JOURNAL OF A RESIDENCE IN CHILE DURING THE YEAR 1822

Maria Graham

Analysis by Biancamaria Rizzardi

Travelogue

Maria Graham’s *Journal of a Residence in Chile during the Year 1822* (1824) is a travel diary blending eyewitness testimony, scientific observation and introspection. Graham's description of the 1822 Valparaíso earthquake combines precise geological detail with a reflection on the social impact of the disaster and the cultural identity of Chileans. Graham's findings on land elevation were questioned by male scientists, revealing how gender limited the legitimacy of women’s scientific authority.

Year of Publication	1824
Publication Place	London
Editor	Longman, Hurst, Rees, Orme, Brown & Green
Entity	1822 Valparaíso earthquake

GEOLOGICAL ANALYSIS

Earthquake 1822 Valparaíso earthquake

REAL EVENT

Time	November 19, 1822, 10.30 pm local time
Location	Valparaíso Region Chile
Coordinates	-33.050697, -71.630685
Impacted Areas	Valparaíso, Quintero, Concon, Illapel, Quillota, Aconcagua, Casa Blanca, Melipilla
Seismic Fault	Peru-Chile Trench; the subduction of the Nazca Plate under the South American Plate
Magnitude	8.5 Ms

Typology

Tectonic Earthquake

"The information reported by Graham, now suggests that the 1822 earthquake was an interplate event deep on the plate interface" (Ruiz and Madariaga 41)

Anthropization Level

Cities

Valparaíso; Quintero; Viña del Mar; Concón; Quillota; Melipilla; Santiago

Villages

Valle Alegri; Illapel; Placilla

Churches

Public Buildings

Shops

"retail shops for all sorts of European goods are nearly as common at Valparaiso as in any town of the same size in England" (Graham 1824, 125)

Ecological Impacts

Physical Landscape Changes

"The shore at Valparaiso rose approximately 1 m [This is disputed by some sources.] Cracks appeared in coastal granite cliffs, and rockslides took place. At Concón, the sea coast rose 0.3-1.2 m. The maximum rise probably averaged 1.5-2 m, and it probably occurred 3-5 km from shore. As a result of the lifting of the ocean floor, numerous rocks appeared above the water level in areas off Valparaiso, Concón and Quintero. The shore eventually slowly subsided, returning to its pre-earthquake level" (NOAA); "In Quintero […] Huge cracks appeared along the lakeshore" (NOAA); "[in Viña del Mar] The whole plain appeared to be strewn with cones of small sand volcanoes of a height of 0.3-1.2 m" (NOAA).

Tsunami

"At the time of the most severe shocks, the ocean receded in the epicentral zone, only to rise and advance upon the shore again and again. In Valparaiso, at the time of a full ebb, the sea suddenly rose and just as suddenly receded. A launch from the admiral's ship, which was on its way to render assistance to people on shore, was thrown up to the gates of the customs house, located 3.5 m higher than the ordinary high tide mark. Suddenly, the sea began to recede very rapidly, stranding small vessels and boats. All this occurred within 15 minutes. Several minutes later, a second wave of reduced intensity appeared. In all, three large floods and ebbs of a height of 3.6 m (12 feet) were recorded. On the morning of the 20th, the sea level fluctuations were normal again" (NOAA).

Destruction Of Plants

"In Quintero, the vibrations shook the palms and caused them to lean permanently" (NOAA)

Social Impacts

Deaths

"In Valparaíso […] 72 persons (over 300, according to other sources) perished […] mostly in brick buildings" (NOAA); "Miners in the gold mines of El Bronse in Petorgue worked at a depth of 170m at the time of the earthquake. The earthquake caused cave-ins in the shafts and some of the miners were trapped in the lateral drifts and perished" (NOAA).

Injuries

"over 200 were injured, mostly in brick buildings" (NOAA).

Destruction Of Public Buildings

"In Valparaiso, most of the public buildings […] were destroyed. All bell towers and turrets collapsed" (NOAA); "In Santiago, no one was killed, but about 30 public buildings were damaged. […] Some buildings were damaged in Melipilla" (NOAA).

