and Paciuolo (pages 127, 259). The form "Mohammed ben Musa Al Hovarezmi" is probably the least satisfactory of any for the name of the great Arab mathematician, particularly as it is followed by the statement that he was a native of Chwarizm, and as the form "Alhowarizmi" appears on page 207. It is unfortunate that we have as yet no generally accepted norm for such transliterations, but there is no good authority for such a mixture of languages as this. A similar criticism might justly be passed upon most of the other oriental names in the work, particularly Al Fahri (page 194), Al Karhi and Alkarhi (pages 194, 195), and Alhayyami (page 199).

DAVID EUGENE SMITH.

Leçons de Géométrie Supérieure. Professées en 1905–1906 par M. E. VESSIOT. Lyon, Delaroche et Schneider, 1906. 4to., 326 pp. (autographed).

THESE lectures delivered by Vessiot during the year 1905–1906 were published in the present form at the demand of his students. The author remarks in the preface that he is hopeful that they may be of service to those who are beginning the study of higher geometry and may serve them as a good preparation for the reading of original memoirs and such works as Darboux's Théorie des surfaces. It is the opinion of the reviewer that the lectures serve these purposes admirably. The attack is direct and the end to be reached is kept clearly before the reader, in fact the whole presentation is such as to lead the beginner to an appreciation of the subject. A glance at the table of contents will convince one that the book will serve as a good introduction to the study of Darboux.

The principal object of the lessons is the study of systems of straight lines but owing to the close relation between lines and spheres it is quite natural that systems of spheres should be studied also. It is assumed at the outset that the student is familiar with the elementary notions of twisted curves and surfaces (tangent planes, tangent lines, etc.), and that he has some acquaintance with the elements of the theory of contact.

In Chapter I, Frenet's formulas for twisted curves are derived and the simple properties of developable surfaces obtained. The rectifying and polar surfaces are discussed as examples of developables. Chapters II, III, and IV are devoted to the general surface theory. Throughout these chapters the importance of the two differential forms of Gauss