She had her memories: had she loved,
Or been beloved, she never told;
But on her thin left hand she wore
A ring of Indian gold.

And when she died, no mourners came;
Only her poor folk thronged around;
And she had bade her grave should be
Made level with the ground.

ISABELLA FYVIE MAYO.

THE GATHERER.

The Story of the Alps.

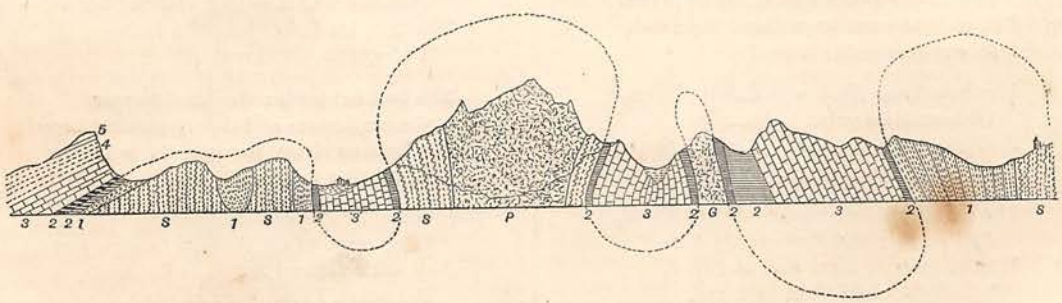
Geological students have long been acquainted with the fact that the Alps are, in spite of their great height, among the newest of our mountain-chains. The strata called *Miocene* have been elevated to great heights along the shoulders of Alpine mountains, although they were formed along the bottoms of extensive fresh-water lakes at a period comparatively recent. Nor has the elevation of the Alps been a sudden or cataclysmal operation. It has been going on in fits and starts, sometimes imperceptibly altering the relative dip of strata, at others pausing, and making up for the interval of rest by occasional short stages of disquiet.

The accompanying section across the Alps made by the French geologist Favre shows us how strata which were once deposited horizontally are now arranged in numerous folds, the tops of which have been truncated by weather-action. Some of the strata locally appear to be reversed.

The plutonic forces which have produced this change from horizontality to every degree of perpendicularity in the rocks have acted *laterally*, not vertically. Indeed the strata have been simply packed into a smaller compass by being crumpled up. And it is to this "crumpling" that we owe the magnificent scenery of the Alps.

It would seem as if this work were not yet done, and as though the geological student were offered a chance of seeing the process in operation. At Tarentaise, in the Savoy Alps, a mountain nearly 6,000 feet high has been reported as "crumbling away," although geologists are of opinion that the external dislocation of stones and rubbish is only the result of some plutonic change affecting the position of the strata, after the manner to which we have referred. For nearly a month the surface of the mountain has appeared to be in a state of dismemberment. Great and small masses of the ancient schists of which the mountain is composed have been rolling down its steep slopes like a stony avalanche. Forests of pines have slidden down, or been overwhelmed by the *débris* which has been poured over them. Huge rocks of fifty cubic yards size have been let loose from their ancient moorings, and rolled down a distance of 5,000 feet in the space of half a minute, leaping as much as 1,000 and 2,000 feet at a bound, and finally getting dashed to pieces at the bottom. The fragments of rocks which have thus been detached have accumulated at the foot of the mountain of which not long ago they formed part, and have there formed a conical hill 2,000 feet in diameter at the base, and nearly 800 feet across at the top. The noise produced by the dislocation of the rock-masses, and the hurling of stones through the air, is stated to have been terrific, and we can readily understand that two villages in the neighbourhood have suffered very disastrously therefrom.

There can be little doubt that the phenomenon is due neither to the penetration of water into the strata so as to loosen them, nor to actual volcanic disturbance; but that it is one among the hundreds, if not thousands, of the plutonic changes which for ages have been crumpling up the strata of the Alpine range, so as to cause them to assume the contorted appearance seen in our diagram.



