

construction was in progress. The discussion of the observations and the deductions therefrom are of great value. Such disturbing effects as beam torsion and the influence of unequal yields in the tension and compression cleats of connexions are duly commented upon; and the final review of the tests on the three buildings contains important remarks on the effects of casings and walls.

An analysis is presented of the effect of wind load moments, and attention is directed to the high values set up in the lower parts of the column when the stiffness ratio of beam to column is low. But the final recommendations for design only cover for stresses caused by vertical loads. It is to be accepted that in structures for which the design rules are used, the constructions must resist horizontal or wind forces by means of floor

slabs and walls acting as bracing, or by special framing.

The design rules are presented with great clearness, and are the outcome of the rational lines of analysis developed in the various special studies on frames, stanchions and connexions. The rules are fully supported by tables and curves, and provide a relatively simple and straightforward procedure that is rather remarkable when the extraordinary range of data and detail study from which they emerge is viewed. In the structural trades, the rules will be the ready measure of the Committee's achievement; but to those who understand the technique of data accumulation, analysis and reduction in large-scale work, the labours that lie behind them, and lead to them, will be significant and highly impressive.

Foundations for Animal Painting

Animal Painting and Anatomy

By W. Frank Calderon. (The New Art Gallery, Second Series.) Pp. 336. (London: Seeley, Service and Co., Ltd., n.d.) 21s. net.

MR. CALDERON'S high reputation and the acknowledged influence he has exerted on the work of other distinguished animal painters guarantee that this new work from his hand will prove a trustworthy guide to the presentation of animal form in art. The first part of the manual is devoted to the general principles of picture-making and will repay perusal by the student of any branch of art, for here the author gives, from a ripe experience, much useful guidance in picture-making, combining a wealth of general principles with many useful hints about the handling of technical details—even to such minor points as the farm-hand with a switch who may be employed to prevent flies from disturbing the pose of a restive model! The second and much the larger part consists of detailed studies and descriptions of the anatomy of several animal types and the influence of anatomical detail on posture and surface form.

Both parts are profusely illustrated by pencil and charcoal drawings of admirable clarity, with the names of structures clearly indicated on the plates themselves—a method much to be preferred to numerical references, at the foot of the plates, so often to be found in manuals of this kind. Several useful reproductions of well-known pictures are added, to illustrate anatomical accuracy in observation or, in some instances, the absence thereof.

While the salient blood-vessels, which form such important features at many points in surface anatomy, are well described in the text, these are not so distinctly differentiated from the deeper structures in many of the plates; it would appear to have been worth while to have devoted some plates expressly to showing the prominent lines of these structures on the surface. With later editions in view, it should also be noted that in PL. 58 the skin-muscle is made to look like a bifurcation of the sterno-maxillaris instead of being shown on the more superficial plane to which it belongs. As one concerned to some extent in the correct delineation of human anatomy, the reviewer would also point to the unsatisfactory view of the shoulder girdle in PL. 63, the absence of the coraco-brachialis in PL. 124B and the exaggerated representation of the platysma in PL. 138.

These, however, are but minor points to cavil at in a work of supreme excellence, which is strongly recommended not only to the art student but also to all animal lovers, who will enjoy its *facile* and faithful drawings. No better advice could be given to any student, desirous of acquiring efficient technique in this branch of art, than that he should make careful copies of Mr. Calderon's plates on separate cards and then study those of anatomical detail in juxtaposition with those of surface form; it is certain that his own work will greatly profit in accuracy and natural semblance through the influence of these distinguished drawings.

ALEX. MACPHAIL.