

THE note under criticism purports to be a "proof" that the base originally used by Napier was the reciprocal of e , and not e itself. In reality, it is nothing of the sort. The arithmetical details are both unnecessary and insufficient for the purpose, and their insertion is unfortunately calculated to deceive many readers by obscuring the real points at issue. The same "proof" might equally well be employed to show that the original base was e instead of its reciprocal, but that the minus sign had been omitted from the logarithms of sines. If your correspondent will read any treatise on the history of mathematics, he will see an account of the train of reasoning which led Napier to the discovery of logarithms before the existence of a base or the connection between logarithms and indices had been suspected. There are doubtless many historical points connected with the discovery of logarithms that deserve closer study than they commonly receive, but the publication of a book of this kind is not likely to advance our knowledge of them. If one could be certain that all readers would take the book for what it is worth, no harm would be done. But there are, unfortunately, many people who possess a "little knowledge" (which is, of course, a "dangerous thing") who will derive a large amount of misinformation from the interpretation they will place on the contents of the book, and this misinformation will be very difficult to eradicate.

THE REVIEWER.

Distribution of the Forms of *Corvus cornix* and *C. corone*.

I SHOULD esteem it a favour if the writer of the review of Ralfe's "Birds of the Isle of Man" (NATURE, May 31, p. 195) would more clearly explain his reference to the dimorphic forms of *Corvus cornix* and *C. corone*, and the "border-line, i.e. along the line from the Firth of Clyde to the Adriatic, &c."

The Firth of Clyde is not the limit of the line where they are known to interbreed. They interbreed north of the Firth of Forth, and as far north as Moray at least.

And as regards the Adriatic, the forms are known to interbreed and produce every variation of crosses or diverse plumages in Siberia.

No doubt your reviewer will be able to explain his meaning, but, as at present expressed, it is somewhat difficult to understand (v. p. 105).

The "carrion crow" (*corone*) seems to me to be the more aggressive of the two, and is slowly but surely pushing north in Britain, as I think references to our series of Scottish faunas will show.

J. A. HARVIE-BROWN.

Dunipace, Larbert, Stirlingshire, N.B., June 2.

THE precise line—if there be one—marking the distribution between the breeding areas of *Corvus cornix* and *C. corone* is of little importance to the "problem" suggested to the readers of NATURE in the review mentioned. Its direction, however, was taken from Newton's trustworthy "Dictionary of Birds," p. 117, where it is stated to be "an irregular line drawn diagonally from about the Firth of Clyde to the head of the Adriatic." The reviewer cited that statement as authoritative, since he has had no opportunity of personal observation on the subject. It is further stated on the page last cited, "it has now been incontestably proved that along or near the boundary where these two birds march, they not infrequently interbreed, and it is believed that the hybrids which sometimes wholly resemble—italics by the reviewer—one or other of the parents . . . pair indiscriminately among themselves or with the pure stock." If these be established facts, then the hybrid wholly resembling the black variety must, if it occur in any considerable numbers, retire to breed "to the south-western part of this quarter of the globe," and the hybrid wholly resembling the "grey neck" "to the north-eastern portion." How has this discrimination been acquired? Two further questions may be asked: Can the wholly black and wholly grey hybrids be recognised after they have left the nest? Can the proportion of pure breeds to hybrids in the general crow-population be determined?

The facts given in Mr. Harvie-Brown's letter seem to

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indicate that the crows in their nursery arrangements behave less perplexingly than the reviewer had deduced from the statements he has quoted above. The black and the grey crows may really be, therefore, not dimorphic forms of one species, but two distinct species.

THE REVIEWER.

The Date of Easter.

IN your issue of April 5 an empirical formula is given for determining the date on which Easter falls in any year from 1900 to 2100. Having tried the formula for certain years within the limits stated, I find that it fails in the case of 1954. For that year it gives April 25, whereas the correct date is April 18. Perhaps some of your correspondents may be able to explain the cause of the discrepancy.

ALEXANDER D. ROSS.

Glasgow, June 1.

YOUR correspondent is correct in saying that the empirical formula of Gauss for determining the date of Easter gives April 25 for the year 1954, and I must confess my inability to assign a reason for its failure in this particular instance.

CHAS. LEIGH.

The Victoria University of Manchester, June 12.

Geological Survey of Canada.

IN the issue of NATURE of April 26, under the heading of "Notes," is a paragraph concerning changes in the organisation of the Geological Survey of Canada. This paragraph is liable to be misleading, and I shall be greatly obliged if you will kindly state the facts as they are. On March 27 last Mr. A. P. Low was appointed deputy head and director of the Geological Survey Department, and, at the same time, Dr. R. Bell simply returned to his former position of assistant-director and chief geologist, to which he had been appointed in 1892.

A. P. Low (Deputy Head and Director).

Geological Survey of Canada, Ottawa, Ontario, May 29.

THE FOSSIL VERTEBRATES OF THE FAYUM.¹

A FEW years ago it was the fashion among vertebrate palæontologists to say that, at least so far as the Tertiary period is concerned, the Old World was played out in the matter of their special science, and that the scene of advance was shifted to America, where alone important and epoch-making discoveries were to be expected. All this has been changed by the discovery of the wonderful Lower Tertiary vertebrate fauna—or, rather, series of faunas—in the Fayum, or lake-province, of Egypt, which Dr. Andrews (who, we are glad to say, has now the privilege of adding the letters F.R.S. to his name) has so admirably and lucidly described in the handsome quarto volume before us. Indeed, it is not saying too much to assert that these discoveries have practically revolutionised our conceptions of the mutual relationships of several mammalian groups, and also our ideas on many points connected with the past distribution and migrations of the mammals of the Old World. Perhaps the most important problem which Dr. Andrews has succeeded in solving is the origin of the Proboscidea; and if this had been the only result of his labours he would have been well entitled to undying fame. As it is, this discovery is only one of several of the highest importance in regard to mammalian evolution we

¹ "A Descriptive Catalogue of the Tertiary Vertebrata of the Fayûm, Egypt; based on the Collection of the Egyptian Government in the Geological Museum, Cairo, and on the Collection in the British Museum (Natural History), London." By C. W. Andrews. Pp. xxxvii+324; pls. 26, and text-figures. (London: Printed by order of the Trustees of the British Museum, 1906). Price 35s.