

SUBJECT LIST OF WORKS ON CHEMISTRY AND CHEMICAL TECHNOLOGY, in the Library of the British Patent Office, being No. 6 of the Library Series, and No. 3 of the Bibliographical Series. London. 12mo. 105 pp. 1901. Price, 6 d.

The book is arranged in two parts, first a general alphabet of subject headings, with descriptive entries in chronological order, of the works arranged under those headings, and second a key, or summary of headings shown in class order. The catalogue comprises 885 works, of which 79 are serials, and represents 3,300 volumes. The chronological arrangement is very useful for the purposes of a patent office library, as it enables a searcher to see at once the date and consequent probable value of a book on his subject. Among the early works we notice 10 books on mines and mining called "Pirotechnia," by V. Biringuccio, 1558-9; and the "Works" of J. R. Glauber, containing a "great variety of choice secrets in medicine and alchemy" 1689; also R. Boyle, "The Sceptical Chymist," 1661; etc.

The principal or leading headings of classification are alchemy, analysis, biography, technology, chemical dictionaries, periodicals and digests, inorganic, metalloids, metals, organic, physical, and theoretical, and practical chemistry which covers laboratories, apparatus, and chemical optics, and includes catalogues.

It may be not generally known that the U. S. Patent Office at Washington contains one of the best technical libraries in this country, open to the public for consultation.

WM. H. SEAMAN.

SMOKELESS POWDER, NITROCELLULOSE, AND THE THEORY OF THE CELLULOSE MOLECULE. BY JOHN B. BERNADOU. Lieutenant U. S. Navy. New York: John Wiley & Sons. 1901. Small 8vo. viii + 200 pp. Price, \$2.50.

Under the first legend there are 38 pages of a lecture by Bernadou, on the "Development of Smokeless Powder," reprinted from the *Proceedings of the U. S. Naval Institute* and 30 pages of a translation of a paper by Mendeléeff on "Pyrocellulose Smokeless Powder," though the source from which the latter is taken is omitted. Under the second legend there are 47 pages given to translations of the papers of Vieille and of Bruley on the "Nitration of Cotton." The only newly presented matter is embraced in the first 80 pages and here the author develops his "Theory of the Cellulose Molecule," after treating of the "Earlier Views as to Nitrocellulose Composition and Constitution," The Concep-

tion of Progression in Relation to Composition and Constitution," and of "Solutions of Nitrocellulose."

In his lecture Bernadou bases his argument for the proper composition of a powder on the relative volumes of carbon dioxide and of carbon monoxide produced from the same mass of carbon when burned with oxygen, but in making this elementary calculation he uses 1.9 (which is approximately the weight in grams of a liter of carbon dioxide at normal) as the specific gravity of carbon dioxide, and 1.4 (which is practically 0.1 of the relative density of carbon monoxide) as the specific gravity of carbon monoxide.

His essay on the "Theory of the Cellulose Molecule," is of the most speculative character and the pages bristle with curious graphic formulas which are arranged in purely fanciful ways and from which he draws the most sweeping generalizations regarding the upbuilding of cells, the characteristics of organic life, and the like. He is unhampered by conventions and since, for instance, the accepted formula for ethyl hydroxide does not serve his convenience he assigns to this substance a "strain" formula in which the atoms are arranged as in the accepted formula for dimethyl oxide. He seems to regard linkages as matters of slight consequence and having assumed, without giving any evidence, the existence of median double linkages in the cellulose molecule, he shifts them to terminal single bonds at will, since, as he states, the molecule "may be expressed" in this way "without radical modification."

The book bears throughout evidence of the ambitious amateur, and one wonders how a man dares risk his reputation in his own profession by excursions into other professional fields of work where his deficiencies become apparent. The pursuit of one's own profession ought to furnish opportunities to satisfy any laudable ambition.

CHARLES E. MUNROE.

A COMPENDIUM OF GOLD METALLURGY AND DIGEST OF U. S. MINING LAWS, WATER RIGHTS AND DESERT LAND LAWS. By E. M. and M. L. WADE. Published by the authors, Los Angeles, Cal. 140 pp. Second Edition. Price, \$1.00.

The book, as stated in the introduction, is intended for the mining public which has little or no knowledge of metallurgy, and appearing now in a second enlarged edition seems to have filled a certain want. It is divided into eight chapters and has