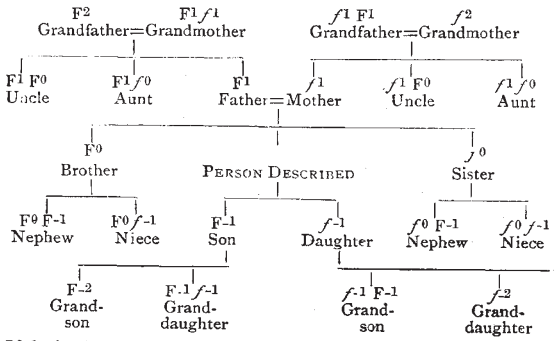
usually adopted, since there are some grounds for thinking that the limits of disturbance are generally lines of faulting or limits of formations. In the first report received, the extreme points mentioned to the west were Jacksonville and Chicago, both situated on a line which represents the axis of the promontory of Florida, as shown by the map. The great mass of the surface shaken lies to the east of this line, so that this surface would be bounded by coast-line directions, at least partially. When fuller information comes to hand, I trust to be able to show more perfect results in this respect. J. P. O'REILLY

Algebraic Notation of Kinship

MR. F. GALTON has described two systems of kinship notation: one in his work on "Hereditary Genius," pp. 50-53; the other in a letter to NATURE, vol. xxviii. p. 435. I propose to indicate here the outline of another system, which, though slightly more cumbrous in form than Mr. Galton's, seems to me to possess some advantages of its own.

Let us denote the male members of a family by a capital letter, say F, females by a small letter, *f*. Taking the person described as a starting-point, relatives in different generations may be denoted by *indices* attached to these letters. For relatives in the same generation, the index is 0; for those in the first, second, &c., generation before him, the indices are 1, 2, &c.; for those in generations following him they are -1, -2, &c. Thus, a brother would be denoted by the symbol F^0, a sister by f^0; the father by F^1 and mother by f^1; a son by F^{-1} and a daughter by f^{-1}. Again, the father's father would be denoted by $F^1 F^1$, or more shortly by F^2; the father's mother by $F^1 f^1$; a son's son by F^{-2}, a daughter's son by $f^{-1} F^{-1}$; the father's brother by $F^1 F^0$ (or perhaps by F^{10}, if it be remembered that here 10 stands for 1 + 0, and not for ten, which is too large a number to be often required); the mother's brother by $f^1 F^0$; the father's sister's son by $F^1 f^0 F^{-1}$, and her daughter by $F^1 f^0 f^{-1}$; and so on. The advantages of the system are: (1) that it is readily used and interpreted; (2) that the generation of any relation with respect to the person described may be found at once by adding the indices of his kinship symbol. For example, in the last two instances given, the sum of the indices is 0, showing that in both cases the generation is the same as that of the person described.

The simpler relationships are shown in the following table:—



If desired, suffixes to the letters might be added to denote the position in his family of any person noted in the kinship symbol. The symbol $F_3^{-1} f_5^{-1}$ would, for example, denote a son's daughter, the son being the third member of his family, and his daughter the fifth. CHARLES DAVISON

Birmingham, September 30

Physiological Selection

As Dr. Romanes has had his attention drawn to my letter (NATURE, vol. xxxi. p. 4), he may be interested in knowing just how far his theory of physiological selection was anticipated by what was in my mind.

My idea was that a spontaneous variation might occur in the sexual elements of the offspring of one parent or pair which would leave them fertile with each other, while rendering them almost or quite infertile with the rest of the species, so that the family would be physiologically insular.

Though I did not definitely so limit it, it did not seem to me likely that a corresponding change in both sexes, which was what I had in my mind, would occur, except in the offspring of the same parent or pair; and I rejected the idea of a gradually increasing infertility in favour of a total or nearly total infertility arising in the one generation, because I did not see any cause for the continuous increase from generation to generation of such infertility.

It did not occur to me that a partial infertility would, in a number of generations, produce the same result, as pointed out by Dr. Romanes (NATURE, August 5, p. 316). Nor do I now see clearly that it would ever lead to the total infertility which exists between species which have not otherwise diverged very much. At present, however, I only wish to point out that the idea of gradually increasing infertility was in no way anticipated by me. EDMUND CATCHPOOL

Friends' Institute, 13, Bishopsgate Street Without,
London, E.C., October 9

American Vines

IN reading Prof. Carruthers' very interesting address to the Biological Section of the British Association, I observe that he says, when speaking of the vine discovered by Dr. Schweinfurth at Abd-el-Qurna: "The leaves which have been obtained entire exactly agree in form with those cultivated at the present day, but the under-surface is clothed with white hairs, a peculiarity which Dr. Schweinfurth has not observed in any Egyptian vines of our time." Will you allow me to remark that this is a character of several of our American vines? Both the Northern Fox and the Summer Grape (*V. Labrusca* and *V. æstivalis*) are conspicuously downy on the lower surface of the leaves—so much so that they appear white.

This fact adds another to the list of points in which the old flora of the eastern hemisphere resembles that now existing on the western side of the Atlantic. But the resemblance in this case is of much more recent date than those with which we are so familiar from the researches of Prof. Heer among the Oeningen beds of Switzerland.

In connection with the facts above mentioned, it would be of interest to ascertain if an opportunity should ever occur whether the other noteworthy differences between the American vines generally and the European vine, namely, the musky or foxy flavour and the soft and pulpy, not firm and fleshy, berry were accompaniments of the downy leaf. This may never be possible, but it would serve to show which of the two was the older stem from which the other has diverged. E. W. CLAYPOLE

Akron, O., U.S., September 30

"Scopelus mülleri"

A FEW weeks since I received a letter from Mr. Southwell, of Norwich, wherein he informed me that Capt. Gray had sent him a very interesting fish, which he kindly forwarded to Cheltenham. He captured it on August 1, 1886, in lat. 73° 12′ N., and long. 14° 28′ W. Capt. Gray remarked:—"It was at the surface; I noticed it while away in a boat as I leant over the bow and watched the water as it passed. It was covered with bright golden scales when I first found it, but they are nearly all rubbed off. It was alive when I picked it up, and the temperature of the water was 35° F., and that of the air 35° also.'

The specimen is in comparatively a good state of preservation; the tail, however, has been broken, reducing its total length to 2 inches; from the snout to the base of the caudal fin, 1·8 inch.

D. 14, P. 11, V. 8, A. 16, C. 19, L.l. 36.

Its proportions are normal, agreeing with Collett's description, the origin of the dorsal fin commencing exactly midway between the end of the snout and the base of the caudal fin. As good examples appear to be very rare, I propose remarking on certain appearances which have been in dispute. The eye-like spots are thus disposed: along the edge of the abdomen, between the throat and base of the ventral fins, 5 pairs; between the ventral and anal, 3 pairs; along the base of the anal, 8 pairs; beyond the anal, 6 pairs. Krüger gave a similar number between the ventral and anal to what exists in this specimen, but Collett found 4 pairs there. Between the 6th and 7th pairs along the base of the anal fin, and between the 5th and 6th pairs behind that fin, there is a wider space than between the others. Along the side and below the posterior half of the lateral line are two more of these eye-like spots, while a row of three passes from