Destruction Of Dwellings

"[In Concon] One building sustained broken windows and damaged roof tiles. Other houses and a mill were damaged more severely" (NOAA); "[In Quintero] almost all the houses were damaged and became uninhabitable" (NOAA); "In Casablanca, no houses remained standing. In Quillota, many houses were destroyed and the remainder were damaged. Only 20 houses and one church remained standing. Viña del Mar suffered almost complete destruction" (NOAA); "In Valparaiso

[…] almost 700 private houses were destroyed. All houses built of mud bricks disintegrated." (NOAA); "[In The port area of the Almendral] All houses built of mud bricks disintegrated" (NOAA).

Destruction Of Facilities

"The port area of Almendral, situated on alluvial soil, sustained severe damage" (NOAA); "[In Concon], The canal connecting the mill with the River Aconcagua was filled with material from collapsed river banks" (NOAA).

Earthquake 1822 Valparaíso earthquake

LITERARY EVENT

Time	November 19, 1822
Location	Valparaíso Chile
Impacted Areas	Valparaíso, Quintero, Concon, Illapel, Quillota, Aconcagua, Casa Blanca, Melipilla
Emphasis Phase	Post-disaster (consequences)
Seismic Risk Ref.	Referenced
Seismic Fault	1822 Valparaíso earthquake

Typology	Tectonic Earthquake
Anthropization Level	Cities, Villages, Public Buildings, Churches, Facilities
Ecological Impacts	Physical Landscape Changes, Tsunami, Destruction Of Animal Species
Social Impacts	Deaths, Injuries, Destruction Of Facilities, Destruction Of Public Buildings, Destruction Of Dwellings, Recovery

INDIVIDUAL REACTIONS & AFFECTS

Attitudes

Name	Maria Graham
Age	Adult
Gender	Female
Native Place	England
Nationality	English
Reactions	Awareness

Reactions

Name	Maria Graham
Age	Adult
Gender	Female
Native Place	England
Nationality	English

Reactions	Order, Cooperation, Solidarity, Fear, Empathy, Escape

COLLECTIVE REACTIONS & AFFECTS

Affects/Reactions

Name	The population
Reactions	Escape, Fight For Survival, Cooperation, Solidarity, Prayer, Despair

Group Attitudes

Name	The population
Reactions	Awareness

LINGUISTIC & STYLISTIC ANALYSIS

Keywords	Maria Graham, 1822 Valparaíso Earthquake, Sublime, Colonial Gaze, Resilience, Scientific Observation, Land Elevation
Similes	"a noise like the explosion of a mine" (Graham 305) "a rolling like that of a ship at sea" (Graham 305) "noises like the explosion of gunpowder, or rather like those accompanying the jets of fire from a volcano" (Graham 307)
Motifs, Topoi, Mythologemes	Locus Horridus, Apocalypse, Gods, Nemesis, Ruins, Colonised People, The Downfall Of Society, The End Of The World, Miracles, Superstition, Cruel Nature
Syntax	Hypotaxis, Complex Noun Phrases, High Frequency Connectives
Punctuation	No Peculiarities
Morphology	Preference For Nouns Adjectives

Maria Graham's *Journal of a Residence in Chile during the Year 1822* (1824) is a travel narrative that depicts the immersion of a British woman and writer in the culture and society of post-independence Chile. Maria Graham, Lady Callcott (née Dundas) was born in 1785 in Cumberland, England, into a naval family with Virginian roots. Educated at boarding school at Drayton, she excelled in languages, literature, and the arts. She also learnt some rudiments of natural sciences, botany and geology. She

travelled extensively, including to India, where she married naval officer Thomas Graham, and later published accounts of her journeys. Her literary career flourished through travel writings and translations, and she maintained strong ties with publisher John Murray. In 1821, she travelled to Chile with her husband. Tragically, Captain Graham passed away from a fever in April 1822 during the voyage.

Arrived in Chile as a widow, Maria was advised to return to Britain, but she chose to remain in the country for a year, immersing herself in its geography, natural history and culture, and reporting all her experiences and impressions in her diary, which was a mix of "historical pieces, and portraits, and landscapes, ad still life, and flowers". She was aware that "[her] poor journal, written in a new country and in a time of agitation [could] pretend to no unity of design", and that her heroes and heroines "govern[ed] themselves". However, she maintained that "the uncertainty of the end [would keep] up the interest" of her readers (Graham 299). She rented a small house in a district on the outskirts of Valparaíso called the Almendral, where she set herself "to learn the language and get to know the people among whom she lived –her landlord's family, her humble neighbours" (Marchant 134). In August 1822, her cousin Glennie, who was critically ill due to the rupture of a blood vessel in his lungs, reached Valparaíso. In November, both moved to Quintero, where they resided temporarily as Lord Cochrane' guests in his unfinished house on the lake shore with Mrs. Miers, Mr. Bennet (Lord Cochrane's Spanish secretary), and Mr. Carrillo (a painter). There, Graham witnessed the powerful earthquake of November 19, 1822.

