, seguido á la erupcion del volcan, y la destruccion de Carácas. ¿Seria una segunda línea que corre hácia el N. E. y corta en un ángulo bastante considerable la que acabamos de indicar, dividiendo de esta manera la cadena de las Antillas en dos hendeduras cuyo encuentro se verificaria entre Santa Lucia y la Martinica? Podria encontrarse en las islas meridionales y sobre en la Trinidad, un terreno moderno, pero diferente del calcáreo de las Antillas, y cuyas circunstancias de yacimiento se hallaran en relacion con este segundo alineamiento. Generalizando esta idea y llevándola mas léjos, si dos líneas de levantamientos ó de conmociones se encontrasen, el sacudimiento podria bifurcarse, propagarse aun en muchos ramales que vendrian á cruzar la direccion inicial del movimiento. Así podrian explicarse las apariencias do irradiación ó de divergencia que presenta el fenómeno; así podria explicarse, en fin, la propagación mas fácil y mas completa del choque, siguiendo determinadas crestas de montañas, al través de llanuras sin relaciones geológicas con el primer lugar geométrico de las oscilaciones."

Pero no es solo el paralelismo de estas dos líneas, calcáreo moderno de las Antillas y de la costa oriental de Venezuela, lo que liga los fenómenos del volcanismo en estas dos regiones opuestas, sino el paralelismo que ellas guardan con el gran círculo primitivo de la red pentagonal, que atraviesa el océano Atlántico á iguales distancias do las costas opuestas del Africa y de la América.

Llamando la atención sobre el influjo de este gran círculo en el sistema estratigráfico de las Antillas, Deville le sigue en su curso sobre el resto del globo, y dice: "Vémosle cortar el Ecuador hácia los 27° 86' S. de longitud occidental, y casi inmediatamente despues, pasar mui cerca del punto singular, hácia el cual Mr. Daussy ha llamado hace mucho tiempo la atención de los sabios, y que parece ser casi sin interrupcion el sitio de terremotos ó de erupciones submarinas[237] Despues de haber dejado á corta distancia, hácia el Oeste, las dos islas volcánicas de la Ascensión y de Santa Elena, llega á la Nueva Holanda,

[237] 22º 12' de longitud 0, y 0º 50' de latitud S.

siguiendo toda la longitud de su costa Noroeste: luego saliendo de la N. Guinea atraviesa el pequeño grupo, tan frecuentemente en erupciones, de las islas de Dampier; cae exactamente sobre la isla Necker, la última del archipiélago volcánico de las islas Sandwich; toca en fin la América septentrional, arriba de Santa Bárbara, de manera que llena el eje del grupo volcánico de la sierra de Mogollones y vuelve al punto D, centro del pentágono de las Antillas, cortando trasversalmente la base del valle del Mississipi donde se experimentan, como se sabe, frecuentes agitaciones del suelo y fenómenos superficiales mui curiosos."

Antes de la destrucción de la Guaira y Carácas, dice Lyell[238], al considerar la importancia de estas regiones, grandes terremotos se experimentaron en la Carolina del Sur, y los choques continuaron hasta la completa destrucción de aquellas ciudades. El valle del Mississipi desde la ciudad de Nueva Madrid hasta la boca del Ohío por un lado, y la del San Francisco por el otro, estuvieron enunciado de convulsión tal, que aun llegaron á formarse nuevos lagos é islas…Durante todos estos trastornos, la tierra se levantó hasta detener el curso del Mississipi, causando un reflejo temporal de las aguas. Por otra parte, añade Humboldt[239] el terremoto de Nueva Madrid constituye uno de los pocos ejemplos que conserva la memoria, de un incesante temblor de tierra durante una serie continuada de meses, en regiones alejadas de chimeneas volcánicas.

"El papel que desempeña este gran círculo primitivo, continúa Deville, es, por decirlo así, completado por un segundo círculo primitivo que viene á encontrarle en ángulo recto en el punto H, situado en el océano Atlántico septentrional por la longitud de las Guayanas."[240]

"De la misma manera que el primero era paralelo á las costas N. E. de la América, pero hácia afuera este es paralelo á la costa S. E. en el interior de las tierras. Los dos círculos se corresponden por otra parte de una manera análoga para el continente africano, siguiendo cada uno á cierta distancia, una de las dos líneas de costas que se cortan en Cabo Verde. En el punto H de la Nueva Guinea antípoda del precedente, se ve el segundo círculo seguir por defuera de la costa N. E. de la Australia; así como el primero seguia en el interior de las tierras la costa N. O. y el Cabo York, que está precisamente en el medio del ángulo que ellos determinan."

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238 Lyell. Principles of Geology.

239 Humboldt. Cosmos.

240 Véase el globo de Mr. Dien en que Mr. Laugel ha trazado, según las indicaciones de Beaumont, la red pentagonal.

"El segundo círculo, dejando los parajes de la Nueva Holanda, va á pasar casi exactamente por el estrecho de Cook entre las dos islas de la Nueva Zelanda, continuamente agitada por los temblores de la tierra; toca la América meridional en el punto D de Valdivia, de donde parte el círculo primitivo, en que Elie de Beaumont ha hecho notar hace tiempo, la coincidencia absoluta en la línea de las costas de Chile y del Perú, sitio de incesantes violencias del suelo; deja el continente por el litoral de Maranhao hácia donde se extendió y sintió el sacudimiento del 8 de Febrero, atraviesa la isla volcánica de Madera y corta la España y la Francia en el ángulo formado por el golfo de Vizcaya, cerca de esa extremidad occidental de los Pirineos en que Mr. Antonio d' Abbadie ha hecho conocer el estado de oscilacion casi permanente. Pero el hecho sin contradiccion mas notable, es que pasa por Lisboa, cuyo célebre terremoto en 1755 fué sentido el mismo dia 1º de Noviembre en toda la línea de las Antillas, desde la Barbada hasta Cuba, es decir, sobre este eje central paralelo al primer círculo primitivo de que hemos hablado."

"He aquí dos grandes círculos *conjugados*, que podrian llamarse los dos *ejes volcánicos del Atlántico,* y cuya influencia es mui notable sobre la distribucion de los temblores de tierra en la superficie del globo. Pero hai algo mas."

"El ángulo recto que ellos hacen entre sí, en los dos puntos H de que se trata, está dividido en dos partes iguales por un dodecaedro romboidal, que, despues de haber atravesado los Andes cerca de Guayaquil y de Riobamba, cuyas catástrofes son célebres, viene á formar el eje de la elipse prolongada descrita por las islas de la Sonda, desde la extremidad volcánica de las islas de Salomon hasta la costa N. O. de Sumatra, y en el mismo centro de esta elipse, pasa exactamente sobre las islas de Amboine y de Banda, que desde mediados del siglo último hasta nuestros dias, no han cesado de experimentar las mas violentas erupciones."

"Tomemos ahora el punto T, colocado sobre este dodecaedro romboidal, precisamente á igual distancia de los dos puntos H, y sigamos hácia el Norte el gran círculo primitivo que en este punto le es perpendicular (y que tiene por lo tanto, por polos, los dos puntos H en cuestión) hasta su encuentro en el centro del pentágono D, situado en la América rusa. Aquí convergen, como se sabe, cinco círculos primitivos. Uno de ellos desempeña un papel importante en las pequeñas Antillas volcánicas, en donde determina la alineación de las tres islas centrales la Guadalupe, la Dominica y la Martinica; del lado del océano Atlántico sigue á alguna distancia la hilera volcánica del Japón, de las islas Kourilles y del Kamtschatka, pasa á la isla *Azufre*, en Gilolo, y vuelve

á encontrar el dodecaedro romboidal en el nudo del archipiélago volcánico de las Molucas."

"El mas próximo hácia el O. ántes de llegar al centro volcánico continental de Albuquerque, pasa por el vecindario do los macizos volcánicos en el N. O. de los Estados Unidos; cae mas despues exactamente en Méjico, centro de los inmensos conos de esta región; y pasa de aquí al grupo volcánico de las islas Galápagos."

"El segundo hácia el O, es aquel que es perpendicular en T al dodecaedro romboidal, y que felizmente encuentra en su camino el enorme pico volcánico de San Elias (5.800 metros de altura)."

"El tercero está aun mas favorecido, porque es el gran círculo del Tenare, y se une por lo tanto al Mowna-Loa de un lado, miéntras por el otro se une al Vesubio, á las islas Eolianas y al Etna."

"El cuarto círculo forma la península de Alatska toda eslabonada de volcanes de grande actividad, y va á encontrar el dodecaedro romboidal en la extremidad oriental de las islas de la Sonda (islas volcánicas de Salomen)."

"De esta manera, no solo ninguno de estos cinco círculos que se cortan en el punto D de la América rusa, es extraño á los fenómenos volcánicos, sino que siguiéndolos sucesivamente en su curso se les encuentra, por decirlo así, relacionados con la mayor parte de los centros volcánicos del globo."

"Notaráse que es sobre todo hácia el océano Pacífico que se desenvuelve la influencia volcánica de los círculos que irradian del punto D, y podemos sin dificultad concluir, que este centro del pentágono parece haber sido el centro de un postrer estrellamiento de la costra terrestre que ha dejado uno de los hemisferios casi todo continental, mui pobre en volcanes, raras veces agitado por los temblores de tierra; mientras que el otro hemisferio casi del todo cubierto por las aguas, está surcado de bandas volcánicas condenadas á una perpetua y convulsiva agitación.[241]"

III

Correlacion de los fenómenos entre la region volcánica de las Antillas y la costa oriental de Venezuela. Sincronismo de sus convulsiones. Conexion de los sacudimientos de los Andes con la costa oriental de Venezuela. Independencia de los sacudimientos de Carácas. Conclusion.

