Danwakai, 240 (1942). P. 114, line 13: read "J. Reine Angew. Math., 196" for "Math. Zeitschrift."

To summarize: in the reviewer's opinion, this is an important and well-written book which should help to stimulate research on the classical groups. The book not only gives a thorough exposition of the present state of the subject, but is also an excellent introduction to the modern techniques basic to further work in this field.

IRVING REINER

Relativity: The special theory. By J. L. Synge. New York, Interscience, 1956. 7+415+20 pp. $10.50.

In the preface of this book Synge states, "The basic idea of this book is to present the essentials of relativity from the Minkowskian point of view, that is, in terms of the geometry of space-time." This reviewer agrees that an exposition of the special theory of relativity based on such an idea is sorely needed and the author's "Ambition . . . to make space-time a real workshop for physicists, and not a museum visited occasionally with a feeling of awe" is laudable.

On the whole this is a well-written discussion of the following topics in special relativity: Kinematics, mechanics of single particles and systems of particles, mechanics of a continuum and electromagnetic theory. These topics are covered with varying degrees of thoroughness, completeness and quality of exposition.

The first chapter discusses the relationship between the metric of space-time and physical measurements, the latter being described in terms of ideal experiments. The author's intention is to lay a foundation strong enough to support both the special and general theories. This intention is fulfilled in a lively thought-provoking way.

The next four chapters are devoted to the geometry of flat space-time (Minkowski space), the group of this space (the Lorentz group), and the explanation of the classical experiments which were first satisfactorily accounted for by the Einstein special theory of relativity. The discussion of these topics is clarified greatly by using space-time diagrams in an effective manner.

Chapter IV which deals with the proper homogeneous Lorentz transformations which do not interchange the past and the future contains as one of its main theorems the incorrect statement: "Any finite Lorentz transformation (of the restricted class defined (above)) is equivalent to a 4-screw." A 4-screw is defined as "a rotation in a time-like 2-flat π, followed (or preceded by . . .) a rotation in a space-like 2-flat π^*, the 2-flats π and π^* being orthogonal to one another." The matrix representing a 4-screw may be taken to be