

matics (e.g., set theory, geometry, Boolean algebra, measure theory), his principal contributions are along the lines of logic. The present volume contains his early logical work. (It does *not*, for instance, contain the Banach-Tarski paradox.) The seventeen papers that appear here in English translation, occasionally with slight changes, corrections, and additions, were first published in German, or French, or Polish. Since some of them were published in more than one part, or in more than one version, a complete list of the original sources would contain not seventeen but something more like thirty titles.

The longest paper is the famous *Wahrheitsbegriff*; it covers 127 pages. Since the first version of this work is in Polish, and the second (in German) appeared in a journal not readily available to mathematicians (*Studia Philosophica*), the reviewer, for one, would have rushed out to buy the book even if it contained nothing else. It does, however, contain a lot more. Here are a couple of tempting samples: the 1930 paper on the sentential calculus (with Łukasiewicz), and the 1933 paper on  $\omega$ -consistency and  $\omega$ -completeness.

The translation seems smooth. A noteworthy feature is the fact that, frequently, the notation was "translated" as well as the text; the letters (or digrams) used in this volume remind the reader, quite properly of course, of the English words "truth," "consequence," etc., rather than, say, the corresponding German words. The usability of the volume is further enhanced by a unified bibliography, a subject index, an index of names, and an index of symbols.

According to a letter from Tarski to the reviewer, Tarski's post-1938 papers on the subject of this volume are all in English. Armed with this volume, therefore, and with the reviews in the *Journal of Symbolic Logic*, the English-speaking mathematical logician can be confident of having Tarski's complete logical output easily accessible to him—a circumstance for which many logicians should and will be grateful to the translator and publisher.

PAUL R. HALMOS

*La théorie des fonctions de Bessel, exposée en vue de ses applications à la physique mathématique.* By Gérard Petiau. Centre National de la Recherche Scientifique, Paris, 1955. 477 pp. 2500 francs.

This book is the first comprehensive treatise on Bessel functions since Watson's standard work on this subject. A comparison between the two is somewhat out of place since their purposes are different. The book under review, as its subtitle and its application part (more than 100 pages) indicate, is aimed to appeal mainly to the applied mathematician and physicist. Consequently those results and prop-