

Thus, the remains of plants and animals in clay, peat, and shell deposits inform us *that the gaps in the extension of the species in Norway may be explained by the varying events of times long gone by.*

Since the Glacial Age the relation between sea and land in Norway has changed. Formerly the sea was in some places upwards of 600 feet higher than at present.¹

The clay at that time deposited on the sea-bottom, and the shell deposits formed near the shore, contain, as Profs. M. Sars and Kjerulf have taught us, remains of Arctic animals even in the southernmost parts of the country. There is a difference of opinion between *savants* whether this alteration of the shore-line is due to a rising of the land or the sinking of the sea, or to both. There is further some dispute about the manner in which the level became altered, some maintaining that it took place suddenly at intervals, whilst others believe that it is the result of a gradual and continuous process. The marks left by the sea seem at first glance to corroborate the first of these theories. Thus, in the lower parts of our valleys we find along the river-courses terraces of sand, pebbles, and clay, one behind and above the other right up to the highest old shore-line. The terraces, of which Kjerulf, pre-eminently amongst others, has given us particulars, have an even surface and a steep declivity outwards against the mouth of the valley. They contain sometimes remains of sea animals. Under a higher level of the sea the river carried down sand and gravel to its mouth, just as in the present day banks and bars are formed at the estuary of our rivers. And the terraces seem to indicate that the changes in the level were broken by periods of rest. During the latter the river had time to form a bank, which rose comparatively rapidly; the next period of rest gave occasion to the formation of another terrace, and so on. But this theory has to combat many obstacles, because the terraces lie often, as Prof. Sexe has shown, even in valleys situated near each other, *at different elevations.* The professor is of opinion that step-like terraces may be formed even under a gradual and steady rising, if the carrying-power of the river is subjected to changes. Our theory may therefore probably also be applicable for explaining the terraces, because, if long periods with milder climate have alternated with others whose climate was more severe, it is evident that the volume of water, and thus the carrying-power of the current, may have altered. Perhaps the rivers have at certain times carried down floating ice, at others not, and the thaw in the spring must have increased the carrying-power. We can thus understand why the corresponding terraces in valleys near each other do not always lie at the same elevation. Their rivers differ in size, and when the carrying-power diminishes a big river will retain the strength to form a terrace longer than a small one.

Besides these terraces, which are particularly conspicuous in the short steep valleys on the west coast of Norway, and on account of their regularity must excite the admiration of every one who sees them, there are other equally striking marks of the old sea-levels, viz. the so-called "Strandlinjer"—shore-lines—which are known chiefly through the researches of Prof. Mohn and Dr. Karl Pettersen.

When travelling through the fjords and sounds, particularly in Northern Norway, one sees here and there horizontal lines drawn along the mountain-sides, sometimes several hundred feet above the sea. They are not always equally marked, but appear often remarkably clear; sometimes they look like roads or railway-lines. They are always horizontal, or nearly so, and must,

¹ The depth of the peat in the parts which were formerly below the sea increases with the height above its surface, because the formation of the peat commenced long before the lowest-lying parts had risen above the surface. From the remains of plants found in the various peat layers we may therefore learn how the Norwegian flora was composed during the various phases of the rising of the land.

therefore, be remains of an old sea-shore. Often two parallel lines are seen running one above the other in the same place; and on closer inspection it will be discovered that they are hollowed out of the rock itself. They have a surface sometimes many feet broad, and are bounded behind by a more or less steep mountain-wall, forming thus horizontal incisions in the same. The shore-lines have also been brought to prove that the rising was broken by periods of rest, during which the sea had time to hollow out the rock; but I am of opinion *that they could be formed, too, under a gradual rising, if the climate be subjected to periodical changes.* The shore lines belong to the northern parts of the country and the deep fjords, where the winter cold is more severe, and they are only found in districts where there is a tide. They seem to have been blasted out by the influence of the cold. At high tide the sea-water fills the holes and fissures in the rock, and when the tide recedes it is left in the same. In severe winters the water will freeze, and thus burst the rock. During the rising of the land, shore-lines will be broken out in this manner, as long as the erosion is able to keep pace with the rising. When the climate becomes milder, a time will come when the erosion is unable to continue. Then the shore-lines will be lifted up above the level of the sea, and out of the reach of the blasting influence of the water. If next, after thousands of years, when the land has perhaps risen fifty or a hundred feet, a period follows with a severer climate, a new shore-line is formed below the former.

