методологическим проблемам математики и ее истории), Вопросы истории естествознания и техник, № 1, С. 162-167.

—. 1987a. Методологические проблемы становления Нового времени. Аналитическии обзор, в кн.: Л.А. Микешина (ред.), Социокультурные факторы развития науки (М.: ИНИОН), С. 92-113.

—. 1987b. *Regularities and modern tendencies of the development of mathematics*, Philosophia Mathematica (2) **2**, 32-47.

GRATTAN-GUINNESS, I. 1990. *Does history of science treat of the history of science? The case of mathematics*, History of Science **28**, 149–173.

—. 1993. *A residual category: some reflections on the history of mathematics and its status*, The Mathematical Intelligencer **15** (no. 4), 4–6.

HILBERT, D. 1976. *Mathematical problems. Lecture delivered before the International Congress of Mathematicians at Paris in 1900* (M.W. Newson, translator), F.E. Browder (ed.), *Mathematical developments arising from Hilbert's problems*, PSPM **28** (Providence, American Mathematical Society, 3rd printing, 1979), Part 1, 1–34.

SCHLESINGER, A., Jr. 1969. *The problem of hope: Contemporary history*, in R.W. Winks (editor), *The historian as detective: Essays on evidence* (New York, Harper & Row), 523–536

SPALT, D.D. 1994. *Quo vadis — History of mathematics?*, The Mathematical Intelligencer **16** (no. 3), 3–5.

****

Morris R. Cohen & Ernest Nagel, *An introduction to logic*, second edition, with an "Editor's Preface" and "Editor's Introduction" by John Corcoran, Indianapolis, Hackett Publishing Co., Inc. 1993.

Reviewed by

IRVING H. ANELLIS

Modern Logic Publishing
2408 1/2 Lincoln Way (Upper Level)
Ames, IA 50014-7217, USA

and

Des Moines Area Community College (Boone Campus)

The textbook *An Introduction to Logic and Scientific Method* by Morris Raphael Cohen (1880 – 1947) and Ernest Nagel (1901 – 1985) was first published by Harcourt, Brace and Company in 1934. In 1962 a new edition by Harcourt, Brace appeared under the title *An Introduction to Logic* containing only Book I, on "Formal Logic," of the original edition, including the original introduction, and the original "Preface" minus the last paragraph, with Book II, on "Applied Logic and Scientific Method" deleted. In October 1993, a new edition of *An Introduction to Logic* was published, with an "Editor's Preface" and "Editor's Introduction" by John Corcoran.

To gain an insight into the type of course for which this textbook was written, let us listen to Paul R. Halmos, who took a typical undergraduate philosophy department logic course at the University of Illinois in the early 1930s. Halmos described the course (p. 31 of his *I Want to Be a Mathematician: An Automathography* (New York/ Berlin/ Heidelberg/Tokyo, Springer-Verlag, 1985), by saying: "Logic was not mathematics — not in those days, not at Illinois — it was the pedantic, taxonomic, scholastically superficial study of syllogistics boiled down to the intellectual level of college sophomores." *An Introduction to Logic and Scientific Method* was the textbook that was used in the undergraduate philosophy department logic course taught by Oskar Kubitz at the University of Illinois a few years later, in the late 1930s.*

The primary justification for issuing a new edition of this classic textbook, apart from Corcoran's belief that it is "the best book for the kind of introductory logic course that I give" (p. viii), is the impact which it has had on generations of students (p. x) and because "it has been referenced so much in the literature of logic...over the fifty-odd years since its first publication" (p. x), that is, because of its significance from the standpoint, we might say, of the history of logic education.

Corcoran uses his "Editor's Preface" (pp. vii–xi) to talk briefly about the history of this textbook, of his affection for it, to give short biographical sketches of the authors, in particular insofar as it relates to the writing of their book, and finally, to explain and enumerate the alterations which he himself made in the text. The alterations are not, however, numerous or significant. Corcoran declares (p. ix) that there are only "a few aspects of [the *Introduction to Logic*] which warrant criticism." Those that occur correct or add 'orthographical, bibliographical, typographical, grammatical, punctuational, compu-

*I still have in my possession the copy of *An Introduction to Logic and Scientific Method* that my father used at the University of Illinois when he took the philosophy department's sophomore logic course taught there by Oskar Kubitz. I wish now that I had also kept the mimeographed page of exam or homework exercises that were tucked away in that old copy when my father gave me the book, especially since Halmos wrote (at p. 31 of *I Want to Be a Mathematician*) that "the only member of the philosophy department who had any interest in logic was Oskar Kubitz (an assistant professor at the time). He taught me formal logic, and, much more important, he told me about Russell and Whitehead's *Principia Mathematica*."

tational, and "generational" points' that in his estimation would detract from current usefulness of the book as an introductory text. These corrections are made silently.

