

righteous, and incapable of appreciating branches of study outside his own; in short, he suffers from many of the very defects he rebukes in others. The remedy that Dr. Sarton would apply is again the study of history—not necessarily the history of science alone, though a modicum of the latter is essential. He would like to see a solid literary and artistic basis and an insistence on the historical point of view in all scientific education, while the more literary-minded students would receive frequent explanations of scientific methods by men familiar with the history of science.

The main theme of the book is, indeed, a plea for a true cultural synthesis as the best help for the present and the most hopeful prospect for the future. The unity of mankind, as it emerges from a study of the development of civilisation in all its aspects, is the lesson the teacher should strive to impart; and though there must be specialists, there should be no specialist unaware of the unity of knowledge and unappreciative of the work of others.

Dr. Sarton is concerned with more than generalities and vague indications of the path to be followed. He supports his thesis with detailed suggestions for educational schemes, and since these are both practicable and most carefully thought out, they demand the serious consideration of everyone who has the intellectual welfare of the race at heart. To humanise knowledge and to integrate it must be the earnest desire of every reflective man; and Dr. Sarton has shown us how that desire might be accomplished.

E. J. HOLMYARD.

Short Reviews

Catalogue of Latin and Vernacular Alchemical Manuscripts in Great Britain and Ireland dating from before the XVI Century. By Dorothea Waley Singer, assisted by Annie Anderson and by Robina Addis. Vol. 3. Pp. iii + 757-1179. (Brussels: Union Académique Internationale, 1931.) 15 Belgas.

THE third volume of Mrs. Singer's monumental catalogue of alchemical manuscripts in the British Isles mainly consists of indexes, with corrections and addenda to earlier descriptions. The indexes comprise a list of first lines of every tract described in the catalogue—a feature of the greatest use to students in every country; a list of every person, whether author, scribe, or owner, mentioned in them; and a list of the manuscripts classified under the libraries where they are to be seen, and containing much incidental information concerning them. In brief, nothing has been neglected which could make the work more valuable to those likely to use it, and Mrs. Singer is to be congratulated heartily on so complete a piece of work.

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Two sections are prefixed to the book, the first dealing with a curious work known as *Kyrannides*, just over the border-line between alchemy and magic, the second dealing with legal documents on its history. Of these, one is specially interesting as bearing on a legend preserved by Camden in his "Remaines concerning Britaine", where he says of the first gold noble, coined by Edward III. of pure gold in 1343 or soon after, "which our Alchemists do affirm (as an unwritten verity) was made by projection or multiplication Alchimicale of Raymond Lully in the Tower of London". In 1350, four prisoners were brought into the King's Bench from the Tower. One of them, who had been in prison for seven and a half years, had received 500 écus of gold and twenty pounds of silver from the Treasury to make gold by alchemy. There can be no doubt that this was the foundation of the Lully legend.

Another interesting entry is that of a very strong Royal Commission in 1457 to examine and report on the merits of alchemy and the elixir. Its report has never been found, but it is not impossible that it still lies somewhere in the Record Office. As gold-making was illegal, and continued to be so until 1689, a number of licences to practise the art were granted. The number of manuscripts in fifteenth century English testifies to a wide interest in the subject. It is a curious chapter in the history of science.

R. S.

The Physiology of Beauty. By Arthur Sewell. Pp. xiv + 194. (London: Kegan Paul and Co., Ltd., 1931.) 8s. 6d. net.

THE modern mechanist—the 'publicist', to adopt the term used by Prof. Hogben, who contributes an introduction to this book—has never claimed that all the activities of living matter are to-day capable of being 'explained' on physico-chemical lines, or even that they ever will be. But he does hold it to be possible, and even likely, that the behaviour of living organisms will one day be describable in the same terms, by means of the same symbols, and in the light of the same laws as are available to describe the phenomena of the inorganic world.

The possibility of applying to aesthetic responses any methods of analysis comparable with those used in pure science has in general been ridiculed by the anti-mechanists.

To the best of our knowledge, Mr. Sewell is the first to attempt, in anything like a systematic manner, to apply to these responses the ideas of behaviourist philosophy and the concept of the conditioned reflex. He has done so with courage, humour, knowledge, and, so far as the complexity of his subject permitted, remarkable lucidity. Perhaps a disproportionate section of his book is devoted to discussing the "physiology of truth" and the "physiology of good", at the expense of the actual subject promised by his title. This is analysed in Part iv., but with such tantalising brevity that another book in which ethics and epistemology have a relatively much smaller share is much to be hoped for, so that he may further