[241] Saint-Claire Deville. Bulletin de la Societé geologique de France, 1858.

Si en posesion de estos datos científicos, estudiamos el litoral Oriental y Norte de Sur América buscando las causas que ligan los fenómenos volcánicos de las Antillas con Venezuela, encontrarémos dos regiones que aunque situadas en una misma línea, discrepan mucho una de otra en los fenómenos del vulcanismo.

La una es la oriental. Humboldt opina que despues de la ruina de Quito en Febrero de 1797, año que marca una de las épocas desastrosas de Cumaná, la costa oriental de Venezuela parecia encontrarse en un grande estado de agitacion. Por otra parte, Saint-Claire Deville, en una carta á Elie de Beaumont, en 1840[242] llama la atencion de este sabio *sobre los efectos volcánicos recientes en el golfo de Pária, que él atribuye á un movimiento efectuado en una línea que corre de N. O. á S. E.*

La historia de cada uno de los terremotos que ha experimentado Cumaná, da fuerza á la opinion del geológo frances, y todo revela, que si algun dia las fuerzas ígneas se abren paso por las regiones orientales del continente americano, del todo desprovistas de volcanes activos, el lugar de preferencia será sin duda la parte oriental de Venezuela. La península de Pária podrá ser descartada del continente, como en otro tiempo la Trinidad; y la hilera volcánica de las Antillas tendrá al fin un punto culminante hácia el Sur que unirá en arco las costas orientales del continente con las chimeneas volcánicas de aquella region.

Si estudiamos en órden cronológico cada uno de los diversos sacudimientos de la costa oriental de Venezuela, y los que en iguales fechas se han sentido en las Antillas, tendrémos el siguiente cuadro que mostrará la íntima conexion que liga los fenómenos ígneos de una y otra region.

[242] Bulletin de la Societé geologique de France, 1858.

COSTA ORIENTAL DE VENEZUELA	PEQUEÑAS ANTILLAS
1766, (21 de Octubre). Terrible terremoto en toda la provincia de Cumaná. Segun Humboldt, estuvo el suelo agitado al mismo tiempo en Carácas, Maracaibo, Surinan y orillas del Casanare, Meta, Orinoco, Venturario y toda la parte Nordeste del continente. En las regiones graníticas del Orinoco hubo grandes derrumbes y una isla cerca de Araracota desapareció.	1766. Segun Poey, en su catálogo cronológico, hubo en la region de las Antillas, temblores de tierra desde Enero 27 hasta 12 de Diciembre, en Santo Domingo, Antigua Granada, Martinica, Jamaica, Cuba, Santa María, San Pedro, Guadalupe, Trinidad. El 11 de Junio tuvo lugar un violento sacudimiento en Santiago de Cuba, que destruyó una multitud de edificios. En la misma noche se sintió en Jamaica, pero con ménos estragos: en esta última isla el sacudimiento fué acompañado de emision de llamas y de luz.
1839, (12 de Abril). Gran terremoto de Cumaná.	1839. Temblores de las Antillas desde 11 de Enero hasta 22 de Octubre en Martinica, Guadalupe, Barbada, Santa Lucía, Antigua, Jamaica. Segun Moreau de Jonnès, el temblor de la Martinica el 11 de Enero de este año, se propagó en la cordillera de las Antillas en una longitud de 200 leguas y hasta 20 á lo ancho, en los lugares en que el mar estaba sin fondo.
1853, (15 de Julio). Gran terremoto de Cumaná.	1853. Temblores en las Antillas desde Enero 11 hasta 30 de Diciembre en Cuba, San Kitts, San Martin, Antigua, Haití, Santómas, Trinidad.

El estudio de este cuadro revela la influencia que ejercen sobre las pequeñas Antillas las grandes conmociones que se han experimentado en la costa oriental de Venezuela. Si marcamos ahora las fechas en que han tenido lugar las erupciones volcánicas y terremotos de las mismas Antillas y buscamos la coincidencia de fenómenos en las costas opuestas, encontraremos una identidad de relaciones que parece marcar los extremos de una línea de comunicacion cuyo límite Norte estaria en el archipiélago índico, miéntras el extremo Sur corresponderia al terreno volcánico de la costa de Pária y lugares vecinos.

PEQUEÑAS ANTILLAS	COSTA ORIENTAL DE VENEZUELA
1797, (28 de setiembre). Erupcion del volcan de la Guadalupe. Temblores en las Antillas desde Febrero 4 hasta 26 de Diciembre en la Guadalupe, Jamaica y otras islas. Del 4 al 20 de Febrero, dice Poey, que las Antillas experimentaron conmociones que continuaron durante ocho meses hasta las erupciones del volcan de la Guadalupe en 27 de Setiembre.	1797. Terremoto de Cumaná en 14 de Setiembre.
1836. En 12 de Setiembre, el volcan de la Guadalupe arrojó agua y cenizas. En 8 de Diciembre vomitó lava, en 1837 hubo temblores en las Antillas, segun Poey, desde 22 de Abril hasta 30 de Noviembre en Guadalupe, Martinica, Cuba, San Vicente, Barbada, Antigua, Santómas.	1837. Terremoto de Cumaná en 12 de Febrero
1843, (Febrero 8). Terremoto en la Guadalupe. Es el año en que ha habido en las Antillas mas abundantes temblores de tierra, segun Poey: se sintieron desde el 8 de Febrero hasta 30 de Diciembre. Las conmociones se extendieron hasta Charleston, en la Carolina del Sur, por el Norte, y hasta la embocadura del Amazónas hácia el S.	1843. En este dia, Febrero 8, se sintieron en toda la region oriental de Venezuela grandes y prolongados truenos que duraron cinco minutos. La tierra tembló pero sin ocurrir estragos.

Pero lo mas sorprendente en el estudio de estos hechos, es que, los fenómenos del vulcanismo en la costa oriental de Venezuela, no solo están ligados de una manera evidente, con los que se efectúan en la region de las pequeñas Antillas, sino que guardan una relacion mui notable con los fenómenos volcánicos de los Andes sur-americanos. Estudiando algunas de las grandes catástrofes de las regiones del Pacífico, encontrarémos que ellas han tenido un eco en la costa oriental de Venezuela y en las Antillas, como puede verse en el cuadro siguiente:

REGION DE LOS ANDES	COSTA ORIENTAL DE VENEZUELA
1766. Sexta erupcion del Cotopaxi.	1766. Terremoto de Cumaná, 21 de Octubre. (Véase el cuadro núm. 1º).
	1776. Terremoto en Cumaná. Temblor en la Guadalupe y otras Antillas.
1777. Erupcion del Tunguragua.	
1797. Febrero de 4 al 20. Destruccion de Riobamba, Ambato y Latacunga. En el mismo dia, los habitantes de Pasto vieron desaparecer súbitamente, segun Humboldt, la columna de vapores que salia desde 1796.	1797. Terremoto de Cumaná, 14 de Diciembre. Las Antillas, segun Poey, experimentaron conmociones que se sintieron durante ocho meses hasta la erupcion del volcan de la Guadalupe en 27 de Setiembre. (Véase el cuadro precedente).
1826 y 1827. Gran terremoto en Nueva Granada en 17 de Junio de 1826, debido á la erupcion del Tólima. Boussingault dice, que esta conmocion se sintió en una superficie de mas de 6.000 miriámetros cuadrados. En 16 de Noviembre de 1827, segundo terremoto de Nueva Granada, y segun el mismo sabio, la onda abarcó un espacio de 3.000 leguas cuadradas.	1826 y 1827. Temblores en las Antillas desde Enero hasta Setiembre; y en 1827 desde Junio hasta Diciembre. El temblor de la Martinica en 8 de Diciembre ostentó una direccion Sur-norte y se sintió en Venezuela. El 18 de Setiembre terremoto de Santiago de Cuba. Mas tarde, en 1828, gran conmocion en Cumaná. Durante esta, dice Daubeny, un buque inglés en el puerto, fué súbitamente cubierto por la niebla, y un ruido como el de un trueno lejano se dejó oir: un choque le acompañó, y el agua chirreaba como si un hierro candente se hubiera introducido en ella, trayendo á la superficie burbujas de gases acompañadas de un olor de azufre. Sobre la superficie flotaron multitud de pescados muertos.
1834. destruccion de Pasto de 21 á 22 de Enero. Las conmociones se sintieron hasta las orillas del Magdalena 200 leguas hácia el Norte. Terremoto de Santa Marta en Mayo 22.	1834. En el mismo dia, 21 á 22 de Enero, temblor en la Martinica. Terremoto de Jamaica en Setiembre 7.
1835, (20 de Febrero). Erupcion submarina en la isla de Juan Fernández, en el Pacífico. En Enero de este año, segun Darwin, tuvieron una erupcion los volcanes Osorno y Aconcagua, en los Andes de Chile, que fué sincrónica con la del Coseguina en Nicaragua. Desde Febrero 20 principiaron á levantarse las costas del Pacífico. Mas tarde, en Noviembre 11, los volcanes Osorno y Corcovado en estas mismas latitudes entraron de nuevo en erupcion produciendo temblores en toda la region de Chile.	1835. Ocho dias ántes del 20, es decir, el 12 de Febrero, violento temblor de tierra en las costas de la Guayana. El 11 hubo temblor de tierra en la Guadalupe y en Marzo, Mayo y Setiembre en la Trinidad.

