# Book Review

Malinowski, Grzegorz. *Many-Valued Logics*. Oxford University Press, Oxford, 1993.
131 pages.

The latest addition to the *Oxford Logic Guides* is a short but informative monograph
on many-valued logics. The author naturally gives pride of place to the achievements
of the Polish school, but many other authors and topics are touched upon. After a
short survey of classical logic, Malinowski begins with the work of Łukasiewicz and
the Lvov-Warsaw school, focusing mostly on issues of philosophy and interpretation.
Next there are two chapters on the topic of logical algebras and matrices followed by
chapters on Łukasiewicz logics (both finite- and infinite-valued), on the logics of Post,
and on the systems of three-valued logic introduced by Kleene and Bochvar. The
remaining chapters cover an assortment of topics, including probability and many-
valuedness, quantifiers in many-valued logic, fuzzy logic, and applications of many-
valued systems. There is also a somewhat incongruous chapter on intuitionism and
the modal logics of Lewis; this is included because the corresponding sentential log-
ics can be characterized by infinite-valued matrices, but the topic seems somewhat
distant from the main stream of research in many-valued systems.

    The author provides an efficient survey of the large and rather diffuse literature
on many-valued logics. The major results and techniques are covered, though proofs
of theorems are mostly omitted. In places where some details are provided (such as
the completeness theorems of Rosser and Turquette), the proof given is a sketch rather
than a complete account. The book, though, gives a very good overview for those
wishing to orient themselves in the field, and provides a substantial list of references
for anyone wishing to follow up particular topics. It is the best introductory mono-
graph in the field, and can be confidently recommended to students.

    Many-valued logic has had a rather checkered career, eliciting remarkably var-
ied opinions as to its significance and value. On the one hand, Jordan, in his booklet of
1945, *The Development of Mathematical Logic and of Logical Positivism in Poland
between the Two Wars*, described Łukasiewicz's discovery of many-valued systems
as "a discovery of the first order, eclipsing everything done in the field of logical re-
search in Poland." This remark is the more surprising if we remember that the results
eclipsed include the fundamental work of Tarski, Lindenbaum and others.