

WEEKLY ALMANAC.

1834	SUN.	MOON.	H.W.	WACH.
DEC 31	11 30	4 21	1 53	6 20
THURS.	25 7 30	4 21	3 12	7 40
FRIDAY.	26 7 30	4 21	4 29	8 40
SATUR.	27 7 30	4 21	5 47	9 36
SUNDAY.	28 7 30	4 22	7 0	10 28
MONDAY.	29 7 30	4 22	8 18	11 19
TUESDAY.	30 7 30	4 22	9 36	12 0
WEDNES.	31 7 30	4 22	10 54	12 0

Jupiter South. 25th 26 42m P. M.
Mercury, new. 30th 28 32m A. M.

SAINT ANDREWS

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SAINT ANDREWS MAIL.

Departs for	Arrives from
St. John, Tuesday, and Friday at 3 P. M.	St. John, Monday, and Friday at 2 P. M.
St. Stephen, Tuesday and Thursday at 10 A. M.	St. Stephen, Wednesday and Saturday at 4 P. M.
United States, Monday, Wednesday, and Friday at 10 A. M.	United States, Monday, Wednesday, and Friday at 2 P. M.

ACCOUNT OF THE GLOBE (Continued.)

UNSTRATIFIED ROCKS. This group, which is widely diffused over every part of the globe, comprises those rocks usually called volcanic, Trappian, Serpentine, and Granite. They are found mixed with almost all the stratified formations, and bear every mark of having been thrown up from beneath. For the most part, they either occur as "protruded masses, as overlapping masses which have resulted from the spread of matter after ejection, or as veins, filling up fissures, apparently consequent on some violence to which the strata have been subjected. The substances principally entering into the composition of these rocks are, quartz, felspar, hornblende, and mica, which have been already described individually. The compounds which they form either when they are all present, or when two or more constitute the elements, are exceedingly various in their aspect and texture.

Granite.—The most prevalent and important rock of this class is a confusedly crystalline body, composed of the four substances above named; but these are not always all present; sometimes only two of them are found in a mass, which obtains the name of granite. This rock was long considered the fundamental one on which all the others were accumulated; but this opinion was abandoned when examples occurred of its resting upon stratified and fossiliferous rocks comparatively recent origin. Granite is common in Scotland, forming a great proportion of the Grampian mountains which intersect the country; it is also found in England, but not so abundantly. It forms a beautiful stone for building, and though used for that purpose, it is not so to an extent commensurate with its value. "In general," says Mr. Brande, in his *Outlines of Geology*, "granite is the most durable of nature's productions, and long resists the destroying hand of time; and though its common uses, its extreme hardness is against its employment, its use should be engaged for public edifices." There is assuredly no danger of exhausting the material. Mr. Williams in his *Natural History of the Mineral Kingdom*, informs us, that there is as much granite in the mountain of Ben Nevis alone, and that "perhaps the best and most beautiful in the world," as there is adequate to serve all the kingdoms of the earth, though they were as fond of granite as the ancient Egyptians." Some idea of its durability may be formed from the excellent state of preservation in which the grand head of Memnon is found, and that of the celebrated column vulgarly called Pompey's Pillar, which still stands entire, amid the mouldering ruins of the ancient city of Alexandria. The obelisk in the Palace of St. Jean de Luteran at Rome, a son of Senosiris consecrated to the sun, has, for three thousand years, survived the vicissitudes of nature and of time.

The most common granitic compound is that which has quartz, felspar, and mica, for its constituents; when hornblende is present, instead of mica, it is called Syenite, from its abounding in the island of Syene. When quartz and felspar occur alone, and the crystallization is such that the former appears disseminated in the latter, it is termed gneiss; granite, from its bearing a supposed resemblance to antique graphic characters. Granite is sometimes porphyritic, large crystals of felspar being disseminated through the mass. The porphyry of Ben Nevis is a beautiful stone, in which the pale rose and colour of a yellowish white are finely blended and shaded. The porphyry of the ancients was chiefly of a red colour, and from that quality it derived its name.

