

is sunk in the skin, and when the young are first born this depression, or miniature pouch, is large enough to hold them; when about a month or so o'd, their hinder parts may be seen sticking out; when two or three months old, only the head, and afterwards, as they become larger, only the snout is hidden, the marsupial bones, which are well developed, support the weight of the young one while sucking. The young does not leave the mother until at least one-third grown, and *even when fully the size of the adult, the quills are only then beginning to show through the skin, which is black, and thinly covered with black hair.*

The new species, *T. lawesii*, Ramsay, from Port Moresby, may be distinguished at once by the stiff flat bristles of the face and the more cylindrical form of its spines; *T. bruijnii* has a very long snout, nearly twice the length of any other species at present known. See *Proceedings L. Soc. of N. S. W.*, Vol. ii., Pt. I. Pl. I. E. P. RAMSAY

Australian Museum, Sydney, January 25

P.S.—It may interest your readers to know that Messrs. Ramsay Bros., of Maryborough, Queensland, have a fine series of eleven *Ceratodus alive* in a large tank constructed for them. These fish have now lived and thriven well in confinement for over eighteen months. I was the first to send the *Ceratodus* in spirits to England, although I never got the credit of it; nor did any of those naturalists to whom I forwarded specimens through a friend at the Zoological Society, ever think it worth their while to acknowledge them. Had it been otherwise, living specimens would have found their way to England long since. It is a great mistake to suppose the *Ceratodus* is now common; they can only be obtained at certain seasons and in certain parts of the Rivers Mary and Burnett. The *Osteoglossum (Bartramundi)*, with which the *Ceratodus (Tribin)* is often confounded, is plentiful enough in the western waters of Queensland.

E. P. R.

#### Fetichism in Animals.—Discrimination of Insects

I HAVE frequently noticed the fetichism of dogs, and was therefore much interested by Mr. G. J. Romanes' letter of December 27, which I have but just seen. Our terrier—a very queer character and a great warrior—is abjectly superstitious. He will not come near a toy cow that lows and turns its head, but watches it at a distance with nose outstretched. A vibrating finger-glass terrifies him; indeed he has so many superstitious that we often make him very miserable by working on his fears. I feel sure he constantly tries to understand, but never gets further than the sense of "uncanny"-ness. Dogs vary greatly as to this.

*A propos* of the discriminating power of insects. I have seen humming-bird moths deceived by sight. They were seeking in an open loggia, ceiled with wood, some dark place in which to hide; the pine wood was studded with brown knots. Again and again the two moths flew from knot to knot, felt and rejected them. At last they reached the open work—holes which looked much like the knots—and in them they hid themselves.

I was much struck at the time, as it appeared to me to show they possessed some dim sense of colour, but no defining perception of surface.

C. G. O'BRIEN

Cahirmoyle, Ardagh, Co. Limerick

#### Nitrification

IT seems right to direct attention to the fact that Bacteria were observed by Meusel to convert nitrates into nitrites; an abstract of which observations is to be found in the *Annals and Magazine of Natural History* for February, 1876; this abstract is copied from *Silliman's Journal* for January, 1876, where the reference to Meusel's paper will be found. This reference is *Ber. Berl. chem. Gesell.*, October, 1875.

No indication of their knowledge of these observations is to be found in Schloesing and Munk's paper in the *Comptes Rendus* (February, 1877) or in Mr. Warington's communication to NATURE, vol. xvii. p. 367.

F. J. B.

Oxford, March 11

#### The Wasp and the Spider

MAY I suggest a possible explanation of the curious case of spider-hunting by a wasp cited by Mr. Cecil; had the prey so accurately tracked by the wasp been anything but a spider, it would, indeed, have seemed an almost conclusive instance of

hunting by scent; but when one recollects the fine line usually left by spiders as they go, it is evident that sight or feeling may have been the sense exercised, and that the fatal clue may have been the guide to the wasp.

E. HUBBARD

March 18

#### ENTOMOLOGY AT THE ROYAL AQUARIUM

AN aquarium is put to its legitimate use when it is made the home of natural history exhibitions, and any attempt to rescue one from the too dominant sway of the showman deserves every support at the hands of science. The Entomological Exhibition, the opening of which at the Royal Aquarium we noticed last week, is also quite a novelty, though it is the outcome in a particular branch of the idea that led to the Loan Exhibition of Scientific Apparatus at South Kensington; as in that case the exhibitors are induced by no hope of prizes, but merely from the love of their science to lend their treasures. One learns from such an exhibition as this how much genuine love for natural history exists amongst men whose daily lives are devoted to manual labour, and that there are those who live within sound of Bow Bells, who make as good a use of their more limited opportunities as Edward in Banffshire. Here is a Mr. Machin, compositor by trade, whose long day's work has not prevented him from collecting and rearing a magnificent series of crepuscular and nocturnal moths, shown in twenty beautifully-arranged cases and accurately named; and the collections of some others are scarcely less noticeable in this respect. But apart from the interest attaching to some of the exhibitors, the material brought together affords an opportunity both to the entomologist proper and to the general naturalist not often to be met with. The greater portion of the whole exhibition is perhaps inevitably taken up with British lepidoptera, but these are not, as might be feared, an endless multitude of specimens of no special interest beyond their rarity and beauty, but are made to teach as well as please. Lord Walsingham, for example, shows the larvæ, pupæ, and imagines of nearly 370 species with the plants on which they occur—so that we have their complete life-history so far as it can possibly be represented to us. This, perhaps, from its scientific character and the beautiful means of preservation adopted, is the most interesting to the general naturalist, but there are others more limited, but scarcely less instructive—as those shown by the Messrs. Adams, in which the usual parasites are included in the series with each insect. Other instructive collections are those which illustrate the varieties of a single species; such is the set of specimens of *Colias edusa*, exhibited by Mr. Harper, a grand series showing insensible passages between perfectly distinct colourings. The influence of climate on colour is well illustrated in the melanic northern varieties of several species of moths, which are usually of a lighter colour in the south of England, the two varieties being placed side by side in the Yorkshire collections, and the results of selective breeding in the same direction in the photographs, unfortunately not specimens, of the common gooseberry moth, varying from nearly white to almost entirely dark. The moths and butterflies of the fen districts, which are now becoming so scarce, are represented by a very large collection by Mr. Farn. But one of the most interesting objects is a large white close-set web, in appearance like a cloth—some eight feet by four feet, spun by the larvæ of a moth, *Ephestia elutella*, that feeds on chicory. It is a portion only of a larger web, six times the size, formed on the walls and ceiling of a chicory warehouse in York, by the incessant marching to and fro of the well-fed larvæ. The threads composing it are less than  $\frac{1}{1000}$  inch in diameter, and as they are nearly contiguous and eight or ten deep, the portion exhibited represents about 4,000 miles of their wanderings. When twisted into a rope, it has been made to support a