and significance of language. In this part of the work we must find the chief interest in the fact that we have an attempt to throw light on the origin of the speech of the hitherto beings in the lower animals, rather than from the standpoint of its more developed conditions in man. The study of language hitherto has been to reduce human language to its lowest and simplest form. Mr. Garner for the first time attempts to develop language in its simpler conditions in the lower animals. One of Mr. Garner's conclusions differ so in some of the ideas that have hitherto been in vogue, it is not surprising.

On the whole, the work of Mr. Garner is extremely interesting and suggestive. As a piece of book-making it is open to criticism. It is skilfully; it is not very logically arranged, containing a miscellaneous mixture of observations on the intelligence, habits, gestures, affections, and general mental attributes of monkeys, some of which are new, but most of which are not especially new, and have little relation to the subject of monkey speech. The observations on the actual speech of monkey is therefore the really valuable part of the work, fills only a small portion of the book. We must look upon this volume and the work it describes simply as an outline sketch of the beginning of a series of results which may be carried to a successful issue in later years. The thanks of science are certainly due to Mr. Garner for opening to us a new line of research and a new realm of suggestive thought.

H. W. CONN.


For some years now there has been no textbook of zoology in the English language at all adequately representing the present state of the science, and at the same time of moderate cost. The cost of Claus and Sedgwick is high; the translation of Lang must remain till the original is finished; and Lancaster's promised book still delays its appearance; Packard is out of date, as for that matter is Claus and Sedgwick; and the college teacher who wishes his students to have a good reference book in their possession hardly knows where to turn when the said students are in search of a text-book. Under these circumstances, the prospect afforded by the announcement of Mr. Thomson's book was distinctly attractive.

It may be said at the outset that the book to a large extent responds to favorable anticipations. Mr. Thomson, while not much known as an original investigator, has made a record for himself in the hardly, if at all, less useful role of abstracter and collator of the work of others, while his occasional essays and his work with Professor Geddes on the evolution of sex have shown him to possess an agreeable literary style. The "Outlines of Zoology" is an exceedingly readable book, and perhaps the only criticism that can be made upon its style is that it occasionally degenerates into flippancy. Professor Forbes was quite justified in making his joke about the "wink of derrision" which Ladyd gave him as it passed over the side of which he said: "but it is hardly desirable to waste space in repeating the joke in a text-book. A good many examples of this kind might be quoted.

Mr. Thomson wisely, we think, follows the example of Claus, Boas, and other writers in devoting a considerable amount of space to general matters. The first ninety pages of the book are occupied with an account of the functions of animals, the meaning of organs, tissues, and cells, methods of reproduction, fertilization, segmentation, etc., paleontology, distribution, and the principles of evolution. Evidently these subjects must be treated in the most possible way; but the result is on the whole not unsatisfactory. The first chapter, however, which takes for granted a knowledge of the meaning of such words as "cells," for example, would be a pretty tough morsel for the average student beginning zoology without any biological training. Of the remaining 534 pages of this work, they are taken up with 162 plates, and 171 with vertebrates — an arrangement which, for a general text, surely gives too much space to the vertebrates.

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