

to the automatic steering of torpedoes, to the mono-rail car, to the reduction of the rolling of ships, and to the steering of ships. Of the gyroscopic compasses now in use, the Anschütz was the first, and this was followed by the Sperry and Brown compasses. H.M.S. *Invincible* was navigated to the Falkland Islands, and the British Submarine *E11* found her way up the Dardanelles into the Sea of Marmora, by Sperry compasses, and such compasses are to be met with in every ocean.

Handbooks on the gyroscopic compasses have been issued by the firms making the various types, but these do not deal fully with the mathematical theory involved. Dr. Rawlings has therefore attempted to place this theory in the reach of anyone with an elementary knowledge of the differential calculus. His book is written primarily for those engaged in the construction of compasses and for navigators, to whom it should prove most useful. The opening chapters are devoted solely to the explanation of the action of the compass, the restraints imposed upon the gyroscope so that it shall be of use, and the problems involved in its oscillation, its damping, and its stability. After this there are descriptions of the Anschütz, Brown, and Sperry-Rawlings-Harrison compasses, while the later chapters deal with compensating weights, rolling error, damping error, and gimbaling error, and the accuracy of the gyro-compass at sea.

*The Court of Burgundy: Studies in the History of Civilisation.* By Otto Cartellieri. Translated by Malcolm Lettis. (The History of Civilisation Series.) Pp. xv + 282 + 25 plates. (London: Kegan Paul and Co., Ltd.; New York: Alfred A. Knopf, 1929.) 21s. net.

THIS volume in the History of Civilisation Series is one of peculiar interest for English readers. The Burgundian court was a great formative influence in the history of European culture. The four dukes who united Burgundy and Flanders under their rule in the period extending from the middle of the fourteenth century to the end of the fifteenth, gathered around them sculptors, painters, scholars, and poets from all parts of Europe, while their court was the last school of the dying order of chivalry. The rivalry of the houses of Burgundy and Armagnac gave England the opportunity of intervention. But the alliance between the English kings and the Burgundian dukes, which was a dominating factor in the troubled politics of France, had an abiding effect on English culture. By ensuring an outlet for our wool trade in the great commercial centres of Flanders, it confirmed the development of English rural life and industry along the lines which ended in the formation of the great pastoral estates, with subsequent economic and social consequences known to all. Prof. Cartellieri here deals with a subject which he has made peculiarly his own. His book is no mere recital of political events, but in a very real sense a social history in which every aspect of life, art, and literature is followed in detail. One chapter deals with the famous witchcraft persecution at Arras.

*Exact Colour Matching and Specifying.* By L. Blin Desbleds. Pp. 116. (Paris: Technological and Industrial Service, n.d.) 25 francs; 4s.

IN this work the industrial method of accurate colour measurement, and consequently of matching colours, made possible by the use of Toussaint's photo-electric photo-colorimeter, is set forth, with many practical examples, in a clear way. It will generally be of use to dyers and those dealing with fabrics who will find it useful.

The uncertainty that must always be associated with eye observations, because of the variations of colour sensitiveness even in the same eye, is eliminated by the use of a photo-electric cell through which an electric current is passed and upon which impinges the light reflected by or transmitted through the substance the colour of which is to be measured. The readings therefore are of the position of a spot of light on a scale, as customary in the use of a reflecting galvanometer. The light that impinges on the sample passes through one or other of (generally) six Wratten-Kodak monochromatic filters transmitting known wave-lengths. Violet, blue, green, yellow, orange, and red are appropriate colours, and the results are plotted on a prepared form of wave-lengths as compared with the same light as reflected from a white surface of plaster of Paris, or better, as more uniform, barium sulphate, which is taken as 100. From these curves all the information required for practical purposes can be found by simple calculations, and these are fully illustrated. The volume is a manual for use in the works' laboratory.

*In the Land of the Lion.* By Cherry Kearton. Pp. 256 + 60 plates. (London: J. W. Arrowsmith, Ltd., 1929.) 10s. 6d. net.

MR. KEARTON is probably our oldest and best-known African picture shikari. Having given us "Photographing Wild Life Across the World", in which he recounts many 'hairbreadth escapes' and exciting incidents with denizens of the wild, the actions of which he tried to portray, he now presents us with a book to gladden the heart of the Nature lover, dedicated by the by to his wife, herself an author of repute. In its twenty short chapters the author has something to say about most of the animals of the African bush and many birds and insects. The best, perhaps, is his chapter on the white ant. Systematic natural history is not his strong point, but his light sketches of the doings, family life, and frolics of the larger animals, lion, elephant, giraffe, hippopotamus, rhinoceros, and many more, are excellent reading, and conjure up fascinating pictures of wild life in sun-scorched bush, river, and swamp.

The eighty-eight illustrations are mostly photographs from the author's film "Tembi", in our opinion one of the best Central African films yet produced. The magnificent photograph of equatorial glaciers and snowfields up in the clouds and far away is alone worth the cost of the book, which is tastefully got up and supplied with an efficient index.