

Such, as it now appears, is some small part of the work of education that lies immediately before us. It is a work that may well call for the most serious consideration of this greatly influential society, which aims to make its philosophy a guide into the larger life. The plea which has been offered amounts in sum to this: That by all means you will give encouragement and stimulus to our already awakened spirit of educational invention; for it takes no second sight to perceive that the times call for the exercise of that spirit in the highest things to which it may aspire.

ELMER ELLSWORTH BROWN

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#### SCIENTIFIC BOOKS

*Electrochemistry.* By Dr. HEINRICH DANNEEL; translated by Dr. EDMUND S. MERRIAM. Part one. New York: John Wiley & Sons.

This is the first of a series of three volumes which Dr. Danneel proposes to write upon the subject of "Electrochemistry." In this volume the modern theories of electrochemistry, as well as their physicochemical foundations, are discussed. The second volume will contain experimental results and methods of measurement, while the third will be devoted to the technical applications of the subject.

Theoretical electrochemistry is beyond the stage at which any radical innovation in the method of treatment is possible. The author does, however, depart from the more usual procedure in discussing transport numbers after conductivity; and wisely too, we believe. We are not, however, convinced of the advantage of introducing a preliminary chapter on the history of electrochemistry in which much of the subject matter to follow is assumed to be known.

This volume, like its companion volumes in the Sammlung Göschel, contains a surprising amount of fact and information within a very small compass. Whether such condensation is always desirable in a theoretical subject, where abridgment of statement does not

necessarily mean a lessening of mental effort, may be questioned. I am reminded of the Abbé Terrassou's remark about a book "that it would be shorter if it were not so short." We are convinced, however, that this very brevity coupled with its clarity will assure it a place of its own among text-books of electrochemistry. We imagine, for instance, that it would be an excellent book to furnish a mature student with a brief, though comprehensive view of the whole subject.

The translation is vigorous and clear. We were sorry to see the familiar expression "migration of the ions" supplanted by the less apt "wandering of the ions."

The physical appearance of the book is better than that of the German original.

ARTHUR B. LAMB

*Researches in Experimental Phonetics; the Study of Speech Curves.* By E. W. SCRIPTURE. Washington, D. C., published by the Carnegie Institution of Washington, November, 1906. Pp. 204.

Under this title is published the groundwork of the results of Dr. Scripture's recent work abroad, in the laboratories organized at Munich, Berlin and Zurich. Save for illustrative examples from the records, the present volume deals almost exclusively with methods; nearly all of the last fifty pages are taken up with tables, some of which appear for the first time, and should prove most helpful to other investigators along these lines. A discussion of the precise philological and psychological bearings of the results we may await in another volume.

The speech curves studied are obtained from amplified tracings on smoked paper of phonograph (cylinder) and gramophone (disc) records. Dr. Scripture has here employed mainly the disc records, the horizontal movement of the recording point giving a more accurate tracing. The workable portion of the records is practically confined to the vowels. The voiceless sounds as a rule give nothing beyond a straight line. The investigator seems to have brought his method to a high degree of technical perfection. The drawings illustrating the apparatus are unusually clear.