

attempt to distinguish between the two and repeatedly uses complex as the opposite of real. In a book on complex geometry this is especially to be regretted.

The book is marred by many, very many, typographical errors. Those in the text itself are not seriously disturbing; in fact, some of them, as, for example, "any value linearly descendent on two given values" on p. 108, and "two intersectional minimal lines" on p. 190, are decidedly the opposite. But those in the formulas, though they may be only irritating to the mature reader, are likely to prove a stumbling block for the budding mathematician.

Aside from these matters, the book is full of solid, stimulating mathematics. Moreover, it is particularly welcome in that it brings up to date a field of geometry which is comparatively new and by no means exhausted. May it prove the inspiration and basis of departure for fresh endeavors.

W. C. GRAUSTEIN

## GAUSS AND NON-EUCLIDEAN GEOMETRY

A question of historical accuracy is raised by Professor Emch in his review of my *Projective Geometry*\* where he says:

"It is proper to point out an error which is common in histories of mathematics and which is contained in the following statement on page 420: 'Little progress was made until about a hundred years-later when Gauss (1777-1855), his friends and pupils became deeply interested in the subject.' (1) Now the fact is that Gauss's deeper interest in the subject was subsequently aroused by the brilliant discoveries of Lobatchevsky and Bolyai. (2) As a matter of fact, Gauss, in the beginning, hoped to be able to prove what is known as the euclidean parallel axiom and (3) assumed a rather skeptical attitude towards the new discoveries. (4) Subsequent deeper meditations, however, led Gauss to his own establishment or verification and acceptance of the new theory."†

An examination of the sources on which my statement is based will, I believe, substantiate the sentence quoted as well as the context from which it is taken. Among these sources are the letters of the

\* This BULLETIN, vol. 30 (1924), p. 81.

† The numbering is mine.