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NEW BOOKS ETC.

VARIABLE STARS OF LONG PERIOD. By Edward C. Pickering. Extrait des Archives Néerlandaises des Sciences Exactes et Naturelles.

THE ART OF DYEING WOOL, SILK AND COTTON. Translated from the French of M. Hellot, M. Macquer and M. Le Pileur D'Apligny. London: Scott, Greenwood & Co. 1901. New York: D. Van Nostrand Company. 8vo. Pp. xx-446. Price \$2.

Hellot, Macquer and Le Pileur D'Apligny, were the forerunners of a long line of French savants who did much to develop the art of dyeing. In their day they were the greatest authorities on their particular subject. Since the appearance of the first English edition in 1789, practice has altered considerably. The discovery of coal tar colors, for example, has exerted a powerful influence on modern methods. But many of the principles and methods formulated by these three Nestors of dyeing are just as valuable now as when they were first published. The book is reprinted exactly as it appeared in 1789. The language although not as terse as that of technical writings of to-day will be quite intelligible to those familiar with textile industries.

THE BALANCING OF ENGINES. By W. E. Dalby, M.A., B.Sc. New York: Longmans, Green & Co. 1902. London: Edward Arnold. Demi-8vo. Pp. xi-283.

Within recent years the subject of engine-balancing has become of increasing importance, for the reason that the unbalanced periodic forces of the engine, and the natural periods of vibration of the hull have approached the sensitive region of synchronism. The balancing of a marine engine and the peculiar problems to which it gave rise have been made the subject of investigation by many engineers. It is the purpose of this work to develop a semi-graphical method that may be used to attack problems connected with the balancing of the inertia forces arising from the relative motion of the parts of an engine or machine. A knowledge of the principles explained and illustrated through the book would enable an engineer to apply the method to the many problems of balancing which he will find on every hand, not only with regard to engines, but in connection with machinery of all kinds.

ANNUAL REPORT OF THE UNITED STATES LIFE-SAVING SERVICE FOR THE FISCAL YEAR ENDING JUNE 30, 1901. Washington: Government Printing Office. 1902. Pp. 480.

THE SCIENCE OF MECHANICS. A CRITICAL AND HISTORICAL ACCOUNT OF ITS DEVELOPMENT. By Dr. Ernst Mach. Translated from the German by Thomas J. McCormack. Chicago: The Open Court Publishing Co. 1902. London: Kegan Paul, Trench, Trübner & Co., Ltd. Pp. xx-605. Price \$2.

Dr. Mach's "Mechanics" is presented for a second time in English in an enlarged and revised edition. The work is not a treatise upon the application of the principles of mechanics. It aims chiefly to clear up ideas, expose the real significance of matter, to throw light upon metaphysical obscurities. The little mathematics which it contains is merely necessary for the attainment of this purpose. The science of mechanics is treated not as a branch of mathematics, but as one of the physical sciences. Too much cannot be said in praise of Mr. McCormack's admirable translation, which is at once faithful in its rendering and idiomatic in its English form.

BRICKLAYING AND BRICKCUTTING. By H. W. Richards. London, New York and Bombay: Longmans, Green & Co. 1902. 12mo. Pp. xii-139.

The book before us is a practical treatise upon brick laying, brick cutting and setting, sufficiently elementary in its treatment for ready comprehension by the average bricklayer. Although the book is intended to cover the City and Guilds of London Institute's examination in brickwork, and to meet the requirements of that portion of the Board of Education's examination in building construction relating to brickwork, the book will, nevertheless, assist bricklayers in general in the principles of their craft.

POUDRES ET EXPLOSIFS. Dictionnaire des matières explosives, par le Dr. J. Daniel, Ingénieur des Arts et Manufactures. Préface de M. Berthelot, secrétaire perpétuel de l'Académie des sciences. Pp. 825. Price \$6.

The monographs included in this dictionary are practical treatises. Among them may be mentioned admirable studies of cellulose and gunpowder; the manufacture of Vieille smokeless powder and of cordite. Dynamite, gelatine explosives, employment of electricity in mines, and the general employment of explosives for all purposes, are the subjects of interesting articles. A discussion of submarine explosives is worthy of attention. A rather curious chapter is devoted to infernal machines and anarchistic appliances of different epochs. Glycerine is made the subject of an entire chapter. In a word, M. Daniel's book constitutes a veritable encyclopedia of the many explosives which have been invented during the last quarter of a century.

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