

stitution of the carbo-hydrates and the amido-compounds. What can be the use of this sort of writing, however well done? No student not already well grounded in science generally can hope to get any real advantage from those parts of this book that are devoted to the scientific consideration of the details of the brewing process, and we wish the author had boldly recognized this very evident fact.

Apart, in a manner, from the more scientific portions of his book, the author gives us his views on the empirical questions of brewing, and also on the arrangement of a brewery and its plant, with the authority of much experience. Here is common ground on which all interested in brewing meet, and we recommend the author's conclusions as worth their attention. At the end of the volume we find a novel feature in a synoptic table of the malting and brewing processes, giving side by side the time, working memoranda, physical changes, and chemical changes of each process, an epitome which is likely to be useful to many readers. A good index also adds value to the book.

Although we do not think that the author in writing this book has been very successful in meeting the requirements of young students of brewing, yet there is a large amount of information contained in the 516 pages of the volume which will repay a careful perusal by those more advanced in the study of the scientific aspect and practice of brewing.

OUR BOOK SHELF.

A Manual of Veterinary Physiology. By Vety.-Captain F. Smith, M.R.C.V.S. (London: Baillière, Tindall, and Cox, 1892.)

THE publication of this work ought to delight the heart of the veterinary student, for hitherto in his pursuit of physiological knowledge he has been compelled to rely upon works which deal exclusively with the human subject. However excellent such works may be and well adapted to the requirements of the human physiologist, they must necessarily contain much which is only of secondary importance to the veterinary student, and absolutely nothing concerning many questions which to him are of vital interest. For example, how needful to him is a thorough knowledge of the physiology of the horse's foot—the seat, as he is afterwards to learn, of manifold diseases. Yet clearly the consideration of this subject is outside the range of human physiology. Similarly the composition, digestibility, and feeding properties of the foods supplied to the various domestic animals are to him matters of paramount importance. Yet here again he finds himself left in the lurch by the standard works on human physiology. Such considerations amply indicate the necessity for a work of the kind now before us, and cause us to wonder that the veterinary profession should have had to wait so long for its publication. Though several first-rate treatises on veterinary physiology exist in French and German literature, Captain Smith's is the first attempt, we believe, to deal with the subject in its entirety in this country.

We can heartily congratulate the author on the manner in which he has performed his task. He writes in a concise but precise style. Bearing in mind how many subjects the student is supposed to take up and master in a comparatively short time, the author has omitted, and we think wisely so, the details of physiological experimental methods and descriptions of elaborate mechanical appliances employed in the laboratory.

The value or usefulness of the horse depends so largely

upon its powers of speed or draught that a knowledge of its locomotory apparatus is obviously imperative to the veterinarians. During recent years much light has been thrown upon the subject of animal locomotion by the elaborately devised experiments of Stillman and Muybridge, carried out, as is well known, by means of instantaneous photography. Captain Smith furnishes a capital *résumé* of the conclusions derived from these experiments and a number of plain, simple diagrams aid the reader considerably in comprehending the subject.

The physiology of the horse's foot is dealt with in a somewhat short chapter. The author adheres to the theory of the expansion of the foot at its posterior part when the weight of the body is imposed thereon. It is a subject which has often been hotly debated, and its discussion will probably be again reopened in the columns of the veterinary periodicals. The chapter concludes with some half-dozen rules on physiological shoeing, a copy of which might well be suspended and acted upon in every place where the shoeing of the horse is carried on.

The book is well printed, neatly bound, and published at a very reasonable price (10s. 6d.). Horse-owners as well as veterinarians will find its perusal attended with profit as well as interest. W. F. G.

The Principal Starches used as Food. By W. Griffiths. (Cirencester: Baily and Son, 1892.)

THIS little book of 62 pages will be found useful by analysts and others who are interested in the examination of foods. The author has collected together short descriptions dealing with the origin and microscopical characters of the different starches met with in commerce—the arrowroots, tapioca, sago, the starches of our common cereals, and of millet, maize, rice, the bean, the pea, the lentil, the potato, and so forth. These are classified according to the natural orders of the plants from which they are derived, and the descriptions are accompanied by remarkably good photo-micrographs, which indicate at a glance the peculiarities of the different varieties. The mode of classification serves to bring out the resemblances which often exist in starches obtained from plants of the same natural order. Since the microscope alone can be employed in attempting to trace the origin of a starch, and bearing in mind the extent to which it is now used as an adulterant, this handy little book will no doubt supply a want.

Three clerical errors were noted. On p. 47 "feint" should be "faint," and "not" is evidently omitted in line three from the bottom. On p. 48 "character" should be "characters."

Les Alpes Françaises. Par Albert Falsan (Bibliothèque Scientifique Contemporaine. (Paris: J. B. Baillière et Fils, 1893.)

WE cannot call this a successful book. A mixture of condensed statistical information and of popular descriptive writing is not much better than a stirabout of Liebig's extract and of trifle-whip. Fixity of purpose on the author's part is also wanting. Doubtless the French Alps cannot be separated from the rest of the chain, but for a book of only 286 pages all told, this contains too much about the Central, Pennine, and Eastern Alps. The geological part is sketchy, and not always very accurate. The author repeats the old mistake about the "variolite of the Durance forming a fringe to the eupholide," though the question was settled by the elaborate paper of Messrs. Cole and Gregory, published in the *Quarterly Journal* of the Geological Society for 1890. The illustrations are numerous; few, however, of them are good, and several very bad. There is no index. The work, in short, is a piece of book-making, characteristically French in style, and is not a valuable addition to the library either of the mountain-climber or of the man of science.