Although *P. nigrirostris* is very common in northern New York and I have taken numerous specimens while collecting, I have made no other observations on its habits in that region. Specimens in my collection which were taken at Potsdam bear dates ranging from March 19 to August 1. As the former date is too early to expect any transformations to have taken place, it seems probable that this species hibernates as an adult.

THE OVIPOSITION OF CHILOCORUS BIVULNERUS MULSANT

By A. A. Girault

As there have been no very complete observations recorded in the literature of economic entomology in regard to the place of deposition, and the morphology, of the egg of this scale-eating ladybird, the following description of it and record of observations on the place of deposition may be of contributory value, particularly since previous observations are not in accordance with these and are more or less fragmentary.

The egg of this species has never been described, and I believe the first observation made on its place of deposition was by Fiske (1903) in Georgia, who stated that they were found in rather large numbers on the trunk of old peach trees infested with the cherry scale (*Aspidiotus forbesi* Johnson). The eggs were deposited under the coccids, in a manner somewhat similar to the mode of deposition of *Chilocorus similis* Rossi (Marlatt, 1902, 1906). However, Smith (1897) mentioned their color, relative size and shape and stated that they are "set on end in little groups, * * * and in a general way resembling the eggs of other ladybirds * *." And years previously, Townend Glover (1859) wrote that they were deposited on the leaves and trunks of trees infested with coccids. Dimmock (1906) gives no additional data.

For the past two or three years I have made more or less desultory observations on *bivulnerus,* but did not find its eggs until the middle of April, 1907, at Olden, Missouri. On a trunk of an apple tree infested with *Chionaspis furfura* (Fitch), the adults were quite abundant, and careful searches under loose pieces of the outer bark and in small crevices along the trunk disclosed the eggs deposited in such places. None were found under the coccids. I was able to prove these eggs to be those of *bivulnerus* several months later when at New Richmond, Ohio, in June, 1907, a pair of the beetles in confine-

ment deposited several eggs, in all respects identical with those found deposited along the trunk of the apple tree in Missouri. A careful description of the eggs in both cases was made. They were deposited on their sides under both conditions, but in confinement I did not succeed in getting more than the few mentioned.

Again at Urbana, Illinois, May 28, 29, 1908, several females of this species were observed crawling slowly about amongst an isolated but crowded colony of *Lepidosaphes ulmi* (Linnaeus), on the trunk of a Carolina poplar (*Populus deltoides carolina* L.), on the campus of the University of Illinois. They were watched for four hours during the afternoon of May 28, but none were observed to deposit eggs, though their ovipositors were quite frequently exserted and inserted into crevices and openings along the bark. The females were very deliberate in their movements, crawling slowly about examining all likely crevices, stopping frequently to feed upon the minute young coccids, and occasionally to rest. They seemed to be particularly careful in selecting a place for the nidus, if such was their purpose. It was not until waiting several hours on the following morning that actual deposition was observed. The females were behaving as formerly, but at 11 a. m., May 29, one of them paused longer than usual while examining a crevice with the ovipositor, and finally she was seen to pass a single egg. This was deposited under a scale of bark, and the egg was very well hidden. This egg was cut out of the crevice and compared with the others found scattered in similar places through the coccid colony, and all of the females were captured and confined in the laboratory, where, however, they died from neglect, without oviposition. All the eggs found in this colony of Lepidosaphes hatched in the laboratory, but I did not have time to secure data on the length of the egg instar. After death the females were kindly determined for me by Mr. Eugene A. Schwarz of the United States National Museum, Washington, D. C., as the species under consideration.

The description of the egg is appended:

Normal: Color uniformly pale chrome orange; cylindrical, slightly thickened towards the middle, the ends obtuse, subtruncate; surface shining, naked, minutely punctate (half-inch Coddington lens), with moderately close, minute papillæ, within rather large, circular, deep punctures (two-thirds-inch objective, Bausch and Lomb), the latter inconspicuous, seen faintly at the change of focus, as of an uneven surface; papillæ resemble minute punctures. Micropyle inconspicuous; chorion elastic. Length, 1.20 mm., average; greatest width, 0.65 mm., average. (From 14 specimens.)

Deposited singly or in small groups of three or four, on their sides, in crevices of the bark; attached, however, at the caudal end, along the latero-caudal margin of one side, making that margin of the egg somewhat obliquely truncate. The eggs are larger than with the more common species of the

Coccinellidæ and appear to be similar to those of *Chilocorus similis* Rossi (Marlatt, 1906). Fiske (1903) states that they are brown in color.

Literature Referred To

1859. **Glover, Townend.** Report Commissioner of Patents for the year 1858. (Executive Document No. 105, House of Representatives, 2d session 35th U. S. Congress), Washington, p. 261. "The eggs of this lady-bug being deposited by the female on the leaves or trunks of trees infested, hatch in from three to six days."

1897. **Smith, John Bernhard.** Report of the Entomologist (for 1896), in 17th Annual Report, New Jersey Agric. Experiment Station, for year ending Oct. 31, 1896, p. 522. "The eggs are bright yellow in color, and quite large in proportion to the size of the beetle. They are elongate-oval in shape, set on end in little groups, something like those of the Potato Beetle, and in a general way resembling the eggs of other lady-birds, which are not uncommonly found on leaves infested by plant lice."

1902. **Marlatt, Charles Lester.** Proceedings of the 14th Annual Meeting of the Association of Economic Entomologists, Pittsburg, Pa., June 28, 1902. Bull. No. 37, N. Series, Div. Ent., United States Department of Agriculture, Washington, D. C., p. 81.

1903. **Fiske, William F.** Proceedings of the 15th Annual Meeting of the Association of Economic Entomologists, Washington, D. C., Dec. 26, 1902. Bull. No. 40, N. series, Div. Ent., United States Department of Agriculture, Washington, D. C., p. 31.

1906. **Dimmock, George W.** Algunas Coccinellidæ de Cuba. Primer Informe Anual de la Estación Central Agronómica de Cuba, Habana, pp. 291–292. Mentions the observations of Glover (1859), Smith (1897), and Fiske (1903).

1906. **Marlatt, Charles Lester.** The San José or Chinese Scale. Bull No. 62, Bureau Ent., United States Department of Agriculture, Washington, D. C., fig. 11, d–g.

NOTES AND DESCRIPTIONS OF SOME ORCHARD PLANT LICE OF THE FAMILY APHIDIDAE[1]

By C. P. Gillette

The Aphididæ have been the most destructive family of insects attacking Colorado orchards for several years past. Consequently they have been objects of special study by the writer and his assistants for the last two or three years. I am giving here some of the more technical information, especially descriptions, that would be of little interest to the fruit grower.

[1]This paper is supplemental to Bull. 133 of the Colorado Agricultural Experiment Station, which deals more specially with the life habits and the means of control of orchard plant lice.