

the evaluation of those at present available. The unsuspecting may not realise the immense amount of computing required by the numerical methods described, but then they may not suspect either the hundreds of miles to travel and the night and week-end work needed in visiting families, examining patients and relatives and collecting specimens. As a rough guide, for each large family with segregating dominant traits, allow two months' work.

It is to be hoped that new editions of this book will appear not too infrequently. There is a real need for such excellent up-to-date reviews.

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DIE GESCHICHTE DES MENSCHEN. By G. H. R. Koenigswald. Springer, Berlin. 1960. Pp. 148, 88 figures. DM 8.80.

Forty years ago the palaeontologist fitting human remains into an evolutionary series had a task with which he could deal almost alone. Stratigraphical dating was often uncertain; cultural dating was often absent. But since 1864 each find could be given a Latin name representing a species, a discontinuous entity in space and even in time. And with only one exception, *Eoanthropus*, the whole series could be arranged in unquestionable linear orders of progress and descent. To the geneticist the picture revealed by human fossils was not so satisfying. He expected continuity rather than discontinuity of variation. He expected continuity in time and sometimes even in space. He also expected evidence of hybridisation as well as of extinction. To him the simplicity of the record was merely evidence of its imperfection.

To-day the picture has changed in a genetically understandable direction. Some gaps have been filled but only to reveal far more new gaps. Now the author of this little book is Professor of Palaeontology in the University of Utrecht and is well known for his discoveries in Java. For him these results are puzzling: "beinahe jeder neue Fund gibt uns neue Rätsel auf" (p. 110).

To solve these riddles, it is clear, new methods are needed: several disciplines need to co-operate. We want general discussion. The purpose of this book, in a series of "Verständliche Wissenschaft", might have been to propound the riddles as a basis of such discussion. This, however, Professor Koenigswald does not seriously attempt to do. For the general reader his illustrations, photographic and diagrammatic, offer an excellent documentary record of fossil human bones. But his text is a summary for the expert with an emphasis on stratigraphical detail. When he leaves the lower mammals behind, he plunges into a cataract of tricky detail which will take most readers out of their depth. This, it may be said, is no fault of the author. But in such circumstances everything depends on the author's success in discovering and explaining some bases of certainty.

What are these bases of certainty? They stand at the two ends of the argument. At the beginning the basis would be a list of important fossil finds together with a map of their distribution and a suggested chronology. The technical validity of these finds is fundamental but it must not be discussed along with the conclusions to be drawn from them. At the end the other basis would be a statement about variation among living men. To assume the existence only of an average "moderner Mensch" or

“ Neger ” is to waste half the story. Still worse is it to divide brain capacity in cubic centimetres by body weight in grammes and name this their “ relation ” without explaining what has been done (tables 13 and 14).

Professor Koenigswald's book therefore seems to fall short of its immense possibilities. But it will have served a useful purpose if it encourages some new readers to take the human fossil evidence seriously and to recognise how it must be arranged in order to be understood in all its manifold (and largely genetic) bearings.

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### BOOKS RECEIVED

- THE ASCENT OF LIFE. By T. A. Goudge. Allen & Unwin, London. 1961. Pp. 236. 30s.  
 THE BIOLOGICAL BASIS OF HUMAN FREEDOM. By Th. Dobzhansky. Columbia Paperback (Oxford). 1956 Reprint. 1961. Pp. 139. 10s.  
 THE MEANING OF EVOLUTION. By G. G. Simpson. Yale Paperbound (Oxford). 1949 Reprint. 1961. Pp. 364. 11s. 6d.  
 FACTORS IN MENTAL EVOLUTION. By Lord Adrian. Oxford. 1960. Pp. 19. 3s. 6d.