

and Plants in Mid-winter to Snow Flakes, Birds in Mid-winter, Animals with and without Combs, The Moon, the Oil Beetle, Buds, Dutch-weed, Flower-Haunting Insects and twenty-seven other equally diversified subjects. It is interesting to learn that "Jenner, the discoverer of vaccination, was accomplished in music, and studied natural history with diligence and success." He it was who made most valuable contributions on the habits of the cuckoo, the hibernation of the Hedge-Hog, and other subjects.

A curious mistatement is made on p. 53, where the author speaks of the pearl-forming *Avicula* as the shell which the Chinese utilize in making artificial pearl images. Any local shell collector would have told him that it was *Hyria*, a fresh water mussel, and not the marine *Avicula*, which the Chinese use for this purpose.

The illustrations are well chosen and clearly drawn. For teachers of elementary science and as a reading book for the higher grammar and even High Schools it may well be commended.

E. S. MORSE.

*Researches on Mimicry on the basis of a Natural Classification of the Papilionidæ.* By DR. ERICH HAASE; translated by C. M. CHILD, Ph. D. 1896. Pp. 154, plates 8, colored, 4to. Nägele, Stuttgart.

It should interest entomologists, and general zoologists also, to know that an English translation of a part of Dr. Erich Haase's elaborate study of mimicry among the Papilionidæ has been published. The results of Dr. Haase's researches were originally published in two parts in Leuckart and Chun's *Bibliotheca Zoologica*.

The portion issued in English translation is Part II. of the study, and makes a quarto volume of one hundred and fifty pages with eight colored plates. The translator, Dr. C. M. Child, now of the University of Chicago, undertook his work at the suggestion of Dr. Leuckart, of the University of Leipzig, and has made a conscientious and idiomatic translation of this important contribution to the knowledge of mimicry. Dr. Child, though not a professed special student of insects, is known to ento-

mologists through his excellent study of Johnston's antennal organ of hearing.

So much of our knowledge of mimicry has come through the study of the mimetic phenomena exhibited among insects, and especially among the butterflies, that it was to be expected that the first serious attempt to combine a study of phylogeny with a study of mimicry should have butterflies for its subject. Systematists have certainly not yet taken much into account the influence of mimicry in making forms of wide phyletic divergence superficially alike, or in making closely related forms superficially dissimilar. Yet mimicry produces exactly these conditions; and where so many members of a group, as Dr. Haase shows is true of the butterflies, owe the chief features of their habitus to the influence of mimicry, systematists have got to take this matter into account. And this will be good for us, for it will hold up very plainly to us one of the most interesting and instructive phases of the biological study of organisms. It may broaden some of us; it can narrow no one of us.

As much for its suggestiveness as for its light on the origin and development of mimetic coloration among the butterflies, entomologists should become acquainted with Dr. Haase's work.

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#### SCIENTIFIC JOURNALS.

##### AMERICAN JOURNAL OF SCIENCE.

THE February number opens with an article by C. E. Beecher, giving an 'outline of a natural classification of the trilobites.' This is the opening portion of a memoir which will be completed in the numbers immediately following. The author's extended study of this group has enabled him to reach definite conclusions, not only in regard to the position that the trilobites properly occupy as a group of the Crustacea, but also to give a systematic and minute classification of the families and genera. The subject is too special to allow of being developed here, but attention may be called to the plate in which certain typical forms are taken to show the principles adopted as the basis of classification.