

the gum vine of Penang, the caoutchouc vine of Sumatra, and metals in the Malay Peninsula. In philology and ethnology we have a paper on traces of the Hindu language amongst Malays (by Marsden); Dr. Leyden's famous paper on the languages and literature of the Indo-Chinese natives, the alphabets of the Philippine Islands, &c. There are several papers on geology and natural history. Two of the latter are catalogues of the Mammalia and reptiles inhabiting the Malay Peninsula, by Dr. Cantor; while a third is a catalogue of the botanical collection brought home by the same naturalist in 1841. Another paper re-published has a peculiar interest, in view of the surveys undertaken by the French two years ago in the Krau isthmus for the purpose of cutting a canal. This is a report by Capt. Fraser and Forlong on a journey from the mouth of the Pakchan River to Krau, and thence across the isthmus to the Gulf of Siam. In the 16th paragraph of that report they urged that the Bay of Bengal could be connected with the China Sea by cutting through the isthmus at comparatively little expense. They enter into calculations showing how easily this could be done, the advantages of the route, &c. These calculations of distance, cost, &c., are exceedingly elaborate, and show that the two officers entered thoroughly into the matter.

It will thus be seen that the volumes offer much of interest to several classes of students, and we repeat the hope that the Singapore Society may shortly be in a position to continue the publication of further selections.

LETTERS TO THE EDITOR

- [The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]
- [The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.]

Physiological Selection and the Origin of Species

SEEING that criticisms on the theory of physiological selection are flowing through channels other than the pages of NATURE, and this in a volume larger than could at first have been anticipated, it seems desirable that I should now permit them to exhaust themselves before undertaking a further and a general reply. On the present occasion, therefore, I will only ask you to be good enough to insert the following remarks.

In order to put myself right with my critics, I should like them to remember that the paper published by the Linnean Society is designedly restricted to a preliminary statement of principles, which, it was hoped, might fulfil its avowed object of inducing other naturalists to co-operate with me in verifying the theory by observation and experiment, in the ways suggested. Such being the design, all details as to facts and references were intentionally omitted, and the same has to be said for all objections to the theory which had occurred to my own mind. All these things will require to be gone into with the utmost care, should the course of verifying inquiry eventually prove that the voice of Nature pronounces for the theory. Therefore, while I shall be thankful for all criticisms, I should like my critics to remember that they have not as yet my whole case before them. In particular, I may intimate that I should not have published even the outlines of my theory had I not been prepared for the very obvious exceptions which are taken to it by Mr. Wallace in the current issue of the *Fortnightly Review*.

I am much indebted to Mr. Francis Darwin for his reference to Mr. Belt's anticipation of my theory, for the fact that in its general form this theory has independently occurred to so distinguished a naturalist, appeals to me as an additional pledge of its probability. On the other hand, I am greatly disheartened by his further statement that he has reason to suppose his father was "familiar with the principle of physiological selection," and yet "did not regard it with any great favour." Hitherto I have been under the impression that it was a theory to which the judgment of his father would probably have in-

clined, and therefore I shall await with no ordinary interest the statement of his reasons for thinking otherwise, whether this be communicated through your columns or privately to myself. It only remains to add that, if Mr. Darwin will be kind enough to turn to p. 380 of my paper, he will find that I have quoted *in extenso*, and with its context on both sides, the passage from the "Origin of Species" which he extracts. But it does not appear to me that this passage furnishes any evidence that the theory of physiological selection was ever present to the mind of the writer—less evidence, for instance, than there is from a passage in one of his earliest writings that the theory of natural selection was present to the mind of Mr. Herbert Spencer.

GEORGE J. ROMANES

Geanies, Ross-shire, September 4

Actinotrocha of the British Coasts

I HAVE been reminded by Mr. T. Bolton, of Birmingham, that about three years ago I sent him living specimens of what Mr. A. G. Bourne afterwards identified as *Phoronis*. At the time I was under an impression, from hasty observation of the arrangement of the tentacular crown, and before I had seen the entire animal, that I had found a new Polyzoan allied to *Lophopus*. *Phoronis* occurs here in company with *Spio seticornis*; a solitary individual or a small group of the former, in the midst of a colony of the latter. A block of stone densely populated with these annelids is a most interesting object in a tank. To me they have proved so interesting that I believe I have spent more time over them than over any other marine organism.

