SHORTER NOTICES

Précis d'Analyse Mathématique à l'usage des candidats au certificat de calcul différentiel et intégral. By E. Lainé. Vol. I, viii+231 pp.; Vol. II (in collaboration with G. Bouligand), 315 pp. Paris, Librairie Vuibert, 1927.

Among the large number of the French textbooks with the similar purposes, this is perhaps one of the most interesting. A definite and, in our opinion, a fortunate break with the old tradition is made by introducing the vector notation in the treatment of the fundamentals of differential geometry. The corresponding part (iv) of the book as well as the part (v) devoted to the partial differential equations (and written by G. Bouligand) are the best in the book. The usage of the vector notation makes intuitive and simple many results which otherwise are obtainable but with a great labor. The inductive method is.also used in the treatment of the partial differential equations (the only ones being treated are those of the first order and some of the second order, of the Monge-Ampère type). The reader is compelled here to make his own conclusions on the basis of intuitive geometric discussion.

As to the remaining parts (Introduction: Review of some facts of algebra and analytic geometry; Part i: Functions of a real variable; Part ii: Analytic functions; Part iii: Ordinary differential equations), they reveal the tendency of putting too much material into too limited space (279 pp.). The resulting treatment is often rather brief and formal, and sometimes a little confusing. As for examples we may mention: infinite double integrals (Vol. I, 69–70); line and surface integrals (I, 76–77); extrema of functions of two variables (I, 82–83); differentiation under integral sign (I, 107). There are found some lapses and quite a few misprints. The text is supplemented by a large number of exercises; some of them, interesting as they are, appear rather difficult from the point of view of the means available in the text.

J. D. TAMARKIN

The Early Mathematical Sciences in North and South America. By Florian Cajori. Boston, Richard G. Badger, 1928. 156 pp.

Excluding introductory matter and a six-page index, this book consists of eleven chapters distributed over 139 pages as follows: Mathematics, 18 pp.; Practical Astronomy and Surveying, 37 pp.; Surveys and Maps, 24 pp.; Meridian Measurements of the Earth, 8 pp.; Transit of Venus, 10 pp.; Comets, 5 pp.; Almanacs, 5 pp.; Orreries, 3 pp.; The Earliest Permanent Observatory in America, 8 pp.; Physics, 16 pp.; Societies, Academies and Journals, Conclusion, 5 pp. As may be inferred from these chapter headings, the work appears to be a series of notes or sketches on topics more or less closely related to mathematics, physics and astronomy rather than a systematic study of the development of these sciences