distance of a foot or so above the sea-bottom, and it yielded a large amount of material, which was in some cases conspicuously different from the contents of the surface nets, worked by Mr. I. C. Thompson during the same time.

A large area of the sea-bottom between Port Soderic and Port St. Mary is apparently covered by masses of *Melobesia calcarea* and the dead valves of *Pectunculus glycimeris*, and incrusting Polyzoa are especially abundant upon both the Nullipore and the shells. Mr. J. Lomas, who has charge of the Polyzoa, informs me that amongst a number of other rare forms he has identified *Stomatopora johnstoni* and *S. incrassata*, *Tubulipora lobulata*, *Lichenopora hispida*, *Cellepora dichotoma*, *Membranipora aurita*, and a peculiar variety of *Cellaria fistulosa*.

Towards evening three very successful hauls of the dredge were made, which covered practically all the ground in a line from the southern end of the "Calf" to the northern side of Port Erin Bay, just under Bradda Head. Amongst the material obtained in these hauls the following species were noticed: *Asterias glacialis*, *Solaster endeca*, *Stichaster roseus*, *Porania pulvillus*, *Luidia fragilissima*, *Antedon rosaceus*, *Ebalia* sp., *Xantho* sp., *Pleurobranchus membranaceus*, *Ascidia venosa*, *Ascidia plebeia*, *Corella parallelogramma*, *Polycarpa* sp., *Leptoclinum* sp., and other Compound Ascidians.

In Port Erin Bay after dark the electric light was again used successfully in the bottom and surface tow-nets.

On the third day an early start was again made, with the object of leaving time to run down into the deep water lying to the south of the Isle of Man. Unfortunately, however, a thick fog was encountered, which hampered our movements during the morning and changed all the plans for the day. After passing the "Chicken" Rock, the *Hyæna* steamed slowly for Liverpool, and reached the Mersey about 1 a.m. on Tuesday. A few hauls of the trawl and dredge were taken on the way home, with no great results, and the tow-nets, both bottom and surface, were worked whenever practicable.

The important feature of this cruise, however, was the use which was made of the electric light for collecting after dark. On the first night, in Ramsey Bay, after the shore party had left and the ship was anchored for the night, an electric light of 1000 candle-power was hoisted a few feet above deck, and this allowed work to be carried on almost as comfortably as during the day. Captain Young, of the Liverpool Salvage Association, who was in command of the *Hyæna*, then kindly arranged for me a 60 candle-power Edison-Swan submarine incandescent lamp in the mouth of a tow-net. This illuminated net was carefully let down to a depth of 3 fathoms, and allowed to remain there for half an hour. At the same time, another tow-net without any light was let down to the same depth over the opposite side of the ship. When the nets were being hauled in, as the one with the electric light approached the surface numerous small animals (Crustacea probably) were noticed accompanying it, and darting about in the bright light. This tow net, when emptied into a glass jar of sea-water, was found to contain an abundant gathering, consisting mainly of Crustaceans; while the net in the dark on the other side of the ship had practically nothing.

The two nets were then put out again. The one had the electric light in its former position, but this time it was let down to the bottom at a depth of 6 fathoms; while the other net was placed in the dark at the ship's stern, and also reached the bottom. The tow-nets remained stationary, but were kept distended by the tide. The outline of the illuminated net could be made out indistinctly at a depth of 6 fathoms. After being out for three-quarters of an hour, both nets were hauled in, with the same result as before. The illuminated net contained abundance of Crustacea (chiefly Amphipoda, Schizopoda, and Cumacea), while the dark net again contained practically nothing. These two experiments showed pretty conclusively the effect of the brilliant light in attracting the free-swimming animals, the difference between the contents of the two nets being on both occasions most marked. Consequently, on the second night, in Port Erin Bay, *both* nets were illuminated, and while the one was let down close to the bottom, at a depth of 5 fathoms, the other was kept at the surface of the sea on the opposite side of the ship. This experiment was tried three times, with the same result each time: both the nets were found to contain abundance of animals, but the bottom and surface gatherings differed greatly in appearance and in constitution. The net from the bottom contained mainly large Amphipoda, and some Cumacea, while the gathering from the surface was characterized by the abundance of Copepoda. As Mr. A. O. Walker, who is reporting upon our higher Crustacea, pointed out to me, the Amphipods from the deep net appeared to be chiefly red-eyed species, such as *Ampelisca lævigata* and *Bathyporeia pilosa*. If this, on a detailed examination of the material, turns out to be the case, it may indicate an interesting relation between the colour of the eyes and sensitiveness to the electric light.

Mr. Thompson has already identified the following species of Copepoda from the illuminated surface net: *Calanus finmarchicus*, *Pseudocalanus elongatus*, *Dias longiremis*, *Idya furcata*, *Centropages hamatus*, *Anomalocera patersonii*, *Isias clavipes*, *Oithona spinifrons*, *Harpacticus chelifer*, and *Harpacticus fulvus*. The specimens of the last two species are remarkable for their unusually large size and their abundance.

The various groups of animals collected will as usual be worked up in detail by specialists, and the results will appear in future L.M.B.C. Reports; but the application of the electric light to marine biology, as a bait or attraction in the tow-net worked after dark, seems of sufficient importance to warrant the publication of this preliminary account of the results of the *Hyæna* cruise of Whitsuntide 1888. The obvious extension of this illumination method to deep-water tow-netting and trawling during the day-time I hope, thanks to the kindness of the Salvage Association, to be able to experiment upon in a future expedition.

