Oxford, told us that much of the cystitis was due to our use of dirty catheters, and when Simpson proclaimed that our wards were so foul as to be fit only for a bonfire, we were incredulous and full of wrath. But in this book is told that story of the great magician under whose wand Syme performed his last twenty thigh amputations without a death! Erysipelas, septicæmia, gangrene, tetanus fled as gibbering ghosts before him.

But for a while these marvellous results were achieved only by the master and his reverent disciples; they were not bestowed upon the profane, or upon "slipshod surgeons." However, our limits forbid any discussion of the antiseptic and aseptic controversies, much of it a matter of words, or of the enthusiastic welcome of "Listerism" almost everywhere at home and abroad, except in London. For these and such stories we must be content to send the reader to Sir Rickman Godlee's book, in which every stage of the establishment of the gradually perfected system is described in its order, and the cardinal points developed in due proportion by an author who is almost silent upon the part played by himself in the new surgery. Moreover, in this case, that the life should have been written by a near kinsman proves to be altogether to our advantage. C. A.

MUSEUM MANAGEMENT.

The Museum: A Manual of the Housing and Care of Art Collections. By Margaret Talbot Jackson. Pp. xi+280. (London: Longmans, Green, and Co., 1917.) Price 6*s.* 6*d.* net.

IN the absence of any comprehensive handbook of museum management, this book serves a useful purpose. It is by no means exhaustive, and is written (quite naturally) from the point of view of American museums; but it contains many hints which the directors of English museums will find helpful. The author does not appear to have paid much attention to English museums; only ten are mentioned in her list of places visited (the Fitzwilliam and all provincial museums except Liverpool are omitted), as compared with forty-one German and seventy-nine Italian; and, apart from references to the print-mounts of the British Museum and a lighting device at the Ashmolean, practically no use is made of their experience. This, however, is no disadvantage from the point of view of museum officials in this country, but rather the contrary. We know our own practice, and what is helpful is to hear the experience of others, even though it may need adaptation before it is applied here.

Miss Jackson deals almost wholly with what may be called the body of a museum, not its soul. Only seven pages are devoted to the chapter on the formation of collections; but she has much to say, and says it sensibly, on the situation and architectural plan of a museum, on its walls, floors, and decorations, on the treatment and conservation of various fabrics and materials, and on questions of internal organisation and administration. On some points within this compass more might usefully be said; for example, on the relative advantages of small and large rooms. Small rooms are restful for the careful student who wishes to examine a few things and to examine them minutely; but they are wearisome to the general visitor, and are less easily warded. The true solution appears to be to have fair-sized galleries for the ordinary visitor, in which carefully selected objects are set out in the most instructive manner; and small rooms for the study series, and for a few special treasures, such as a Madonna di San Sisto or a Venus de Milo, which deserve the honour of solitary worship. There are few museums which are planned in this way, or which can spare the necessary space to set out objects with sufficiently wide intervals; but the ideal should be before the designers of new buildings.

A few other points may be noted. A word of caution is needed against the cross-lights and reflections which come from low windows on either side of a gallery and glass cases at right-angles to them. If peripatetic lectures are given in the galleries, some floor covering (such as cork linoleum) will save the lecturer's voice and the listeners' tempers. Variations of level between galleries, necessitating a step or two up or down, are a great obstacle to the transport of objects on trollies or barrows. More might have been said about designs of show-cases; the contents should not looked naked and unframed, but the case should provide a frame for the contents, without overpowering them by too much heaviness. If the museum is to be used at night, much thought is needed for the lighting, whether by ceiling lights or lights within the cases. But the omission which seems most serious is a fuller discussion of the labels and guide-books on which the main value of the museum as an educational agency depends. In America perhaps more reliance is placed upon lectures. In this country the lecturer is making progress as a museum institution, but he by no means replaces the descriptive label or the cheap, well-illustrated guide-book.

These are the few suggestions which space allows towards the improvement of a book for which museum curators should be grateful.

F. G. KENYON.

PLANT-ANATOMY IN RELATION TO EVOLUTION.

The Anatomy of Woody Plants. By E. C. Jeffrey. Pp. x+478. (Chicago, Ill.; The University of Chicago Press; London: Cambridge University Press, 1917.) Price 4 dollars net.

BOTANISTS for several years past have felt the need of a comprehensive text-book on the anatomy of plants worthy to take the place of de Bary's classic book published in 1877. As Prof. Jeffrey says: "In de Bary's text-book both palæobotany and development are deliberately eschewed." The omission of any account of the anatomy of extinct plants would in these days

be a much greater defect than it was forty years ago, and whether one agrees or disagrees with the conclusions stated by the author, he cannot be accused of undervaluing the importance of palæobotanical data. The study of the development of organs is deliberately omitted on the ground that it throws little light on the processes of evolution. The researches of Schwendener gave a stimulus to the study of anatomy from a physiological point of view, and the last edition of Haberlandt's "Physiological Plant Anatomy" admirably represents the present state of our knowledge in this branch of botany. It is surprising that Prof. Jeffrey makes no reference to Haberlandt's work.

