

springs of the State, with over 150 analyses of waters. The waters are divided into muriatic, alkaline, sulphatic, chalybeate, and sulphur. The origin of each of these is briefly discussed. The methods of analyses, classification, and therapeutic uses are also considered. For those who are especially interested in analyses of water and for the citizens of Missouri and other States who desire a knowledge of the location and uses of the various springs the volume is invaluable. It is a volume to be consulted rather than one to be read.

JOSEPH F. JAMES.

Washington, May 13, 1893.

A Handy Book for Brewers. Being a Practical Guide to the Art of Brewing and Malting. By HERBERT EDWARDS WRIGHT, M. A. London, Crosby, Lockwood, & Son. 580 p. 8°

MR. WRIGHT has, in the present volume, expanded and enlarged an earlier work well known to the profession, entitled, "A Handbook for Young Brewers," giving the conclusions of modern research in so far as they bear upon the practice of brewing, as well as much practical detail, manipulative and structural. Few books of the size other than mere statistical records contain the amount of information herein included, and if the author has sacrificed style to space it can not be considered a fault in this instance. The book is not intended for general reading, but for the student of brewing, and is to supplement rather than to supplant practical teaching at the works. There is much, however, that is of value to others, both to chemist and to general scientist, as witness the excellent chapters on water, the laboratory, on ferments and fermentation, yeasts, etc. The latter subjects in particular are cleverly treated, and nowhere do we remember seeing the various theories and hypotheses massed together so conveniently for comparison and ready reference. Complete details of malting and brewing operations are carefully given, differing customs are placed in juxtaposition, and in all cases the scientific discussion of chemical and vital changes accompanies the description of the process. It is unfortunate that the glossary originally planned as an appendix to the text was finally omitted, as there are few industrial operations with more technical and "shop" expressions than brewing, and the free use of these in some of the chapters—the author resting, of course, upon his

intended glossary—would be rather confusing to the uninitiated. The subject is one of many ramifications, and as such could more easily be handled in three volumes than in one, but Mr. Wright has succeeded admirably with this difficult condensation, and has omitted nothing essential to a thorough knowledge of the subject.

C. P.

An Outline of the Documentary History of the Zuñi Tribe. By A. F. BANDELIER. *Somatological Observations on Indians of the Southwest.* By DR. HERMAN F. C. TEN KATE. *In a Journal of American Ethnology and Archaeology.* J. Walter Fewkes, editor. Vol. III. Boston and New York, Houghton, Mifflin, & Co. 1892.

THE scientific work accomplished by the Hemenway Expedition is gradually becoming known to the world through the medium of Dr. Fewkes's journal. The documentary history of the Zuñis during the 16th and 17th centuries, by Mr. Bandelier, is of absorbing interest and reflects the vast labor that had been expended in its compilation. In the identification of the Seven Cities of Cibola with the ancient Zuñi pueblos, the evidence formerly adduced is made so conclusive, by the introduction of new data, that it seems impossible for any one to fail to be convinced. The events which led to the Pueblo uprising against the Spaniards in 1680 are minutely recorded. Probably half the paper is devoted to copious notes and citations from original sources—principally manuscripts now in the hands of the Expedition. On page 114, the date of Fray Juan del Bal's arrival in New Mexico is given as 1771, instead of 1671, an obvious misprint, as the missionary was killed in the revolt above alluded to.

The second part of the volume is a summary report by Dr. ten Kate of his anthropologic observations of the Pima, Papago, Maricopa, Yuma and Zuñi Indians, as well as of the human remains found in the ruined pueblos of the Salado Valley, Arizona, and in one of the Cibolan cities. Although the investigations of Dr. ten Kate and Mr. Cushing were from totally different points of view they unite in the conclusion that "the pre-Columbian Arizonians were closely related to the Zuñis of to-day." In the opinion of Dr. ten Kate the types of North American Indians are not exclusively American, but present only the characteristics of the Mon-

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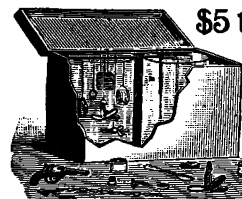
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