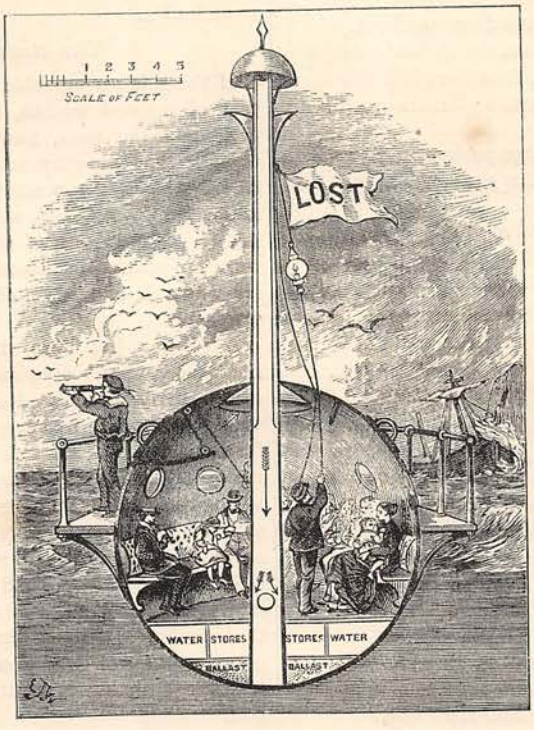
GENERALISED SECTION ACROSS THE RANGE OF MONT BLANC.

P. Protogeine Rocks. G. Gneiss. S. Crystalline Schists. 1. Carboniferous Rocks. 2. Triassic Rocks. 2'. Quartzose (Triassic) Rocks. 3. Jurassic Rocks. 4. Cretaceous Rocks. 5. Tertiary ditto. The dotted lines above the section represent the former height of many parts of the Alps, and the amount of rock removed by denudation since the crumpling up of the strata first began.

From a Watery Grave.

Fifty passengers saved! This is generally a good proportion of a vessel's crew; and if so many lives may with certainty be rescued from death by the operations of one little boat, it is surely a good thing for all travellers by sea to become acquainted with it.

This novel life-boat consists of a hollow globe made of wood or metal, with ballast at the bottom, so that the vessel may readily right herself on first coming in contact with the sea. There are compartments for water, provisions, and medical stores, windows for light, a port-hole for purposes of signalling in distress, a door of ingress and egress, and a double hollow mast for providing fresh air and for carrying away that which has become vitiated.



The accompanying illustration will show how the fifty passengers may, it is said, be housed and protected from the dangers of wind, rain, and cold, which dangers alone have caused death to thousands who had previously been saved from drowning, to die eventually a more horrible death from exposure in an unsheltered boat.

This vessel can easily be conveyed on the deck of an ordinary steamer or sailing boat, or hung over the stern, in which position it would be useful as an extra cabin until required for a more important purpose.

Police Work in 1876.

During the year 1876 no fewer than 76,214 men, women, and children were taken into custody by the metropolitan police—one third of this number being females. The chief offence, of course, was drunkenness, accompanied by violent conduct—then drunkenness only. More than 32,000 charges were made under these two heads. Petty larceny follows next with 7,000 apprehensions, while the number of vagrants imprisoned was 3,830.

"Suddenly Disappeared!"

A lady in evident distress of mind presents herself before a magistrate. "Sir," says she, "my husband [or "my only son"] has suddenly disappeared. Can you advise what steps to take in order to become acquainted with his whereabouts? He had in his possession a good sum of money; he was tall and good-looking, and dressed in black. He left home two months ago. On first missing him I applied to the magistrate in the next town, but he could not assist me. Since then I have been waiting in hopes of receiving tidings of him from other quarters. These have failed me. Can you afford me any assistance in my search?" Magistrate's reply: "I am exceedingly sorry that it is not in my power to assist you. I have no doubt, however, that the press will give publicity to your application." Such scenes as this occur with alarming frequency before magistrates of large towns. The press reports the application in due course, but, so far as the public know, does not bring back the lost son or missing husband. That there are many such disappearances is evident from the following fact:—The other day a drowned man was discovered in one of our large towns. A letter found in his pocket declared that drink had been his ruin, and compelled him, having no hopes of reform, to lay violent hands upon himself. Immediately on the publication of this letter in a local newspaper, forty or fifty letters were received from sorrowing relatives of other missing men, asking for further description of the deceased. Also, at the inquest, between twenty and thirty personal visits were made, the visitors almost expecting, yet dreading, to find a missing son or husband in the dead man. Surely something should be done to assist these helpless relatives. Many are unwilling, and more are unable, to advertise. What we should suggest, therefore, as being the best means for purposes of identification, is the insertion once a month of a list of these missing ones in one of our leading London newspapers. Then, if personal descriptions and addresses were furnished in the list, opportunities for communication, at present denied, would be afforded.

A Rain-Tree.