In her account of the disaster, based on field observations, Graham described the main features of the earthquake – its date, timing, duration, direction of movement, the intensity and periodicity of the aftershocks, a tsunami at Valparaíso Bay – and its effects on the terrain, concluding that the land around the bay of Valparaíso had been raised about three feet above its former level. A copy of her report was sent to Henry Warburton, one of the most influential members of the Geological Society of London, who published it in the society's 1824 *Transactions*. Martina Kölbl-Eber underscores that Graham's report is one of the earliest "detailed and geologically meaningful earthquake reports" that later influenced the development of "the elevation theory in the British scientific context" (37). However, Graham's insights about the relationship between seismic events and alterations of the ground level were not considered by many of her contemporaries, and were firmly opposed by the Neptunist geologist George Greenough, co-founder of the Geological Society of London. As observed by Ruiz and Madariaga, in the nineteenth century as well as in the first twenty years of the twentieth century, "The uplift and subsidence observed near coastal sites reported in the chronicles were not fully accepted […] because there was no model of the seismic cycle" (41). Moreover, as maintained by Natalia Gándara-Chacana, even though "The pieces of evidence presented by Graham triggered a transnational debate over the effects of earthquakes on the planet's crust" (386), the Graham case showed how gender has affected the validation of knowledge throughout history. Indeed, "In the first half of the nineteenth century, women's participation in geology was largely restricted to the amateur activities of observation, collection, and classification" (391); in a nutshell, their scientific endeavours were not considered 'scientific' at all. Women themselves often tended to "profess [. . .] geological modesty' and understate the extent of their knowledge" (Heringman qtd. in Thompson 339). Furthermore, Graham's observations were used by Charles Lyell and other Huttonian geologists such as Van Hoff to demonstrate their theory of mountain building, which was opposed by Greenough. In this context, Greenough obviously saw Graham "as an easier adversary than the eminent figures of Lyell and Von Hoff" (393) and questioned both the results and methodology of her research in an article published in *The Athenaeum* on June 14, 1834. First, he discredited her scientific findings by prioritizing the opinions of male authorities such as the Chilean naturalist Juan Ignacio Molina over Graham's detailed observations. Since Molina had never mentioned any case of land elevation after an earthquake, Greenough judged Graham's hypothesis unfounded. Second, he discredited her by highlighting that male contemporaries, such as Captain Philip Parker King, had not witnessed such changes and trusted their informal impressions over her systematic research. Third, he quoted local accounts of the effects of the earthquake, such as an article published in *La Abeja Argentina*, where there was no mention of phenomena of land elevation.

In response to Greenough's attack, Graham wrote a long letter of rebuttal to *The Athenaeum*, and "arranged the publication of a pamphlet that brought together her 1824 report, Greenough's comments, and a letter counterattacking Greenough's critiques" (Thompson 336). This pamphlet,

which criticised Greenough's argument with sharp irony, was published in the *Americal Journal of Science and Arts* in July 1835 and in the *Proceedings of the Geological Society* as an appendix to the 1833-1838 volume. In 1835, during his second voyage on board *The Beagle*, Charles Darwin was sailing along the southern coast Chile when he experienced the Concepción earthquake. Visiting the coastal area of Quintero, he reported the presence of barnacles "adhering to points of solid rock which were now [considerably] elevated", supporting Graham's ideas on the coastline's "change of level" (qtd. in Thompson 338). In 1836, the argument was finally settled in Graham's favour. Overall, the whole dispute made Graham's report well known in geological circles: more than a decade later, her considerations on the "elevation of land" related to seismic activity was still being referenced at debates held at regional geological societies (Solly 344). Over time, partly building on Graham's diary, seismologists concluded that the 1822 earthquake was the result of thrust fault, namely "an interpolate event deep on the plate interface" (Ruiz and Madariaga 41).

