

THE Vienna correspondent of the *Journal* of the American Medical Association writes that at present there are two medical posts vacant in Austria: one at the clinic for internal medicine in Innsbruck, from which Ortner was called to Vienna to succeed von Strümpell, and the other at the pharmacologic institute of the German university in Prague. The latter has become vacant through Professor Pohl's acceptance of an appointment at Breslau. The following scientists have been recommended in the order named for the vacant post: for Innsbruck, Professor Pfeiffer from Graz, well known for his researches on serology, hematology and diseases of the lungs; Docent Dr. Schmidt (Vienna) and Professor von Tabora from Strasburg and also Professor Walks from Prague; for the pharmacologic institute, Professor Cloetta from Zurich, Professor Wiechowski, who is at present an assistant of Horst-Meyer in Vienna, and Professor Jodlbauer in Munich.

MR. HERBERT BOLTON, F.G.S., curator of the Bristol Museum of Natural History, has been appointed reader in paleontology in the University of Bristol.

DR. SAMUEL OPPENHEIM, of Prague, has been elected professor of astronomy in the University of Berlin.

#### DISCUSSION AND CORRESPONDENCE

##### CONCERNING THE "NEMATOCYSTS OF MICROSTOMA"

PROFESSOR GLASER in *SCIENCE* of July 14, 1911, has criticized my recent paper on "Nematocysts of *Microstoma*."<sup>1</sup> In the first place he indicates that I have made a quotation from his paper and given credit for it to Boulenger. This was a piece of carelessness on my part. That it was an inadvertence is shown in that the page numbers given refer to Glaser's article, to which I meant to give credit. I greatly regret that this blunder has been made and I am grateful to Professor Glaser for calling my attention to it.

<sup>1</sup> *Biological Bulletin*, Vol. XX., No. 5.

My critic continues by saying, "Professor Kepner states that the cnidophages of æolids deliver their nematocysts to the cnidocyst, whereas the endodermal cells of *Microstoma* deliver their nematocysts to the mesoderm. Unfortunately for the analogy, both Grosvenor and I have shown that the cnidophages after engulfing a certain number of nettles, metamorphose directly into cnidocysts."<sup>2</sup> I had attempted to make no *analogy* in this case nor was I concerned with the manner in which the cnidocyst was formed. I had attempted to make a *comparison*. The cnidophages of æolids by metamorphosing to form the cnidocysts do not involve the mesodermal cells and thus may be *compared* with the endodermal cells of *Microstoma* which deliver the nematocysts to the mesoderm.

Professor Glaser in the third place criticizes me for quoting Grosvenor in support of the idea that the nematocysts of æolids are of defensive value, and at the same time overlooking the work of Cuenot and Glaser which showed that the "defensive value of the nettles is slight if not negligible." I had not overlooked this work of Cuenot and Glaser on the nematocysts of æolids. Despite this negative evidence I am constrained to believe that the nematocysts of *Microstoma* are of defensive value.

Finally my critic states that I have raised the question whether æolids have acquired their method of dealing with nematocysts of coelenterates through flatworm ancestry. This question was suggested. Professor Glaser, however, is unfair to me in not stating that I had placed by the side of this the alternative question whether we had here cases of parallel development. Two questions, not one, were thus raised by me, and I feel quite unready to defend either hypothesis.

Giving credit to whom credit is due, the fact remains that the endodermal cells of *Microstoma* collect the nematocysts of *Hydra* to deliver them to mesodermal cells. Certain mesodermal cells transport these nematocysts to and orient them at the ectoderm.

This intricate process has no meaning un-

<sup>2</sup> *SCIENCE*, Vol. XXXIV., July 14, 1911, pp. 51-2.

less the nematocysts have important defensive value to the flatworm.

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July 15, 1911

#### 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 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.