I take the opportunity of calling attention to what I believe is an undescribed species of *Peridinium* that annually recurs in these waters. The form is flattish, and the outline bi-conical, having one end bifurcated, with a flagellum in the fork, and a central ciliary groove. By degrees it loses its present form, and assumes that of a spheroid.

I will gladly send specimens of either or all of these organisms to any naturalists who may wish to study them, if the cost of carriage be defrayed and the applicants not very numerous.

Sheerness-on-Sea

W. H. SHRUBSOLE

A New Aërolite

ON May 28 last a farmer of Barntrop, a small town of the Principality of Lippe, in the north-west of Germany, walking in the afternoon, 2h. 30m., on the edge of a neighbouring wood, suddenly heard repeated reports like those of a gun, followed shortly after by an indistinct rumbling as of thunder. At the same time a meteorite came crashing through the leaves of a tree. The rumbling came from a south-westerly direction, the temperature was warm, the sky bright, and almost entirely cloudless.

This is the twelfth case of a meteoric fragment being found in the north-west of Germany. It is a monolith of about the size of a walnut, and weighs 17·3 grammes (specific weight = 3·495). It is covered with a black crust chipped off in places by the fall. Under this crust it is of a light gray colour and granitic substance, dotted in places with small yellow crystals, which are probably troilite or schreibersite. It has been lately presented to the Detmold Museum.

Bremen, Germany

L. HÆPKE

DRAPER MEMORIAL PHOTOGRAPHS OF STELLAR SPECTRA EXHIBITING BRIGHT LINES

THE spectra of ordinary stars, whether examined directly by the eye, or indirectly by means of photography, present little variety. The comparatively few cases of deviation from the usual type are therefore particularly interesting, and the occurrence of bright lines in a stellar spectrum constitutes perhaps the most singular exception to the general rule. The brightness of the F line in the spectra of γ Cassiopeix and β Lyræ was noticed by Secchi. Rayet afterwards found three rather faint stars in Cygnus, the light of which was largely concentrated in bright lines or bands. The adoption at the Harvard College Observatory of a system of sweeping, with a direct-vision prism attached to the eye-piece of the

equatorial telescope, resulted in the discovery by the present writer of several additional objects of the same class. Still more recently, Dr. Copeland, during a journey to the Andes, has extended the list by the discovery of some similar stars in the southern heavens.

Among the photographic observations which have been undertaken at the Harvard College Observatory, as a memorial to the late Prof. Henry Draper, are included a series of photographs of the spectra of all moderately bright stars visible in the latitude of the Observatory. A recent photograph of the region in Cygnus, previously known to contain four spectra exhibiting bright lines, has served to bring to our knowledge four other spectra of the same kind. One of these is that of the comparatively bright star P Cygni, in which bright lines, apparently due to hydrogen, are distinctly visible. This phenomenon recalls the circumstances of the outburst of light in the star T Coronæ, especially when the former history of P Cygni is considered. According to Schönfeld, it first attracted attention, as an apparently new star, in 1600, and fluctuated greatly during the seventeenth century, finally becoming a star of the fifth magnitude, and so continuing to the present time. It has recently been repeatedly observed at the Harvard College Observatory with the meridian photometer, and does not appear to be undergoing any variation at present.

Another of the star's shown by the photograph to have bright lines is D.M. + 37° 3821, where the lines are unmistakably evident, and can readily be seen by direct observation with the prism. The star has been overlooked, however, in several previous examinations of the region, which illustrates the value of photography in the detection of objects of this kind.

The other two stars first shown by the photograph to have spectra containing bright lines are relatively inconspicuous. The following list contains the designations according to the *Durchmusterung*, of all eight stars, the first four being those previously known:—35° 4001, 35° 4013, 36° 3956, 36° 3987, 37° 3821, 38° 4010, 37° 3871, 35° 3952 or 3953. Of these 37° 3871 is P Cygni, and 37° 3821, as above stated, is the star in the spectrum of which the bright lines are most distinct.