Al considerar de una manera concienzuda cada uno de los resultados que dejamos consignados en los precedentes cuadros, tendrémos que reconocer que los sacudimientos de la costa oriental de Venezuela, no son engendrados por una causa local y limitada tan solo á esta region, sino por causas generales que, obrando á grandes distancias, relacionan los fenómenos volcánicos del Oriente de Venezuela con dos grandes focos de la actividad ígnea del planeta: el uno hácia el Norte, limitado á los volcanes de las pequeñas Antillas; el otro hácia el Sur y Oeste, comprendiendo la gran batería volcánica desde los Andes de Chile hasta el Istmo de Panamá.

Contraigámonos ahora á las costas de Carácas, y busquemos la relacion que hai entre los temblores de tierra y terremotos de esta region, con los sacudimientos de Cumaná. ¿Existe algun sincronismo entre los terremotos de Carácas y las erupciones volcánicas de los Andes y de las Antillas? A primera vista parece que estando Carácas en la misma costa que Cumaná, y en la ramificacion oriental de los Andes, debian sus sacudimientos estar relacionados con el vulcanismo de aquellas dos últimas regiones; pero los hechos no revelan nada de esto. Durante los últimos trescientos años, Carácas ha experimentado tan solo dos violentos sacudimientos que puedan considerarse como una verdadera catástrofe; el uno en 1641, el otro en 1812. Que el terremoto de 1641 sea un choque reflejo del que segun algunos experimentó Cumaná en igual fecha, ó que se haya limitado solamente á este punto de la cordillera costanera de Venezuela, es lo cierto que aquel terremoto no coincide con ninguna erupcion volcánica ni terremoto en todo el continente sur-americano, ni en el mismo dia, ni en el mismo año. Poey, por otra parte, no refiere en su catálogo de temblores de tierra en las Antillas, fecha alguna referente á este año. Este sacudimiento puede pues considerarse como un hecho aislado, en que la onda elástica obró sobre un solo punto sin ramificacion de ningun género; "fué una erupcion volcánica abortada." "A pesar de las íntimas relaciones que se manifiestan entre la accion de los volcanes de las pequeñas Antillas y los terremotos de la Tierrafirme, dice Humboldt, acontece con frecuencia que los sacudimientos del archipiélago volcánico, no se propagan ni á la isla de la Trinidad ni á las costas de Cumaná y de Carácas. Este fenómeno no tiene nada de admirable; aun en las pequeñas Antillas, quedan á veces los movimientos reducidos á una sola isla. La grande erupcion del volcan de San Vicente en 1812, no causó ningún temblor de tierra en la Martinica, ni en la Guadalupe, y

aunque se oyeron tanto allí como en Venezuela fuertes estruendos, se mantuvo el suelo en tranquilidad"[243]

El terremoto de 1812, fué por el contrario, uno de los diversos modos con que se exhibió una causa profunda obrando bajo una grande área de la superficie del globo. No coincidió esta catástrofe con ninguna erupcion en los Andes, ni con la del volcan de San Vicente que tuvo lugar treinta y tres dias después de la ruina de Caracas.

Boussingault cree que los terremotos mas memorables del Nuevo Mundo, los que arruinaron las ciudades de Latacunga, Riobamba, Honda, Carácas, la Guaira, Mérida, etc., no irán coincidido con ninguna erupcion volcánica bien determinada". "En los Andes, dice este sabio, la oscilacion del suelo, que depende de una erupcion, es casi local; mientras que un terremoto, que en apariencia no está ligado á ninguna accion volcánica, se propaga á distancias inmensas siguiendo la direccion de las cadenas montañas[244]".

Pero hai algo mas importante aún, y es que los terremotos de Carácas, no solo no han estado ligados con erupciones volcánicas, ó con terremotos sin erupción de los Andes y las Antillas, sino que las grandes catástrofes que en todas épocas han destruido los pueblos en uno y otro continente del hemisferio americano, no han tenido eco alguno en las regiones de Carácas, miéntras la costa oriental de Venezuela puede considerarse como un punto intermedio que participa del vulcanismo de las pequeñas Antillas, y del que en los Andes se ostenta bordando las orillas del Pacífico.

Cree Moreau de Jonnès que Carácas y Cumaná son el punto de partida de la cadena volcánica de las Antillas, y que es por lo comun por estas ciudades que principian los temblores de tierra que se propagan en toda la extension del archipiélago. Esta última observacion es contraria á las de Itier y Deville, quienes han manifestado que durante el terremoto de la Guadalupe, en Febrero 8 de 1843, el movimiento se propagó de esta última isla hácia Cayena; y estas dos opiniones están en contradiccion con la que ha emitido Mr. Rogers sobre el temblor de tierra que se sintió en los Estados Unidos en el mismo año, á saber: que en el sentido de su direccion, el choque fue simultáneo sobre toda la línea.[245]

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243 Humboldt. Relation historique, etc., etc.

244 Boussingault. Viaje á los Andes.

245 D'Archiac. Histoire des progres de la Geologie.

Me parece que esta última observacion es la que está mas en armonía con los hechos; pero por lo que respecta á la opinión de Moreau de Jonnès, que supone que Carácas pueda estar relacionada con las conmociones de Cumaná y las Antillas, me parece inexacta. Solo puede admitirse una relacion directa entre las Antillas y la costa oriental de Venezuela. Caracas queda fuera de estas líneas de comunicaciones, aunque de una manera refleja experimente pequeños temblores relacionados con los grandes terremotos de Cumaná.

No debe olvidarse, de otra parte, que en la región oriental de Venezuela, los fenómenos volcánicos van cada dia ganando terreno, miéntras que Carácas edificada sobre una poderosa formacion metamórfica, el gneis, está fuera de toda influencia plutónica. Es la naturaleza de la roca, su facilidad para trasmitir las ondas elásticas, lo que hace que en Caracas se sientan los mas pequeños sacudimientos, miéntras otras ciudades edificadas sobre depósitos estratificados, resisten á las mas grandes conmociones. Esta elasticidad de los terrenos metamórficos y primitivos, hace que los grandes movimientos se trasmitan á enormes distancias, siguiendo la direccion de los sistemas de cordilleras, y derribando los pueblos que en ellos están "como castillos de naipes".

(27 agosto, 1876.) Revista Hispano-Americana. 231

que existe entre los terremotos de Caracas y Cumaná con los fenómenos volcánicos de las Antillas y los Andes.

Esto puede convenir en mucho á los intereses históricos y al progreso de los conocimientos comunes en materia tan ignorada. Tu amigo, etc.

FELIPE LARRAZABAL.

FRAGMENTO

DE UN ESTUDIO GEOLÓGICO

SOBRE

LOS TERREMOTOS Y TEMBLORES DE TIERRA

EN VENEZUELA

POR

ARÍSTIDES ROJAS, D. M.

I.

El Volcanismo.—Los Terremotos y los simples volcánicos.—Rápida ojeada de orientación en torno las dos Américas.—Tabanitos de Cachao y de las cercanías del Mediodía en 1853.—Erupción del volcan de Santorino en las Pequeñas Antillas.—Opiniones de Humboldt.—Duración y fecundidad de la erupción.—Elevación de sus cenizas.—Fenómenos notables de la misma erupción de las cimas ígneas.—Conclusiones de Leop.

La célebre catástrofe que en 1812 destruyó la ciudad de Caracas y una parte de los pueblos de Venezuela, no es un acontecimiento aislado en la historia geológica de nuestro planeta. Causas generales, ocultas y misteriosas en su acción, pero conocidas en sus resultados, obrando en las profundidades de la tierra engendran fenómenos múltiples que se revelan en variadas formas. Ya sea que los continentes ó las islas se levanten ó se sumerjan: ya sea que las erupciones volcánicas destruyan con el fuego del planeta las creaciones del hombre; ya que los terremotos y temblores de tierra conmuevan y sepulten las ciudades infundiendo el espanto y el terror; ya, en fin, que el levantamiento de las costas se efectúe de una manera lenta y casi visible á los ojos del hombre; todos y cada uno de estos fenómenos no son sino la resultante de una causa única, el volcanismo, ó como lo definió Humboldt, la reacción del interior de un planeta contra su corteza.

En los primitivos tiempos de la historia de la tierra, las revoluciones á que esta estuvo sometida, se exhibieron con un carácter de terrible grandeza: á proporcion que el curso de los siglos fue consolidando los continentes y estableciendo de una manera sólida el imperio de la tierra sobre el de las aguas, las revoluciones geológicas fueron cambiando de forma, y hoy, salvo una nueva catástrofe general que no es dado prever á la inteligencia humana, puede ya asegurarse que las revoluciones son pacíficas y que las fuerzas elásticas del corazon del planeta, en cumplimiento de fines providenciales, levantan lentamente los continentes en medio de una paz no interrumpida, de la misma manera que en los archipiélagos, la vida orgánica en el silencio de una noche eterna, levanta los escollos, rellena los bajíos, une los estrechos y conquista al fin el imperio de las aguas con nuevos comarcas saladas del seno del abismo.

