

ject on which interest has lately so much revived in this country, and on which we hope before long to see a treatise by competent hands. Nor would it be fair to compare this "School Manual" with the admirable "Lessons in Elementary Physiology" of Prof. Huxley. The latter, though intended for boys' and girls' schools, is only of use in the few instances in which dissection and microscopic anatomy are taught; and its chief value is for University men who do not specially take up Biology, and as the best introduction to the subject for medical students. But Dr. Lankester addresses the wider circle of the general public. He shows in the Introduction how an elementary knowledge of the functions of the body and of the rules of health may be taught in primary schools; and proceeds to demonstrate the advantage of this knowledge to statesmen, clergymen, lawyers, architects, newspaper writers, common councilmen, and artisans. Perhaps the most important part of this introduction is that in which the author urges the importance of some knowledge of what is necessary to health for women in all stations of life. A skilful teacher would be able to teach girls of average intelligence a large part, and that the most valuable, of the contents of this Manual. They would probably learn it more readily than boys, and when all memory of the tissues and their names had passed away, it may be hoped that the dogmatic injunctions and prohibitions on food and air and drains and clothing would, at least in part, survive.

The first chapter contains a fair sketch of the constituents of the human body; the second deals with food, and gives sensible advice on many points; but here there are marks of imperfect adaptation of Liebig's theories to more recent facts. The third chapter, on Digestion, is also clear and practical. The next on the Circulation is too technical for the purpose of the book, and might, we think, be relieved of many anatomical terms. The two which follow on Respiration and the Skin, are chiefly sanitary, and might be read with advantage even by those ignorant of physiology. In the seventh chapter, on Movement, Dr. Lankester gives a very uncertain sound on the subject of boat-racing (pp. 76 and 77), in the former passage going so far as to assert that "in all gymnastic exercises competition in feats of strength should be avoided." The public have been already frightened as much as they are likely to be by certain letters on the dangers of boat-racing, which appear at intervals in the *Times* newspaper. It may be said of this, as of other athletic sports, that when competition is avoided gymnastics will cease to be practised. It is surely better to attempt wisely to regulate these contests than to condemn what are just as valuable or as injurious as competitive examinations in mental athletics.

The last two chapters of this manual, which deal with the difficult subjects of the nervous system and the senses, are pleasantly written, and give much useful information; but there are more errors here than in the rest of the book. Thus the decussation of nerve fibres is made to take place in the *corpus callosum*, the arachnoid is described as a "spongy membrane," and the pathology and causes of apoplexy given on the same page are not correct. Again, the physical cause of short sight is not the cornea being too rounded, but the whole eyeball being too long, and if the reader "looks into a living human

eye, through the pupil," as directed in p. 104, he will be disappointed of the promised result. In these as in other particulars the work would have been better if the writer had taken more pains. Beside a number of curious misprints, there are several minor inaccuracies scattered through the book, which a competent physiologist would correct in looking through it. Only two lines of poetry from Shakspeare and Milton occur, and both are misquoted. Similar inaccuracies are to be found in the classification of the animal kingdom printed at the end of the volume, with which it appears to have no very close connection. The glossary, on the other hand, and the questions for examination, will probably be found of practical use. The tables of the ultimate and proximate constituents of the body, also given in the Appendix, are too exact to be correct, and the same may be said of that showing the daily supply and waste. Moreover, 12lb. of fat would make but a meagre man; and 31oz. of water is more than there is reason to suppose that the lungs excrete. The woodcuts which have been added to the present edition are taken from well-known, chiefly French, sources; they are roughly reproduced, but answer their purpose well enough.

In a future edition, which we hope will be called for, it would be well to restore the original title of the work, and correct some of the inaccuracies we have referred to. It might also be desirable to give fuller directions on the choice and preparation of food, and especially of the food suitable for infants and invalids. A chapter on the general management of a sick-room as to warming, ventilation (now often carried to injurious excess), feeding, disinfection, &c., would also be a valuable addition. A short and admirable pamphlet, issued a short time ago by Dr. Bridges ("A Catechism of Health, adapted for Primary Schools," 1870), contains just those points of sanitary knowledge which are most important, and Dr. Lankester's experience as a coroner would be of great service (as it has already been) in enabling him to enlarge upon these most pressing topics, and to illustrate them by well-chosen examples. P. S.

#### OUR BOOK SHELF

*Jahrbuch der kaiserlich-königlichen geologischen Reichsanstalt*, xxi. Band. Nro. 4; October, November, December. (Vienna, 1871.)

DR. NEUMAYR occupies the greater portion of this number of the "Jahrbuch" with the third part of his elaborate "Jurastudien." In this paper he describes what he calls "der penninische Klippenzug," a name derived from Penninberge, near Szczawnica, on the borders of Western Galicia and Hungary. The structure of this region is treated of at considerable extent. A long list of some two hundred and fifty papers, notices, &c., accompanies the memoir. Herr Franz Toula gives some account of the Randgebirges, near Karlsburg and Rodaun; and the work done in the Chemical Laboratory of the Institute is described by Karl Ritter v. Hauer. The mineralogical communications which accompany the "Jahrbuch" contain, amongst other papers, one by C. W. C. Fuchs, on the mechanical and chemical changes which lava undergoes in passing from the fluid to the solid state; and another by G. Tschermak on the problems of mineralogical chemistry. We have also descriptions of various minerals by Prof. Zirkel, Victor v. Lang, and Richard v. Drasche, and a number of miscellaneous "notices."