

"This, without either proof or figure, is a hopeless muddle. . . . Goodness knows what the use of it was supposed to be in this form!" (Page 61.)

"Neither Gerhardt nor Weissenborn tried to get to the bottom of these manuscripts, being content with simply 'skimming the cream.'" (Page 74.)

"Thus what is generally considered to be a muddle turns out to be quite correct. The muddle is not with Leibniz, it is with the transcriber." (Page 81.)

"This is of course nonsense." (Page 97.)

"I cannot get out of my head the suggestion that" (Page 110.)

"Is Leibniz trying to draw a red herring across the trail, the real trail that leads to Barrow's a and e ?" (Page 128.)

Unfortunately, there are a large number of similar instances that will strike the reader's attention as he studies the pages of the book.

It is a rather low type of criticism that looks only for the misprints and inconsequential slips of the pen in the work of an author. When Mr. Childs remarks that "there is of course the usual misprint (in Gerhardt's work) that one is becoming accustomed to," he tempts the reader, however, to recall various instances of a similar kind in the work under review. Without wishing to call attention to these misprints in detail, the point may be illustrated by the cases of 15 for 16 (page 31), the period for a comma on page 74 (line 5), the absence of an interrogation point after the question in the note on page 101, and the date 1874 for 1674 as that of the second edition of Barrow (page 13).

That the book is a valuable contribution to the history of mathematics, however, is evident to anyone who gives its pages even a casual reading.

DAVID EUGENE SMITH.

An Enquiry Concerning the Principles of Natural Knowledge.

By A. N. WHITEHEAD. Cambridge University Press, 1919.
xii + 200 pp.

THE aim of this work is to illustrate the principles of natural knowledge by an examination of the data and the experiential laws fundamental for physical science. The modern theory of relativity has opened the possibility of a new answer to the question as to how space is rooted in experience and has

brought to light a new world of thought as to the relations of space and time to the ultimate data of perceptual knowledge. "The present work is largely concerned with providing a physical basis for the more modern views which have thus emerged. The whole investigation is based on the principle that the scientific concepts of space and time are the first outcome of the simplest generalizations from experience, and that they are not to be looked for at the tail end of a welter of differential equations."

Three main streams of thought—the scientific, the mathematical, and the philosophical—are relevant to the theme of the enquiry. About half the book is given to parts I and II on the traditions of science and the data of science respectively. In part III on the method of extensive abstraction we have a philosophical and postulational treatment of the space-time manifold; and this is employed in part IV to yield a theory of objects. The fundamental assumption elaborated "is that the ultimate facts of nature, in terms of which all physical and biological explanation must be expressed, are events connected by their spatio-temporal relations, and that these relations are in the main reducible to the property of events that they contain (or extend over) other events which are parts of them."

R. D. CARMICHAEL.

Differential Equations. By H. BATEMAN. Longmans, Green and Company, London and New York, 1918. xii + 306 pp.

"THE subject of Differential Equations has grown so rapidly in recent years that it is difficult to do justice to all branches of the subject in a single volume." So reads the opening sentence of the preface to the book under review. The statement is literally true; but it is nevertheless of such form that its connotation may be misleading to the learner. One who is not acquainted with the subject of differential equations may justly conclude from this sentence that it is possible, though indeed difficult, to do justice to all branches of the subject in a single volume. And yet it is probable that no one who knows the field would be willing to maintain such a judgment. It is in fact true that it would be difficult to do justice to all branches of the subject in ten volumes of the size of the one under consideration.

In the second sentence of his preface the author indicates