Créese generalmente que el terremoto de Caracas, que precedió treinta y tres dias á la erupcion volcánica del Morne-Garou, fue ocasionado por esta última. Este es un error que la ciencia moderna se encarga de combatir. Todos los fenómenos que desde 1811 hasta 1813 se exhibieron en esta gran parte del océano Atlántico, resguardada por las dos Américas, es decir, la aparicion de la isla Sabrina en los Azores, los primeros temblores de las Antillas y de Caracas á fines de 1811; mas despues las grandes conmociones en los valles del Ohio y del Mississipi: el terremoto de Caracas en 1812, y finalmente, la erupcion de San Vicente treinta y tres dias despues, son el resultado de fuerzas elásticas que viniendo del interior del globo hicieron reaccion contra esta extensa área del nuevo hemisferio entre las dos Américas.

Esta region, teatro de uno de los más terribles sacudimientos que registra la historia de la tierra, está comprendida al Norte y Oeste por una gran parte de la América del Norte y golfo de Méjico, abraza el Atlántico oriental hasta más allá del meridiano de las Azores, mientras hácia el Sur, perdiéndose en dilatados horizontes, llega hasta los Andes granadinos.

En en medio de esta célebre region que sobresalen los volcanes de las pequeñas Antillas, no como un reflejo de la grandeza que caracteriza á los de los Andes, sino como respiraderos naturales que neutralizan en parte ó evitan las grandes conmociones que las fuerzas plutónicas engendran en una region cuyos contornos están desprovistos de chimeneas volcánicas.

Humboldt cree que la aurora boreal es el fenómeno que da fin á una tempestad magnética en el centro de la tierra; de la misma manera que el rayo en las elevadas regiones de la atmósfera, es el fenómeno que da fin á una tempestad eléctrica (1). ¿Sería aventurado decir que una erupcion volcánica es el fenómeno que da fin á una tempestad sísmica en las regiones profundas del globo (2)? ¿Esa emision de gases, de llamas, de aguas termales y de variadas sustancias que se desprenden de las grietas y

(1) *Humboldt.*—Cosmos.

(2) Sismos viene del griego σεισμος, que significa sacudimiento, conmocion, rotura. De aquí sismómetro, instrumento para medir el choque de un temblor de tierra ó de cualquiera otra conmocion.

Figura 52: Detalles del artículo de Arístides Rojas "Fragmento de un estudio geológico sobre los terremotos y temblores de tierra en Venezuela" publicado en Madrid en la *Revista Hispano-Americana* para la Entrega 7.

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Anónimo, "The Earthquake Term", *Scientific American*, New York, 30 de septiembre de 1868, Vol. XIX, Nº14, pp. 217.[246]

Our mother earth is passing through one of those periods of convulsion the phenomena of which are among the most terrible of all the manifestations of physical forces. The throbbings of the earth crust, which have extended over so vast an area during the last twelve months, the meteoric shower, and the meteorological phenomena during the same period, are together an Interesting subject of study. What mysterious connection exists between those occurrences, if any does exist, or rather the real nature of it, has never been satisfactorily shown; and there is yet, perhaps, room for skepticism upon the hypothesis that the cosmical matter from which the enormous number of meteors periodically rain upon the earth's surface has any direct agency in these disturbances. That the weather and other atmospherical phenomena are influenced by some cause acting in concert with the causes of earthquakes. if not by the same causes, must be admitted. It would be interesting to review la this connection the histories of some of the most remarkable earthquakes on record; we will, however, allude only to one, which destroyed the city of Caracas, in Venezuela, in 1812. The shocks of this earthquake continued at Intervals for months previous to the above catastrophe, and were felt with more or less violence from the mouth of the Ohio River to that of the St. Francis, in the United States. Fissures were opened, lakes disappeared, trees were felled, and such changes produced in the general appearance of the surface that a tract 70 to 80 miles in length and 80 miles wide along the Whitewater River and its branches has ever since been called the "sunk country." The traces of the fissures and chasms produced at that time were visible for years, and were noticed by Flint, the geographer, seven years after their occurrence, and Lyell, the geologist, as late as 1846. Such were the effects of this convulsion in our own land. Throughout Mexico and Central America they were still more remarkable, increasing in Intensity as they extended farther south, finally terminating with the destruction of Caracas, which involved the almost instantaneous death of 12.000 people. The atmospheric phenomena during the period preceding the final great convulsion was exceedingly peculiar. Electrical discharges from an apparently cloudless sky were frequent. Vivid auroral displays wore more than ordinarily common. At New Madrid, below St. Louis,

[246] N de A: Este artículo también aparece publicado en *The London Reader*, Londres, 21 de noviembre de 1868, p. 88.

the inhabitants wore at one time surprised and alarmed by the appearance of the sky, which although cloudless, presented along the western horizon a most brilliant electrical display. A continued glare of most vivid lightning, accompanied by what was at the time supposed to be incessant thunder, appeared to proceed from below the horizon, and coupled with the preceding alarming events, produced great terror In the minds of the people.

The present season has presented great climatic peculiarities. From all parts of the world come accounts of hurricanes, floods, unusual vagaries of temperature, and prevalence of winds from unusual quarters. The *Scientific Review*, speaking of the extraordinary beat and drougth experienced in England, says: "The southerly winds have prevailed for an unusually long Interval, and the weather has consequently been very hot and very dry. On the 22d of July it was possible to cook a beef steak on the south side of Westminster Bridge by the beat of the sun's rays alone. The apparatus employed was of a very simple kind; it consisted of an empty cigar box, the inside of which had been blackened, and the top closed with three panes of glass about one inch apart. In the course of twenty minutes the steak was done on both sides, while a few potatoes were baked around it."

With the south winds end the extreme heat in England has appeared the mosquito, which threatens to become a past in a country hitherto exempt from that annoying insect. The peculiarities of our climate during the last twelve months have attracted much attention. Both extreme cold and heat have been experienced, and these extremes have continued for extraordinary periods, while we have bad unusual storms of wind and rain. All this indicates unusual atmospheric disturbance. Overhead and underfoot the elements are warring with terrific energy. The recent eruption of Vesuvius, the earthquakes In the West Indies and the Sandwich Islands, the meteoric fall of 1866 and 1867, the alleged shifting of the Gulf Stream nearer to the eastern continent, and above all the accounts just received of the disastrous earthquake in southern Peru and Ecuador, exceeded in destructive effect by only two similar events on record, constitute a series of remarkable occurrences which may not perhaps be rashly regarded as the commencement of an epoch of permanent physical and climatic change to which the earth is destined. Some will see in these events the fulfillment of prophecy, and the indications of moral and political changes not less momentous.

The causes which produce the grand and terrible phenomena of earthquakes are doubtless various. The generations of gases by chemical reaction, and the

development of enormous volumes of superheated steam, by the contact of water with the intensely heated interior of the earth, are without doubt the most common and potent. The distance below the surface at which these forces act, although undoubtedly great, is unknown. The sensations produced upon people by earthquake shocks have peculiarities which must be felt to be realized, as it is impossible to give any adequate description of them. The most graphic description we have over heard was given to us by a gentleman who has experienced several of these occurrences both at set and on land. The sensation at sea he says is often described as resembling the shock produced by a ship's striking upon a reef, but there is a feeling of something different, a sort of instinct of something further away and more powerful, which accompanies the first feeling of surprise and alarm, a sort of mysterious pulsation through the water, which once experienced is not easily for gotten. On land ho describes It as being like what would be the feeling of a person standing upon a flexible, buoyant substance, like an immense tarpaulin spread over the surface of a liquid mass in a state of violent agitation. The undulations succeed each other so rapidly and irregularly that it is impossible to time one's stops to meet them, persons are suddenly and violently prostrated, while the mysterious subterranean noises, the peculiar appearance of the sky and atmosphere, the universal alarm of all living things, conspire to produce the most appalling spectacle that the imagination can conceive.

The accounts received from Ecuador and Peru indicates a disaster of almost unparalleled extent, and the misery which must inevitably result will appeal to the sympathy and the charity of the entire civilized world. Whether it will prove the grand finale of the present earthquake term, or whether other disasters are to follow, no mortal can say. Time only can determine this, but we trust that the giant forces which have produced such wide spread devastation and death have expended their energies, and the earth may again "rest for a season."

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Horace D. Warner, "The City of Earthquakes", *Atlantic Monthly*, Boston, Massachusetts, marzo de 1883, pp. 397-403.[247]

[...] Caracas has got used to earthquakes, as México to revolutions. Their frequency has developed a special nomenclature. Terremoto, the literal translation of our comprehensive term, would here be as insufficient as the word hurricane for the description of all kinds of atmospheric disturbances; **temblor**, **vibración**, **tremor**, **golpe rasgo rasgada**, **terremoto**, express only a part of the wide scale between a faint vibration and a wall-breaking shock. Of temblors the city has at the very least a semi-weekly supply; golpes (involving broken windows and fracture brick walls) occur about twice a year, in some years every month.

[....] In 1812, when fourteen thousand persons were killed by the fall of their dwellings, the San Martin district got off with four shattered brick houses, and in 1826 with a few broken windows. The current explanations of this inmunity vary from the most fanciful conceits (as the prophylactic influence of a votive tablet at a certain corner of the favored street) to Proffessor Mckinney's theory, that the formation of the subjacent rocks isolates that part of the table land from the surrounding strata. Several smaller streets, and even single buildings, irrespective of their architectural distinctions, pass for earthquake proof and experience has generally justified that confidence. The north side of the Plaza del Presidio has never sustained any serious damage, while the west and east sides of the square are as liable to accidents as the worst parts of the river suburb. The **puntas tremolosas**, the shaky districts, are likewise well known, but, in consequence of the lower rents, not less well inhabited; some of them being, indeed, in the very centre of the business part of the town, -like the "factory quarter" and the river-side taverns. The old cathedral, too, seems to have been founded on an extremely tremulous basis, and in its presents condition is perhaps the strangest- looking minster, in Christendom. The earthquake of the 1812 had cracked its west wall so badly that the dome threatened to collapse, and as a provisory measure the building was propped up with massive, but rather unsymmetrical, buttresses. Soon after, the top of the dome did fall, and was imperfectly repaired, while the buttresses not only remained, but now support the least grotesque-looking part of the structure;

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[247] N de A: Esta versión es tomada fielmente del artículo de José Grases "El Terremoto de 1812 y sus Efectos", ya citado. La cita corresponde a las páginas 112-115.

for on the east side and above the facade large breaches in the masonry have been patched up with brickwork, at the expense of a pious tiller, who, during the catastrophe of 1826, had made a vow to repair the sacred edifice with his own hands.

