## LETTERS TO THE EDITOR.

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### Further Discovery of Dodos' Bones.

SINCE the astonishing discovery, in 1865, of innumerable bones of the dodo in the peat of the Mare aux Songes by Mr. George Clark, of Mahébourg, in Mauritius (*Ibis*, 1866, pp. 141–146), whereby Prof. Owen was enabled to describe the greater part of the skeleton of that remarkable bird (*Trans.* Zool. Soc., vi. pp. 49–80), and the subsequent researches at the same place of Mr. Sauzier in 1889, the results of which, when worked out by Sir Edward Newton and Dr. Gadow (*Trans.* Zool. Soc., xiii. pp. 281–302), almost wholly completed our knowledge of its osteology—besides affording evidence of the former existence of other contemporary species now extinct—nothing more has been recorded on the subject.[1] It was therefore with great interest that, just five years ago, October, 1899, I received a letter from M. E. Thirioux informing me of his having found, in the preceding month of August, some remains of at least two dodos in a small, partly collapsed cave, about 800 feet above the sea, and about two miles and a half from Port Louis. Encouraged by this success M. Thirioux continued his operations, a matter of some difficulty, not to say danger, from time to time, and was good enough to keep me acquainted with many of the results, sending me photographs of the bones which he was fortunate in disinterring from the soil. They were not all dodos' bones, but some belonged to other extirpated forms of birds—as the brevipennate parrot (Lophopsittacus), the "Poule Rouge" (Aphanapteryx), and the coot—and reptiles—as Didosaurus and one or more of the land tortoises—all of which are very imperfectly known, while some of the small dodo bones are of great rarity, and at least one of them (the pygostyle) had not been seen before. From that time until very recently M. Thirioux has been continuing his researches, and has consequently formed a very considerable collection, which he now writes to me he has disposed of to the Museum of Mauritius, and I can but express the fervent hope that some competent person may be found to work it out and publish a memoir on it which will be a worthy successor to those that I have already mentioned. ALFRED NEWTON.

Cambridge, October 20.

### The Forest-pig of Central Africa.

THERE are two good mounted specimens of the forest-pig in the Museum of the Congo Free State at Tervueren, near Brussels, where I had the pleasure of examining them in July last. M. A. Dubois, conservator of the Royal Museum of Natural History at Brussels, told me that he intended to describe the animal in conjunction with Dr. Matschie, of Berlin, but I am not aware that their description has yet been published, so that I hope the forest-pig may remain known by the excellent name Hylochœrus, proposed for it by Mr. Thomas.

As regards the "third mysterious animal" of the Congo Forest alluded to by Sir Harry Johnston in his letter on this subject (NATURE, p. 601), I have little doubt that it was the fine antelope of the genus Tragelaphus, lately described by Mr. Thomas as *Baeocephalus euryceros isaacsoni* (*Ann. Nat. Hist.* (7), v. p. 310, and *Proc.* Zool. Soc., 1902, ii. p. 319). The first pair of horns of this species was obtained by Mr. F. J. Jackson in 1897 (see *Proc.* Zool. Soc., 1897, p. 455), but it is only recently that the perfect specimen which now adorns the mammal gallery of the British Museum was procured.

The "abnormally developed horns of the cow eland" referred to by Sir Harry Johnston have nothing to do with this antelope. They will be found fully described and figured in the "Book of Antelopes" (vol. iv. p. 209).

P. L. SCLATER.

[1] Some reputed dodos' bones, said to have been found in a cavern (*Proc.* Zool. Soc., 1885, p. 719), turned out to be turkeys' (*op. cit.*, 1890, p. 402).

### Average Number of Kinsfolk in each Degree.

THE letter you forward to me from Prof. G. H. Bryan gives an opportunity of discussing the question somewhat more thoroughly than space allowed in my brief memoir of September 29.

The writer says:—"Is Dr. Galton's deduction of $d-\frac{1}{2}$ correct? I should have thought that if a parent had $d$ male and $d$ female children, each female child would have $d-1$ sisters and $d$ brothers."

The objection holds good only on the erroneous supposition that each and every family of $2d$ children consists of $d$ boys and $d$ girls; it does not hold good on my supposition that each such family contains *on the average* $d$ boys and $d$ girls. The inclusion of the omitted word introduces a new set of considerations. They depend on the variety of the possible forms of combination of boys and girls in $2d$ children, which are $2d+1$ in number, and on the frequency of each of these forms, which is given by the $d+1$ terms of the binomial expansion of $(1+1)^{2d}$. The exact character of the process concerned is clearly appreciated by thoroughly working out some particular case, say that of $d=2\frac{1}{2}$, where the number of children, $2d$, in each family will be 5. There are then 6 possible combinations of boys and girls, forming 6 different classes, shown in the first three lines of the table.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (1) | Classes ... ... ... ... | I. | II. | III. | IV. | V. | VI. | |
| (2) | Boys in each family ... ... | 5 | 4 | 3 | 2 | 1 | 0 | |
| (3) | Girls in each family ... ... | 0 | 1 | 2 | 3 | 4 | 5 | |
| (4) | Sisters in each family ... | — | — | 2 | 6 | 12 | 20 | Totals |
| (5) | No. of families in each class | 1 | 5 | 10 | 10 | 5 | 1 | 32 |
| (6) | Girls in all the families ... | — | 5 | 20 | 30 | 20 | 5 | 80 |
| (7) | Sisters in all the families... | — | — | 20 | 60 | 60 | 20 | 160 |

In line (4) is shown the number of sisters in any *one* family of each of these classes ($n.(n-1)$ sisters to $n$ girls). Thus in each family in class vi. there are 5 girls, consequently $5\times4=20$ sisters, in class v. there are 4 girls, and $4\times3=12$ sisters, and so on. The total number of combinations of boys and girls in a family of 5 children $=2^5=32$, which are distributed into six classes according to the familiar binomial fashion as above; these are shown in line (5). Multiplying each entry in (5) with that in the same column in (3) we obtain line (6), which shows that the total number of girls in the 32 families is 80 ($=2\frac{1}{2}\times16$, as it should be). Multiplying similarly the entries in (5) by those in (4) we obtain line (7), which shows that the 80 girls have between them 160 sisters; consequently each girl has on the average 2 sisters. This is identical with my $d-\frac{1}{2}$.

I have made similar calculations for values of $d=1$, $1\frac{1}{2}$, 2, $2\frac{1}{2}$ (above), and 3. In each case the result is that a girl has on the average $d-\frac{1}{2}$ sisters. It may therefore be assumed that the reasoning by which I originally arrived at that deduction is correct.

Before concluding, I should like to direct attention to a slip of the pen in the last line but one of my memoir, which somehow escaped correction; the term $d=5$ should have been $2d=5$. The context corrects the mistake, which may nevertheless puzzle the reader for a while.

FRANCIS GALTON.

### Mendel's Law.

IN his letter of last week detailing his most interesting experiments on cross-bred maize, Mr. R. H. Lock makes the following statement:—"I see from the published account of a recent discussion at the Cambridge meeting of the British Association that the facts of Mendelian segregation are still disputed by the biometric school of evolutionists." Now it is easy to make a general statement about some vaguely defined group of men, and I have no right to speak for biometricians as a body. But as inventor of the term *biometry*, I may perhaps be allowed to say what I understand by it as a science, and to restate what I said with some emphasis at the Cambridge meeting. Biometry is only the application of exact statistical methods to the problems of biology. It is no more pledged to one hypo-