

the 31 remaining cases. Of these 26 reports, 3 were unfavorable, 19 favorable, and 4 doubtful, concerning the success of the experiment. These doubtful cases are not to be looked upon as unfavorable, but more evidence is needed to transfer them to the list of favorable reports. These 19 out of 26 reports, or 73 per cent., were decidedly favorable. The experiments will be continued during the season of 1891.

In presenting this paper I wish to acknowledge the invaluable aid continually received during the progress of the work from my assistants, Messrs. W. C. Stevens and V. L. Kellogg.

BOOK NOTICES.

BUTTERFLIES OF NORTH AMERICA. Third Series—Part X. By W. H. Edwards.

The last part of Mr. Edwards's superb work has just come to hand. It is of exceptional beauty and interest. Special attention has been lately called to the American species of the genus *Argynnis*, by the publication of Mr. H. J. Elwes's "Revision of the genus *Argynnis*." (Trans. Ent. Soc. Lond. 1889. Part IV.) and Mr. Edwards's "Notes" thereon (Can. Ent. XII. p. 82.) The present number contains plates and descriptions of three species of this genus, the validity of two of which has been questioned by Mr. Elwes. Plate I. illustrates the complete life history of *A. Alcestis* by which it is shown that not only is it distinct in the imago state from both *Aphrodite* and *Cipris* but also in its preparatory stages.

Plate II. *Argynnis Adiante* (male and female). This is a local Californian species of which Mr. Elwes had only male specimens taken many years ago—from what material he had he was inclined to regard it as merely a variety of either *Zerene* or *Monticola*. It appears, however, that it is not such a rare species as he supposed, and Mr. Edwards had ample material to show that this species is valid. The male is figured from Dr. Boisduval's actual type. Dr. Behr, the well-known San Francisco lepidopterist, writes of it that it is common in its season at the proper locality, and further that unlike many Californian *Argynnis* it is very constant. On the same plate as *A. Adiante* is figured another interesting species *A. Atossa* (n. sp.) the male of which has been in Mr. Edwards's collection for twenty years; but the female was only discovered in 1889. From the figure it appears to be very distinct from anything we have in our fauna.

Plate III. shows *Satyrodes Canthus* in great detail. The text of this plate is very complete. Mr. Edwards has adopted Mr. Scudder's genus for this species but believes the name *Eurydice* does not belong to it.—J. F.

THE CAVE FAUNA OF NORTH AMERICA, with remarks on the Anatomy of the Brain and Origin of the Blind Species. By A. S. Packard, M.D. Vol. IV.: First Memoir—National Academy of Sciences. 4to., pp. 156.

The author of this admirable volume is everywhere known throughout the scientific world from his numerous works, especially on entomology, and has obtained a deservedly high reputation in Europe as well as in America. This reputation will, we are confident, be, if possible, enhanced by the elaborate monograph before us. It contains many original observations of cave animals, some careful scientific investigations, and a very interesting chapter of philosophic