The shell-banks, too (*i.e.* deposits of shells of marine animals living in shallow water near the shore) lie, as Kjerulf has shown, in the Christiania fjord at different levels, the oldest at heights of from 540 to 350 feet, and the youngest between 200 and 50 feet above the present level of the sea. But between 350 and 200 feet none has been found. In the neighbouring Swedish province of Bohus they are found at all elevations, even between 350 and 200 feet, and it must therefore be assumed that local causes, as, for instance, the ice-formation in the more closed Christiania fjord, destroyed the shell-banks when they reached the shore-line, at a period when the land lay 350 to 200 feet lower in relation to the sea than at present. According to the evidence of the peat-bogs, there is reason to believe that this part of the rising occurred under a more severe climate.

It is therefore seen that all the facts which have been advanced in order to prove that the rising was broken by periods of rest may be easily explained, *if we assume that the land rose gradually and steadily under periods alternating with milder and severer climates.*

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(To be continued.)

HYPERTRICHOSIS

I THINK all naturalists, and anthropologists in particular, will be interested in the cases of human hypertrichosis now on view at the Egyptian Hall, Piccadilly. I myself spent two hours with them on Saturday last.

This family of hairy people have been at the Court of Burmah for four generations. Crawford saw Mahphoon, the old woman now exhibited, an infant in 1827; the family was described by Col. Yule in his narrative of a Mission to the Court of Ava in 1855.

It is singular that the hypertrichosis of Mahphoon's grandparent should be continued not only to herself but to her son, Moung Phoset, also exhibited, inasmuch as one of the parents has always been an ordinary comparatively hairless Burman, so far as the face and body are concerned.

Mahphoon is now an old blind woman, but very lively, full of fun, and an inveterate chewer of betel; her face

and ears are entirely covered with hair, particularly thick on the nose. Her son, Moug Phoset, is more hairy on the face and ears than his mother—probably her locks are somewhat thinned by age—his forehead is densely clothed with hair, which, when combed over his face, entirely hides his features, the hair being $12\frac{1}{2}$ inches in length; he parts it over the eyebrows and passes it behind his ears; it is also very long on the nose, and being parted in the middle and falling over the cheeks gives his face a most remarkable resemblance to that of a Skye terrier. The suggestion was so strong on my mind that I could scarcely divest myself of the canine idea.

The whole of his body is clothed with soft hair some inches in length, but I am informed that he has usually had this cut from time to time, so that its natural length is not apparent. The hair of Moug Phoset and of his mother Mahphoon is very soft and wavy, of a brown colour, and utterly unlike the coarse black hair of the ordinary Burman.

Capt. Paperno, who obtained them, and has been fifteen years in Burmah, informs me that the dentition of all these hairy people has been imperfect, whilst their less hairy brethren and sisters have had perfect teeth.

I have examined a cast of Moug Phoset's mouth. In the upper jaw he has but two canines and two large incisors, in the lower jaw two canines and four small incisors; the premolar and molar teeth are quite absent.

A nephew of Mahphoon, who is exhibited with them, has the appearance of an ordinary Burman only.

I believe that it is owing to the enterprise of Mr. Farini that we are enabled to see this singular family in London.

They are both far more hairy than Krao, who was exhibited in London some time since, and is now at Paris in good health; she was obtained from a district east of Burmah, and north of Siam; the features of the Burman family are so obscured by hair that I could not ascertain whether there was any resemblance to those of Krao, nor even whether they were Mongoloid.

Moug Phoset has been well educated, writes fluently in the Burman character and language, and possesses considerable power in the delineation of objects; like many Burmans he is tattooed from below the waist to above the knees.

I have seen a photograph of a brother of Mahphoon now dead; he was quite as hairy as his sister, but the peculiarity did not, I understand, extend to the whole of the family.