Serpentine.—A rock of this class has been called from its resembling the skin of a serpent, in the delightful admixture of various colours which it exhibits. Several specimens of this stone are found in Britain, particularly at Portree, in Banffshire. A curious substance called asbestos occurs in this rock. There are five varieties of it, and all are more or less fibrous and flexible, from one of these the ancients made cloth, which was incombustible. When these habitations required cleaning, it was only necessary to throw them into the fire, whence they came forth completely purified, and as unimpaired as the three Jewish youths who went through the ordeal of the furnace. The Equimaux use it as a substitute for wick in their lamps. Mountain cork, another kind of asbestos, floats on water. *Serpentine or stentite*, is also found in serpentine rocks. It derives its name from having a soft feel somewhat resembling that of soap. Humboldt assures us, that some of the North American savages use it for food, although there is not a particle of nourishment in it. It writes on glass the characters remain invisible until breathed upon; for from being fugitive, they can only be destroyed with the glass itself.

Trap Rocks.—Certain rocks have obtained this name from their presenting very often the appearance of steps and stairs. Arthur's Seat and the Calton Hill, and the principal mountains surrounding Edinburgh, are composed of them. Trap rocks consist of basalt, clinkstone, greenstone, amygdaloid, &c.

Basalt.—This rock very frequently presents the most remarkable appearances; the

most wonderful of which are Fingal's Cave, in the island of Staffa, and the Giant's Causeway, in Ireland. The entrance to the former resembles a Gothic arch, and is about seventy feet high; the length of the cave is 127 feet, and the breadth from forty to fifty; the sides are composed of masses of basalt arranged in columns, with considerable regularity throughout. This magnificent temple of nature has been frequently described by scientific and other travellers, but all description would seem to fall short of the reality. The following are the impressions which it made upon the mind of a great poet:—

Where art to shun the temples deck'd,
By skill of earthly architect;
Nature herself, it seem'd, would raise
A minister to her Maker's praise:
Not for a meagre use ascend
Her columns, or her arches bend;
Not for a throne less alien tell,
That mighty gorge that cliffs and wells.

The Giant's Causeway consists of three tiers of columns, which extend several hundred feet into the sea, and are walled round by towering rocks, some hundred feet high, in which are, clusters of columns of various forms and inclinations. Basalt frequently shows upward in abrupt masses, without displaying any columnar appearance. The rocks, upon which the Castles of Edinburgh, Stirling, and Dumbarton rest, are examples of this kind. Clinkstone, another species of trap rock, derives its name from emitting a ringing sound when struck. Greenstone is of a pale green colour, and composed of felspar and hornblende. Whinstone is a rock of the same kind. Amygdaloid is so called from small nodules of an almond shape occurring in it.

Walls or dykes, that is long ledges or walls of greenstone intersecting a different description of rock, are very prevalent in this formation. These appearances may be seen on the Western side of the Salisbury Crags, and in several positions on the Calton Hill, in the neighbourhood of Edinburgh. In the coal strata these dykes also occur. The trappian rocks are so common in nature, that any farther notice of their "local habitation" is superfluous. They are found mingled with stratified rocks in every possible way; and for a more minute account of them, and also of all the rocks in this group, we may refer the reader to Macculloch's *Western Islands*. Mr. Gregory Watt has made several most interesting experiments to ascertain the causes which have produced the columnar and globular structure of these rocks. He fused a considerable quantity of basalt, and allowed it to cool very gradually; by this means spheroids were formed in the mass, which explained the phenomena of globular basaltic rocks. His remains were also extended to the columnar structure, and the theory of their origin, hence deduced, is exceedingly plausible, but an explanation of it would carry us far beyond our limits. We can, therefore, only refer the inquirer to the *Philosophical Transactions* for 1834.

We have now passed in review before the reader the various stratified and unstratified rocks of which the crust of the earth is composed. A more minute account of the almost endless diversity of substances, and their intricate and complex relations to each other it was impossible to give within our necessarily circumscribed limits. But we hope enough has been done to satisfy the minds of that numerous class of individuals who wish a comprehensive view of a subject presented to them without being fatigued with minute details, or entertained with barren speculations; while in other minds there may have been awakened a desire to prosecute the study by reference to more laborious and amplified compilations devoted to the subject, or to that most perfect and sublime of all works—Nature herself.

