

The Application of Moving Axes Methods to the Geometry of Curves and Surfaces

By Dr. G. S. Mahajani. Pp. vii+60. (Poona : Aryabhushan Press, 1937). n.p.

APPARENTLY Routh was the first to turn to account the fact that the curvature and torsion of a space curve represent the components of rotation of the fundamental axes as they move along the curve. It was Darboux, however, who developed fully this application of kinematics.

In the tract under notice, Dr. Mahajani, employing vectors, derives a compact and manageable notation for the equations of relative motion. The Serret-Freult formulæ form a special case ; in the author's notation

$$\frac{d}{ds} (l_1, l_2, l_3) = \begin{vmatrix} l_1, l_2, l_3 \\ -\tau, \theta, \kappa \end{vmatrix},$$

where obviously the symbol on the right is to be read in a special manner. By assigning appropriate motions to the representative point, he succeeds in outlining much of the material discussed by means of these formulæ in the usual introductory course, including some results in the theory of curves on surfaces.

The essay shows that, at any rate within the limits which its author has set himself, the method can be an elegant one. It may well appeal to those who find that their need of the subject is not continuous enough to enable them to memorize completely the calculus of the unit vectors t, n, b . A clearer exposition than Dr. Mahajani's could not be wished for.

Observationes Anatomicae Selectiores :

Amstelodamensium 1667-1673. Edited with an Introduction by F. J. Cole. Pp. xi+45+59+4 plates. (Reading : Prof. F. J. Cole, University, 1938.) n.p.

THIS beautiful little book, of which not more than a hundred copies are to be printed for sale, emanates from the Department of Fine Arts of the University of Reading, and represents a faithful reprint with the preservation of all grammatical, typographical and engraver's errors of two little tracts of the Private College of Amsterdam, copies of which in Great Britain were hitherto only to be found in the British Museum, the University of Glasgow and the Bodleian libraries. In his excellent introduction, Prof. F. J. Cole states that these tracts are the rarest and least known of all the early literature of comparative anatomy. The first tract printed at Amsterdam in 1667 contains notes on the anatomy of the calf, horse, bullock, sheep, swan, duck and dove, and the vivisection of a dog and frog, while the second tract published in 1673 deals mainly with the pancreas of fishes such as the sturgeon, herring, cod, turbot, pike, perch and trout. Of special interest to the biologist are the descriptions of injection of the branchial artery of a calf with mercury, the air sacs of the swan, duck and pigeon, the palatal organ of the carp, the swim bladder and pneumatic duct of the carp, pike and herring, and the ligamentous spiral valve or 'skrew gut' of the sturgeon.

Civilization and Disease

By Dr. C. P. Donnison. Pp. xv+222. (London : Bailliere, Tindall and Cox, 1937.) 10s. 6d.

THE author, whose work is based on his experience as medical officer in charge of a native reserve in Kenya as well as in private practice in England, maintains that in a small but important number of diseases which can be divided into two groups a relationship can be traced between civilization and the disease. The first group comprises four diseases, namely, high blood pressure, diabetes mellitus, exophthalmic goitre and peptic ulcer, while the second group consists of functional disorders usually known as psychoneuroses. High pressure, it is shown, is rare in primitive races and its incidence increases with development in towns and with education, while it is common in the African in America and very prevalent in Europe and the United States. The same holds good with regard to diabetes mellitus, exophthalmic goitre, peptic ulcer and psychoneuroses. In other diseases, according to the author, there seems to be some relationship with civilization, but the evidence is too inadequate to justify any definite conclusions.

Primitive Races of To-day

By J. W. Page. Pp. 348. (London : George G. Harrap and Co., Ltd., 1938.) 8s. 6d. net.

ANTHROPOLOGISTS may cavil at Mr. Page's use of the term 'primitive' as applied to existing peoples of the simpler cultures ; but they will not quarrel with the acumen with which he has chosen his authorities, nor the ability with which he has singled out for mention the significant details in the various modes of life and their relation to environment, in these accounts of typical examples of food-gatherers, hunters, cultivators and nomadic herdsmen. The peoples whom he has elected to describe range in distribution from polar snows to the tropical forests of the equator and the islands of the Pacific. Not all still exist to-day as described here ; and others, as Mr. Page notes, have long been diminishing in numbers, while rapid changes in culture are universal.

Mr. Page's illustrations are well chosen, and his sketch maps, rough as they are, useful.

Applied Mycology and Bacteriology

By L. D. Galloway and Dr. R. Burgess. (Modern Chemical Industries Series.) Pp. ix+186. (London : Leonard Hill, Ltd., 1937.) 10s.

THIS little book fills the need for a simple introduction to the study and control of bacteria and fungi. The treatment given herein is lucid, comprehensive and accurate. The book may be cordially recommended, therefore, to those, such as chemists and others, having interests in the supervision of foods, water, textiles and perishable goods generally, who wish to obtain some understanding of the agents of decay and how to circumvent them. Even the specializing microbiologist can learn of developments outside his own sphere. Production is good, and misprints are all but absent. H. N.