of Sycons. Occasionally they were obtained in this way in fair quantity. It was therefore thought probable that a more careful examination of a number of these sponges would be interesting in determining whether this habitat is a usual one. Accordingly twenty specimens of *Sycon coronatum*, varying in length from about 2 to 4 cm., were examined. The contents of the gastral cavities of these specimens were squeezed on to a slide and a careful search for Amœbæ made.

Of the twenty specimens thus examined one or more Amœbæ were found in all except three. Usually about three or four specimens were obtained from each sponge; only one Amœba, however, was found in a few of the squeezings, but from one sponge nineteen of these animals were counted, and doubtless not all those present were seen. It is therefore evident that these sponges are a common habitat of marine Amœbæ, whence these lowly animals may be obtained fairly easily.

There is no likelihood that this habitat is an exclusive one; doubtless Amœbæ occur in a great many other situations in the sea, from which, however, they can only be obtained with some difficulty.

The Amœbæ obtained from the sponges were rather small. Specimens when measured in one common phase were found to be about 80 μ long and 40 μ broad, being, however, in this phase almost uniform in breadth, and having only slightly rounded ends, but when creeping such specimens stretch out to a length of more than 90 μ. The animals move quickly, progressing often in a straight line and flowing with a motion somewhat like that of planarians; at other times thick, blunt, and—at first—hyaline pseudopodia may be extruded from one or more parts of the body. So far as has been observed, the animals appear to have a definite posterior end. The protoplasm is highly and coarsely granular, except at the periphery, and in some specimens ingested diatoms and other inclusions were to be seen. The contractile vacuole has not been made out definitely, but a stainable vesicle of constant size visible through a high power of a microscope in the anterior region of the living animal appears undoubtedly to be the nucleus. The absence of an easily visible nucleus and nucleolus makes it easy to distinguish the Amœbæ from the more or less amœboid forms of some sponge cells, which, moreover, are mostly spherical, and do not show anything like the active movement of the Amœbæ.

In their general characters these Amœbæ resemble the species described by Gruber (*Zeits. für Wiss. Zool.*, vol. xli., 1885, Leipzig, "Studien über Amöben," p. 219) as *Amoeba crystalligera*, but further investigations are necessary to establish their identity with that species.

J. H. ORTON.

The Laboratory, Plymouth.

A Remarkable Meteor on November 24.

LAST night, November 24, at 8.47 p.m., a very remarkable meteor was seen in the northern sky. It moved slowly in an east to west direction, describing a straight path of about 10° in length, which made a small angle (of some 20°) with the horizon, the eastern end being the lower, and remained visible for four or five seconds.

It presented a comet-like appearance, having a bright nucleus surrounded by a less intensely luminous envelope, which streamed out behind, forming a kind of double tail. Conspicuous blue (or green) flares were visible in the "tail," but the appearance lasted such a short time that I am unable to state exactly how they were distributed. It vanished as suddenly and as silently as it had flashed out.

The northern sky being overcast at the time, it was, of course, impossible to lay down its track relatively to the stars, but its position was referred to some tree-tops, which were silhouetted against the sky, and from observations made next morning I am able to state that the middle point of the apparent track was situated at an altitude of about 17° above the horizon, and at about 7° or 8° east of the north point.

Although seen through clouds which were sufficient to obscure all stars in its neighbourhood, including the conspicuous constellation of Ursa Major, the meteor appeared far more luminous than the planet Venus even at its brightest. In fact, with one exception, it was the brightest meteor I have ever seen. The one exception was the splendid daylight meteor of February 8, 1894, which appeared in full sunshine within a few minutes of noon, but was still bright enough to attract the attention of thousands of people at various places over an extended tract of country, from London to Whitby, and from Chelmsford, in Essex, to Ballinasloe, in the west of Ireland.

ARTHUR A. RAMBAUT.

Radcliffe Observatory, Oxford, November 25.

Darwinism 100 Years Ago.

IN reference to Dr. Gadow's interesting quotation from Tiedemann (NATURE, November 13), may I remind your readers that the principle of sexual selection was clearly enunciated by Erasmus Darwin in his "Zoonomia," first published in 1794? I quote from an edition of 1800. "A great want of one part of the animal world has consisted in the desire of the exclusive possession of the females; and these have acquired weapons to combat each other for this purpose. . . . So the horns of the stag are sharp to offend his adversary, but are branched for the purpose of parrying or receiving the thrusts of horns similar to his own, and have therefore been formed for the purpose of combating other stags for the exclusive possession of the females; who are observed, like the ladies in the times of chivalry, to attend the car of the victor. . . . The final cause of this contest amongst the males seems to be that the strongest and most active animal should propagate the species, which should thence become improved."

ARTHUR DENDY.

University of London, King's College, November 19.

Intra-atomic Charge.

IN a previous letter to NATURE (July 20, 1911, p. 78) the hypothesis was proposed that the atomic weight being equal to about twice the intra-atomic charge, "to each possible intra-atomic charge corresponds a possible element," or that (*Phys. Zeitschr.*, xiv., 1912, p. 39), "if all elements be arranged in order of increasing atomic weights, the number of each element in that series must be equal to its intra-atomic charge."

Charges being known only very roughly (probably correct to 20 per cent.), and the number of the last element Ur in the series not being equal even approximately to half its atomic weight, either the number of elements in Mendeléeff's system is not correct (that was supposed to be the case in the first letter), or the intra-atomic charge for the elements at the end of the series is much smaller than that deduced from experiment (about 100 for Au).

