

was writing it, Prof. Huxley's obituary notice of Mr. Darwin came into my hands. I read it with the keenest pleasure, as everyone must; and I pointedly referred to it with a pardonable anxiety that a piece of work perhaps one of the most remarkable that ever came from that admirable literary workshop should attract a wider attention than from its mode of publication it might possibly receive. Personally, with regard to indifferent variations, I am a little disposed to think that Mr. Huxley is inclined to make too great concessions. I quite admit that correlated variation does give rise to a large class of non-significant characters. But I feel more and more that natural selection is a very hard taskmaster, and that it is down very sharply on structural details that cannot give an account of themselves. I doubt if there is much room in Nature for indifferent variations; and even correlated variations must be anchored, as it were, to an adaptive variation which has to bear the brunt of the maintenance of the whole correlated train.

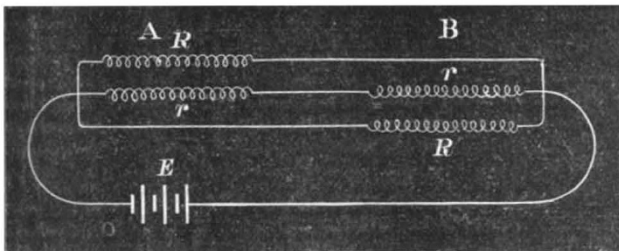
W. T. THISELTON DYER.

Royal Gardens, Kew, October 26.

**Electro-Calorimetry.**

In a paper read at the British Association meeting at Bath, Messrs. Stroud and Haldane Gee describe the method used by them for heating the liquids under experiment. Will you allow me to point out that the series arrangement of the coils is electrically in unstable equilibrium, since any difference of temperature between the baths causes less power to be spent in the cooler one, thus tending to increase the difference. With the coils in parallel less power is spent in the hotter bath, but the method is still imperfect from the want of equality of heating at different temperatures.

Coils may, however, be so arranged as to completely overcome these defects in an otherwise very simple and convenient apparatus. In the figure let A and B represent the two baths and the



coils therein, each bath being heated partly by a series coil of  $r$ , partly by a parallel coil of  $R$ . All four coils should be made of the same metal.

The necessary relation between  $R$  and  $r$  to secure equal heating may be found by writing  $\frac{d \text{ watts in } A}{d \theta} = \frac{d \text{ watts in } B}{d \theta}$ , where  $\theta$  is the difference of temperature between the baths. When worked out this gives  $R = 4r$ ; a result which is obviously true provided the coils have only a small temperature coefficient.

SYDNEY EVERSHED.

2 Victoria Mansions, S.W., October 10.

**The "Tamarao" from Mindoro (Philippine Islands).**

I HAVE only just seen, in NATURE of August 16 (p. 363), Dr. Sclater's communication of Prof. Steere's letter concerning the discovery of a new species of *Anoa* (*A. mindorensis*) in the Island of Mindoro. I beg to say that I forwarded a note on this imperfectly-known animal, whose native name is *Tamarao* (not "*Tamaron*," as far as I know), to the Zoological Society of London, and the note was printed in the Proceedings of the Society for 1878, pp. 881-82, under the title, "Letter concerning the supposed existence of the *Anoa* (*Anoa depressicornis*) in the Philippines." Since then, Dr. Hoffmann, formerly Assistant at the Royal Zoological Museum of Dresden, has published the results of his investigations on a skull of the *Tamarao*, which has belonged to the Dresden Museum since 1878, and which was brought by Prof. Semper from his travels in the Philippines (see *Abhandl. und Berichte d. k. Zool. und Anthr. Ethnogr.*

*Museum zu Dresden*, 1886-87, No. 3, p. 26 *et seq.*, Plate 6, a-f). He proves, by a comparison of this skull with the skull of *Anoa* from Celebes, and with buffalo skulls from the Philippines and elsewhere, that this *Tamarao* has nothing to do with the genus *Anoa*, but is a true buffalo, viz. either *Bubalus indicus*, Rüt., or an undescribed variety of this species, or, perhaps, a new species of *Bubalus*. Between these alternatives we were unable to decide from the single skull in our hands, which, besides, is not that of a full-grown animal. If Prof. Steere be right in asserting that there exists a true *Anoa* in Mindoro, I can only conclude that the skull brought by Prof. Semper as that of the *Tamarao* of Mindoro, is not the true *Tamarao*.

R. Museum, Dresden, October 17.

A. B. MEYER.

**Pallas's Sand-Grouse (*Syrhaptes paradoxus*).**

It is obvious that this bird no longer appears to come much, if at all, under observation in Europe, although it was reported from almost every part during the months from April to June (see Meyer and Helm, *Orn. Jahresbericht der Beobachtungsstationen im Königreich Sachsen*, iii. p. 117 *et seq.*), and even later. I suppose nearly all the specimens have flown into the sea, and been drowned there. As regards its former appearances in Europe, a specimen of *Syrhaptes paradoxus* is said to have been killed near Grenzdorf, in Silesia, about four years ago; and it is also said to have been observed near Sagan, in Silesia, in the years 1874-78; and in the year 1883 near Münster, in Westphalia. Whether these reports are authentic, I, of course, cannot say, the specimens not being in my hands.

R. Museum, Dresden, October 17.

A. B. MEYER.

**The Species of Comatulæ.**

THE writer of the notice of vol. xxvi. of the *Challenger* series, which appeared in NATURE of October 11 (p. 561), remarks that the total number of living species of Comatulæ is given on p. 383 as 180, but that from the distribution list itself there would seem to be 188 species, and he adds that "possibly the seven additional species of Antedon and the one species of Actinometra named but not described may account for this discrepancy." If he will look at the list again he will find that though it contains the names of 8 MS. species, three of them belong to Actinometra and only five to Antedon. These, however, do not account for the apparent discrepancy, which is due to the fact that eight species are dimorphic, so that their names appear twice over, as is fully explained in the systematic tables on pp. 54, 58.

It will, of course, be understood that these lists only contain the names of such species as have yet been baptized, some few having received names before they could be described, on account of their serving as hosts to Myzostomida, which have been reported on by Prof. von Graff. But some time must unfortunately yet elapse before it becomes possible to make out a complete systematic and distribution list of all the Comatulæ-species which are still awaiting description in various Continental Museums. Some very interesting forms were obtained by the German ship *Gazelle* and by the Italian cruiser *Vettor Pisani*. Prof. Semper's Philippine collection, which contains several unusually fine individuals, is as yet undescribed, and I know of many other new types from various localities. At present, however, the fine collections made by the *Blake* in the Caribbean Sea during the years 1877-79 are occupying most of my little working time, and they well repay investigation.

Eton College, October 26. P. HERBERT CARPENTER.

**Voracity of the Haddock.**

A SMALL haddock (*Gadus aeglefinus*), alive when purchased on the fish quay this morning, was so much distended that curiosity prompted an investigation of the cause. In the stomach were found fourteen young whiting (*G. merlangus*) from 4 to 5 inches long, and a small crab (*Carcinus menas*), with hard carapace, about 1 inch in diameter, all quite fresh, and digestion barely commencing. The haddock was 17 inches long, and weighed, when gutted, 26 ounces. The weight of the young fry and crab was 6½ ounces, or almost one quarter of the weight of the fish. Doubtless this record is often beaten in the deep, though the evidence of so healthy an appetite among fishes is not often so apparent.

CHAS. O. TRECHMANN.

Hartlepool, October 30.