From the foregoing detail of unquestionable facts, we may with perfect safety infer, First, That all solid bodies have formerly been in a soft or fluid state, that they were either fixed by fire or held in suspension by water; for how otherwise can we account for the presence of organic bodies in them? Secondly, That some terrible convulsion, has rent the solid pavement of the earth, and upheaved the beds of the sea, in many instances beyond the regions of perpetual snow; for how otherwise can we perceive of marine remains being imbedded in elevated mountain rocks? Not ascribed by means of the deluge; yet such an explanation of the phenomena has been given, with all due gravity, in works published so late as the year 1832. The theory of Voltaire, in one of his numerous and very absurd essays on geology, was even more plausible than this. That singular man hated the Christian religion so much, that he hated everything which was brought forward to support it. When it was stated that the shells found upon the Alps afforded a proof of the deluge, he replied, with admirable tact, that they were eastern species, which had fallen from the hats of the Syrian pilgrims. On another occasion, he observed, "that the bones of a reindeer and hippopotamus, discovered near Etampes, did not prove, as the members composing it observed, a strict none would have it, that Lapland and the Nile were once on a tour from Paris to Orleans, but merely that a lover of curiosities

once preserved them in his cabinet." Thus, he threw doubt indiscriminately on all geological subjects. Thirdly, That the globe has existed many (it is impossible to calculate how many) thousands of years previous to the creation of nature's "chief ornament," man. Amongst other facts which support this conclusion, the absence of his remains, and those of his works, in strata where vegetables and the lower animals occur in infinite number and variety, is one which cannot be explained away, and appears to be decisive of the point, and let not the Christian reader be startled at this statement, and sarcastically exclaim with the pious Cooper:—

"Some drift and bore
The solid earth, and from the strata there
Extract a register, by which we learn
That he who made it, and revealed its date
To Moses, was mistaken in its age."

It goes directly to corroborate the Mosaic account of the time which has elapsed since the human race first appeared upon the globe. This is now agreed upon by all philosophers whose opinions are worthy of notice. With regard to the creation of the earth itself, the language of Scripture, particularly with regard to time, is metaphorical; so that to found any argument upon it would be quite unphilosophical.

THEORIES OF THE EARTH.

There is nothing so important to science as a correct generalization of facts, which go on to prove that nature has adhered to a certain number of fixed principles, from which she never deviates, in developing particular parts of the mighty scheme of creation, unless, perhaps, it be the collection of the facts themselves, and yet there has nothing retarded its progress more than the hasty deductions from too limited observation. The truth of this is more strikingly exemplified in the history of geology than in that of any other science. The theories and conjectures as to the manner in which the substances composing the globe were first amassed, and vicissitudes to which rocks and strata have been subjected, so as to account for their present positions, and the alteration of hill and valley, are various and conflicting. Two, however, stand conspicuously forward—those of Werner and Hutton. The Wernerian or Neptunian theory, as it is called, supposes that the whole materials of the earth were held in solution by water, and that they were gradually deposited in layers or strata, the granites falling down first, and the other formations following in succession, according to the order of the superposition. The Huttonian or Plutonic theory supposes a continual decay and reproduction to be taking place on the earth's surface. Mountains and rocks are worn down by the agents already noticed at the beginning of this article, and, being arranged in strata at the bottom of the ocean, are acted upon by the agency of fire, and thrown up again in the shape of mountains, &c. The characteristic feature of Hutton's theory is the exclusion of all causes but those which belong to the present order of nature. Its great defect is the undue influence ascribed to subterranean heat, supposed necessary for consolidating submarine deposits. It was the opinion of the Scotch geologist that there were alternate periods of disturbance and repose; that, when the ruins of former continents had furnished sufficient materials for new ones, they were heaved upwards by violent and paroxysmal convulsions. These two theories for several years kept the scientific world in a ferment. Each had its partisans, and the turbulence and rancour with which the belligerents carried on the warfare, without a parallel in the history of philosophy. Religious zeal added a fearful contribution to the amount of abuse and contumelious heaped upon the heads of the heretical localists. "In the economy of the world, I can see no traces of a beginning, no prospect of an end," said Hutton. He threw the creation of the globe many ages farther back than what was then deemed the orthodox period of cosmogony. He may be said to have exhausted time, according to all previous notions of the extent of its duration, and to have borrowed largely from eternity; and yet there are now comparatively few who will be disposed to doubt the truth of what Hutton advanced. How should there be any traces of a beginning or of an end? The works of the great Creator are not like those of man, which have inherent in them the elements of their own destruction. "He has not permitted in his works," says the gifted Playfair, "any symptom of infancy or of old age, or any sign by which we may estimate either their future or their past duration. He may put an end, as he no doubt gave a beginning, to the present system at some determinate period of time; but we may rest assured, that this great catastrophe will not be brought about by the laws now existing, and that it is not indicated by anything which we perceive."

