

men of no great education; that the learned receive these discoveries at first with shrugs of the shoulders, and prove that there is nothing in them; but after the discoverer has persevered, and even come to success through a kind of contempt for science, then the learned demonstrate the possibility of success.

“And it is often partially true; bold undertakings are frequently due to those who are free from dizziness, and to prevent dizziness one must not see too clearly. Of these adventurers only the successful are counted, not those who break their necks.

“Not the less true is it that modern industrial development, considered as a whole, would have been impossible but for the advance of science. The unlearned live daily in an environment created by science, and unconsciously receive the benefit. It is science that gives a form to their dreams, which in other centuries would have been very different. Many bring to their applications ideas of scientific origin, but which their discoverer looked upon as only the mind’s play, and impractical, because he foresaw a thousand difficulties. Every inventor has had predecessors whose great merit was the fact that they did not halt at difficulties, which they did not perceive simultaneously, but conquered one at a time.”

There are thirty-seven pages of notes by H. Weber. These consist of explanatory remarks, historical notes on the original text, and some philosophical considerations. They will be particularly useful to the general reader. The last note closes with a quotation ascribed to Novalis:

“The life of the Gods is mathematics. All divine messengers must be mathematicians. Pure mathematics is religion. Mathematicians are the only fortunate ones. The mathematician is naturally an enthusiast. Without enthusiasm no mathematics.”

JAMES BYRNIE SHAW.

Spezielle Flächen und Theorie der Strahlensysteme. Von Rektor Dr. V. KOMMERELL und Prof. Dr. K. KOMMERELL. Sammlung Schubert LXII. Leipzig, Göschen, 1911. vi+171 pages.

DURING the preparation of the second edition of the authors' *Allgemeine Theorie der Raumkurven und Flächen*,* it was

* Sammlung Schubert, XXIX and XLIV. First edition 1903; second edition 1910-11.