Now, according to Rutherford, the ratio of the scattering of α particles per atom divided by the square of the charge must be constant. Geiger and Marsden (*Phil. Mag.*, xxv., pp. 617 and 618, notes

1 and 2), putting the nuclear charge proportional to the atomic weight, found values, however, showing, not constancy, but systematic deviation from (mean values) 3·825 for Cu to 3·25 for Au. If now in these values the number M of the place each element occupies in Mendeléeff's series is taken instead of A, the atomic weight, we get a real constant (18·7 ± 0·3); hence the hypothesis proposed holds good for Mendeléeff's series, but the nuclear charge is not equal to half the atomic weight. Should thus the mass of the atom consist for by far the greatest part of α particles, then the nucleus too must contain electrons to compensate this extra charge.

Table of the Ratio of the Scattering per Atom Divided by A^2 Compared with that Divided by M^2.

	I.	II.	Mean	Mean ×5·4	Mean ×A^2/M^2	M
Cu	3·7	3·95	3·825	20·6	18·5	29
Ag	3·6	3·4	3·5	18·9	18·4	47
Sn	3·3	3·4	3·35	18·1	19·0	50
Pt	3·2	3·4	3·3	17·8	18·6	82
Au	3·4	3·1	3·25	17·5	18·4	83
Mean	3·44	3·45	3·445	18·6	18·6	

A. VAN DER BROEK.

Gorssel, Holland, November 10.

The Stone Implements of the Tasmanians.

IN reply to Mr. J. P. Johnson's letter on Tasmanian stone implements in NATURE of November 13, attention may be directed to the paper read by M. Exsteens before the International Prehistoric Congress at Geneva last year, and destined to appear in vol. ii. of the *Compte-rendu*. It seems that the common opinion in Europe as to the culture represented by these relics of a recently extinct race was based principally on rejects from a large collection; and an inspection of the better worked specimens is sufficient to upset their eolithic origin in favour of a later stage, viz. Le Moustier-Aurignac, which is precisely Mr. Johnson's view. In 1906 the Rev. C. Wilkinson and Mr. Anthony presented a small but typical series of that character to the British Museum.

REGINALD A. SMITH.

Society of Antiquaries of London,
Burlington House, W., November 18.

Museum Glass.

IN connection with a work I am writing on "The History of Anatomy," I have been induced to trace the rise of the anatomical museum, and this appears to have depended to a larger extent than one would have suspected on the price of spirit and museum jars. In the second half of the eighteenth century John Hunter was using about 5000 museum jars for his spirit preparations. It would be interesting to learn whether these were made specially to his order, as I suspect, which firm he dealt with, and how much he was charged. Perhaps some old-established glass manufacturers can give me some isolated or continuous records of the prices of circular and rectangular glass jars used in museum work, and also the period when they were first manufactured in the ordinary course of business routine. From 1750 to 1850 is the period of most importance.

F. J. COLE.

University College, Reading, November 15.

CAPTAIN SCOTT'S LAST EXPEDITION.[1]

CAPTAIN SCOTT'S last journal has the deep interest of one of the most tragic documents in the history of exploration, for the fate of his party on its return from its magnificent and successful journey will surround his name with the romance that immortalises those of Franklin and of Burke and Wills. The human interest of Captain Scott's journals is greater than the geographical, for his route by the Beardmore Glacier was the same as that of Shackleton to one hundred miles from the Pole, and the remainder of the route was over a plateau with no special features of interest apart from its position. The reader therefore naturally hurries through the accounts of the voyage out, the landing on the middle of the western coast of Ross Island, the depôt laying in the first season, the happy life at the winter quarters, and the reports of enthusiastic scientific investigation by the staff. He will read with pleasure the eulogies of Dr. Wilson and the tributes to the capacity and enterprise of all the members of the expedition; and he may note, too, that Captain Scott started greatly preferring ponies to dogs, and that the old *Discovery* hut was used as an intermediate station on the way to the Barrier; the remarks that it was cold is not surprising, since half its heating apparatus had been left in New Zealand, and the insulating material on which its warmth depended was not inserted.

The Southern Party, with its various supporting parties, started between October 24 and November 3, with sledges drawn by motors, ponies, and dogs; and this part of the narrative inevitably recalls the old maxim against mixed transport. The transport was, however, gradually unified by the failure of the motors and the shooting of the ponies, the flesh of which was used as food, mainly for the dogs. After the fateful return of the dogs from the lower end of the Beardmore Glacier on December 12, the journey was continued with man-hauled sledges, with the aid of two supporting parties, which returned later. Eighteen miles from the Pole came the discovery of a camp and many dog tracks, followed by finding Amundsen's tent and letters, which have given conclusive evidence that both parties reached their goal.

The interest increases in the story of the return march, maintained with heroic persistence in spite of the ever-growing difficulties and weakness, which led to the final tragedy only eleven miles from the ample store of food and fuel at One Ton Depôt. There is no direct statement as to the real cause of the disaster. Dr. Wilson's diary may be expected to contain more explicit evidence; but though various extracts from Dr. Wilson's diary are quoted on comparatively unimportant details, there is none regarding the main problem. The

[1] "Scott's Last Expedition." In 2 vols. Vol. i., Being the Journals of Captain R. F. Scott, R.N., C.V.O. Pp. xxvi+633+plates. Vol. ii., Being the Reports of the Journeys and the Scientific Work undertaken by Dr. E. A. Wilson and the Surviving Members of the Expedition. Pp. xv+534+plates. Arranged by Leonard Huxley. With a Preface by Sir Clements R. Markham, K.C.B., F.R.S. (London: Smith, Elder and Co., 1913.) Price 42s. net.