The foreign residents of Caracas generally prefer the southern (up-town) quarters, where the natives take the cheaper lodgings and the additional risk. But the experience of the last fourteen generations has somewhat diminished that risk. Caracas was founded in 1567, and has been visited by eighteen terremotos, or earthquakes of the first magnitude. Golpes, rumblings, and tremors are never counted, but must amount to an average of sixty appreciable shocks per year; involving an average yearly damage of three hundred thousand dollars, or the equivalent of percapita tax of four dollars. This impost has taxed the ingenuity of the inhabitants, and taught them some useful lessons. Projecting basement corners (giving the house a slightly pyramidal appearance) have been found safer than absolutely perpendicular walls; mortised cornerstones and roof-beams have saved many lives, when the central walls have split from top to bottom; vaults and keystone arches, no matter how massive, are more perilous than common wooden lintels, and there are not many isolated buildings in the city. In many streets broad iron girders, riveted to the wall, about a foot above the house door, run from house to house along the front of an entire square. Turret-like brick chimneys, with iron top ornaments, would expose the architects to the vengeance of an excited mob; the roofs are flat, or flat terraced; the chimney flues terminate near the eaves in a perforated lid.

Every house has its **lado seguro**, or safety side, where the inhabitants place their fragile property; and there is a supposed and not altogether imaginary connection between north sides and security. The transcontinental shock move from west to east, the local ones from east to west, and sometimes from north-east to northwest; so that in two out of three cases the west and east walls have been stricken broadside, while no shock has ever approached the town from the north, that is, from the direction of the sea. A native of Venezuela would laugh at the idea that a terremoto is an up-heaval of the ground. The movements of dislodged rocks, the disjointment of house walls and their way of falling, the motions of a tidal wave during the progress of an earthquake, all prove that the shock is a lateral push, and that its operation could be imitated on a small scale by covering a table with loose pebbles, card houses, etc., and striking the edge of the board.

[...] Trascontinental shocks sometimes announce their approach by slight tremors, that can be observed only in special localities. Of the various vibration gauges, the most popular is the **cruz sonante**, a T-shaped frame, connected with a little bell, and attached to the centre of the ceiling. Foreign scientists: have contrived more delicate indicators, which, however, are apt to prove too much, by indicating the approach of every rumbling street car, as barometral portents may announce a thunder-shower as well as subterranean thunder [...].

On the pastures of Venezuela cattle graze peacefully the year round, except in the mountains, where the noise of falling rocks sometimes stampedes a whole herd. Still, there is a tradition that, a few hours before the catastrophe of 1812, a Spanish stallion broke out of its stable in the river suburb, and took refuge in the eastern highland.

That horse could have taught the founders of Caracas a valuable lesson. They began by grading the terraces along the banks of the Rio Arauco, and it was a bad mistake to bridge the river at a point where countless caves and crevices proclaim the activity of the subterranean forces. A little further east, or below the junction of the Catucho, the city would have been comparatively safe. Between the Plaza de la Torre and the foot of Santa Marta Street nearly every house has been destroyed and rebuilt five or six times; and, further west, a large tract of land has been entirely deserted, and is now a military drill-ground. Caracas is moving eastward; the upper (northeastern) suburbs grow from year to year, while the streets below the mint exhibit manifold signs of neglect. The agricultural population of the surrounding country has steadily increased; for crops are not materially the worse for a periodical instability of the ground, except perhaps in the orange district of Valencia, and at the mouth of the coast rivers, where tidal waves have often submerged the littoral plantations.

Intelligent observers therefore predict that, in spite of local and imported earthquakes, the population of Northern Venezuela will continue to increase, but **that the present site of Caracas will ultimately be abandoned. Horace D. Warner**.[248]

[248] N de A: Subrayado original.

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Wilhelm Sievers, "El terremoto del 26 de marzo de 1812 en la costa norte de América del Sur", *Mittheilungen der Geographischen Gesellschaft in Hamburg 1884*, Hamburgo, 1885, pp. 265-271.[249]

El gran terremoto del 26 de Marzo de 1812, que ocasionó a lo largo de la costa norte de América del Sur tan fuertes estragos y, a saber en una expansión de más de seis grados de longitud, parece haber estado relacionado casi solo con las rocas de gneis, esquisto y granito de la zona central de la Cordillera de la Costa y la Cordillera Occidental, en general compuesta de antiguas rocas cristalinas, no ha sido nunca objeto de un estudio preciso, ya que por una parte no había la capacidad adecuada en el país, pero por otra parte los reinantes disturbios de la guerra de la independencia impidieron precisamente cualquier actividad científica. Hoy es naturalmente imposible, aún solo recolectar material preciso al respecto, ya que las numerosas ruinas todavía existentes no pueden aportar ninguna información sobre la dirección y características del impacto y la tradición se ha enrevesado totalmente.

Las únicas huellas del terremoto, las cuales pueden dar todavía resultados seguros, son las hendiduras de la tierra y grietas de tan numerosa ocurrencia, cuyo origen para la época del terremoto es apenas refutado. Se puede subrayar el hecho de que estos barrancos, grietas y desprendimientos se produjeron primero solamente en el norte, noroeste y noreste de la ciudad de Caracas, y en segundo lugar también preferentemente sobre las denominadas sabanas ubicadas entre las casas del norte de la ciudad y las pre-montañas peladas y desprovistas de vegetación de la Cordillera de la Costa.

La ciudad de Caracas está ubicada al pie meridional de la parte norte de la cadena de la Cordillera de la Costa, compuesta exclusivamente de gneis con incrustaciones de granito (en el Naiguatá), esquisto, puras eclogíticas, y finalmente como serpentinitas, evidentemente rocas metamórficas, las cuales en la Silla de Caracas en el Naiguatá se elevan hasta 2.782 metros. Al sur del valle se levantan unos 200 metros sobre el mismo las montañas del Rincón de El Valle, estribaciones de la cadena paralela meridional de la Cordillera de la Costa, y también compuesta por gneis. Hacia el oeste y este el valle de Caracas está abierto y se desciende en una extensión de aproximadamente 3 a 4 horas de recorrido desde Antímano en el Oeste hasta Petare en el Este de 923 a 840m. No se puede ver nada de depósitos jóvenes, fósiles, o terrazas y

[249] N de A: Título original: "Das Erdbeben vom 26 März 1812 an der Nordküste Südamerikas". Traducido del alemán por Michael Schmitz.

arena de playa, así que la opinión de Humboldt, que el valle de Caracas había sido un lago, no es apoyada por nada.

A una altura de 922m (Catedral) se ubica entonces la ciudad de Caracas con una inclinación bastante fuerte de NO a SE, de cuyo suelo, al igual que todo el valle, se puede suponer que está formado por el detritus, el cual fue llevado por las aguas particularmente hacia abajo desde las montañas del norte. En el Este, Oeste y Sur de la ciudad se encuentran campos, la mayoría de caña de azúcar, que desde hace algún tiempo comenzó a desplazar al café. Sólo al norte no se observan ningunas plantaciones. Aquí se ubica toda la pre-montaña, entre la ciudad (922m) y la mitad de la altura de la Cordillera de la Costa (aprox. 1.500m; Pulpería de Sanchorquiz en el camino viejo hacia La Guaira= 1.533m), un terreno en completa disolución y en condiciones de una meteorización avanzada. En este lugar se consiguen todas las etapas de la misma, en parte grandes bloques remanentes de cuarzo, en parte pequeñas masas, en parte estratos aflojados, cordones y orillas de cuarzo, cuyos componentes individuales se encuentran dispuestos sueltos uno sobre el otro, y que en una extensión de 1/2m y 1m pueden desmoronarse entre medio metro y un metro, si se golpea con un palo. En otros sitios se observan montones de fragmentos de cuarzo. El agua no representa peligros ya que las cascadas son pequeñas. Pero donde la fuerza del agua puede resultar incontenible, se aprecian los más grandiosos fenómenos de erosión. El suelo es totalmente descompuesto y se ahueca por la acción del calor, el rocío, la lluvia y las frecuentes noches de verano muy frías (Noviembre hasta Abril) hasta grandes profundidades, de manera que aparecen formaciones en la impregnada superficie enrojecida con óxido de hierro, que se asemejan desde lejos a flujos de lava (por ejemplo: en los caminos de cabalgata entre La Cruz -1.170m- y la Pulpería Campo Alegre -aproximadamente 1.400m- en el camino viejo hacia La Guaira). Sin embargo, no hay rastros de la estructura celular, en forma de malla y porosa, propia del Laterito, que sospechaba aquí, no obstante el suelo se parece a una lutita roja y grasosa.

