

himself, but is likewise able to extract good work out of other people—a task often more hard to be accomplished than the former one.

The Countries of the World. By Robert Brown, M.A., Ph.D. Vol. iii. (London: Cassell.)

THIS volume is devoted to Central and South America, and appears to us to present a fairly full and trustworthy and certainly interesting account of the countries of this most attractive region. Dr. Brown has evidently taken the trouble to search most of the authorities likely to help him. The illustrations to this volume are unusually good and appropriate.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

A Carnivorous Goose

I INCLOSE to you an account of a Golden Eagle, which I have reason to know to be authentic. The possibility of a bird so purely graminivorous as a goose being taught to eat flesh, and acquiring the power of digesting it, is extremely curious. It is well known, however, that cows are largely fed on fish offal in Scandinavia, and I have heard of a Highland cow devouring a salmon which an unwary angler had hid among fern on the banks of a river in Sutherland.

Isola Bella, Cannes, April 7

ARGYLL

"March, 1879.—There is in the possession of W. Pike, Esq., at Glendarary, in the Island of Achil, Co. Mayo, a Golden Eagle, now about twenty-five years old, which was taken from the nest and brought up in confinement. This eagle, in the spring of 1877 laid three eggs, which Mr. Pike took away, replacing them with two goose-eggs, upon which the eagle sat, and in due time hatched two goslings. One of these died, and was torn up by the eagle to feed the survivor, who, to the great tribulation of its foster-parent, refused to touch it, together with the other flesh with which the eagle tried to feed it, Mr. Pike providing it with proper food. The eagle, however, in course of time, taught the goose to eat flesh, and (the goose having free exit and ingress to the eagle's cage) always calls it by a sharp bark whenever flesh is given to it, when the goose hastens to the cage and greedily swallows all the flesh, &c., which the eagle, tearing its prey to pieces, gives it.

"I saw them in May, 1878, when, the goose being a year old, had made a nest in the eagle's cage, and laid eleven eggs, and the two birds were sitting side by side on the nest. I hear from Mr. Pike that he did not allow them to hatch out, fearing that it might interfere with their attachment to one another.

"The eagle is very tame and fond of Mr. Pike; he goes into the cage, and it allows him to handle it as he likes, but will not allow any one else near it. It never attempts to get out of the hole made for the goose to go in and out."

Sense of Force and Sense of Temperature

THE sense of force, or of resistance to pressure, and the sense of temperature, have been very commonly confounded under one name, "sense of touch." Indeed, I think they are still imperfectly distinguished in many modern works dealing with the subject of sensation. Nevertheless, there can be no doubt as to these two being sensations altogether distinct. It is even quite probable that they are observed and transmitted by distinct nerve-systems.

AN important and interesting question arises as to the kind of information given to us by these two senses; viz., how far it is merely relative, and how far these senses may, by cultivation, be made to give us absolute information.

So far as the sense of force is concerned, it is with most persons chiefly relative. Every one is prepared to say, but generally very roughly, that of two bodies, A and B, A is heavier

than B. To test their relative weights we lift first the one and then the other, and decide between them. Sometimes we may go a little farther towards making an absolute estimate by means of the sense of force. I can tell, for example, that a weight is greater than 20 lbs. and less than 30 lbs. by trying to hold it out at arm's length; and most likely with a little practice I could learn to estimate weights to within closer limits than 5 lbs. on each side of 25 lbs. But such testing as this is all that is done in ordinary cases.

There is, however, a very remarkable case in which the sense of force is made absolute to a high degree by practice. It is the case of letter-sorters in the Post Office, who learn to distinguish letters that are over a particular weight with accuracy that is perfectly marvellous. It would be very interesting to try a series of experiments with letters of different weight, some slightly under weight for a particular postage, and some slightly overweighted, and to observe the errors or rather the limits of uncertainty.

The sense of temperature may also be rendered absolute to a certain extent. Several instances might be mentioned, some of which depend, as in the case of testing force by lifting the greatest possible weight in a particular way, on the limit of endurance.

One remarkable case of an absolute determination of temperature by the senses is that of the plumber and tinsmith who are in the habit of holding up the soldering bolt to the face, and judging by feeling whether it is at the proper temperature for a particular piece of work in hand.

Probably there are other cases in the arts in which the sense of temperature is cultivated to a high degree. It is in the hope of getting information on this subject through your readers that I address this note to you.

J. T. B.

April 7

Did Flowers Exist During the Carboniferous Epoch?

MR. A. R. WALLACE, in his review of Mr. Allen's, "The Colour Sense" (NATURE, vol. xix. p. 501), has been misled in supposing the fossil insect from the Belgian coal-fields, named *Breyeria borinensis* may be a moth. It was originally described as the hind wing of an orthopterous insect, under the name of *Pachytolopsis borinensis* (Comptes Rendus, Soc. Ent. Belg. xviii. p. xli). Subsequently it was transferred to the lepidoptera on bad advice, and re-named *Breyeria borinensis* (same Comptes Rendus, p. lx.). Its original location was nearer the truth. I examined the fossil at Brussels in 1877, and have no doubt it belongs to the pseudo-neuroptera, family Ephemeridae (vide my note to this effect in the same Comptes Rendus for 1877, xx. p. xxxvi.). The very dense transverse reticulation did not receive sufficient importance when M. de Borre was induced to refer it to the lepidoptera. Thus we remain without any zoological evidence that would tend to prove the existence of flowering plants in the carboniferous age.

R. McLACHLAN

Lewisham, April 4

Water-level Indicators

I OBSERVE in NATURE (vol. xix. p. 518) a description of what is stated to be a new form of water-level indicator which has lately been erected by the India-rubber, Gutta-percha, and Telegraph Works Company, at the Leamington New Waterworks.

So far as mere form goes, it possibly may be considered new, but hardly so in any other sense, as a water-level indicator, fulfilling the purposes you mention, on a very extended scale, has been in action at the Nottingham Waterworks for many months past. It is not only capable of being made to give smaller indications than one foot, but is actually doing so. This apparatus was designed and constructed in the electrical department of the General Post Office, and has given great satisfaction. I may mention that it was under the consideration of Mr. Preece so far back as the latter end of 1877, and but for his determination to have an instrument perfect in every respect before he turned it out, it might have been at work early in 1878.

Nottingham, April 8

H. ROFE

Eastern Yucatan

IS there any information to be had about Eastern Yucatan? In 1847 the Maya Indians there rose against Mexico and have become independent. The animosity between them and the Mexicans is so great that there is scarcely any possibility of