President Prado, Consul of the United States of Columbia, in the department of Cerato, Peru, states that there exists in the woods near the city of Mayolamba, a tree possessing very remarkable qualities. The name given to it by the natives is *Tamai-caspi*, or rain-tree, and it is described as being about fifty feet high and three feet in diameter at its base when at the age of maturity. It has the extraordinary property of absorbing humidity from the atmosphere, which it concentrates, and afterwards releases from its branches in a shower, the water falling down in such abundance that the neighbouring ground is frequently converted into a perfect bog. This curious property is only in full force during the hot summer weather, when water is scarce and the ground parched with the

sun. What a fine thing it would be for the more arid regions of Peru and other places if, as the Columbian Consul suggests, some of these trees were planted for the benefit of the agriculturist!

Double Acrostic.

'Tis thine, O man! to make the pleasant choice,
And if the fair one love thee, then rejoice
Most truly in my second; but if not,
Dwell in my first, contented with thy lot.

A little river: bridge it o'er—
A city's where it ran before.

This festival with reverence deep was kept
To honour those who, when the Persians swept
Relentless thro' the land, their lives laid down,
And won in death the victor's glorious crown.

Trust not too much to large profession.
I did, and dearly paid for my transgression.

The Scythians worshipped me in days of yore,
And on my banks see Roman forts arise!
Now hostile races all their forces pour,
And struggle hard to gain me for their prize.

If eastward ho! you wend your way,
This route will save you many a day.

It came in might and power unsurpassed,
A miserable wreck returned at last.

No brothers since were ever so united,
So closely locked, so fast together tied,
As he and *I*. Death even could not part us:
We lived together, and together died.

The log is blazing on the hearth,
And merry children round us play;
The festive season comes once more,
When homes are bright and faces gay.

Answer to Acrostic on page 638.

P istol.
O thello.
R omeo.
T imon.
I ago.
A riel.

Insuring Workmen's Tools.

About as sensible a piece of advice as can be given to workmen is to insure the tools of their trade, as well as their articles of household furniture. How often do we hear of fires breaking out in houses inhabited by artisans, whereby they lose both their furniture and tools! Thus not only is their home wrecked, but they are unable to go to work, just when their utmost energies are required to build up a fresh establishment. Cases occur, too, almost every other day, of men losing valuable tools by fires in the workshops and manufactories in which they are engaged. All should take note that insurance on even £100 worth of property may in most cases be effected at a cost of less than a halfpenny a week, a sum which could surely be afforded by the poorest workman who has any articles in his possession deserving to be called implements of trade. There can seldom be any difficulty in laying by every year two shillings or half-a-crown for fire-insurance, and the saving of even so small a sum as this would, in many cases, encourage habits of thrift. The work of insuring tools might be taken in hand by benefit societies, and in the case of tools left at places of work, employers would do well to look to it.

The Nurse's Calling.

If there is an enviable reputation in the world it is that of a good woman, active in deeds of charity, careful of the poor, and denying herself rest and comfort that she may act the good angel by the bedside of the sick and suffering. And yet, with all the talk nowadays about woman's work and woman's mission, the labour of nursing the sick—a special work for women—is almost neglected by the very class for whom it is best fitted, namely, educated gentlewomen.

A scheme has been started for providing trained nurses for the sick poor in the only way in which this can properly be done. Its leading feature is the providing of homes within easy distance of their work for the nurses to live in. These homes will afford—materially, a bed-room for each nurse, and dining and sitting-rooms in common; and morally, direction, support, sympathy in a common work, further training and instruction in it, and proper rest and recreation; whilst there will be a head of the home, who will also and pre-eminently be the trained and skilled head of the nursing. In short, they will be places where any good mother, of whatever class, would willingly let her daughter, however attractive or highly educated, live.

From these comfortable head-quarters the nurses will go out day after day to tend the sick and reform the homes of the poor. Florence Nightingale's idea of the nurse—and no one is better entitled to have an idea on the subject—is that she should not only nurse the sick, but nurse the home. She will find the latter too often a pig-sty; she should leave it a tidy room. This is her glory. "To set these poor sick people going again," says Miss Nightingale, "with a sound and clean home, as well as with a sound body and mind, is almost as great a benefit as can be given them—worth acres of gifts and relief."

To do this the district nurse must be properly trained. She must have, before she is qualified—1. A month's trial in district work. 2. A year's training in hospital nursing. 3. Three months' training in district nursing.

The work has already proceeded as far as the establishment in London of one district home with five hospital-trained nurses, and three nurse candidates.

