

state, however difficult it may be to explain in what manner this heat is generated and confined. In every department of nature, our inquiries are terminated by ultimate facts, beyond which further research becomes vain. The constant generation and emission of light from the surface of the sun is more inexplicable and surprising than the constant generation of heat in the centre of the planets; but we cannot refuse our assent to the fact, though it is far beyond the power of the human mind to conceive by what means the particles of light are propelled through space with such astonishing velocity. We are too apt to measure natural operations by their coincidence with the received systems of philosophy, and to make our own ignorance the standard of truth. Had all the volcanoes in the world been dormant for the last two thousand years, and were we only acquainted with their existence by the writings of ancient historians, we should discredit the fact, and prove its impossibility by an appeal to established chemical principles; we should further accompany the proof with a pathetic lamentation over the credulity of former times.

The descent of stones from the atmosphere was denied during a longer period, though the fact is now established beyond all doubt: this should teach us to be less confident in our own knowledge, for there are still remaining "more things in heaven and earth than are dreamed of in our philosophy."

Admitting the existence of central fire in the earth, it is not difficult to conceive that there may be determinate causes, by which its intensity is increased or diminished at certain periods. We know little respecting the operation of electric or voltaic energy in the laboratory of nature; but from the existence of electric light at the poles we may infer that electric currents are passing through the earth, and are important agents in many subterranean phenomena. Perhaps the different beds of rock which encircle the globe may act like a series of plates in the voltaic pile, and produce effects commensurate with their vast magnitude. Voltaic energy is capable of supporting the most intense degree of heat without access to atmospheric air, even in vacuo; and this for an indefinite time.

Whatever origin we ascribe to subterranean fire, there can be no doubt that it will make its way through the surface in those places where the incumbent rocks offer the least resistance, or where they are most fusible. By the access of water to this fire, the sudden evolution of steam, hydrogen gas, and many phenomena of volcanic eruptions, will admit of an easy explanation. Most of the active volcanoes being situated near the sea or great lakes, we may infer that water is in some way necessary to the production of volcanic phenomena. Boiling fountains and hot springs may be classed with volcanic phenomena; for it can scarcely be doubted that the Geysers in Iceland, which throw up columns of boiling water at intervals, to the height of seventy or eighty feet, are occasioned by the subterranean fires which extend under that island; to the same cause must be ascribed the boiling fountains in the island of St. Michael's, one of the Azores. The hot springs in the vicinity of the Pyrenees, and in Italy and other parts of the world, may with much probability be supposed to have a similar source of heat. The unvaried equality of their temperature for centuries, proves that this source lies far below the agency of those causes which operate on the surface. It has been remarked that hot springs are most frequent in volcanic and basaltic countries. Though no active volcano exists in the Pyrenees, a late writer, who has described the geology of these mountains, says that the hot springs and frequent earthquakes in different parts of this chain offer proofs of the present operation of subterranean fire.

The volcanoes in South America throw out water and mud, and stones of enormous magnitude; but for particular information respecting them I must refer the reader to the interesting descriptions of Humboldt, to Ulloa's Travels, and Molina's History of Chili.

The craters of ancient volcanoes which can now be traced, are many of them far greater size than any that are in present activity. The whole of the mountainous parts of Quito, according to Humboldt, may be considered as one immense volcano, occupying more than seven hundred square leagues of surface, and throwing out flames by different cones, known by the denominations of Cotopaxi, Tungurahua, and Pichincha. In like manner, he adds, the whole groupe of the Canary Islands is placed as it were on one submarine volcano. The fire forces a passage sometimes through one and sometimes by another of these islands. Teneriffe alone contains in its centre an immense pyramid terminated by a crater, and throwing out from one century to another lava by its flanks. In the other Canary islands the different eruptions take place in various parts, and we no where find those isolated mountains to which volcanic effects are restrained. The basaltic crust formed by ancient volcanoes seems every where undermined, and the currents of lava seen at Lanzarote and Palma remind us, he adds, by every geological affinity, of the eruption which took place in 1301 at the Isle of Ichia, amid the tufas of Epimeo.

