less the nematocysts have important defensive value to the flatworm.

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SCIENTIFIC BOOKS

Convergence in Evolution. By Arthur Willey. London, John Murray. Pp. 177, 12 figs. 1911.

In "Convergence in Evolution" Professor Willey has written an illuminating exposition of the wide-spread occurrence of convergence in animal structure and habit, and a strong argument for a fairer recognition of its validity and importance. Indeed, this argument is sometimes so strong, at least in its wording, that it seems almost to overshoot the mark. It makes convergence seem too important, too dominant, too universal, to be true. For example—perhaps a slightly unfair one, wrested thus from its context—Professor Willey says of histologic identity:

> In the light of facts which are now available it even begins to appear strange, although only a matter of a few years or months ago, that histological identity should ever have been insisted upon as a criterion of homology except within well-defined limits (p. 153).

But despite his enthusiasm for convergence and his avowed intent to unseat homology from its high place, Professor Willey never means to be unfair. He is simply a convinced believer, a positive expositor and a strong debater. He asks only for a recognition of the facts. He has no laws of convergence to offer any more than he will agree to accept any one universal criterion of homology.

> Then away with laws and away with criteria until they cease to obscure the facts as they are (p. 170).

The book is thoroughly interesting reading for a zoologist. It is a mine of illustrations of adaptive convergence. Indeed, it might be offered as a reference book of animal adaptations. Examples of extraordinary similarities in superficial and histologic structure in all parts of the bodies of animals of all the phyla crowd the pages of the book. For not a few of these the author is able to draw on his own contributions to the knowledge of animal morphology. For the others he usually gives satisfactory references.

I am tempted to take out of the book some of the choice examples. But I shall be doing my readers a greater favor if by refraining from doing this, and at the same time telling them how interesting and suggestive many of of these examples are, I can induce them to see the whole book. To read it as a whole is the more desirable also because of the unusually independent and original points of view from which the author examines many current biological theories and problems. Indeed the book is so refreshing and stimulating in its forthright outspokenness with regard to much that many of us feel insurgent about but hesitate to speak out about, that it is worth while for this alone. All the convergence in it will be surplus for your money!

Just one thing to act as "snapper" at the end of this otherwise unmitigated enthusiasm of commendation. The style in which the book is written is unfortunate. Not as to sentence construction, paragraphs, grammar, punctuation, but as to abruptness of attack and of leaving off; of pertinence of matter to subject, of illustration to point. One loses his bearings too often in the book. One wonders whether this example belongs to the subject behind it or to the one in front of it. Or indeed whether it belongs in the book at all. But readers of scientific books are, from long experience, immune to most of the difficulties which unusual manners of writing can present. They are accustomed to dig their gold wherever and however they find it concealed. And Professor Willey's book has much good gold in it for any digger.

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A Monograph of the Naiades of Pennsylvania. By Arnold E. Ortmann, Ph.D. Memoirs of the Carnegie Museum, IV., No. 6, February, 1911, pp. 279–347; pl. 86–89; 4to.