This, it is hoped, will soon be the central home of many other districts; and we shall join our good wishes to those of Miss Nightingale, that "the system of district nursing, which twenty years ago was a paradox, twenty years hence may be a commonplace."

In Hot Water.

When eels writhe about after a severe death by boiling water, there is ample opportunity for the imaginative or ignorant mind to indulge in curious speculations. Likewise the run of a fowl after its head has been chopped off induces strange conjectures, and is likely to lead one to fancy that these extraordinary motions are the result of something more than muscular power. However, be this as it may, a great French naturalist has informed us that many fish can and do exist in water greatly exceeding the normal temperature. The common gold-fish, for instance, are known to breed where the water is, on an average, more than 80 degrees Fahrenheit. More than this, the *Leuciscus thermalis* and the *Naria thermoicus*—fish living in the hot wells of Canusa in Ceylon—exist in water the temperature of which is positively known to be from 86 to 100 degrees.

Our Soldiers and Sailors.

There never was any reason why, when a young man enlisted in the army, or became a sailor in the fleet, he should find upon the expiration of his term of service that he had practically lost so many years of life, and was considered, familiarly speaking, fit for nothing. If the recommendations of a Select Committee of the House of Commons are carried into effect, in future the soldier or sailor who has conducted himself steadily, instead of discovering the time he has spent in uniform a disadvantage, will possess special facilities for entering the lower grades of the Civil Service. It appears that there are certain classes of minor appointments which are not competed for, but are still in the patronage of the Treasury, the War Office, Admiralty, Customs, &c., and for some of these places soldiers and sailors, it is believed, are particularly suitable, either from the skill they have attained, or the habits of discipline they have acquired. For instance, men from the Royal Navy would fill the offices of boatmen in the Customs, and the permanent messengerships in various departments would be also exclusively given to soldiers or sailors. The same would be the case with park-keepers. Large numbers of efficient men, from either service, would find opportunities for obtaining employment as military or naval clerks, &c., in the subordinate situations of the War Office and Admiralty. For the engineer, store, supply, and barrack departments soldiers are, of course, particularly fitted. For warders in convict prisons, and gaolers in county prisons, it is thought the habitual sense of responsibility acquired in military life should qualify soldiers and sailors, and some preference should be accorded to them, although not exclusively. A short military service is also considered a good preparation for policemen; and when suitable local candidates do not offer themselves, rural messengerships might be properly granted to men who have served. When a well-behaved private has shown a special aptitude, there is no reason why he should not be eligible for some appointment even before his term has fully expired. The question of employing officers in the higher grade clerkships at the War Office and Admiralty has been mooted, but has not been fully discussed. Purely Civil clerkships, however, it is thought might be given sometimes to non-commissioned officers who have completed their time. It must not be forgotten that these recommendations do not interfere with the principle of competition, as they only apply to places already filled without it—except, perhaps, in the case of the War Office and Admiralty. The public have come to look upon open competition for the Civil Service as a right, and it would not be wise to tamper with it in any way; but it does seem natural and reasonable that, under certain restrictions (and the Committee is very moderate and careful in its recommendations), soldiers and sailors should have preference in those departments which they have already served in a different capacity. There would be an undoubted inducement to a better class of men to enter the army and navy—in itself an advantage to the nation—and that the idea is practicable has been demonstrated in France and Germany, where similar situations are entirely filled from the ranks.

Meteoric Iron in Church Steeples.

Looking out any clear night, one may see from five to seven shooting stars on an average every hour. At two periods of the year, however, about the 10th of August and the 11th of November, they are much more numerous. Their luminous trains furrow the sky at these times in surprising numbers. Those which appear at the former date used to be called "St. Lawrence's Tears," and the superstitious pointed to them as the burning tears of the martyr, whose feast fell on the 10th of August.

These shooting stars used to be considered *only* as atmospheric meteors caused by the combustion of inflammable gas—will-o'-the-wisp, in short, high up in the air. They have come now, however, to be generally recognised as bodies which, although they become inflamed on coming into contact with the earth's atmosphere, yet have their origin far beyond it. The earth is supposed to pass at certain times through rings composed of myriads of them circulating like the larger planets round the sun. Some shooting stars, perhaps, pass through our atmosphere, and continue their path through space, after having presented to us the appearance of a transient illumination. A great number, however, have their career brought to an abrupt conclusion. On striking our atmosphere, most of them are dissipated by the heat of intense friction, and a few of large size attain the very surface of the earth. Falls of stones, ferruginous masses, and dust from the upper regions of the air are proofs of this assertion.

