

Wheatstone Stereoscope in Photographic Surveying", in 1896; and it is believed that Fourcade began his work on the subject in 1897.

However, if we make allowances for the point of view, this is an important and useful book, well illustrated, well printed and well indexed, a valuable work of reference on a difficult technical study, of which all surveyors must take account. The translators are to be congratulated upon the success of their laborious task; the English, in general, reads quite easily.

The Cotton Effect

The Cotton Effect and related Phenomena. By Dr. Stotherd Mitchell. (Monographs on Modern Chemistry.) Pp. vii+92. (London: G. Bell and Sons, Ltd., 1933.) 7s. 6d. net.

RECENT work on optical rotatory power has directed attention to the importance of the phenomena which were observed in certain coloured tartrates by Cotton in 1896, namely: a maximum ellipticity and a zero rotation interposed between positive and negative maxima, giving rise to a loop in the region covered by an absorption band. Dr. Stotherd Mitchell's monograph is therefore very welcome, since it contains an attractive review both of the experimental work which preceded Cotton's observations and of subsequent experiments with other optically active compounds containing absorption bands of suitable wave-length and intensity.

The earlier pages, leading up to Cotton's work, are of real value in recalling the origins of the fundamental phenomena of optical rotation and dispersion. References are given throughout, but would have been of greater value if in every case the date had been quoted, and the reference carried back to the original text instead of to reprints such as Ostwald's "Klassiker", or the "Oeuvres complètes" of Arago and Fresnel. The part which Biot played in the discovery of optical rotatory power also appears to have been underrated, if we accept the views of Longchambon that "Arago did not distinguish sharply between rotatory polarisation and chromatic polarisation", and that it was Biot rather than Arago who first established the laws of polarisation.

Recent measurements of circular dichroism are reviewed in somewhat full detail in the middle chapters, which are central in importance as well as in position; but these lead up to a chapter on

asymmetric photochemical action, which describes the successful experiments of Werner Kuhn and of the author, in producing optically active products by the selective destruction of racemates under the influence of circularly polarised light. The problem of the origin of optically active compounds in Nature is discussed, and the conclusion is drawn that no 'vital force' or living agency is needed for this purpose, since it has been shown that there is an excess of one type of circularly polarised light on the surface of the earth, which might enable this method of resolution by selective destruction to take place spontaneously.

The monograph is well written and attractively presented; it will be welcomed by many workers who are interested in the group of phenomena with which it deals. T. M. LOWRY.

Electrical Communication

Telling the World. By Major-General George O. Squier. (A Century of Progress Series.) Pp. xi+163. (Baltimore, Md.: The Williams and Wilkins Co.; London: Baillière, Tindall and Cox, 1933.) 5s.

THIS book tells the story of electrical communication, and shows how the entire science has been built up on a few fundamental facts. The first chapter tells the story of electricity and magnetism, beginning with Gilbert and ending with Hertz and Marconi. The chapter is well written and General Squier has chosen the names of the world's men of science to whom he pays honour judiciously. Some of the equations given are perhaps too mathematical for many readers—it is not everyone who knows what curl H means.

In Chap. ii the history of the telegraph is given. It concludes with an account of Squier's own discovery that many messages can be sent along a wire simultaneously. The chapter on the telephone ends with the discovery that six or seven telephone messages can be sent at the same time over one pair of wires.

The account of radio engineering begins with Hertz and ends with Marconi and Franklin. The final chapter gives the history of the U.S. Signal Corps, and contains much novel matter. In this connexion the author has made several notable inventions. For example, he invented the method of using trees as antennæ. Wired-wireless telephony, another of his inventions, is in world-wide