On the night of November 19, 1822, shortly after 10:30 p.m. local time, a devastating earthquake struck the Chilean coast near Valparaíso. With a magnitude of 7.5 and an epicentre estimated twenty-five to thirty kilometres north or northeast of the city, the earthquake was preceded by a series of foreshocks from the 14th to the 17th. The ground shook for nearly three minutes, with the most violent convulsions lasting approximately forty seconds. In the epicentral zone, the sea mysteriously withdrew from the shore, only to surge back repeatedly in a haunting rhythm. In all, three large floods and ebbs of a height of 3.6 m (12 feet) were recorded. On the morning of the 20th, the sea level fluctuations were normal again. In Concón, three distinct shocks occurred within five minutes. The second, most intense of them, endured for two full minutes. Unusual glows were reportedly seen in the sky, casting an eerie light over the shaken land. One building lost its windows and roof tiles; others, including a local mill, suffered greater ruin. The canal feeding the mill from the River Aconcagua filled with debris from crumbling riverbanks, and the earth cracked open in a web of fractures. In Quintero, the quake bent the palms, some of which remained permanently tilted. The lakeshore split with massive fissures, and nearly every house was severely damaged. Fires broke out, and lives were lost. Casablanca was reduced to rubble, with no buildings left standing. In Quillota, most homes were destroyed; only twenty houses and a church were spared. Viña del Mar faced near-total devastation, its plains scattered with small cones of ejected sand up to 1.2 meters high. Damage was also reported in Limache and La Ligua. Across all affected areas, nearly two hundred lives were lost. Valparaíso suffered several losses and devastation: early seven hundreds private homes and most public buildings crumbled; every bell tower and turret collapsed; the main structures of the port district of Almendral, built on unstable alluvial ground, dissolved into dust. Depending on the sources, a number between seventy-two and three hundreds of people perished; more than 200 people were injured, most in brick buildings. Indeed, while wooden structures withstood the quake, older stone fortifications suffered various degrees of damage. Watercourses increased their flow, and new springs briefly emerged before vanishing. The coastline near Valparaíso rose by approximately one meter, though this remains contested in some historical sources. Cracks appeared in the granite cliffs, triggering rockslides. Along the coast of Concón, the land lifted between 0.3 and 1.2 meters; the greatest elevation, perhaps up to two meters, likely occurred a few kilometres offshore. The seabed's sudden uplift exposed rocks once hidden beneath the waves, dramatically altering the shores of Valparaíso, Concón, and Quintero. In time, the land began to settle again, slowly sinking back toward its former level. Farther inland, miners toiling 170 meters deep in the gold mines of El Bronce near Petorca were caught by cave-ins. Some perished, trapped in lateral tunnels. In Illapel, churches crumbled; San Felipe also suffered heavy damage. Though no fatalities occurred in Santiago, about thirty public buildings were affected. The Aconcagua region endured similar destruction. Some damage was reported in Melipilla, while the quake was felt across a wide swath of Chile – San José de Maipo, San Fernando, Talca, Rancagua, and Concepción – though these places reported no destruction. Aftershocks continued to shake the epicentral region until the first decade of December (NOAA).

In her diary, Graham first reports slight seismic shocks in the entry dated 16th July, focusing on the catastrophic nature of earthquakes, and on their physical effects on human bodies, which she likens to seasickness. Comparing them with other "convulsions of nature", she maintains that "the earthquake seems to rock the very foundations of the globe, and escape or shelter seems equally impossible" (Graham 180). Then, she adds:

The frequency of earthquakes here by no means renders the people insensible to their occurrence. In the streets of Valparaíso, I recollect seeing them run out, fall upon their knees, and pray all the saints. Here, in the country, the peasants leave off work, pull off their hats, beat their breasts, and cry *Misericordia*, and all leave their houses (180, emphasis in original).

Her description of people's reaction blends observation with a kind of ethnographic detail, noting both urban and rural behaviours featuring ritualized gestures. The invocation of saints in the city and the plea for mercy in the country frame earthquakes as moments of divine confrontation, not just natural danger. However, the urban response seems more formalized in Catholic saint-invocation, while the rural one is simpler, more bodily and direct. Graham's phrasing "I recollect seeing" places her in the scene but also positions her as an outsider recording the customs of another people. Discussing Graham's perspective and style in her Chilean journal, Regina Akel observes that "The position she typically chooses as a speaker is that of a member of a civilized society observing another in a more primitive state, in order to report her conclusions to her peers" (Akel 143). Indeed, there's an element of the travel writer's ethnographic gaze here, shaped by her British Protestant background, which may inflect her portrayal of Catholic devotional practices as "melodramatic and ridiculous" (146).

