

Food plant. Black oak (*Quercus kelloggii* Newberry).

Nadata oregonensis is not well distinguished from *N. gibbosa* Sm. & Abb., especially in the larval state. It seems to be related to *gibbosa* much as *Papilio rutulus* is related to *P. turnus* among the butterflies. Its habitat is very probably coextensive with that of its food plant, which is said to be "on the coast ranges and on the western

slope of the Sierra Nevada throughout California and as far north as the middle of Oregon; on mountain sides and summits only, or in the elevated valleys, not on the plains or near the sea."* Mr. Edwards recorded it from Siskiyou and Butte Counties and I found it in Mariposa County, and at Portland, Oregon but I am not aware that any record of its capture in the coast ranges has yet been made.†

NOTES ON THE NESTING HABITS OF CERTAIN BEES.

BY A. S. PACKARD, PROVIDENCE, R. I.

These notes were made in 1865 to 1867, and were used in writing the chapters in "Our Common Insects" entitled "The Home of the Bees," and were also in part utilized in my Guide to the Study of Insects, but the matter here offered for publication has been unpublished and is perhaps worthy of record.

OSMIA SIMILLIMA Smith. — A number of cells of this species were found in a deserted oak-gall of *Diplolepis confluentus*, individuals of both sexes appearing in the house Dec. 14, 1865, while one appeared during the second week of the following April, and lived a week in the breeding box. The earthen cells, eleven in number, were arranged irregularly so as to fit the concave vault of the gall, which was about two inches in diameter. The cells are rudely cylindrical, a third longer than broad, and quite different in appearance from the cells of *Odynerus*, which are also built in these empty galls. The cells within are shining mahogany-colored, but externally are rough with the debris of the interior of the deserted gall. They differ from the cells of *Odynerus* in being parchment-like, while those of the latter are made

of mud thinly lined within with white silk, and those of *Osmia* are a fourth larger. The insect cuts a longitudinal ovate lid, nearly as large as one side of the cell itself, which is attached to the posterior end by a hinge. *Odynerus* makes its exit by a hole at the end of its cell.

OSMIA PACIFICA Say. — Individuals of both sexes were found in the perfect state in cocoons and earthen cells beneath stones April 15. The cell is half an inch in length; breadth .28 inch. It is oval cylindrical, a little contracted at the upper end just before the lid, forming an urn-shaped oblique lid, which is flattened and a little depressed at the middle. The cell is thin and composed of black fine earth, and not lined with silk within; the outer surface is not very rough.

MEGACHILE CENTUNCULARIS. — The cells or cocoons of what is probably this species are cylindrical, very obtuse at each end, the walls of tough, parchment-like consistency.

* E. L. Greene, Illus. of West Amer. oaks, page 2, 1889.

† I have recently seen examples of the species in the collection of Prof. Rivers from Napa Co., Cal. and it has been taken at Seattle, Wash., by Johnson.

thick and solid, and covered by two or three layers of circular pieces of rose leaves.

MEGACHILE SCAEVUS Say.—I find in Dr. T. W. Harris MS. notes, in the library of the Boston Society of Natural History, the following notes on this species. "Nest under a stone Sept. 11, 1829. Imago, June and July."

MEGACHILE n. sp?.—Six cocoons were found in blackberry stems (probably received from Mr. James Angus) in tunnels just their size. They did not lie very near each other. They are quite tough and thick, and are rounded at one end and squarish at the other. Length .40; breadth .14 inch.

MEGACHILE BREVIS Say.—Its cells are like those of *M. centuncularis*, but the leaves of which they are made are more loosely placed around the cocoon. The leaves are neither those of the rose or spiraea, and were not identified. This is a small species, with the fore tibiae simple, as are those of *M. integer* Say. The nest, preserved in the Harris collection, is in the museum of the Boston Society of Natural History.

MEGACHILE INTEGER Say.—The nest, also in the Harris collection, is scarcely distinguishable from those of *M. centuncularis*, though the pieces may be a little larger, and the cells a little more flattened.

ENTOMOLOGICAL ITEMS.

Mr. T. D. A. Cockerell of Jamaica is engaged in an investigation upon the insects of Custer County, Colorado, with special reference to the origin of the successive faunas found at different altitudes, based upon his collections while resident there. It can hardly fail to give results of considerable general interest.

Out of fifty-seven specimens of *Opomala brachyptera* collected this season in New England by Mr. A. P. Morse, seven (2 ♂, 5 ♀) have tegmina and wings which extend to the tip of the hind femora, the ancestral form thus appearing to an unexpected degree;

of twenty-eight specimens in the collection of Mr. S. H. Scudder only one (a ♂) has wings of this length.

The U. S. National museum has recently published as a bulletin a pamphlet of about 150 pages, amply illustrated, containing admirable "Directions for collecting and preserving insects," by Dr. C. V. Riley; it is excellently planned and executed, with many sensible suggestions.

A successful visit was made last July by Messrs. S. H. and G. H. Scudder to the summits of the White Mountains to procure the eggs of *Oeneis semidea*. More than fifty females were captured, and about half of them sent to Mr. W. H. Edwards in West Virginia, the others placed over growing grass. More than half of those sent to West Virginia reached there alive and were there confined over growing plants, and from all many hundreds of eggs were obtained. Of one lot of over one hundred eggs laid in Cambridge, July 14, every one that was fertile hatched on July 26. The period may of course be longer on the mountain. Mr. G. H. Scudder found a caterpillar which had just reached the last stage feeding at midday on a blade of *Carex*, and it has since fed in Cambridge quite as much by day as by night.

The friends and admirers of the late Mr. Henry Walter Bates are endeavoring to raise a fund to be presented to his widow as a suitable memorial of their esteem. The first list embraced the names of nearly ninety persons, and £ 377 has been subscribed. Contributions may be sent to S. Wm. Silver, 3 York Gate, Regent's Park, N. W., London, England.

An admirable and interesting illustrated account of the life-history of *Hypoderma lineata*, the ox-bot of the United States, is given by Dr. C. V. Riley in the June number of insect life; Mr. Riley also contributes to the same number a highly important description and figure of the first larval stage of *Bruchus fabae*, showing that it has slender and rather long thoracic legs of a peculiar



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