An example of such an alteration occurs at p. 126, in §6, on "The Calculus of Propositions." In the table serving as a "dictionary" for translating the theorems of the class calculus into theorems of propositional calculus, we have, in the original Cohen & Nagel:

0, the class having no members	The proposition which is false
1, the class containing all classes	The proposition which is true

In Corcoran's correction, this is replaced by

0, the class having no members	f The truth-value false
1, the class containing all individuals	t The truth-value true

The alteration in the dictionary script for the propositional calculus brings the translation in line with Cohen and Nagel's own original explanation (on p. 227) that "just as in the calculus of classes where all classes are interpreted in extension, so in the calculus of propositions all propositions are considered only with respect to their *truth-values* and not for the *specific meaning* of what they assert. The reader must be clear about this if he does not want to commit bad blunders." Similarly Corcoran's replacement of "1, the class containing all classes" for "1, the class of all individuals" brings the script in line with Cohen and Nagel's own original statement (p. 122) that "the domain of all individuals is called the *universe of discourse*, or simply the *universe*. It will be symbolized by 1."

In order to preserve the character and substance of the original edition and convey both the sense the original presentation and of the author's pedagogical, heuristic, and philosophical views of logic, Corcoran reserves his discussion of his disagreements with the views and presentations of the original authors for his "Editor's Introduction" (pp. xvii–xlvi).

In relating the history of the book, Corcoran is not as precise as he might be. He says of *An Introduction to Logic and Scientific Method* that "the 1934 book went through several printings, staying in print more than twenty-five years" (p. viii). I don't know what Corcoran means by "several", but I know that by 1936 *An Introduction to Logic and Scientific Method* was in its third printing. This particular imprecision is partly corrected by Cohen and Nagel themselves, who stated on p. vi (in an addendum, dated January 7, 1936, to their original preface) that "the continued demand for this book, which has exhausted three printings...;" their statement is preserved on p. xvi of Corcoran's edition. These imprecisions notwithstanding, Corcoran's sketch of the history of this textbook is

not only informative, but suggests that a history of logic courses and logic textbooks would make a worthwhile, informative, and interesting study.

****

Erik Heijerman & H. Walter Schmitz (editors), *Significs, Mathematics and Semiotics. The Signific Movement in the Netherlands. Proceedings of the International Conference Bonn 19–21 November 1986*, Nodus Publikationen: Münster 1991 (= *Materialien zur Geschichte der Sprachwissenschaft und der Semiotik* 5); 208 pp., ISBN 3-89323-305-9.

Reviewed by

VOLKER PECKHAUS

Institut für Philosophie der Universität Erlangen-Nürnberg
Bismarckstr. 1, D–91054 Erlangen, Germany
e-mail: peckha@phil.uni-erlangen.de

In 1986 philosophers, mathematicians, linguists, and communication specialists met in Bonn to take part in the conference "Significs, Mathematics and Semiotic — the Signific Movement in the Netherlands" held at the Institut für Kommunikationsforschung und Phonetik. The conference had been organized by Erik Heijerman, Jacques van Niewstadt and Hans W. Schmitz, host at the institute, and author of a full scale study on the signific movement, published in [*1990*].

The volume under review gives the proceedings of that conference containing, as Schmitz writes in his introduction, "some results of a renewed historical and systematic interest in the signific movement in the Netherlands," which sunk into oblivion after its disintegration at the end of the fifties, at least outside of the Netherlands. Schmitz, however, emphasizes that before that time "significs was an important pendant to the Unity of Science movement and to Morris' theory of signs, the significians also being active in the fields of epistemology, semantic analysis and the theory of signs" (7). The volume is of some interest for the readers of this journal because several authors cover the relation between language and mathematics, thus contributing especially to the philosophical foundations of intuitionism.

Besides Schmitz's excellent introduction (7–18), the volume comprises twelve papers, ordered in four sections. The first section bears the rather irritating title, "Significs as a Starting Point of Research." Its four papers deal with the philosophy of mathematics: