

them directly from Phœnicia, as Benfey wished to do, or from the Hinyaritic characters of Yemen as Lenormant alleges. The traditional belief of the Hindus that their ancient literature was handed down by oral recitation alone is thus confirmed, and a remarkable illustration afforded of the powers of a trained memory. The famous maxim that a literature cannot exist without writing must be given up, and the rigid sceptics who refuse to admit that any historical truth can be extracted from oral tradition lose their most formidable argument.

The earliest material used for writing purposes in India seems to have been the bark of the *bhūrja*, which is usually identified with the birch. It is worth notice that our own word *book* has the same origin as *beech*, and testifies to a similar employment of the bark of the beech-tree among our Teutonic ancestors. It is probable, however, that the characters of our first "books" were cut upon the soft wood or bark of the beech in the form of runes, and not painted as in the case of the birch books of ancient India. Nevertheless we must not forget that Venantius Fortunatus when alluding to the runes in the seventh century speaks of them as being "painted" on tablets of ash.

A. H. SAYCE

#### OUR BOOK SHELF

*Parasites; a Treatise on the Entozoa of Man and Animals, including some Account of the Ectozoa.* By T. Spencer Cobbold, M.D., F.R.S., F.L.S. (London: J. and A. Churchill, 1879.)

THERE are several groups of animals which from time immemorial have been more or less generally neglected by zoologists, and which have induced but very few amongst the latter to make a speciality of their investigation. As an instance of comparatively highly developed animals to which this remark applies, we need only point to the whole class of cephalopoda, and among the lower animals the entozoa are certainly a good case in point. Apart from the comparative scantiness of the literature treating of these animals, it has the additional disadvantage, in common with much other zoological literature, of being scattered in the numerous volumes of several hundred different scientific serials. Dr. Cobbold has for a long time been held an eminent authority on helminthology, and, as he states in his preface, many hundreds of correspondents, not having ready access to the works of Rudolphi, Diesing, and Dujardin (three great foreign authorities on the subject), have applied to him for identification of parasites they met with in dissections or otherwise. He therefore pronounces the most justified hope that by the work now published a reasonable limit may be placed upon the number of future applicants. What particularly characterises Dr. Cobbold's work is the thoroughly scientific enthusiasm with which it is written, and which in itself is admirable. We cannot help reproducing the closing sentences of the preface, which will give to our readers a true notion of the spirit to which, according to our view, a scientific work ought to owe its origin:—

"The study of the structure and economy of a humble parasite brings to the investigator no slight insight into the workings of nature. If these workings cannot at all times be pronounced to be 'good and beautiful,' they must at least be characterised as 'true.' The knowledge of the true—especially if that knowledge by its practical applications be calculated to confer substantial benefits upon man and his inferior fellow-creatures—ought to be held in high esteem; but apart from this purely utilitarian view, there remains for the investigator the delight occasioned by the inrush of new scientific ideas. The average mind,

being either essentially commercial or ridiculously sentimental, as the case may be, is totally incapable of comprehending the motive power that animates and guides the votary of science. The late Prof. Faraday, a man wholly untinged by the ambitions of wealth and power, once remarked to me that there were no people so difficult to instruct as those who were ignorant of their own ignorance. It is just these very persons who, when placed in high positions of social, political, or professional trust, most powerfully contribute to check a nation's progress. There are too few genuine workers at science in this country. As one of the rank and file I claim only to have honestly contributed my mite. I should like to see a small army of helminthologists rise up and lay siege to the fortresses at present securely held by thousands of death-dealing parasites." None but an honest and true worker will write such sentences as these; every well-meaning man of science must concur with Dr. Cobbold in the ideas he thus forcibly expresses. Upon an array of workers of Dr. Cobbold's stamp a nation may justly look with pride.

Turning now to the book itself we need hardly say that the author has executed the task he set himself in a most praiseworthy manner. Apart from a voluminous contribution of original work, he has consulted an almost interminable list of bibliographies on the various kinds of parasites, a work which in itself involved stupendous labour.

The contents are divided into two large groups, the parasites of man occupying the first division, and those of animals the second. Each division is subdivided into several sections, and thus in the first we have descriptions in one section of Trematoda or flukes, in the other those of Cestoda or tapeworms, in the third those of Nematoda or round- and thread-worms, and in the last those of Acantocephala (thorn-headed worms), Suctorina (leeches), and the parasitic forms of Arachnida, Crustacea, Insecta, and Protozoa. In the second division the parasites of animals are arranged according to the respective places of their hosts in systematic zoology. The parasites of Mammalia are subdivided according to the orders in this class, beginning with Quadrumana and ending with Marsupialia and Cetacea. After this the parasites of birds, reptiles, fishes, and invertebrate animals are considered in due course. In relation to the parasites of man, the author gives a great deal of valuable statistical information which must be of special interest to the physician.

Altogether we cannot speak too highly of Dr. Cobbold's book, and congratulate the author warmly upon having so efficiently filled a gap in zoological literature, the existence of which had long been felt by all working naturalists and many medical men.

*A Contribution to Agricultural Botany.* By A. S. Wilson. (Aberdeen: J. Rae Smith, 1879.)

THE author of the small volume before us is already favourably known as an investigator of more than one obscure yet important problem connected with field-botany. The text of his present discourse is "turnip-singling." He approaches this subject in a characteristically careful manner, taking into account, as he does, a number of considerations which might easily escape the attention of an ordinary observer or experimenter. The object and manner of his experiments present no novelty; indeed, it seems to us that Mr. Wilson can hardly be fully aware of the immense number of trials which have been made, both in this country and on the Continent, in order to ascertain the best distance apart for swedes and turnips. However, experiments of this order certainly require frequent repetition in order that the influence of season, climate, soil, and manure, may be duly measured. Any one of these conditions may so affect the result as to invalidate a hasty conclusion drawn from one or two years' trials, even when such trials have been conducted, not in one locality, but in several. Mr. Wilson is quite