W. A. HERDMAN.

A REMARKABLE CASE OF FASCIATION IN FOURCROYA CUBENIS, *HAW*

THERE was lately exhibited in this city a plant of *Fourcroya cubensis*, Haw., in which the well-known, tree-like inflorescence had been deformed into what I believe to be the largest fasciation on record. The plant came from Carapa, a small village distant about 4 miles towards the west from Caracas. Its aspect is given in the accompanying figure, engraved after a photograph.

The stem of the plant, covered by the leaves, is about 1 metre in height. From between the upper leaves there branch out two flattened and curiously twisted bodies. The one to the left was soon checked in its growth, so that it forms but little more than a semicircle; whilst the other, after having described a curve somewhat like a very large capital S, rises to a height of about 4 metres from the soil. Both together have in the front view the appearance of a small boat with hoisted sail filled by the wind. The under and lower parts of this deformed flower-stem are covered by numerous bracts, and measure 80 centimetres in their greatest breadth. Towards the top it divides into shred-like branches bearing flower-buds; those of the latter I examined being in every respect of normal structure.

There can be little doubt that, in this case, the malformation is due to some injury done to the young flower-

stem, when it was scarcely 1 foot high, vestiges being still visible that it was bent towards the right and kept in this forced position by some of the leaves. The upward growth being thus checked, numerous adventitious buds made their appearance on the injured organ, coalesced from the very outset, and formed by their subsequent growth the fasciated stem, the twisting resulting from the unequal rate of development of its component parts (Masters, "Veget. Teratology," 18).

Fasciation is likely to be not at all uncommon in *Fourcroya* and other allied plants, though I know of but three cases in the former, and never heard of any in *Agave*. In 1854 a very curious case of this kind was for several months the cause of considerable excitement among the good people of Caracas; it is described in the newspapers of the time as having been likewise twisted in the shape of a gigantic S. Another instance came under my notice in 1876, and was described in the *Journal of Botany* of that year, p. 180.

Caracas, April 19. A. ERNST.

NOTES.

THE following were elected Foreign Members of the Royal Society, on Thursday, May 31: Prof. Edmond Becquerel, of Paris, distinguished for his researches on the effects of light on bodies, especially with reference to phosphorescence; Prof. Hermann Kopp, of Heidelberg, for his researches on atomic volumes and boiling-points; Prof. Eduard F. W. Pflüger, of Bonn, for his researches in physiology, especially in relation to irritability of nerves, respiration, and animal heat; and Prof. Julius Sachs, of Würzburg, for his researches in botany, especially vegetable physiology.

THE Board of Visitors made their annual inspection of the Royal Observatory at Greenwich on Saturday last.

THE Vienna Correspondent of the *Times* announces that, in pursuance of a resolution passed at a recent meeting, the Vienna geologists will invite the International Geologists' Congress, which will assemble in London in September, to hold its next meeting in Vienna.

AT a recent meeting of the Victoria Royal Society, the President (Prof. Kerrot) announced that the first meeting of the Australian Association for the Advancement of Science would be held at Sydney, beginning September 4, the second at Melbourne, the third at Adelaide. The proposal that Victoria should join in the movement was favourably received, but at that meeting no action was taken in the matter.

IT will be seen from our list of the additions to the Zoological Society's Gardens during the past week that a living specimen of Pallas's sand grouse (*Syrrhaptes paradoxus*), the new visitor from Central Asia, has been presented by Mr. H. Hewart Crane, of Berwick-on-Tweed. It was captured at that place on May 25.

THE Tartar sand grouse seems to have appeared in Denmark and Scandinavia before making its appearance here. In the Island of Bornholm, in the Baltic, large flocks, numbering many hundreds, were seen early in May, some being shot, others captured alive. A few days later, birds were seen in various parts of Denmark and Sweden. In Norway a flock of birds was seen at Lister, on the extreme west coast, on May 12, and two were shot, a male and female. Their crops were full of tiny black seeds unknown to that country, whilst the eggs in the hen were far developed. During the immigration in 1863 these birds were seen as far north as Nordfjord. In that year, too, many nested on the west coast of Jutland, where the soil is sandy, but they were all gathered by the fishermen.

PROF. A. GRAHAM BELL, who is now on his way to England, will shortly appear before the Royal Commission engaged in making inquiry as to the best methods of caring for and educating deaf-mutes. In announcing this fact, *Science* reminds its readers that several years ago Prof. Bell presented a paper, at a meeting of the National Academy of Sciences, on the formation, through the intermarriage of deaf-mutes, of a deaf variety of the human race, and gave some important statistics to show that a much larger percentage of the children of deaf parents are deaf than of those whose parents possess the sense of hearing. This paper attracted wide attention, and gave rise to very interesting discussions both in America and elsewhere. The Royal Commission has requested Prof. Bell to lay before it the results of his subsequent investigations and studies upon this branch of the subject, and he has devoted much time to the preparation of facts and figures in regard to it. He will also give the Commission the result of his studies of other divisions of the subject.

ACCORDING to *Allen's Indian Mail*, Mr. Barrington Browne, the geologist sent by the Secretary of State to examine the Burma Ruby Mines, has left Simla for England. He has, it is understood, handed in to the Government of India his report on the mineral wealth of Upper Burma.

THE hydrographic survey of Canadian waters, which has already taken about five years, is now nearly half done. Commander Boulton is hard at work in Georgian Bay, one of the most dangerous of inland waters in Canada, and it is said that the survey will be extended to Lake Superior.

FROM September 15 to October 25 there will be in Vienna an International Exhibition of Amateurs' Photographs and Photographic Apparatus. The Exhibition is being organized by the Vienna Club of Amateur Photographers, and will be held in honour of what is called "the Jubilee" of the Emperor Francis Joseph. It will include every branch of art and manufacture connected with photography. The Club's Daguerre Medal and