The Hon. Mr. Bennet, in his account of Teneriffe, describes the appearance of the whole plain on which the present cone is situated as a vast volcanic crater. "After surmounting the lower sides of the mountain, at length an immense undulated plain spreads itself like a fan on all sides

nearly as far as the eye can reach; and this plain is bounded on the W. S. W. and S. S. W. by the regions of the peak, and on the E. and N. E. by a range of steep perpendicular precipices and mountains, called by the Spaniards Las Faldas. M. Efcolar informed me that the wall could be traced for many leagues, the whole circumference of which evidently formed the side of an immense crater. This tract, called *Las Canales*, contains, according to the same authority, twelve square leagues. As we enter it from the South West, there are to be seen several declivities of lava and strata broken inwards towards the plain, and evidently a continuation of the abovementioned line of wall, and the remains of the original crater." The cone of Vesuvius is thus partly encircled by the walls of a much larger crater, of which Mount Somma formed one of the sides.

The other extinct craters and souffrieres in the vicinity of Naples are of immense size compared with any that are in an active state. The magnitude of their opening must have been commensurate with the quantity of matter thrown out, for the craters themselves are formed by the eruptions.

We cannot avoid the inquiry respecting the use of these mighty agents in the economy of nature. Were we to consider volcanic craters merely as the vents for internal fires, a further inquiry would arise respecting the utility of these fires; for we cannot suppose that the laws which govern the interior of our planet are not directed by the same design and skill which are displayed in the external universe. Now the only instances which we have of actual rock formations in our own times are volcanic; and when we consider the vast number and the magnitude of extinct and active volcanoes, it will not appear unreasonable to suppose that they have been operative in forming the original materials of which all the various beds and strata that cover the globe were composed; and that these materials have been successively thrown out by aqueous and igneous eruptions in the different states of lava, sand, and mud, and also held in chemical solution or mechanical suspension by water.

The substances emitted or ejected from volcanoes are either solid, fluid, or volatile. Among the first, we may mention masses of rock ejected at the commencement of an eruption without being acted upon by fire. Among the melted substances may be enumerated lava, pumice, and volcanic glass. Lava is poured out of the crater or sides of a volcano, and descends in currents of red-hot liquid matter, of a pasty tenacious consistence like that of melted ore, or slag from a furnace. The quantity of lava ejected during a single eruption is sometimes inconceivably great. The current which flowed from *Ætna* in 1669 is two miles in breadth, fifteen miles in length, and two hundred feet in depth; it retains a portion of its heat to the present day. Ferrara says that in 1809, when this lava was perforated at Catania, flames broke out, and it continued to smoke at the surface, after rain, at the beginning of the present century, or 130 years after its eruption.

The following circumstance, communicated to me by a very intelligent glass-manufacturer, evinces the difficulty with which heat passes through vitreous substances. When the pot containing the melted glass cracks in the furnace, it is common to pour out the contents into water. A mass of melted glass in this situation will soon become cool and solid on the outside; but the internal parts will preserve a red heat for four or five hours after, and may be seen shining through the water when the temperature of the outside of the glass is but sensibly warm.

### FOREIGN NEWS.

London, Oct. 23, 1819.

#### The Whigs.

Lord Erskine, has again taken up his pen in defence of the Whigs against the charges brought against them by the Reformers, of not having gone the whole length of their views of the question. After stating that his opinions have undergone no further alterations than, "as to the best and most probably successful means of effecting an unchangeable purpose under circumstances that have changed," his Lordship says:—"Those among the Whigs, who at any time supported a reform in Parliament, have not, that I know of, departed from their declared opinions, that an extension of the Representation is most desirable, and is a just expectation on the part of the people; but in my opinion, and speaking for myself, they never can rationally act with those who defame them. They ought forever to stand aloof from such reformers; not from repentment, not even from a decent pride, however natural and justifiable, but because the defamation proves their views to be different, and that these defamers are seeking nothing like an improvement in the House of Commons, by a wisely adjusted balance of representation, but on the contrary, countenancing every prospect of it, by claiming rights in defiance of the established laws; and instead of promoting petitions, encouraging their followers to revile the Legislature of their country."

His Lordship strongly deprecates the bringing together such large assemblies as have lately been held, however loyal it may be to do so; and finally calls upon Parliament to avail itself of the present crisis to extend the elective franchise, without altering the character of the House of Commons, as the best means of quieting the orators of sedition, who would be necessarily silent when their topics of invective were destroyed.

October 24. Alderman Bridges has been invested as Lord Mayor of London.

