

In a precisely similar way, but using equation 2 instead of 1, the value 13.937 is obtained, which can be increased to 13.948.

This being the case, the question is, How can this value arise? The experimental work upon which the figures are based seems to have been carried out with every possible precaution, and all the values agreed very closely. The only possible weakness appears to lie in equation 5; the result was deduced from only three experiments, and the agreement was not so good as usual. Assuming for the moment that this value is wrong, it is easy to calculate by how much it is so. Taking $N=14.010$, we may say

$$N = 14.010 = \frac{2422.08 + 6.62}{2779.94 - 3.57} \times 16.$$

If the values of x , w , and y are taken as before, this gives 0.028 as the *minimum* value of z , and it is hardly to be expected that such a large error could have escaped notice. Another possibility is that all the errors are about five times as large as the values given, but even if this were so it would be very improbable that they should all be of such a nature as to raise the atomic weight. Consequently, granted that the discrepancy is due to experimental error, it is almost certain that the analysis of potassium nitrate is at fault. This was carried out by heating with silica, and if the nitrate was not completely decomposed the number 87.232 would be too great. This is the only explanation which seems reasonable; and, moreover, if the ratio obtained in this experiment be changed to 100 : 87.203, all five equations become consistent, and yield frequently accepted values for the atomic weights, silver being 107.883.

Whether this be the true explanation or not, it is obvious that the method outlined above affords an excellent means of checking atomic weight determinations, and is also applicable to finding the absolute weights, since there is no great accumulation of errors.

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University College, Gower Street, October 26.

The Fauna of Madagascar.

MADAGASCAR, with certain adjacent islands, has been regarded by some naturalists as forming a distinct "region," the Malagasy, equivalent to the other main regions of the world. On the other hand, Messrs. P. L. and W. L. Sclater ("The Geography of Mammals," London, 1899, p. 108) adhere to the earlier opinion of the first-named of the two authors, as well as of many subsequent writers, and place Madagascar in a subregion only of the Ethiopian region. They remark that "Madagascar appears to contain a sample of the ancient Ethiopian fauna, which has been almost exterminated on the mainland."

The archaic nature of the Madagascar fauna has lately (*Zool. Jahrb.*, 1902) received further confirmation at the hands of Miss A. Carlsson, who found that the peculiar Viverrid genus *Eupleres* showed likenesses to both the Viverrine and Herpestine sections of the Viverridæ, and was therefore probably an ancient type of Viverrid. Having had lately the opportunity of making some anatomical observations upon another Madagascar genus, viz. *Galidictis*, I am able still further to support this view. This interesting Viverrid has the external scent glands of the Viverrine section, and a cæcum which is comparatively long, like that of the Herpestinæ. The brain, like that of *Eupleres*, shows intermediate characters. Finally, the archaic nature of this animal is demonstrated by the completely double uterus, a feature new to the Carnivora, where a bicornuate uterus is at least the rule.

It has been pointed out that Madagascar also shows an unexpected likeness to the neotropical region in its fauna, especially in the group of reptiles. As to mammals, the late Dr. Dobson showed reasons for believing that the alleged close resemblance between the Cuban *Soleonodon* and the Mascarene *Centetes* had been exaggerated; but among the Reptilia there are genera which are common to the two regions, e.g. the snakes *Boa* and *Corallus*. I have been able lately to compare *Corallus madagascariensis* with a South American form, *C. cookii*. In the former the bronchus extends a long

way down the larger lung, the liver is prolonged by one lobe nearly to the gall bladder, the umbilical vein of the foetus does not persist, and the mode of distribution of the intercostal arteries is as in the pythons. In the latter species these characters are as in the Anaconda.

The anatomical differences may possibly seem slight to those not specially acquainted with the structure of serpents; but in the features mentioned there is, if anything, rather a greater difference between the two species of *Corallus* than between two admittedly distinct genera such as *Eryx* and *Python*. It is very desirable that the alleged close resemblance between other forms occurring both in Madagascar and in the neotropical region should be carefully scrutinised.

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The Interpretation of Mendelian Phenomena.

DR. ARCHDALL REID'S letter in *NATURE* of October 3 contains a very positive statement in reference to the relation of Mendelian phenomena to man, which I think should be immediately answered. I delayed supplying an answer because I wished to discuss his statement on a tangible basis. I desired to analyse certain data which I have been collecting, and which throw light upon the problem of segregation in man. This analysis is as yet incomplete, but it is sufficient to show that Dr. Archdall Reid is too confident when he asserts that "there is no segregation in man," and that, "with the exception of eye-colour, and possibly one or two other traits, such as the Mongolian eyelid, human hybrids appear to blend every character as perfectly as skin-colour."

The accounts which I have collected deal with various marriages between Europeans (chiefly Scotch) and the Canadian Red Indians. It is well known that many of the early European settlers in Canada married Red Indian women. The resulting half-breeds in their turn were in some cases intermarried, and in others mated to Europeans.

The Canadian Red Indians can be marked off from Europeans by six definite characters, which concern the nature of the hair, eyes, skin, cheek-bones, nose, and beard. The Indian hair is invariably black, long, glossy, and lank, and cannot be confounded with European hair; the eyes are almost invariably black or, very seldom, dark brown; the skin is tawny brown-yellow (varying from pale olive-yellow to dark brownish yellow); the cheek-bones are high (there is no obliquity to the eyes, thus differing from the Mongol); the nose is very prominent and broad at the base, and is of the *busque* type, that is, the profile is made up of two lines, which diverge widely from the bridge towards the base; and, lastly, there is either no beard or a very scant one of straight hairs on the face of the men. These characters, when well developed, are so different from the corresponding features in Europeans that they cannot easily be confused. No one, for instance, would mistake the long, lank, black hair and black eyes of the Indian for the thick red hair and blue eyes of some of the Scotch persons concerned in the histories now under review.

We may therefore use these six characters as differentiating ones, and may tentatively regard the Indian characters as being allelomorphic to the corresponding European ones. For the sake of brevity I will use symbols, which will have the following significance:—

I = Indian, E = European, H = hair, E = eyes, S = skin, C = cheek-bones, N = nose.

First, then, with regard to the matter of dominance. We must, in this case, be quite sure that the European concerned marries a full-blood Indian. In the cases which I have so far collected, I have only one marriage of such an Indian with a European, and there were only two children of the marriage. The European was a Highland Scot. His complexion was fair, and eyes blue. I have no information of the colour of his hair, since it was white with age when observed, but it was quite thick and not lank. In all the features (with the exception of the beard, of which I have no information) which mark off the Indian from the European, the son and daughter of this marriage were quite Indian.

So far, then, as this one case will take us, these five