Meteoric iron, originally belonging to these vagrant stars, may be collected in the most out-of-the-way places. M. Tissandier has lately shown that it is constantly found in the cosmical dust collected from rain, and existing in the atmosphere of elevated regions. M. Yung once told the French Academy of Science that the best place in which to look for meteoric dust is an old church steeple. One should collect all the dust deposited in corners where the wind has not been able to penetrate, and examine it under the microscope. Apart from learning how many curious things are floating about invisible in the air, the student may be able to get together enough iron to examine it by chemical means, and thus learn something both of the mineralogy and chemistry of distant regions of the universe.

The Sea for a Servant.

Nature will never be bankrupt: the stores she owns of energy and power are inexhaustible. Of these stores we do not half enough take advantage; and it is a very reasonable proposal with which we met the other day, that we should make an additional servant of the sea, and force it to work hard for us. At present the ocean is little better than an idler, and—what with storms, tempests, and inundations—continually getting into mischief: let us, therefore, set it to follow some useful calling.

The proposal we have mentioned is based upon the immense power of the tide; a rise or fall of one foot for every square yard of tidal surface representing the rise or fall through half the distance of five hundredweight. In rivers this tidal force has occasionally been taken advantage of. Mills with ordinary undershot wheels have been mounted on barges, so as to preserve the same degree of immersion and to swing round on the current being reversed. But this is a plan which in some rivers would seriously interfere with navigation, and encourage floods to a dangerous extent.

A better plan would b the following:—Build a river-wall, to stand twenty- feet or so out of the water when at its lowest; and in these days of gigantic engineering tasks this would be mere child's-play. The wall must be strong enough to resist the pressure of the water as it mounts to the summit, and must be independent of any backing of earth for at least the last fourth of its height. Behind this portion make an extensive reservoir, to be filled by the tide every time it rises. The tide should flow into this reservoir through flood-gates so constructed as to allow of ingress only. Construct a second reservoir, of equal size with the first, but occupying the lowest fourth of the tide's height, to receive the impounded water from the upper reservoir, and to return it to the river, when the tide is down, by flood-gates only allowing of egress.

The scheme thus includes two reservoirs, one emptying into the other, with a clear fall between the two of half the tide's height. It would, no doubt, be easy to regulate the flow so that equal quantities of water might pass down in equal times, and that the whole might be spread over the time which elapses between one tide and another. And, "what is of the greatest importance," says the ingenious projector, "the water in falling might be made to turn any number of wheels (breast-wheels or overshot) that might be deemed sufficient," and so give motion to the machinery of countless mills and small factories. The power would be enormous; and the best of it all is that, once completed, the engines would carry on day after day and month after month, and cost nothing for fuel.

The Cost of Damp Feet.

The famous philosopher, John Locke, in his "Thoughts concerning Education," insists on the fact that were we from childhood accustomed to wear thin shoes, which would leak and let in water, we need never be concerned about wet feet. "Whoever considers," he remarks, "how mischievous and mortal a thing taking wet in the feet is to those who have been bred nicely, will wish he had, like the poor people's children, gone barefoot, who, by that means, come to be so reconciled by custom to wet in their feet that they take no more cold or harm by it than if they were wet in their hands." Most of us, however, have been brought up so that to be long with damp feet is a serious matter, and all will read with interest the following curious statement, given by an American contemporary, of the probable result of one day's neglect to clean the streets of New York. A day is taken when "every spot in the metropolis was a pool of water," and statistics are given for the great thoroughfare of Broadway alone. The number of pedestrians is estimated for the whole day at 100,000; proportion of wet feet, fifty per cent., 50,000; ordinary colds, thirty per cent., 15,000; serious illnesses, twenty per cent., 10,000; deaths, sooner or later, 2,500. The loss of time is estimated thus:—Ordinary colds, three days, 45,000 days; serious illnesses, a week, 70,000 days; average fatal cases, sixty days, 150,000 days; making a total of 265,000 days. Then we must take into account the doctors' bills, and other expenses, including funeral charges, incident to that one day, and this part of the calculation any one may work out at leisure. Taking the whole city for the same day, the total number of colds from wet feet would in all probability number 175,000. From this we may see that a state of the roadways favourable to damp feet is a very serious affair. We hardly dare hope to be without mud and slush now and then, but it strikes us that the local authorities might occasionally exert themselves a little more to secure the gratitude of those with thin shoes and delicate constitutions, not only in New York, but in our own country.