

that much to which the author originally pinned his faith is no longer tenable. Spiral nebulae are proving to be something bigger than the author at first imagined them to be, and both mathematicians and observers feel doubts as to whether their particular branches of astronomical science will altogether confirm the author's predictions as to the course of events. At the same time the author has always regarded his theory as one to be continually modified in the light of new facts, so that the question of present interest is whether the theory can be fitted to new knowledge without entirely losing its original character.

The book will be welcomed as providing a complete and authoritative account of a hypothesis which must be considered along with others in our efforts to unravel the history of our system.

J. H. J.

The Earliest Voyages Round the World, 1519-1617. Edited by P. F. Alexander. Pp. xxiii + 216. (Cambridge: At the University Press, 1916.) Price 3s. net.

In the century, 1519-1617, covered by this travel-book there were six voyages round the world—one Spanish, led by a Portuguese, Magellan; two English, led by Drake and Cavendish; and three Dutch, led by Van Noort, Speilbergen, and Le Maire and Schouten. Mr. Alexander includes in this volume Pigafetta's account of the Magellan expedition; Francis Pretty's narratives of Drake's piratical voyage, and of Cavendish's first voyage; and an account of Le Maire and Schouten's discovery of the route round Cape Horn. There are numerous illustrations, including a sixteenth-century map of Drake's voyage corrected by the great navigator; a dozen pages of useful notes; a brief introduction to the narratives; and a table of important dates in the history of discovery. As a contemporary source book, which maintains the atmosphere of the great days of the early voyages, this compilation will prove extremely useful and stimulating.

Large-Scale Map of the French Battle-Front. (London: G. W. Bacon and Co., Ltd.) Paper, 1s. net; cloth, 1s. 6d. net.

THIS map, on a scale of four miles to an inch, shows the battle-front from Peronne to Verdun. There is a gap of about twenty miles to the south of Peronne, but the advance of the Allies will no doubt soon bring this part of the battle-line within the area of the sheet. The map shows woods in green, and the present front, approximately as it was on November 10, by a red line. There is, unfortunately, no attempt to show elevation either by contours or spot-heights. Rivers, railways, and canals are clearly and accurately shown, and there is an abundance of names. The map should make it easy to follow the course of any advance on this front, though the absence of indications of relief will not help the reader to grasp the significance of the line of front. There is a companion map at the same price of the British front to the north.

NO. 2464, VOL. 98]

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 intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

The Permanence of Finger-Print Patterns.

I RECEIVED a few days ago Sir Wm. J. Herschel's brochure, "The Origin of Finger-Printing." His object—in addition to examining other claims to this method—is stated to be the desire to place on record the discovery of this method of identification "in Bengal in 1858," and the author seems to be piously grateful for the "gift granted" to him of that great and most useful discovery. The evidence for this early date is contained in the imprint of a single hand of one Kōnāi, made at that time. This was issued on a single sheet some years ago, but when, as an eager student of the subject, I applied to the publishers for a copy, I was told it was issued only for private circulation, and could not be supplied to me. I now hasten at the first opportunity to give my own opinion of this impression, long guarded so carefully from the inspection of the expert critic.

The fateful lines so dear to palmistry are quite nicely shown up, and many of the skin furrows, or *rugae*, on the palm are printed with considerable clearness. That is, the part of the hand not at all used in the official system of identification is well done, but what of those parts on which the system entirely relies? The significant pads at the last joint of each finger, which are full of intricate patterns in every human, or monkey, finger, are not shown at all. They are mere uniform blotches of ink. There is absolutely no trace of a pattern of the simplest kind in any one of the five fingers shown. I wish to be understood as not exaggerating for any controversial effect, and appeal to any trained detective if this is not as I represent. No identification could be effected on such a basis, and the system was therefore clearly *not* discovered in 1858 by the baronet. I cannot perceive that even now the author has any adequate conception of what the system is, now in general and satisfactory operation throughout the civilised world. A most curious confusion has arisen from an original police blunder that no two single finger patterns are ever alike, for which, I think, Sir William himself is mainly responsible. I am quite sure that there is no scientific basis for such an assertion. My syllabic system of classification, applied to a large collection, would enable such an assertion to be severely tested, but I know of no other method in existence which could do so. To compare finger by finger in a large collection is utterly impossible. But by giving a short syllabic name to the pattern of each finger those names can be assorted apart from the hand collection, and those which are similar can be compared individually. I have no doubt in my own mind that such a search would reveal closely similar fingers in different individuals, so closely similar indeed that the slightest blur in printing would lead to the fallacious conclusion of identity. It was on getting a clear perception of this very dangerous fallacy, still manfully held and expounded by one or two police experts, that from 1879-80, when I first made public the method, I insisted on the use of the whole set of ten fingers, serially and consecutively printed, for criminal identification. It affords an example of mutations, but for trivial purposes fewer fingers might do very well. The English method, now practically used everywhere, cannot be greatly improved upon in this respect for identifying old convicts on reconviction.