

*The Byzantine Astrolabe at Brescia.* By O. M. Dalton. New York, Oxford University Press (American Branch). 14 pp. + 3 plates. Price 70 cents.

This monograph was communicated to the British Academy on July 7, 1926, and is now reprinted from the Proceedings. The astrolabe described in the paper has an unusual interest because it is of Byzantine workmanship and dates from a period of which, as regards the science of astronomy on the banks of the Bosphorus, we know but little. The instrument is larger than most of those which have come down to us, being nearly fifteen inches in diameter, but the workmanship is crude in comparison with the neat work of European craftsmen of the Middle Ages or with the Arabic pieces. A special interest, however, lies in the fact that the inscriptions are all in Greek, the instrument being, as the author states, "perhaps the sole survival of an astrolabe representing a Greek type apparently unmodified by foreign ideas." On the arachne are some iambic verses which state that the piece,

"being an intricate work, with ardent mind fashioned Sergius the Persian, holding a consul's rank";

and another inscription reads

"Decree and command of Sergius, protospatharios, consul, and man of science [?], in the month of July, fifteenth indiction, year 6570,"

being the year 1062 of our era.

The author prefaces his monograph with a brief statement as to the general nature of an astrolabe and then gives description of the one which is the subject of his researches. The instrument is now in the Museo dell'Età Cristiana at Brescia, having been presented in 1844. The essay is a genuine contribution to our knowledge not only of the history of the astrolabe but of the state of science in the eleventh century.

DAVID EUGENE SMITH

*Les Groupes Abéliens Finis et les Modules de Points Entiers.* By Albert Chatelet. Paris and Lille, 1925. 221 pp.

As the author states in the introductory chapter, this book was the outgrowth of a much more limited treatment of abelian groups that he had originally planned as the first part of a treatise on abelian algebraic fields. While much more narrow in scope than the existing texts on groups, which treat those of the commutative sort more or less incidentally, it nevertheless embraces considerable material that is not found in such texts and, while following in large part the developments of the subject as given in papers by various authors, appears nevertheless to have considerable novelty in its treatment.

When the elements of an abelian group are represented in all possible ways as products of powers of a suitably chosen set, the set of exponents of such powers may be regarded as the coordinates of points in a certain number of dimensions. The set of points that thus correspond to the identical element of the abelian group form a "module" of a particular type in the same space, i.e., the "sum" or "difference" of any two points