Especialmente desarrollados se encuentran los fenómenos de erosión en las quebradas y barrancos de hasta 60 m de profundidad que atraviesan todo el terreno al norte de la ciudad masivamente, y en varias direcciones, y cuyo origen en parte no puede ser atribuido sólo al agua. En las mismas muchas veces ya no se encuentran rastros de rocas sólidas; pasé varios días estudiando estas quebradas y conseguí en una parte de las mismas típicas pirámides de tierra. El terreno que se encuentra al norte de Caracas puede ser separado de

manera ajustada por el surco de erosión del río Catuche, que surte a la parte norte de la ciudad con agua muy buena, fresca y clara, en una mitad este y una oeste. Las quebradas orientales muestran de manera especial la aparición de las pirámides de tierra. En el medio, entre la quebrada del Río Catuche y la quebrada Coticita, se encuentra el cerro Arbolito, sin árboles, que asciende hasta aproximadamente 1.400m de altura, coronado por un solo árbol en la cima. Del mismo baja en dirección casi sur una corriente de agua, que cambia su dirección inmediatamente detrás del cementerio de los Hijos de Dios, y desemboca en otra que va casi exactamente con rumbo oeste a este. El ancho de esta quebrada mide en el fondo aproximadamente 3 a 5m, y en la parte superior 20 a 30m; la profundidad es de aproximadamente 5m; en la parte baja, al NE del panteón, la quebrada lleva el nombre de Llorona. Tanto en esta quebrada, que desciende de Arbolito, al igual que en la quebrada principal, especialmente en la desembocadura, se encuentran las pirámides de tierra, que en parte se presentan en dos niveles superpuestos: en el inferior en forma de flecha, en el superior en forma de verdaderas pirámides de hasta 5m de altura, cuyas puntas portan bloques de gneis meteorizados. El acceso imposible al terreno solo permite una observación desde lejos. Ambos niveles están separados por una capa de buena visibilidad de piedra de laterita ferrosa, especialmente en la parte inferior de la quebrada Llorona.

Las demás quebradas muestran este fenómeno pero de manera menos pronunciada, a pesar de que por muchos lados están presentes formaciones con apariencia semejante; en cambio en ellas puede reconocerse, mejor que en la quebrada grande mencionada, que su origen no se debe solamente al agua, sino a los terremotos, o mejor dicho, que el terremoto (de 1812) ha debido tener una influencia esencial en ellas.

Básicamente esto puede reconocerse en una quebrada que se inicia en el punto este del cementerio de los Hijos de Dios, que desciende repentinamente hasta 10m de profundidad para luego desembocar más abajo en la gran quebrada Llorona.

También la gran quebrada de La Pólvora o de la Puerta de Caracas puede ser mencionada en igual sentido. La misma comienza repentinamente detrás del pequeño puente de madera encima de ella misma, inmediatamente fuera de La Puerta de Carácas. La quebrada aquí es muy estrecha, apenas metro y medio de ancho y presenta una abertura hacia atrás; sin embargo, ésta fue hecha artificialmente para crear un canal para una corriente de agua. La quebrada misma se corta fuertemente en su punto final superior y transcurre

en dirección NNE-SSO, luego S 60 grados O, y finalmente casi al oeste. En el fondo presenta una anchura promedio de aproximadamente 4m, y pareciera que originalmente hubieran existido dos quebradas independientes, ya que en el punto donde dobla al oeste se encuentra una elevación del fondo del valle, el cual evidentemente es atravesado más adelante por el agua. La profundidad es de 5 a 15m.

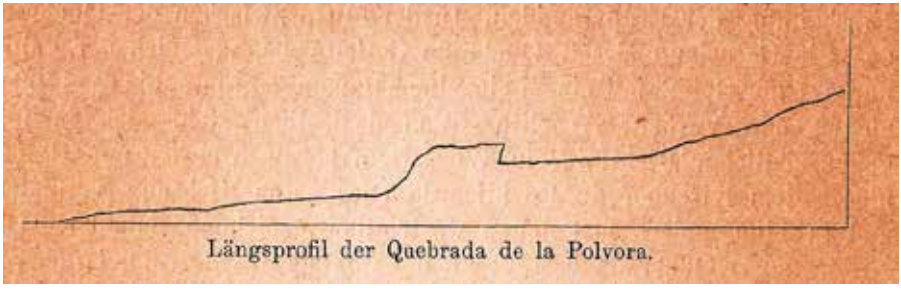

Figura 53: Perfil longitudinal de la quebrada de La Pólvora.

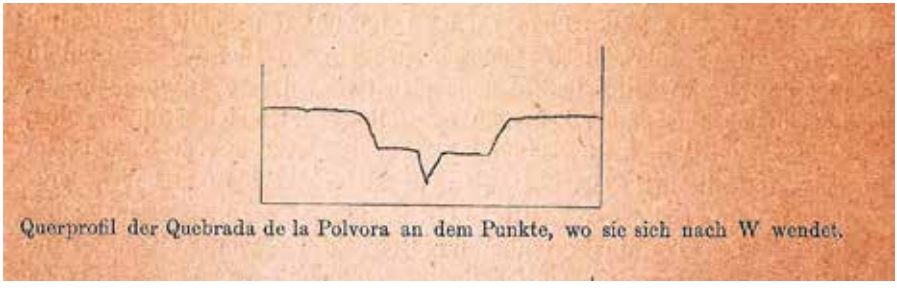

Figura 54: Perfil transversal de la quebrada de La Pólvora en el punto donde dobla hacia el oeste.

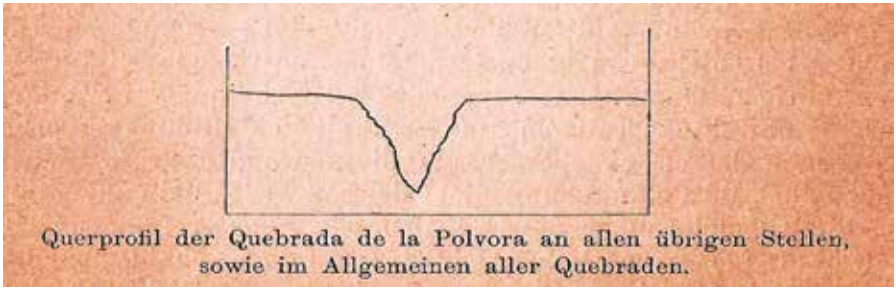

Figura 56: Perfil transversal de la quebrada de La Pólvora en todos los demás puntos, así como en general de todas las quebradas.

150m al SE de esta quebrada comienza en el medio de un pequeño lomo que funciona como divisoria de aguas, repentinamente otra pequeña quebrada, la cual después de pocos pasos, ya tiene 3m de profundidad; aquí se excluye prácticamente la erosión debido al agua; más bien se presume una formación de grietas en la corteza terrestre o una repentina caída de la tierra o algo parecido. Tiene un rumbo sur 10º oeste, luego sur 45º oeste, y luego casi al oeste paralela a la gran quebrada de La Pólvora, desembocando como está en el nuevo camino hacia La Guaira. También ella parece haberse originado de dos quebradas, y también presenta en el punto del cambio de dirección un fondo del valle elevado. Otra quebrada al oeste de la quebrada de La Pólvora, del otro lado del depósito de pólvora, también presenta como la anterior una dirección SSO y luego sur 60º oeste.

Especialmente interesante es la quebrada de La Pastora, la cual yo llamo así, porque inmediatamente al oeste de la iglesia de La Pastora entra en la parte norte de la ciudad, primeramente en dirección SSE, luego en dirección SE, y se puede seguir su curso casi hasta el centro de la ciudad. Ella es especialmente interesante porque en su cercanía tuvo lugar en 1812 el efecto más devastador del terremoto, y justamente ella comienza de manera tan inesperada como las antes mencionadas fuera de la ciudad.

Todas estas quebradas recién mencionadas no continúan hacia las montañas; por tanto ellas no pueden ser consideradas como el resultado solamente de la fuerza erosiva del agua. Comienzan en el medio de la sabana casi plana, entre las casas más al norte de la ciudad y las montañas de la Cordillera de la Costa en un terreno de gneis totalmente compuesto, de cuyos componentes sólo puede reconocerse el cuarzo, mostrando incluso en su parte más profunda apenas rastros de roca sólida. Parecieran esparcirse desde un punto, aproximadamente al inicio del viejo camino a La Guaira, hacia el SO, sur y SE, y es notable que en ninguna de las pre-montañas de la Cordillera de la Costa se encuentre tan cortada, desgarrada y llena de zanjas como esta montaña La Cruz, sobre la cual en fuertes vueltas se conduce esa carretera vieja espléndidamente empedrada por los españoles, y hoy en día lamentablemente muy destruida esta carretera a La Guaira. Es un hecho conocido, que durante el terremoto de 1812 la parte sur de la ciudad de Caracas no fue tan destruida como la parte norte, y que desde entonces la ciudad se ha expandido más hacia el sur, mientras antes el norte se encontraba más poblado por su mejor y más saludable ubicación. Si justamente aquí se encuentran muchas grietas en la tierra, mientras que en el sur no se observa ninguna, y si estas grietas,

debido a la falta de su continuación superior hacia las montañas, no pueden verse como el sólo resultado de la erosión, entonces es fácil comprender al ver estas grietas que fueron formadas por el terremoto. (Desplazamientos horizontales de un lado de la grieta respecto al otro no pudieron observarse). Quizás también pueda suponerse una cierta interacción entre el terremoto y la fuerte descomposición del suelo, por un lado, debido a que los terremotos producen una fuerte meteorización por la formación de grietas y aflojamiento de la tierra; por el otro lado, porque el terreno aflojado y destruido deja sentir mejor las sacudidas, haciéndolo más peligroso por su composición, de lo cual pudiera deducirse la mayor destrucción de la parte norte de la ciudad frente a los menores efectos del terremoto en el sur.