A main object of a large body of the Reformers is the equal distribution of property.

On the 13th of Oct. H. E. the Senator Tatishoff arrived at Paris, as Minister Plenipotentiary from the Emperor of all the Russias—which lessened the idea of a war, that had been agitated.

The Emperor of Russia has abolished the liberty of the Press in Poland.

A Paris article of Oct. 12, states, that the vintage in the department of La Haute Marne, and the produce, surpassed the utmost expectations. It is difficult to know what to do with the plentiful stock of wines—the price of casks had suddenly risen, and the greatest embarrassment was experienced for want of them.

Ten additional field pieces have been ordered into the districts in England, under the command of major general Sir John Byng.

The King of France was well on the 27th of October. Orders have been given to suppress the clubs in France who profess to be the friends of the liberty of the press.

The Princess of Wales, travelling under the title of Countess Oldi Angela, was still at Lyons.

The French Minister of war issued orders for all the regiments of cavalry and corps of artillery and engineers to be completed to their full effective numbers.

Sandt, the murderer of Kotzebue, is said to have been carried to Mentz.

The London Courier of the 30th Oct. says—"Among the many rumours in circulation in the city within three days is that of a change of Ministry, for which, we venture to assert, there is not the slightest foundation."

Earl Grosvenor has addressed a letter to the committee for raising an additional armed force in the county of Chester, refusing to contribute to that object.

A large meeting of Reformers has been held at Rutherglen, Scotland. The president wore the Cap of Liberty, and the emblem of Revolution. A meeting has also been held at Mauchline. They came to the meeting to the tune of "The Campbell's are coming," played on the bag pipes.

The Park and Tower guns were fired on the 25th of October in London, in honor of the King of England entering upon the 60th year of his reign, being four years longer than any other British Sovereign.

Cobbett says that Paine shall have a funeral twenty miles long, and that he shall be buried in St. Paul's Church, London! How natural is aristocracy!

A coalition is rumored to be on the tapis between Ministers and the Grenville party, which, it is supposed will be completed before the meeting of Parliament; and that the only obstacle to a treaty is the scruple of Lord Liverpool and his friends on the point of Catholic emancipation.

On Monday night, at the different meetings of the Union Societies of Radical Reformers in London and Westminster, the bust of Mr. Hunt was publicly broken to pieces, and he was pronounced unworthy of their future confidence.

Mr. Budge, an English gentleman, fond of field sports, on leaving home for Church, was followed by his lad who had charge of his dogs, who informed his master that the head of the dogs was exhausted, and that the animals would starve, and requested to know what was to be done. Mr. B. who was vexed in being addressed at such an unseasonable time, in an angry tone, exclaimed "Hang the dogs!" The lad made no reply, but returned to the house, and carried the order into execution. On Mr. B's return from Church, he beheld his brace of grey hounds and a leash of the best Spaniels in Dorsetshire, hanging dead in his stables.

Among the reports of a change of ministers in England, Lord Colchester is named as the successor of Lord Sidmouth.

Sierra Leone has been remarkably unhealthy the past season, almost every person in the colony having been sick, natives as well as Europeans.

One of the gold snuff boxes, manufactured in England, decorated with a miniature of the Prince Regent in enamel, studded with brilliants of the first water, and presented by order of the British government to the Sovereigns and Princes assembled at Vienna, is in the hands of a Jeweller at Brussels for sale. A house in London had offered 650 pounds for it. A London Editor is anxious to know which branch of the Holy Alliance could treat the present of the Prince Regent with so much indignity?

The London Courier of the 20th, gives us the following "Revolutionary Coincidences":—

1. *Harrison*, a spiritual Preacher, executed at Tyburn, for high Treason, in the reign of Charles the First.
2. *Burdett*, (Sir Thomas) executed for high Treason in the reign of Edward the Third.
3. *Cochrane*, (Sir John) arrested for high Treason in the reign of William the Third.
4. *Cobbett*, a regicide and cobler turned soldier, and became Colonel, executed for high Treason in the reign of Charles the Second.
5. *Wolfey*, (Sir Charles) a reforming Puritan and revolutionist, who headed a deputation to offer Cromwell the Crown.
6. *Cartwright*, a puritanical reformer, punished by the Star Chamber, for a Libel, called "New Discipline."