Graham mentions past earthquakes and tsunamis such as the events that destroyed Valparaíso in 1730 and Callao in 1747. Regarding the latter, she quotes an excerpt from Edmund Burke's *Account of the European Settlers in America* (1757), in which the author reported "a cry of *miserere*" (Burke qtd. in Graham 303) in the streets of Callao. In this case, intertextual references are used by Graham to support her view of Chile as a country permeated with religious fanaticism and grotesque rituals.

In another excerpt, she reports:

[B]ut I could not learn that any Indian superstition or tradition pointed that way, any more than the speculations of European natural philosophers and, indeed, twice within these five years, Coquimbo and Capiapo, hitherto described as never touched by these calamities, have been utterly destroyed, and have thus contradicted some theories about soils, situations, &c. (304)

Even though Graham underlines the universal unpredictability of seismic disasters by suggesting that both European speculations and Indigenous tradition failed in predicting the Coquimbo and Capiapo earthquakes, the word "superstition" reflects a Eurocentric and dismissive perspective, implying that Indigenous knowledge is not empirical or rational.

As mentioned above, Graham's first-person account of the disaster in the entry dated 20th November deals with meteorological observations, timing, duration and intensity of individual shocks, the type of motion during the main shock, and the accompanying sounds:

Yesterday, after dinner […] I saw it lighten. The lightning continued to play uninterruptedly over the Andes until after dark […] [A]t a quarter past ten, the house received a violent shock, with a noise like the explosion of a mine […] the motion of the earth changed from a quick vibration to a rolling like that of a ship at sea. […] The shock lasted three minutes. (305)

The first simile compares the sound of the earthquake's impact to a mine explosion, giving the reader a concrete sensory reference related to a sudden and violent event; the second turns the abstract idea of "earth movement" into a familiar physical sensation, namely the disorienting sway of a ship, underscoring the unnaturalness of solid ground behaving like water.

Like in the entry dated 16th July, Graham maintains that

from an earthquake there is neither shelter nor escape: the "mad disquietude" that agitates every heart, and looks out in every eye, seems to me as awful as the last judgement can be; and I regret that my anxiety for my patient overcoming other feelings, I had not my due portion of that sublime terror: but I looked round and saw it. Amid the noise of destruction before and around us, I heard the lowing of the cattle all the night through; and I heard too the screaming of the seafowl, which ceased not till morning. (305–306)

This passage – like the previous one – evokes Burke's conception of the sublime terror, hinting at those "passions which concern self-preservation [and which] turn mostly on *pain* or *danger*" (Burke 13, emphasis in original), and describing phenomena such as "lightning […] productive of grandeur" (62), "excessive loudness" (65), and "the cries of animals" (68). The narrator, who knew Burke's treatise on the origin of the ideas of the Sublime and Beautiful (Akel 48), was aware of the aesthetic dimension of experiences involving human confrontation with the devastating forces of nature. However, her strong anxiety for her invalid cousin Glennie prevented her from fully feeling that blend of fear, awe, and delightful horror. Graham's depiction of a second shook too evokes the feeling of sublime by using similes that refer to violent explosions and volcanic eruptions: "shocks […] accompanied by noises like the explosion of gunpowder, or rather like those accompanying the jets of fire from a volcano" (307).

Graham also focuses on spatial details that reflect her interest in investigating seismic-wave motion. By using a compass, she describes the effect of the first shock on her house's walls and furniture: noting "a regularity in the disposal of every thing", she founds "the general direction of the undulations to be north-west and south-east" (Graham 306); then, she reports other shocks returning "every two minutes" and another main shock with an interval filled "with a constant trembling, with now and then a sort of cross motion, the general direction of the undulations being north and south" (307). Her accurate measurements challenge Greenough's questioning of the scientific foundations and methodology of her observations.