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NOTES

PREPARATIONS are being made by Parisian men of science for the celebration of the 100th anniversary of the birth of M. Chevreul, on August 31 next.

A REGULATION as old as the French Academy of Sciences has just been broken through in Paris. Women have hitherto been excluded from the sittings of the Academy, but at the meeting of the 28th ult. the interdiction was raised in favour of Mdlle. Sophie Kowlewska, Professor of Mathematics at the University of Stockholm, and daughter of the eminent palæontologist. Admiral Juven de la Gravière, who presided, welcomed her in graceful terms, and said that her presence should be a cause of pride and pleasure, not only to the mathematicians present, but to the whole Academy. As she entered, the whole of the members rose to salute her. She took her place between Gen. Fave and M. Chevreul.

ACCORDING to official decree, the Tokio University and the Imperial College of Engineering having been amalgamated into the Imperial University of Japan, they now cease to exist. The

new University comprises five collèges or sections: (1) Law; (2) Medicine; (3) Engineering; (4) Literature; (5) Science. Each of these, as well as the whole institution, is placed under a Japanese director. The director of the Science College is Prof. Dairoku Kikuchi, a Cambridge Wrangler, and the same gentleman is acting for the present as head of the Engineering College also. The large and splendid buildings erected for the Engineering College—the finest pile of European edifices in Japan—will, it is said, be used in future as a school for the children of nobles.

HERR FENNEMA, a mining engineer at Buitenzorg, in Java, has made some observations on the recent volcanic eruptions in that island which are of interest as setting at rest a matter on which some doubt has existed. On the authority of Junghuhn, the general belief has been that in historic times all the volcanoes of Java (and of Sumatra it may be added) had thrown out solid matter only, and never those streams of lava which are so characteristic of most eruptions. But a careful examination of Smeru and Lemongau during the catastrophe of April last year shows that this notion must be abandoned as incorrect. The former is not only the highest but also the steepest in Java. From 700 to 1400 metres the slope is about 6° , up to 2100 it is 20° , and from 2100 to 3671 metres it is more than 30° . For a considerable way from the summit the striking cone consists wholly of the detritus thrown out regularly by the almost uninterrupted activity of the crater. Up to April 1885 the existence of torrents of lava was unknown. On the 12th-13th of that month a stream appeared on the south-eastern side, and forced the residents on the plantations lower down to fly. The stream increased for several days, until it reached a height on the mountain-side of about 2100 metres from the level of the sea. The loss of life was due to the avalanche of stones sent down the steep sides of the mountain by the stream. Similarly, at the same time, Lemongau threw out a lava stream, but there was a curious difference between this and the one issuing from Smeru—the latter was andesitic in its character, while the former was basaltic.

WE have received from Mr. Henry Farrar, 6, Hanway Street, W., photographs, seven in number, selected from a very extensive collection taken by a native of India, Lala Deen Diyal. One consists of the whole view of the rapids of Chichai waterfall, near Reira, which are 400 feet deep; another, a river view at Indore. The photographs themselves are exquisite; in looking at some of them one might imagine one's self in the tropics surrounded by the wonderful vegetation of that region. The tone of them is very fine, especially in the one "Channel below the Keuli waterfall, near Reira," the velvety appearance of the vegetation on the hill-sides is in strong contrast with the sharp and clear detail of the white and waterworn stones in the river bed. To the various lovers of nature as well as students of art and archæology a possibility of getting quite perfect photographs of the natural and artistic wealth of India at a low price should be very welcome.

IT is stated that the explorations for coal conducted by Dr. Warth in the Salt Range in the Punjab have proved so satisfactory that the Government is now arranging for the practical working of the seams. Dr. Warth estimates that over one million tons are underlying the plateau at Dundote. The coal is not of the first quality. It contains iron pyrites and is very friable, but it is believed that it will be very useful for the North-Western railways.

WE have received several communications relating to the letter signed "P." in NATURE for May 27, p. 76, on "Male Animals and their Progeny." Mr. Arthur Nicols has noticed several times a common cock marshalling a brood of chicks,