The lamentable exhibition of human frailty displayed in this philosophical crusade, for a time retarded the progress of just views with regard to geology, but in course, a third party took its rise, and rapidly gained ground. The members composing it observed a strict neutrality, and were zealous in collecting facts, not for the purpose of supporting speculative doctrines, but of ascertaining truth.

It is now pretty generally admitted, that, after all, neither of the two theories answers the various conditions of the problem to be solved. A third theory is at present gaining ground, and it appears to be a very rational one. It is reared upon, and partly constructed of the ruins of both. Discarding the idea of paroxysmal convulsions at particular epochs, and an extraordinary influence of subterranean heat for the consolidation of submarine deposits, it explains the former changes of the earth's surface, by reference to causes now in operation. Professor Lyell has published an admirable work in support of this opinion. It would be doing injustice to the author were we to attempt to give an abstract of the various arguments, deduced from an unsparing mass of evidence, which goes to support the doctrine. We take pleasure, however, in referring the reader to the work; and if he be not convinced of the correctness of the fundamental view there entertained, he can not fail to admire the ability and eloquence with which it has been advocated.

With respect to Mr. Lyell's theory we have in conclusion, one observation to make—Since it is now pretty generally admitted, that the temperature of the earth was a good deal higher formerly than what it now is, would not the causes at present in operation, under such circumstances, act with a greater degree of intensity, and produce more extensive results?

HUMAN FRAILTY.

Life is a fountain, fed by a thousand streams which perish if once dried: it is a silver cord, twisted with a thousand strings, that part asunder if one be broken. Frail and thoughtless mortals are surrounded by innumerable dangers, which make it more strange that they escape so long, than that they should at all perish so suddenly and surely. We are encompassed with accidents, events ready to crush the mouldering truth of things that we inhabit. The seeds of disease are planted in our constitutions by the hand of Nature. The earth and the atmosphere whence we draw our life, are impregnated with death; death is made to operate in its own destruction. The food that nourishes the body contains the elements of its decay—the seed that animates it by the vivifying fire, tends to wear it out by its action. Death lurks in ambush along our path—"in the midst of life we are in death."

THE SUMMER IS PAST.

The three short months of summer have passed, and autumn with its yellow and scarlet leaf is before us. It seems but yesterday when the earth put forth the flowers and blossoms of spring, and yet during this short period, summer has succeeded to spring, and now autumn to summer. Day follows day, and year follows year: in quick and rapid succession, and amidst the turmoil and excitement and bustle of life, we forget how rapidly we are moving on that "journey from whose house no traveller returns."

The summer is passed! What a sad and instructive lesson does the rapid change of seasons leave us of our destiny. In the spring-time of life our hearts have beat high with the hopes and delightful anticipations of future years of promise. The summer's sun may have risen upon us without a cloud, and its last rays of light may have been more beautiful than the first. And when the autumn gathers around us, testing the hopes of our earlier years, and stamping upon all either disappointment or success, according as we have treasured up the talents bestowed upon us by our Maker. Then comes the winter of life, when the joyous hopes of boyhood are looked upon as wild enthusiasm, and when the judgment, matured by experience, will unite with the wise men of Israel in saying vanity of vanities—all is vanity.

The summer is past, and perhaps with the winter and reader it has passed for ever. To us the balmy breath of spring may never come again. We may never again see the budding rose or the springing flower of this beautiful season. Change is stamped upon all things of this world: here to day and gone to-morrow, and then all that remains of us is a little handful of earth, an affecting comment on our vanity and folly. Ah! did we realize and feel this important truth, how different—how very different would be the course of our lives. Did we in our moments of temptation, when we find our hearts turning towards the things of this world, but reflect that all its enjoyments are as "fading as a dream, how little should we care for all its honours. What to us would be the homage of thousands—what to us the adulation and applause of the multitude? A few rapid rolling years, and our heads will lie as low in dust as theirs, and "the places that now know us, will then know us no more for ever."