EDWARD C. PICKERING

PEAT FLOODS IN THE FALKLANDS

THE accompanying narratives of a singular visitation which has befallen the town of Stanley in the Falklands may be of some interest to the readers of NATURE. Though the causes are so different, the effects of the bursting of a peat-bog in some respects curiously simulate those of a lava-flow. The papers have at different times been sent to Kew from the Colonial Office. It is partly in the hope that their publication may lead to some practical suggestion for dealing with the trouble that I ask for their insertion in your columns.

W. T. THISELTON DYER

THE ACTING-GOVERNOR BAILEY TO GOVERNOR
CALLAGHAN, C.M.G.

Stanley, Falkland Islands, January 1, 1879

SIR,—I regret to have to report to you the circumstances attending an accident which happened early on the morning of November 30 last.

Just after midnight on Friday, November 29, one of the inhabitants was awakened by the continued barking of his dog, and thinking that a cow had strayed into his garden, he went outside, when to his alarm he found that his house was surrounded by a black moving mass of peat several feet in height, and travelling down the hill at about four to five miles an hour. It was not until daylight that the extent of the disaster was manifested.

The sufferers by the calamity were quite shut off from communication with the rest of the settlement, until they

had cut a way for themselves through the heap of liquid peat, which everywhere surrounded their dwellings. Fortunately no lives were lost.

Immediately, when the report reached me, I proceeded to the scene of the disaster, and found the town in a worse state than it had been represented, all communication between the east and west end of Stanley being entirely cut off, except by boats. At this time there was no perceptible movement in the mass of peat which covered the ground in confused heaps, except in Philomel Street and the drain on the east side—where I perceived the liquid peat moving down at a very slow rate. To get rid of this as quickly as possible, I found it advisable to turn all the water that could be damned up, and sluice the peat whilst in a liquid state, and by this means I eventually cleared Philomel Street. On following up the course which the slip had taken, the hill presented a curious appearance. From the peat bank, down to the brow of the hill, a distance of about 250 yards, the surface-peat lay in confused heaps direct from the opening of the bog. The moving power (whether water or liquid peat it is impossible to say) travelled over the ground faster than the heavier bodies, which were left standing 3 to 4 feet above the level of the ground.

Proceeding to the top of the bog, I found a depression extending over 9 to 10 acres of ground, the edges cracking and filling up with water, and threatening another accident. I at once saw the necessity of calling upon the inhabitants to assist me in cutting a trench at the back of the hill, so as to draw off this accumulation of water, which seemed likely to float the loose peat left in the depression down into the settlement. I am glad to say that this call was heartily responded to by every man in the settlement, the gentlemen finding substitutes to take their places.

All worked for eight days in the cold and the rain, but nevertheless they were unsuccessful in carrying the trench through the bank into the bottom of the slip, owing to the soft peat welling up from the bottom and filling the trench again. Seeing that the exertions were of little avail in the present state of the bog, I did not press the settlers to continue the work that was so disheartening in its results; and as I now felt satisfied, from the great quantity of water that had been drained off, and the cutting being at a level, that this would prevent any further accumulation of water taking place in the slip, as there was no immediate danger of another accident taking place, the work was stopped, and I published the inclosed notice.

With your Excellency's permission I will, in the course of a few weeks, prepare sections of the bog and the settlement, showing a plan of drainage which will, I hope, prevent a similar accident happening again.—I have, &c.,

(Signed) ARTHUR BAILEY

His Excellency Governor Callaghan, C.M.G.

LIEUT.-GOVERNOR BARKLY TO EARL GRANVILLE

*Government House, Stanley, Falkland Islands,
June 3, 1886*

MY LORD,—I regret to have to report that a slip of the peat-bog at the back of the town of Stanley, similar to that which occurred in November 1878, but about 200 yards to the westward of the scene of that accident, took place last night. A stream of half-liquid peat, over 100 yards in width and 4 or 5 feet deep, flowed suddenly through the town into the harbour, blocking up the streets, wrecking one or two houses in its path, and surrounding others so as completely to imprison the inhabitants. Fortunately, as the night was wet and stormy, almost every one was within doors, and the few who were in the wrecked houses escaped in time. One child was, unfortunately, smothered in the peat, whose body has been recovered, but no other casualties are known to have occurred. An old man is, however, reported to be