"The Anatomy of Woody Plants" cannot be said to be a comprehensive text-book; the treatment is essentially eclectic, and the subject-matter is to a large extent limited by the scope of the author's well-known and invigorating researches. The main object is to interpret the structural features of recent and fossil woody plants in terms of descent. An anatomical treatise on broader lines, in which the anatomy of the lower plants receives adequate treatment, has still to be written.

Prof. Jeffrey believes that the herbaceous type of dicotyledon is derived from ancestors with woody stems, and in this connection the different types of medullary rays are fully discussed. The illustrations are excellent, the great majority being new. Chaps. i.–x. treat of the cell, tissue-systems, fibrovascular tissues, the epidermis, and fundamental tissues. Special attention is given to the structure of the secondary xylem. "We have," says the author, "in the woody structures past and present an almost perfect biological document, carrying back the history of plants in relation to their changing conditions of environment into remote epochs of our earth's history."

Much interesting and to a large extent new information is given about the elements of woody tissue, tracheids, vessels, fibres, etc., based on the examination of macerated material. Arguments are adduced in support of the view that "the distinction between spring and summer tracheids did not exist in the case of Palæozoic woods," a statement—implying, as it does, the prevalence of uniform climatic conditions throughout the Palæozoic era—scarcely consistent with the geological and botanical evidence afforded by the Glossopteric flora and the rocks associated with the Permo-Carboniferous plant-beds of Gondwanaland. Rings of growth, though generally lacking in Palæozoic stems from European localities, are far from being universally absent. An annual winter period of rest is believed to be the cause of the appearance of longitudinal parenchymatous elements in wood. Attention is paid to the root, stem, leaf, microsporangia, and seeds, and there is an interesting chapter on the canons of comparative anatomy. Chaps. xviii.–xxix. are devoted to the Lycopsida, Pteropsida, Gymnosperms, and Angiosperms; chaps. xxx.–xxxii. include anatomical structure and climatic evolution, evolutionary principles exhibited by the Compositæ, and a very useful account of anatomical technique.

Prof. Jeffrey's book, which is admirably produced by the Chicago Press, is an original and stimulating contribution to botanical literature. The author discusses various controversial questions and raises many points on which there is considerable difference of opinion. His views on the primitive nature of the Abietineæ and their greater antiquity than the Araucarineæ are stated with an assurance that is almost pontifical. Too little weight is attached to the study of reproductive organs, and the very strong evidence of the records of the rocks in favour of the greater antiquity of the Araucarian stock is either ignored or very partially treated. There are no references to the published work of other authors, and no bibliography—a very serious blemish in a book which is presumably intended for students unfamiliar with the widely scattered original literature, and ought to be a guide to those who wish to go further along particular lines of inquiry and to see what has been said on the other side.

The fact that Prof. Jeffrey is an original investigator whose position entitles him to speak with authority increases one's regret that his attitude is not more in keeping with the best traditions of scientific exposition. A. C. SEWARD.

OUR BOOKSHELF.

Telegraph Practice: A Study of Comparative Method. By J. Lee. Pp. ix+102. (London: Longmans, Green, and Co., 1917.) Price 2*s.* 6*d.* net.

OF books on the art of electric telegraphs, covering more or less completely technical details and principles of the numerous types of apparatus, there has been an increasing, and it may be even a more than ample, supply. That the science of telegraphy has not been equally well served is probably due to the artificial elimination in England of the engineer from any sufficient practical direction of the method of utilising the machines which he designed and installed. However that may be, the appearance of Mr. Lee's book at once brings the fact into prominence and goes a long way towards filling the gap which it reveals. Mr. Lee's long association with the traffic control organisation of the British Post Office has placed him in an excellent position to ascertain all the factors of the numberless problems of the science of telegraphy; and his admirable powers of grasping the facts and of presenting them in a concise and cogent manner render this little book of 100 pages a storehouse of valuable details and a veritable handbook for the expert. It is withal a very attractively readable description of one of the most valuable of modern "utilities." It is a "study" of telegraph practice which, while glancing at the past, deals in a comparative sense with the present, and indulges in illuminating conjecture in regard to the future. The author regrets that the name of the originator of an ingenious method of classifying Press telegrams is unknown; if he should wish to know who originated the "indicator" word of