

last sixteen years only serve as a basis for future work. Much has yet to be done regarding the physiological action of these bodies; and no progress can be made in this respect until the alkaloids have been extracted in a pure state. It is almost useless, in the interests of science, to speak of the action of alkaloids extracted by various reagents; though, in certain cases of poisoning, the investigation of such an action may be of immediate utility. Dr. Brown has devoted much space to the consideration of the part played by the vital alkaloids in physiological or pathological conditions. In his account he has closely followed the views of M. Gautier, whose researches have thrown great light on the subject.

Dr. Brown's work may be recommended as giving a general account of the present state of our knowledge regarding these alkaloids. S. H. C. M.

PRACTICAL FORESTRY.

Practical Forestry: its Bearing on the Improvement of Estates. By Charles E. Curtis, F.S.T., F.S.S., Professor of Forestry, Surveying, and General Estate Management at the College of Agriculture, &c. (London: *Land Agent's Record Office*, 1888.)

THE present work is described as a reprint of a series of papers on "Practical Forestry," which appeared in the *Land Agent's Record*, and the author's object in republishing his ideas on practical forestry is to promote and encourage the study of true forestry among the British land-owners and land agents, and especially to impress upon students the necessity of acquiring a sound practical knowledge of a branch of land economy so long neglected and ignored. So far so good; but when the author says, "I trust this publication will be the means of spreading this object more widely" (*sic*), we fear that he will be grievously disappointed.

To begin with: the book is written in doubtful English. Though the correct use of the English language is not absolutely essential, yet in order to be a really useful work, a book should be written in language which complies with the ordinary grammatical rules, and which is also intelligible to the class of readers expected to profit by its perusal. The whole book is conceived in a very narrow spirit, and the expressed views of the author are frequently open to question. Take for instance the following passage (p. 40):—

"The great and true principle of thinning is to encourage the growth of those trees which are left, and not to secure a financial present return. This, though important, is quite a secondary consideration, and should at all times be ignored."

We beg to say that the great and true principle of thinning is nothing of the kind. In every instance the owner, or his manager, must consider what the objects of his management are. They may be:—

- (1) To produce material of a certain description.
- (2) To produce the greatest possible number of cubic feet per acre and year.
- (3) To secure the highest possible money return from the property.
- (4) To secure the highest possible interest on the invested capital.

(5) To improve the landscape, or to affect the climate, &c.

In each of these cases the method of thinning will be different.

Again, the description given of a true forester (p. 12) is somewhat illusory. If the author thinks that a man who has studied botany, vegetable physiology, geology, entomology, &c., is also able to wield the axe, and use with skill the pruning saw or knife, he is likely to be disappointed in nine cases out of ten. Such ideas are theoretical speculations, and not the result of practical experience.

The chapter on "Soil and Site" is of a very hazy description whenever the author attempts to rise above ordinary platitudes. He promises to describe clearly in future sections the nature of the soils and sites in which the individual trees most delight, but, as far as we can see, he has got over the difficulty by omitting to redeem his promise.

To sum up, the book is not likely to further the object which the author seems to have at heart. The experienced forester will find nothing new in it, and the beginner will only meet with badly arranged statements which are frequently not in accordance with the teaching of science or of practice. Sw.

OUR BOOK SHELF.

Tropical Africa. By Henry Drummond. (London: Hodder and Stoughton, 1888.)

THIS is a brightly-written and most interesting sketch of Mr. Drummond's experiences during a recent journey in East Central Africa. He has no very surprising or exciting adventures to describe, but in the course of his narrative, which is written with a vigour and grace unusual in books of travel, he contrives to convey a remarkably vivid impression of the country through which he passed. Going up the valley of the Shiré River, he visited Lake Shirwa, of which little has hitherto been known; then he went on to Lake Nyassa, and to the plateau between Lake Nyassa and Lake Tanganyika. During the whole of his journey he was a close observer, not only of the physical features of the districts he visited, but of the various classes of phenomena which interested him as a geologist, an ethnographer, and a student of natural history. In one admirable chapter he gives a full and striking account of the white ant, which he had frequent opportunities of studying; in another he brings together many curious illustrations of the well-known fact that among numerous species of animals mimicry is one of the means of self-protection. Before going to Africa, Mr. Drummond had mentally resolved not to be taken in by "mimetic frauds," yet he was "completely stultified and beaten" by the first mimetic form he met. This was an insect—one of the family of the *Phasmide*—exactly like a wisp of hay. Another insect, which he often saw, closely resembles a bird-dropping, and the consequence is that "it lies fearlessly exposed on the bare stones, during the brightest hours of the tropical day, a time when almost every other animal is skulking out of sight." Mr. Drummond has of course much to say about the chances of a great future for Africa, and in this connection he presents a good deal of valuable information as to the capacity of the natives for work and as to the wrongs inflicted upon them by vile gangs of slave-traders.