Regarding the ecological impact of the earthquake, she describes the changes in the physical landscape in various locations: "[In the surroundings of Quintero] here and there cracks of various sizes appeared in various parts of the hill. […] in various places in the middle of the gardens, the earth has cracked, and water and sand have been forced up through the surface, some banks have fallen in, and the water courses are much injured" (307); "the alluvial soil on each side of the river looks like a sponge, it is so cracked and shaken […] I see from the hills, rocks above water that never were exposed before" (308); "the loose banks and the edges of the water-courses are pretty generally cracked or broken down; there are cracks along the beach between the Herradura and Concon […] some rocks and stones […] have now a passage between them […] the earth appears to have sunk on the sides of the river" (313); "[in Viña del Mar] the whole of the little plain is covered with small cones from one to four feet high, thrown up from below" (314); "At Valparaíso, the beach is raised about three feet, and some rocks are exposed, […] in some instances the earth has actually parted and fallen, leaving the stony base of the hills bare" (329). Concerning the destruction of animal species and plants, she observes that "On the beach [...] many rocks, with beds of muscles, remain dry, and the fish are dead" and reports the "[death of] a long strip or bed of sea-weed" (331).

Regarding the social impact of the earthquake, Graham's journal offers remarkable information about the destruction of towns, villages, houses, public buildings, churches and facilities: "[in Valle Alegri] many, even the peasants' houses, are damaged and some destroyed" (307); "At Concon the whole house is unroofed, the walls cracked, the iron supporters broken, the mill a ruin" (308); "the church of Concon is overthrown […] the estate-house nearly destroyed [and] the walls of the mill are quite destroyed" (314); "Quillota [...] is a heap of ruins" (308); "[in Quillota] only twenty houses and one church remained standing [and] all the ovens have been destroyed" (312); "there is not a house standing whole in the Almendral. The Church of the Merced is quite destroyed. Not a house in the port remains habitable [...] the ovens are ruined" (309); "[in Santiago] part of the directional palace has fallen; the houses and churches are in some instances cracked through [...] the canals for irrigation [broke down] in some places" (309); "[in Viña del Mar] the ruin had been complete; not a shelter remained for any living being [and one can acknowledge] the absence of the churches and higher buildings" (314); "The Almendral presents a sad spectacle: not a house remains habitable; all the roofs and walls of the land-side are ruined; those of the seaside are seriously injured [and] the port itself is in some parts utterly destroyed, in others scarcely injured" (316); "Casa Blanca and Melipilla are both a heap of ruins; Illapel is also destroyed [...] all the village churches have suffered" (318); "[in Placilla] the church and parsonage [were] shaken down" (322).

The emotional response to the earthquake involves feelings of helplessness, fatalism, and awe, while from a social perspective, it results in "demoralizing and loosening the ties of society", with "rich and poor, young and old, master and servants [...] huddled together in intimacy frightful" (315). Through

this powerful image, Graham dramatizes how natural catastrophes can flatten the normal vertical structure of society into a horizontal mass of vulnerable bodies. In this context, the expression "frightful intimacy" suggests that enforced closeness is unsettling as without the normal rules of social distance, people lose their familiar identities and roles.

Graham points out how "the hills [of Valparaíso] were covered with groups of houseless creatures, sitting round the fires in awful expectations of a mighty visitation" (310). As "visitation" is often used to describe God's direct, usually punitive, involvement in human affairs in the Bible, this passage evokes an image of mass displacement on a scale associated with Biblical exodus, with people gathering and waiting for revelation or judgement.

In the entry dated November 22, Maria relates that the night of 20th November the people, especially the women, were terrified and gathered around the image of the "Our Lady of Quintero" (Virgin Mary) with shrieks and cries, imploring her protection, "tearing their hair, and calling her by all the endearing names which the Church of Rome permits to the objects of its worship". However, the next morning, the statue of the Lady of Quintero "was found prostrate, with her head off, and several fingers broken" (310). The destruction of the statue functions almost as an empirical "test" that reveals the ineffectiveness of such devotional objects. This aligns with a Protestant worldview, in which idolatry is seen as both irrational and materially powerless. Not only does this passage involve a critique of melodramatic devotional practices, but it also describes Chilean women as members of a "nameless, faceless multitude, and the heavenly 'mother' to whom they turn as an imperfect feminine symbol" (Akel 146). While during the shocks most Chilean women pray for divine intervention, Graham observes the "regular tremulous motion" (310) on the surface of water, and analyses the behaviour of mercury in a decanter, complaining about the lack of a barometer to make more precise observations. This contrast subtly positions the Protestant female intellectual as morally and intellectually superior to her Catholic counterparts. Graham embodies the enlightened Protestant scientist by remaining calm, observant, and analytical amid disaster, resisting the collective emotionalism she associates with Catholicism. Her attention to empirical detail, her critique of devotional excess, and her implicit assertion of Protestant rationality over Catholic superstition all contribute to representing a persona that merges intellectual authority, cultural critique, and empirical curiosity. Furthermore, Graham writes that after the earthquake, some locals maintained that the tyranny of the government of Santiago "had awakened God's vengeance" (Graham 312–313). Later in the text, Graham refers to Chile in terms of a "half-civilised state" (328). Building on these observations, we can maintain that "the Protestant religious discourse used to denounce the disastrous nature of Catholicism in this diary also acts as a weapon to attack the incompetence of Spain's treatment of its colonies and, consequently, to highlight the ethical foundation of British colonialism" (Akel 142).