Al observar las grietas llama inmediatamente la atención la predominancia de dos direcciones, una casi norte-sur, y una que la cruza, casi este-oeste, destacándose la dirección este-oeste cada vez más, mientras uno avanza en dirección oeste a este, mientras que en el centro de la ciudad predominan más direcciones intermediarias.

Como única edificación en la cual aún puede reconocerse claramente el efecto del terremoto, puede mencionarse la iglesia de Altagracia en la parte norte de la ciudad. En la torre cuadrada de la misma, un poco más alta que ancha, pueden reconocerse grietas que transcurren de la siguiente manera:

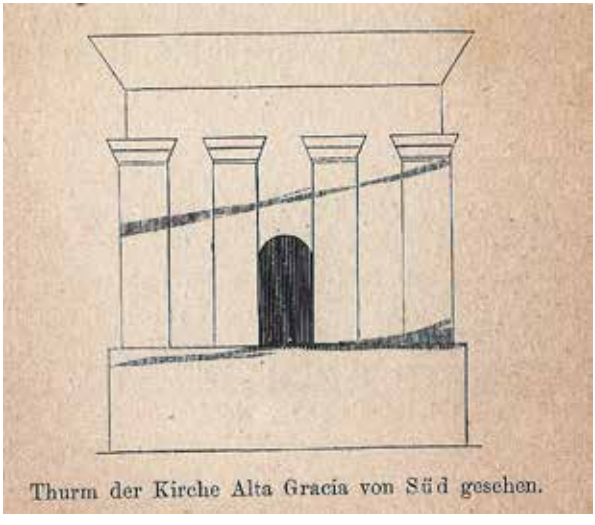

Figura 57: Torre de la iglesia Altagracia vista desde el Sur.

La torre de esta iglesia muestra dos grietas, las cuales, ya que la iglesia está orientada en sentido norte sur, van en la dirección oeste este. La parte de la torre, que se encuentra entre las dos líneas negras, fue girada hacia el observador, de manera que con las partes superiores e inferiores de la torre forma un ángulo muy pequeño.

Suponiendo que la parte central de la torre mueve ahora su centro de gravedad, sin embargo habiendo sido sostenido fuera de la plomada de su centro de gravedad por lo sobresaliente de la torre, habiéndose movido como alrededor de un eje fijo y por la inercia en dirección contra el golpe, entonces este último debió haber transcurrido en dirección NE-SO, lo que concuerda por una parte con la dirección de la grieta de La Pastora, que se encuentra cerca de Altagracia, que transcurre en dirección NO-SE, y por el otro lado la dirección general de propagación del terremoto, el cual transcurrió de Caracas (La Guaira) en dirección NE-SO, destruyendo en su camino una gran parte de las ciudades que se ubican entre las cadenas principales de la Cordillera de la Costa y de los Andes, como por ejemplo Valencia, Barquisimeto, Mérida.

MITTHEILUNGEN

der

Geographischen Gesellschaft in Hamburg

1884.

Figura 58: Imagen de la portada de la revista en la que Sievers publicó su artículo sobre 1812.

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Adolfo Ernst, "El terremoto del 26 de marzo de 1812 en la Costa Norte de America del Sur", *Aardrijusk Genostrah. Nederl*, Holanda 1886, Nº3, pp.175-181.[250]

Bajo este título el Dr. W. Sievers ha publicado un artículo en las "Mittheilungen der Geographischen Gesellschaft zu Hamburg" (Comunicaciones de la Sociedad Geográfica de Hamburgo) (1884, págs. 265-271) sobre el que me quiero permitir algunas observaciones, ya que las informaciones dadas en el mismo no son todas ciertas y ponen de manifiesto el conocimiento insuficiente de las condiciones locales, como no podía ser de otra manera, teniendo en cuenta la corta estadía del autor en Caracas.

En primer lugar, debo admitir que faltan informes auténticos de la época del gran terremoto de 1812, y por los motivos indicados por Sievers. Es bastante curioso que casi todo lo que sabemos de esta terrible catástrofe se apoya en el informe que un francés de nombre Delpéche que vivía entonces en Caracas envió a Humboldt. He buscado en vano en los archivos locales más documentos y sólo he encontrado en el palacio arzobispal, algunos pocos datos enviados por los párrocos de diversas localidades a las autoridades eclesiásticas superiores; sin embargo, para la historia geológica del terremoto, los mismos carecen por completo de valor.

El informe de Delpéche me parece muy exagerado y no puedo menos que presumir que Humboldt mismo, cediendo a un sentimiento puramente humano, ha aplicado, en el mismo sentido, colores excesivamente sombríos. A este respecto me apoyo, en primer término, en las comunicaciones orales que me fueron hechas repetidas veces por un testigo ocular, el franciscano Fray Carlos Arambide, fallecido hace tres años a avanzada edad, quien en 1812 ya había recibido la ordenación sacerdotal inferior y que hasta el último día de su vida gozaba de su capacidad espiritual imperturbada. El me ha dado siempre la seguridad de que las pérdidas humanas debidas al terremoto no eran, de lejos, tan grandes como se acostumbraba a decir y admitía que, probablemente en toda Venezuela, apenas 10.000 personas perdieron la vida, una cifra que armoniza mucho mejor con los informes de los párrocos locales antes mencionados, que los 20.000 de los que habla Humboldt. Del mismo

[250] N de A: Título original: "Das Erdbeben vom 26 März 1812 an der Nordküste Südamerikas". Tomado de *Adolfo Ernst Obras Completas* (Blas Bruni Celli, compilador), tomo VII, Ciencias de la Tierra. Ediciones de la Presidencia de la República, Caracas, 1988, pp. 480-495. La traducción del alemán, en ese tomo de la compilación, pertenece a Sara de Heymann, Herbert Höhne y Guillermo Heilbock.

modo, la información que se encuentra en Humboldt de que un regimiento de tropas de línea en el *Cuartel San Carlos* habría quedado sepultado casi en su totalidad bajo las ruinas del enorme edificio, la niega Fray Carlos de la manera más decidida. Sé, además, por propia experiencia, que después de una catástrofe semejante es inevitable, en un primer momento, una sobrevaloración de las pérdidas. Así se decía en los primeros días después del terremoto de Cúa (abril 12, 1878), que habrían muerto aproximadamente 1.000; mientras que más tarde una investigación exacta indicó que ni siquiera habían perdido la vida 150 personas, de tal modo que la cifra de 300 señalada por mí (Nature, XVIII, 130) era todavía demasiado elevada. Menciono esto para justificar todavía más mi fuerte duda en los datos corrientes sobre las consecuencias del terremoto de 1812 y, por lo demás, estoy completamente de acuerdo con el Dr. Sievers en que hoy ya no es posible reunir material más exacto sobre aquella catástrofe.

Pero cuando el Dr. Sievers habla de "las todavía numerosas ruinas" que ha dejado en Caracas el terremoto, entonces sería para mí muy interesante saber dónde las ha visto; pues a fines del año 1884, cuando el Dr. Sievers estuvo en Caracas, no había en *absoluto ninguna* ruina ya sea en la ciudad o en sus alrededores más cercanos, que pudieran ser atribuidas al terremoto de 1812, con la única excepción de *huellas* en la torre sur de la iglesia de Alta Gracia, que también menciona Sievers. Evidentemente, en este punto Sievers fue informado erróneamente; y dado que todavía buscaba con gran interés más huellas del terremoto, supone que las quebradas existentes al norte de la ciudad tienen que provenir del mismo; y aun dice que "su origen en la época del terremoto apenas es cuestionado"; aunque hubiera sido más correcto escribir que hasta ahora no lo ha sostenido nadie que conozca el Valle de Caracas con más precisión.

La descripción general del valle de Caracas que da Sievers en la página 266 es acertada y me alegra que se adhiera tácitamente a mi punto de vista de que el valle de Caracas nunca pudo haber sido un lago lo que, como es sabido, fue la conjetura de Humboldt. He entregado la prueba en 1871 en *Globus* (Tomo XX, 45) y he informado al Dr. Sievers del artículo correspondiente durante su estadía aquí en 1884.

El Dr. Sievers menciona por cierto "los más imponentes fenómenos de erosión" que se ofrecen al observador en muchos lugares del valle; pero, sin embargo, cree que la formación de las quebradas "no pueden ser atribuidas sólo al agua, sino que los terremotos, o mejor dicho, el terremoto (de 1812) debe

haber ejercido sobre ellas una considerable influencia" (sic!). No quiero para nada negar que durante aquella catástrofe se han producido en algunos lugares derrumbamientos en las quebradas; pero la totalidad del sistema de quebradas existía desde mucho antes del terremoto y su origen se debe muy especialmente a la fuerza del agua.

Para la primera de las dos afirmaciones expresadas basta con aducir una prueba histórica; la segunda la apoyaré con la especificación de hechos geológicos.