And "Revolutionary Indications":—  
1. Women were organized by Weisshaupt, the German Revolutionist, into clubs similar to those of Blackburn, Stockport, &c. &c. See Barruel and Robinon.

2. Women took part in the Revolutionary mobs, in the reign of Charles the First, as at the commencement of the French Revolution and at Manchester.—See Lord Clarendon's Rebellion.

The Reformers, in England, or as they now style themselves, the Radicals, have prevailed upon the clay-moulders to join their standard—who have produced Radical Jugs, out of which nothing exciseable is to be drunk. The jugs are decorated with the following lines:—

"May the British Rose never blow,  
The Scotch Thistle never grow,  
The Irish Harp cease to play,  
Till Henry Hunt has won the day."

The London Courier proposes to add the following couplet:—  
"And may our champion find, let's hope,  
His just reward, four feet of rope."

#### From a Liverpool Paper.

*Female Reformers in 1641.*—Previously to the civil war in 1641, a petition was presented to the House of Commons by certain females, asserting, "that if proper remedies for the public miseries were longer suspended, the petitioners would be forced to extremities not fit to be named," and adding, that, "Necessity has no law, and they had nothing to lose but their lives."—(See *Macaulay's History of England*)—The order of petition is remarkable. First came a petition from young men; then one from tradesmen and manufacturers; third from porters; and a fourth from gentlemen, tradesmen's wives, &c. The close of Mr. Pym's reply to the female reformers of that day is rather curious: "We exhort you to return to your own houses, and turn your petitions, which you have delivered here, into prayers at home for us. We have been, and shall be to the utmost of our power, ready to relieve you, your husbands, and your children; to discharge the trust committed to us; and perform our duty to God, our King and our country, as becomes faithful christians and loyal subjects."

#### From the Norfolk Herald, Dec. 4.

*From Spain.*—By the Hornet we have received late advices from Spain, through the politeness and attention of a friend in that quarter, extracts of which we give below.—A few days ago we announced with confidence the existence of a secret Treaty between Spain and Great Britain, which stipulated for the transfer of the Floridas to the latter. It will be seen, from what follows, that such a Treaty was negotiated, but, like our own, not ratified.

October the 18th.—"The post from Madrid is just arrived.—My letters are to the 12th, informing me that on the 9th, the day limited by Mr. Forsyth for the final determination of the King as to signing the Treaty, the Spanish Secretary of State made his answer to the demand of our Minister in the following pithy and genteel terms—"That H. M. adhered to his former resolution of appointing an Ambassador to the United States, where his objections to the Treaty would be made known.—And as his powers would embrace every object, he would of course hear what the President had to say—but here H. M. would not ratify the Treaty." This is plain English, and for Spanish diplomacy pretty short and terse.

"Capt. Read left Madrid the 13th. Mr. Forsyth is to remain there until he receives further orders.

"The Mareschal de Campo, Don Francisco Dionisio Veyes is named as Envoy Extraordinary to the United States on this occasion, and it is believed he will accept the office and set out on his mission—some of these days.

"I have the Treaty of 1814 between England and Spain, which I mentioned to you, but discover that it was never ratified—by which party I know not. Here, now, we are set on a curious enquiry to find out under what Treaty the "foreign enlistment bill," of the last parliament was made necessary." To this Treaty of 1814 there were secret articles, the only important one of which was, that England should not allow supplies or assistance to be afforded to the revolted colonies in South America. But this Treaty was not ratified, of course created no obligation for England to adopt such a measure. Then what Treaty has been made since? And what recompence does England get from Spain for the foreign enlistment bill, so manifestly against her interest, as regards her relations with Spain and her colonies? This mystery will be developed soon \* \* \* \* \*

"It is said the Government of Spain had the modesty, to request of Captain Read, in Madrid, to give a passage to a Minister to the United States!—And the still greater modesty to require that the United States shall not now or at any time hereafter, acknowledge any of the revolted colonies of South America, as independent states!

"It is perhaps a premature report, that Mr. Forsyth demands his passports if the treaty is not accepted. He will probably remain to receive orders from his government, after the meeting of Congress. If their resolutions will have no effect on Spain, they have only one alternative left besides an open declaration of war: take all the territory you have contended for, to the Colorado, or the Rio del Norte—pay your citizens for Spanish spoliation, &c. as liberally as circumstances will justify, and let his Catholic

Majesty make war for it if he pleases.—  
The Spanish people will be delighted if he should—it would be the harbinger of peace and freedom to them in three months afterwards."