Some days after the disaster, Graham and her friends read together history and poetry, "to compare the descriptions of men who did not feel the fearful times with the passing facts" (323). She quotes a passage from Lord Byron's *Childe Harold's Pilgrimage* (1812) in which Childe Harold mentions an earthquake on the day of Thrasimene:

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. (LXIV, lines 568–676)

In this poetic fragment, people at sea as strangely untouched by the catastrophe that devastates the land. Surrounded by the ocean, they do not even pause to notice the motion of their ship. This detachment suggests that the natural laws which normally awaken fear in the face of disaster are, for them, somehow suspended. The suspension is above all emotional and perceptual: indeed, their isolation shields them from the scenes of terror on land: mountains trembling, birds abandoning their nests to seek refuge in the clouds, herds stumbling across convulsing plains, and human unspeakable terror.

By contrast, Graham underlines how she is in the middle of natural and social catastrophes: “Earthquake under me, civil war around me”, and asks herself what fatality […] brought [her], an Englishwoman, whose very characteristic is to be the most domestic of creatures, almost to the antipodes, and placed [her] among all the commotions of nature and of society” (334). In this passage, the narrator builds on the polysemy of the word “commotions” to draw connections between geological events, personal experiences and social history, underlining the remarkable capacity of a woman to endure and adapt despite overwhelming forces of destruction. However, the voice of Lord Cochrane seems to permeate the end of Graham’s journal, depicting her as a Romantic heroine, “[a] lady in distress who is rescued by the gallant knight” (Akel 175–176). In the end of “the most disastrous year of [her] life” (340), on January 18, 1822, Graham set out to Brazil on board the Chilean schooner *Montezuma*, leaving behind a country in a state of turmoil. Indeed, Bernardo O’Higgins’ proposals for a further amendment to the constitution, considered despotic and dictatorial, led to the rebellion of General Ramón Freire and the uprising of the provinces of Concepción and Coquimbo.

In conclusion, Graham’s account of the 1822 Valparaíso earthquake in her Chilean journal is a combination of scientific observation, socio-ethnographic commentary, and literary writing. Her meticulous descriptions of seismic motion during the shocks of 20th November and her considerations on the resulting coastal uplift in Valparaíso and Quintero anticipated core principles later integrated into modern seismology, despite facing dismissal from male contemporaries on both methodological and gendered grounds. Graham’s style blended geological knowledge and empirical observation with Romantic aesthetics by reporting scientific data and depicting soundscapes rich in sensory details, similes, and analogies. Her Protestant rationalism informed both her critique of Catholic devotional practices and her self-presentation as a calm, analytical witness of a seismic disaster that strained the social contract in Valparaíso and in other towns and villages struck by the earthquake. In her journal, she also reported past catastrophic events, showing awareness of their recurrence and unpredictability, and noting that both European theories and Indigenous traditions failed to predict disasters. However, her descriptions of Chilean townspeople fleeing into the streets, peasants praying in the fields, and women gathering around religious icons reflect her critique of a primitive worldview in which geological catastrophes were interpreted and faced through the lens of religious fanaticism and grotesque, useless devotional practices. Graham’s resilience in the face of the catastrophe is evident in her collection of scientific observations during the shocks and aftershocks, and in her capacity to intellectually process the disaster through reading, comparison with literary sources, and writing scientific correspondence. She positioned herself as both witness and survivor, interpreting her own endurance as part of a broader human capacity to withstand the “commotions of nature and society”. Her work reframed the 1822 earthquake not just as a geological phenomenon but as a test of cultural belief systems, communal cohesion, and individual strength.

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