conceptions he summarises not only the main doctrines of the Koran, but also those of the chief sects and heretical schools of Islamic thought. Necessarily the treatment is brief, and must be regarded as introductory rather than as exhaustive. In his survey of secular law and custom, he indicates the manner in which Islam has modified and adapted itself to local custom and tribal law one of the principal, if not the chief, of the sources of the strength of its hold over a diversity of peoples. This adaptability is especially to be noted in the manner in which religious difficulties have been overcome in the introduction of a Western system of popular government in Turkey.

The field covered by the author in his two volumes is extremely wide; but notwithstanding the limitations of space, he has succeeded in giving a lucid account of the essential features in a system of the first importance in the past history and in contemporary politics of the East.

## Le mystère et de paradoxe du vol animal. Par Dr. Émile Batault. Pp. xiv + 236. (Paris : Gauthier-Villars et Cie, 1933.) 50 francs.

PURELY mechanical theories of flight in animals on one hand attribute to the organism an exaggerated muscular power incompatible with the findings of physiology, and on the other hand under-estimate (in the formula  $ksv^2$ ) the resistance due to the air upon which the wings are obtaining purchase. These inaccuracies are eliminated if the stroke of the wing be looked upon, not as a single movement, but as a succession of short impulses in very rapid succession, so that the muscles actuating the wing are working at their physiological optimum.

In insects, more than in birds, the suddenness and rapidity of the wing-beat, running to hundreds a second, is apparent, and this motion, which has its equivalent in the wing-beat of a bird, helps to explain the relatively feeble expenditure of physiological energy in regard to the weight sustained demanded by flight. Because of this peculiar action of the living organism, analogies between animal flight and the mechanical flight of flying machines are misleading. J. R.

The Old Stone Age: a Study of Palæolithic Times. By M. C. Burkitt. Pp. xiv+254+9 plates. (Cambridge: At the University Press, 1933.) 8s. 6d. net.

MR. BURKITT'S "Old Stone Age", a textbook for students, may for the purposes of a wider public be regarded as a progress report. Although it is a study of the period as a whole, and as such is complete within the limitations imposed upon detail by space, its special interest lies in the author's pronouncements upon recent developments in the study of the earliest periods of prehistory. One such, for example, is the discussion on typology and the implications which arise therefrom, more particularly the differentiation of the *coup-de-poing* makers of western Europe and the flake-tool makers of farther east, and the possibility of a racial distinction to which it seems to point. Mr. Burkitt is at one with Dr. Menghin in his view that a reclassification of stone age industries is necessary—although he does not express admiration for that author's terminology —and would restrict the nomenclature and classification of palæolithic industries now in use to western Europe.

Sex Determination. By Prof. F. A. E. Crew. (Methuen's Monographs on Biological Subjects.) Pp. ix+138. (London: Methuen and Co., Ltd., 1933.) 3s. 6d. net.

In this little monograph, Prof. Crew adds both to his own reputation as an exponent of his subject, and to the reputation of the admirable series of which it forms a part. Though his treatment is as clear as is humanly possible, he has been handicapped, like other writers in the series, by the extreme condensation that the size of the mono-To have covered the whole graph demands. subject of sex determination in 111 small pages of text (to which must be added 11 pages of bibliography, 5 pages of glossary, and author and subject indexes) would not have been possible with accuracy, had it been necessary to indulge in simplifying periphrases. As it stands, the book should prove an invaluable source of information and references both to those actually working in the field, and to those having to make occasional incursions into it. A. L. B.

The Mode of Action of Drugs on Cells. By Prof. A. J. Clark. Pp. vii+298. (London: Edward Arnold and Co., 1933.) 18s. net.

In this book, Prof. Clark has expanded three lectures delivered in London in 1932. It probably forms the most complete presentation hitherto available of a quite recently developed aspect of pharmacology. When it is realised that statistical methods and thermodynamical considerations are both involved in Prof. Clark's exposition, and that a knowledge of physiology, pharmacology and biochemistry is taken as a matter of course, it will be obvious that the volume is essentially one for the specialist. Its importance lies in the very fundamental problems raised by the author, and in his own position as one of the most original and penetrating thinkers and experimenters working to-day in his particular field. A. L. B.

Handbook of Mathematical Tables and Formulas. Compiled by Dr. R. S. Burington. Pp. vii+251. (Sandusky, Ohio: Handbook Publishers, Inc., 1933.) 2 dollars.

PART 1 contains a convenient summary of formulæ and theorems from elementary mathematics, including tables of the more useful integrals. Part 2 contains thirty tables, including separate tables of common logarithms to four, five and seven places. The matter is well selected, conveniently arranged, typographically excellent, and the handbook, pleasant to handle, is altogether a very satisfactory work.