its foundations, and the contemporary trend of its development.

The ignorance of the history of any science could easily be remedied. Each head of a scientific department should arrange for a historical course in his subject. The interest aroused by such an adequately prepared and well delivered and illustrated historical course would more than repay the time spent on it.

The acquisition of a competent view of any subject is more difficult, and especially in mathematics, as is illustrated by Dr. Shaw's lectures. No student of mathematics can be expected to be familiar with all or even with the majority of the branches of mathematics mentioned by Dr. Shaw. The pass man would probably lay the book down after reading the first chapter—if he gets thus far. The honours student would perhaps go further, particularly if his speciality is pure mathematics and his reading has been ably directed by a teacher familiar with modern mathematical tendencies. Yet Dr. Shaw has dealt with his theme in a particularly persuasive and very elementary manner.

The author considers the "speculative thinker" who desires "to know the content of mathematics," "to hunt for the central principle that controls its evergreen growth," to explore "the source of mathematical reality," and to discover the "methods pursued in the field of investigation" and the "right of this Queen of all the sciences to rule." These problems are dealt with in a brief and clear exposition, which must be read in order to be appreciated. It would be idle to attempt a summary, as this would not convey much to the uninitiated for whom the lectures were written. Suffice it to say that in Dr. Shaw's opinion there is no *single* principle of mathematics, no *single* source of reality, no *single* mathematical method.

These lectures should be read and re-read by all who desire to fathom the depths of the reality of mathematics. They will be inspired to a view of the subject different from the drab and utilitarian view so often prevalent in our colleges. They will learn at least to give his due share of recognition to the mathematician who "sits with abstracted mien, his mental eye turned inward upon some intricate construction of symbols and formulæ," and to respect, perhaps even to share, his joy when he catches the flash of triumph.

S. BRODETSKY.

OUR BOOKSHELF.

The Journal of the Institute of Metals. Vol. xxi. Edited by G. Shaw Scott. Pp. xi+508+40 plates. (London: The Institute of Metals, 1919.) 31*s.* 6*d.* net.

OF the new volume of this important journal, no fewer than 216 pages are occupied by the fourth report to the Corrosion Committee by Drs. Bengough and Hudson and the subsequent discussion. The new report embodies the results of a very large amount of experimental work, and is distinctly helpful in regard to the immediate problem of extending the life of brass condenser tubes. A large array of new facts bearing on the baffling question of the mechanism of corrosion is also included, and illustrated by numerous plates. The authors favour the view that direct oxidation takes place without preceding electrolytic action. As Prof. Armstrong points out in the discussion, the theory of corrosion is in a disappointingly backward state, and no satisfactory explanation has yet been given of some of the most familiar facts. The report is a valuable one, and fully justifies the continuance of the work of the committee.

Messrs. Hanson and Archbutt contribute a most useful account of their methods of polishing and etching aluminium and its light alloys, and of identifying the constituents, a task which has presented difficulties to most metallographers. Another paper from the same laboratory, by Dr. Rosenhain and Mr. Hanson, records the properties of some copper alloys which were devised for war purposes, and incidentally describes a convenient method of obtaining clean castings by working under pressure. A note by Lt.-Col. Jenkin on the metallurgical information required by engineers is followed by a lively discussion, the conclusion being reached that the determination of true physical constants is likely to supersede many of the present empirical tests. There are two papers on the effect of cold work on metals, and an interesting discussion on the relation of science to the industry of the non-ferrous metals, in which the respective views of scientific workers and manufacturers are well and clearly expressed. The volume concludes with the usual abstracts of metallurgical literature.

C. H. D.

Golden Days from the Fishing-Log of a Painter in Brittany. By Romilly Fedden. Pp. xviii+233. (London: A. and C. Black, Ltd., 1919.) Price 7*s.* 6*d.* net.

HERE is a book full of quiet charm and humour, written by one who is evidently not only an artist and a sportsman, but also a true lover and observer of Nature and her ways. The angler will be fascinated by the vivid descriptions of trout- and salmon-fishing in Brittany. There are no improbable fisherman's yarns to invite his scepticism, but their place is taken by some delightful stories of saints and miracles drawn from the Breton folk-lore, so that the book appeals quite as much to the general reader as to the piscatorial fraternity. It is a pleasant narrative, well suited to while away a winter evening at the fireside and to conjure up visions of sunlit meadows, fragrant pinewoods, and murmuring streams, though tinged, alas! by that vein of sadness which must colour the day-dreams of all of us at the present time, and especially of those who, like the author, have witnessed at close quarters the tragedy of the last few years.