Łukasiewicz, Jan
Selected works. Edited by L. Borkowski. (English) Zbl 0212.00902
Studies in Logic and the Foundations of Mathematics. Amsterdam etc.: North-Holland Publishing Company; Warszawa: PWN - Polish Scientific Publishers. xii, 405 p. (1970).

This book differs considerably from the Polish publication of J. Łukasiewicz's selected papers [z zagadnien logiki i filozofii. Pisma wybrane (Warsaw, 1961)]. Several articles (mainly of historical interest) are omitted and 10 new articles on mathematical logic are included.

The first period of Łukasiewicz's activity is represented by "Creative element in science" (1912), "The logical foundations of probability theory" (1913), "On the concept of magnitude" (1916; JFM 47.0898.04) and the "Farewell lecture" (1918) that makes earliest reference to three-valued logic.

Papers on mathematical logic published between the two world wars and included into the present publication are: "On the three-valued logic" (1920), "Two-valued logic" (1921; JFM 48.1125.05), "A numerical interpretation of the theory of propositions" (1922/3), "Investigations into sentential calculus" (1930; JFM 57.1319.01), "Comments on Nicod's axiom and on 'generalizing deduction' " and "The equivalential calculus" (1939; Zbl 0022.28901; JFM 65.0022.01).

Some philosophical articles of the same period are also included: "On determinism", "Philosophical remarks on many-valued systems of propositional logic" (1930; JFM 57.1319.02), "Logistic and philosophy" (1936), "In defence of logistic" (1937), "Logic and, the problem of the foundations of mathematics" (1941; Zbl 0061.00804); it includes the following credo: The propositional calculus is the fundamental logical discipline. Other logical disciplines in particular functional calculus, are based on the propositional calculus, and the whole of mathematics is in turn based on logic. Thus the propositional calculus forms the deepest foundation of all deductive sciences.)

The paper "On the history of the logic of propositions" (1935; Zbl 0011.24204; JFM 61.0004.03) is concerned with the history of logic. After World War II Łukasiewicz published 12 works, all of them on logic, seven of which have been included in the publication under review: "The shortest axiom of the implicational calculus of propositions" (1948; Zbl 0029.09801), "On the system of axioms of the implicational propositional calculus" (1951; Zbl 0045.14811), "On variable functors of propositional arguments" (1951), "On the intuitionistic theory of deduction" (1952), "Formalization of mathematical theories" (1953), "A system of modal logic" (1953), "Arithmetic and modal logic" (1954).

The book does not include any of Łukasiewicz's works on Aristotle's syllogistic. This is due to the fact that his monograph "Aristotle's syllogistic from the standpoint of modern formal logic." Oxford: Clarendon Press (1951; Zbl 0043.24601) is easily accessible to English-speaking readers.

Reviewer: G. E. Mints (Leningrad)

For a scan of this review see the web version.

MSC:

03-03 History of mathematical logic and foundations
01A75 Collected or selected works; reprintings or translations of classics
00B60 Collections of reprinted articles

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