Las quebradas al norte del valle de Caracas fueron bien conocidas por Humboldt y las menciona *(Rel. historique,* IV, 179) en el siguiente pasaje: "Tres pequeños ríos que descienden de la montaña, el Anauco, el Catuche y el Caraguata atraviesan la ciudad dirigiéndose del N. al S.; están muy encajonados y recuerdan, en pequeña escala, a *las barrancas desecadas que entrecortan el terreno,* los famosos *guaicos*[251] de Quito". Además he tenido acceso a los viejos títulos de propiedad de varios terrenos que limitan, todavía hoy, con las quebradas y ahí he encontrado siempre mencionadas las "quebradas" y los "barrancos" como líneas limítrofes, y, por cierto, en documentos de comienzos del siglo XVIII. Por lo tanto es históricamente comprobable que las quebradas existían desde mucho antes del terremoto de 1812, y por lo tanto nada tienen que ver con éste. Toda la idea es en parte resultado de una observación de Humboldt, sólo correcta a medias, quien dice en alguna parte (lamentablemente ahora no puedo citar el lugar con exactitud), que el valle de Caracas estaba más habitado *antes* del terremoto en el norte, hacia las montañas, que en el sur. Esto es correcto sólo en el sentido de que antes la ciudad se extendía mucho menos hacia el sur; sin embargo es incorrecto concluir de ello que la ciudad se extendía hacia el norte más que, por ej., hace 12 años. Por el contrario, recién en el último decenio se ha comenzado a construir casas en las sabanas hacia las montañas, y por cierto en un número tan considerable que, debido a ello, han desaparecido totalmente los ámbitos naturales donde se encontraban diversas especies vegetales interesantes, cosa que debe ser dicha por ejemplo de las dos especies de *Marsilia,* anteriormente nada raras en esos lugares. A fines del siglo pasado estas sabanas estaban por completo deshabitadas; la ciudad terminaba en el *Cuartel San Carlos* y la parroquia más al norte de todas, *Alta*

[251] Las profundas quebradas que surcan los flancos de la montaña (el Pichincha) llamadas por los indios **guaicos,** se extienden hacia la ciudad; y algunos edificios son construidos en arcadas tendidas encima de ellas (**Excursiones en las vecindades de Quito, por el coronel Hall,** en **Hooker, Journal ol Botany,** 1834. Pág. 333).

Gracia, tenía en 27 *cuadras* sólo 361 casas, mientras que ahora cuenta con más de 1.500.[252]

Si ahora está comprobado que las quebradas no datan del terremoto de 1812, entonces queda por explicar cómo se han originado, y esto no es difícil.

Para este fin es necesario recordar la estructura geológica del valle de Caracas. "La ciudad de Caracas se encuentra al pie sur de la cadena norteña de la Cordillera de la Costa, compuesta exclusivamente de gneis con incrustaciones de granito, esquisto micáceo, de roca de aspecto de eclogita pura y finalmente de roca metamórfica del tipo de la serpentina" (Dr. Sievers, en el acta mencionada aquí, página 265). Toda la región pertenece pues a una formación muy antigua, y se elevó, en todo caso, mucho antes de la época terciaria, durante la cual formaba una isla. A través de los tiempos, para los cuales falta toda medida, trabajó en esta masa montañosa la influencia destructora de los sucesos atmosféricos y produjo aquellos grandiosos fenómenos de desnudación a los cuales el actual valle de Caracas les debe su existencia. Poderosas masas de detritus fueron llevadas hacia el fondo del valle, elevando su nivel poco a poco. Debido a ello el relieve de la cadena montañosa se modeló de una manera agudamente contorneada, así como se presenta hoy en día: una cresta extendida larga y de altura variable, de la cual se precipitan al valle, casi en ángulo recto, una serie de cortas estribaciones de laderas abruptas, con regularidad casi esquemática de las condiciones orográficas. Cada intervalo entre dos estribaciones consecutivas forma, en consecuencia, un recolector más o menos extenso de las aguas de lluvia y de las que riegan la montaña, aguas que después de lluvias torrenciales se lanzan hacia el valle con asombrosa violencia y cortan en las capas blandas de detritus surcos que se ahondan cada vez más y que, finalmente, o desembocan en el lecho del río que corre de Oeste a Este del valle (el Guaire) o se unen antes con otras quebradas. Estas son las quebradas que existen todavía hoy; y siguen ahora, incambiadas, *siempre las líneas del mayor declive,* influenciadas por la dirección cambiante de la más pequeña resistencia; en cambio, ninguna rompe ni las más bajas estribaciones, lo que ocurre, sin embargo, no pocas veces cuando se trata de fisuras de terremoto. Es correcto que *algunas* de ellas (no *todas* como Sievers parece suponer) "parecen irradiar de un punto, aproximadamente al comienzo del viejo camino hacia La Guaira, hacia el sudoeste, sur, sudeste" (página 269); pero de ninguna manera como lo hacen las fisuras de terremoto,

[252] Mi amigo, Dr. Arístides Rojas publicará junto conmigo, dentro de poco tiempo, un trabajo más amplio sobre "Caracas hace 100 años", en el que volveré sobre este punto.

sino sólo como lo condiciona la situación, excelentemente descrita, del terreno de aquella estribación; pues, efectivamente, "ningún otro está tan cortado, desgarrado y surcado."

Este desgarramiento es en gran parte una consecuencia del camino de herradura hacia La Guaira, abierto hace aproximadamente cien años. Dado que corta la ladera en la mayoría de los lugares con bastante profundidad y es, al mismo tiempo, muy sinuoso por razón del declive escarpado, se da con ello un lecho para las aguas de lluvia que corren hacia el valle; y además se encuentran muchos puntos en las vueltas del camino donde una parte considerable de esta cantidad de agua puede pasar a través de brechas artificiales, o formadas espontáneamente, que atraviesan las paredes laterales, por lo que con el correr de los años se forman, naturalmente, numerosas quebradas que buscan la profundidad hacia la derecha e izquierda del camino. Sievers mismo menciona una de tales rupturas en la parte superior de la Quebrada de la Pólvora, que lo pudo llevar a la explicación correcta de la naturaleza muy escarpada del terreno.

Más lejos, hacia el oeste, las quebradas se hacen más pequeñas porque el valle se estrecha mucho; hacia el este se suceden, por el contrario, una tras otra, y por más lejos que comienzan en el norte de la ciudad, continúan también a través de la misma, por cierto recubiertas de construcciones y no visibles para el que no conoce el lugar, formando un sistema de cloacas repugnantes al que Caracas debe, sin lugar a dudas, su extraordinariamente alta cifra de mortalidad (¡enero hasta junio de 1885, por encima del 52 por mil!).

Estas quebradas comienzan al pie mismo de las montañas, a menudo inmediatamente, con considerable profundidad, pues la quebrada crece retrocediendo poco a poco por las aguas de erosión que la cortan y los derrumbes que se producen debajo. No es nada difícil explicarse los casos en los cuales una quebrada comienza "sobre una pequeña loma divisora de las aguas" y después de pocos pasos ya tiene varios metros de profundidad. Conozco diversos ejemplos de este tipo y yo mismo he observado la formación de dos quebradas de esta categoría. Estas se forman retrocediendo. Próximo al fondo de la quebrada principal mayor se produce por algún motivo un deslizamiento hacia abajo de una masa de tierra; si el ángulo de la ladera es lo suficientemente empinado y la firmeza interior de la capa de detritus que yace en la parte superior de la hendidura no basta para contrarrestar el empuje hacia abajo, entonces se produce un derrumbe detrás de otro hasta que, por fin, la cosa termina de repente a la altura de la loma. Por lo tanto una erosión por

agua está aquí *directamente* excluida; pero, sin embargo, la totalidad del fenómeno es sólo una consecuencia secundaria de la erosión.

El Dr. Sievers indica correctamente que en el sur de Caracas no existen fisuras. Sin embargo ¿cómo podrían ser capaces de formar quebradas profundas las aguas de lluvias y las que riegan las montañas de apenas 200 m de altura del *Rincón del Valle*? Si volviera alguna vez a Caracas entonces podría visitar las montañas, al sur de *El Valle*, que se encuentran en dirección a *Baruta*, ahí encontrará suficientes quebradas.

Hay varios puntos que permiten, todavía hoy, seguir de cerca todo el proceso de la formación de fisuras. Así, en especial, en una profunda quebrada adornada con magníficas pirámides de tierra que conduce por detrás de la fábrica de jabón del Sr. P. A. Díaz hacía el lecho del río Anauco. Esta fisura se ha hecho más larga, hacia atrás, en más de 20 metros, en los 24 años que yo la conozco, de tal modo que un sendero de aquella región cambia continuamente y, sin embargo, no recibe en absoluto cantidades de agua importantes, dado que comienza en medio de una sabana levemente ondulada en la cual baja de una línea de depresión poco marcada que parte del cementerio "de los hijos de Dios", también mencionado por Sievers. Pero aquella línea está siempre empapada de agua en mayor o menor grado, de tal modo que ya se distingue un crecimiento más exuberante de hierba; la cohesión del suelo es por consiguiente menor que en ambos costados y alcanza cada vez el mínimo en el punto inicial de la hendidura, al que sigue entonces una caída del terreno más o menos significativa.

Si la formación de fisuras es desde hace mucho tiempo un fenómeno básicamente concluido, esto se debe en gran parte a la capa espesa de hierba que cubre hoy las laderas. A partir de qué momento se vivificaron con un hermoso verdor las hasta entonces desnudas laderas, es una pregunta de difícil respuesta. Las partes más altas de las montañas recibieron su vegetación de la cordillera occidental al final de la era terciaria, como lo prueban las especies que existen en ellas, pertenecientes a los géneros predominantemente andinos: *Espeletia, Gaylussacia, Befaría, Gardoquia, Acna, Osteomeles, Berberís, Vaccinium, Cínchona, Podocarpus,* etc.

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