"October 20.—I have just time to give you the contents of my Madrid letters of the 15th. They confirm my suggestions as to the probable time of the departure of General Veyes the new minister, for Washington. "Gen. V. (says my correspondent) was lately appointed to the expedition at Cadiz, in the room of Sarsfield, removed, and is somewhere in Andalusia—of course he will have to go through a long quarantine before he can enter Madrid; then he will require some time to be instructed in the business he is going upon, for he knows nothing about our country or the nature of the dispute. —He may, also, expect some detention to get money for his outfit—and then he has to obtain an absolution for his sins—the blessing of his Confessor against the perils of a foreign and distant service, the protection of the holy Inquisition and the fellowship of the Pope. So that upon the most moderate calculation he will not be in readiness to embark before next summer; that is to say if he accepts the appointment, which he may not do, three others of equal distinction having already refused it."—He may possibly arrive at Washington about the time the Representatives from Florida arrive there to take their seats in Congress.

"The Spaniards are not to be driven out of their own way of doing things, and so long as our Government content themselves with words, in whatever language they may be couched, we shall never make any thing of them.

"The same discord prevails in the Councils of Spain, amongst the present Ministers as before the Duke San Fernando's appointment, and some think already, that the Duke won't retain his situation many days longer.

"Nothing is talked of here but the entrance of the new Queen, and the royal marriage, which is to be celebrated the 21st.—The affairs of America can never be compared with the possession of a ribbon or a star, and we shall probably hear no more about the matter till we are again roused either by despatches or something more effective from Washington.

"We have all eyes open for the Peacock. The Commodore with his squadron waits her arrival, and immediately afterwards the Erie, Capt. Stockton, will sail for America.

"Accounts from Cadiz represent the mortality by the fever still at 100 per day, but great hopes are entertained that the cool weather now set in will destroy it."

A letter of the 14th Oct. from a friend in Madrid, in whose intelligence, veracity, and means of information entire confidence may be placed, contains the following article, which, if to be reduced to conviction, must denounce Spain as an outlaw in the eyes of nations, and to the rights of diplomacy, and justify us in any measures of redress which would be pursued even against the Algerines. "It is the determination of the Government of Spain, in case the United States touch Florida, (as they most certainly will, and that very soon too) to make reprisals on their commerce. To do this with effect that government has adopted a plan to encourage the English, French, &c. to fit out vessels and put them under the Spanish flag, in Spanish names, &c. We shall see how this proposition takes, but in the mean time the above may be relied on."—Comment is unnecessary on this point, even if it be proved that the Spanish Government have dreamed of such a scheme at this time. Enquiry is now on foot \* \* \* \* \*

Jean Baptiste Arismendi, has been appointed Vice President of the Republic of Venezuela, in the place of the Hon. Francis Antonio Zea, resigned. Arismendi has issued a proclamation, which declares that in consideration of the exhausted state of the National treasury, and to meet the necessary expenses of war, that hereafter all hides of black cattle, whoever may be their owners, are declared to belong to the State.

#### N. Y. D. Adv.

*A crystal summer house.*—Furetiers has given a description of a curious summer-house invented for the King of Siam. The description was transmitted to him by a friend who has had the honor of a seat in it.

The King of Siam has in one of his country palaces, a most singular pavilion. The tables, the chairs, the closets, &c. are all composed of crystal. The walls, the ceiling, and the floors, are formed of pieces of plate glass, of about an inch thick, and six feet square, so nicely united by a cement, which is as transparent as glass itself, that the most subtle water cannot penetrate. There is but one door which shuts so closely, that it is as impenetrable to the water as the rest of this singular building. A Chinese engineer has constructed it thus as a certain remedy against the insupportable heat. This pavilion is twenty eight feet in length, and seventeen in breadth: it is placed in the midst of a great basin, paved and ornamented with marble of various colors. They fill this basin with water about a quarter of an hour, and it empties as quickly. When you enter the pavilion, the door is immediately closed, and cemented with mastic, to hinder the water from entering; it is then they open the sluices; and this great basin is soon filled with water, which is even suffered to overflow the land; so that the pavilion is entirely under water, except the