Like leaves on trees the years of man's life pass, now green in youth, now withering on the ground, another race the following spring supplies; So generations pass and new ones rise.

BLACK-ROD SKAN.—An Anecdote. GAY wrote his well known ballad of "Black-rod Skan," upon Mrs. Montford, a celebrated actress contemporary with Cibber.

After her retirement, love, and the ingratitude of a bosom friend, deprived her of her senses, and she was placed in a receptacle for lunatics. During a lucid interval she asked her attendant, what play was to be performed that evening? and was told, *Hamlet*. In this tragedy, whilst on the stage, she had ever been received with rapture in the character of Ophelia. The recollection struck her, and, with that cunning which is so often allied to insanity, she eluded the care of the keepers, and got to the theatre, where she concealed herself until the scene in which Ophelia enters in her insane state; she then pushed on the stage, before the lady who had performed the previous part of the character could come on, and exhibited a more perfect representation of madness, than the utmost exertions of the mimic art could effect; she was, in truth, Ophelia herself, to the amazement of the performers, and the astonishment of the audience. Nature having made this last effort, her vital powers failed her. On going off, she exclaimed, "It is all over." She was immediately conveyed back to her late place of security, and a few days after, like a "lily drooping, she hung her head, and died."

Magnetic Locomotive Engine.—A very successful trial of a new magnetic locomotive engine has been recently made by M. Lemierre of Brussels, its constructor. The trial occupied above an hour; and as the motion was very rapid, it may reasonably be expected that this new power will become of much use when employed on a larger scale. The construction, in which the plan suggested by Professor Guillery has been followed, is very simple, consisting chiefly of an horizontal fly-wheel of copper, which magnetises a galvanic column, within which an iron bar is placed; this bar turns itself between two fixed magnets, and thus works the fly-wheel agreeably with the impulse given by them. As soon as the iron bar has arrived at a balance, the magnetic current has increased so much as to change the poles, and that is now repelled which just before was attracted: by this means a continual, pendulous motion is established.—This is the first time, we believe, that the well known power of the magnet has been made available for the purposes of locomotion.

Antiques.—Several ancient silver coins were found lately in a peat moss west of Pentfield hills, at Baddingtill, about two feet below the surface. One of Henry III. of England 1216. Henry is represented with a full face, and a sceptre in his right hand, crown, a row of pearls of five points, with a cross raised upon the middle point—on the reverse a double lined cross terminating at the inner circle, and four pellets in each quarter. The others are of William the Lion, of Scotland, 1165, coined at Perth, Roxburgh, and Edinburgh; a lion's head and sceptre—reverse, a cross and crescent, and pellet in each quarter.—*Scotsman*.

OCCULT QUALITIES.

It has for a long time been fashionable (says one of our correspondents) to ridicule the term *occult qualities*. Those who deny them deserve ridicule. Every principle of every work of the Author of nature is *occult*, and hidden from the knowledge of mortals.—What is centripetal force, which, without contact, acts at immense distances? What power causes the heart of man to beat 60 times in a minute? What power changes grass into milk in the udder of a cow? or bread into blood, flesh, and bones, in the infant, who grows in proportion as he is fed, until he reaches a certain stature, to which no human art can add a single line?

What is the first principle of vegetables, of minerals, of animals? It is known to him alone who has clothed the sun with light, and caused it to revolve on its axis.

Lead will never become ivory; silver will never become gold; gold will never be a diamond; straw will never become a citron or a pineapple.

What is the nature of the corporeities or atoms, which determine the nature and properties of substances? It will in all probability be eternally hidden from us. All that is around us, and all within us, is an enigma which we cannot solve.

Accustom yourself to submit on all and every occasion, and on the most minute, no less than on the most important circumstances of life, to a small present evil, to obtain a greater distant good. This will give decision, tone, and energy to the mind which thus disciplined, will often reap victory from defeat, and honour from repulse. Having acquired this invaluable habit of rational preference, and just appreciation, start for that prize that endureth forever; you will have little left to learn. The advantages you will possess over common minds, will be those of the *Lanista* over the *Tyro*, and of the veteran over the recruit.

The seeds of repentance are sown in vanity by pleasure, but the harvest is reaped in agony by pain.