OUTLINE LIFE-HISTORY OF THE CHRYSOMELID *GASTROIDEA CYANEA* MELSHEIMER.

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DURING late June, 1907, adults of this species were observed feeding on the leaves of a species of dock (*Rumex*) in a garden at New Richmond, Ohio. On June 28, a female beetle was captured which had a greatly swollen abdomen, and upon confinement in the laboratory, she deposited eggs in abundance. Other gravid females were likewise confined and from their eggs a second generation was obtained in July. These notes briefly record the general outline of the cycle, together with a description of the egg.

THE EGG.

The eggs of this species are uniformly bright orange yellow (Gamboge), with one end rather conspicuously transparent in most cases. They are elongate oval in shape, the ends somewhat obtuse, and one side slightly concaved. The surface is glabrous and simple, and the micropyle inconspicuous. After several days the transparent end becomes concolorous, through expansion of the embryo. The eggs measure in length, 0.95 mm. They are deposited in conspicuous masses of from 20 to 40 on an average, side by side on the under surfaces of the leaves of dock, and perhaps (?) other weeds. The egg-masses are irregular in shape.

Table I. Duration of the Period of Incubation, July 2–11, 1907.

Lot No.	No. eggs.	Deposited.	Hatched.	Length Days.	hours.	Av. daily effective temperature.
1.	52	Noon, July 2	10 P. M., July 6	4	10	31.5° Fahr.
2.	40	10 A. M., July 5	10 P. M., July 9	4	12	36.1
3.	35	10:30 A. M., July 7	7 P. M., July 11	4	8½	37.1

The eggs were all of the first reared generation. They were confined in the laboratory in darkness, under the cover of paste-board boxes, and were supplied moisture by the daily addition of fresh foliage. The egg-masses found in nature were not exposed to the direct rays of the sun.

No parasite were obtained from 40 eggs found on dock July 2, all hatching by July 6.

Postembryonic Stages.

The larvae resemble in general aspect those of *Haltica chalybea* Illiger, but are not as robust. They are inclined to be gregarious during early life. Three larval ecdyses and four postembryonic instars occur during development.

Table II. Average Duration of Postembryonic Instars for a Generation, July, 1907.

No. eggs.	Hatched.	1st ecdysis. Instar I.	2nd ecdysis. Instar II.	Entered soil. Instar III.	Emerged. Pupal instar.	Total.	av. daily effective temperature.
52[1].	10 p.m., July 6	7 a.m., July 9 2 dys., 9 hrs.	Noon, July 11 2 dys., 5 hrs.	6 p.m., July 13 2 dys., 6 hrs.	7 p.m., July 20 7 dys. 1 hr.	13 dys., 21 hrs.	36.3° F.

The larvae were given an abundance of food and confined in the laboratory in an open glass jar filled with clay loam soil. They eat irregular patches of matter from the leaves. Pupation takes place beneath the soil.

Table III. Av. Width of the Head for Respective Larval Instars.

Instar:	I.	II.	III.
Greatest diameter, mm.	0.3735	0.6474	0.9960

Duration of Life Cycle.

By combining Table II with Lot No. 1, Table I, the length of the life cycle for a single set of individuals is obtained as follows:

Table IV. Duration of life cycle for a single generation, July 2–20, 1907.

	Egg.		Larva.		Pupa (time in soil).		Life cycle	
No.	Days.	hours.	Days.	hours.	Days.	hours.	Days.	hours.
52	4	10	6	20	7	1	18	1

The Adults.

Gravid females captured on their foodplant, growing in clay loam of a garden, on June 28th, July 1st and 7th, were confined in glass jars in the laboratory and supplied food daily. Table V summarizes. The three females were probably some days old when taken, so that the records probably fall short of the average. It is

[1] Lot No. 1, table I.

rather hazardous, however, to say even that, in the absence of extensive data, but analogy would lead me to believe that the number of eggs deposited, for instance, is much greater than the maximum here recorded, and so on for the other points involved. But reasoning by analogy is untrustworthy in these cases, and the records must stand for themselves.

Table V. Gravid females in confinement.

No.	1.	2.	3.
Date captured.	A. M., June 28th.	4 P. M., July.	10 A. M., July 7th.
Oviposition:	By July 1 — 181	Noon, July 2 — 52	Noon, July 7 — 33
	p., 3 — 41	a., 3 — 42	a., 8 — 81
	p., 4 — 62	p., 3 — 40	p., 9 — 27
	10a., 5 — 40	p., 4 — 89	By p., 11 — 13
	6p., 6 — 34	a., 6 — 43	p., 11 — 38
	a., 8 — 43	10:30 a., 7 — 35	a., 14 — 31
	p., 9 — 36		p., 15 — 35
	11 — 37		a., 16 — 32
	a., 14 — 34		
	a., 15 — 47		
	p., 15 — 64		
Eggs in ovaries at death	— 15	 2	 5
Total number eggs deposited	— 634	303	295
Died.	6 p., July 22.	July 13.	July 22.
Length period oviposition	June 30–July 15	July 2–July 7	July 7–July 16
Length of life	June 28–July 22	July 1–July 13	July 7–July 22

Note: a. and p. mean A. M. and P. M. respectively.

The adults of the reared generation, issuing at the average time of 7 P. M., July 20th, were confined together with food, and did not commence to mate until July 25th, feeding during the interval. At emergence, the two sexes are similar in appearance, but after mating the females become greatly swollen about the abdomen, giving them a characteristic appearance.

Two pairs were observed mating, presumably for the first time, on July 25th, and they were confined separately. The female of one pair deposited 211 eggs, from July 26–29, dying on August 3 without further deposition. The female of the other pair laid 412 eggs, from July 26 to August 5, dying on August 9. Many of the eggs deposited by these pairs failed to hatch. In nature the adults feed extensively on the foliage.

In regard to the number of generations in this locality, it appears that there is one in June or earlier and one in July. The first eggs were found early in June, and gravid females were observed in nature as late as July 24, 1907. Although these two generations are all that were observed occurring on *Rumex*, yet my observations were not extensive enough to say that there were not earlier or later ones.

I am under obligation to Mr. Eugene Amandus Schwarz, U. S. National Museum, for identification of the species.

NOTES ON HARRIS'S TYPES OF CYNIPIDAE.

BY WILLIAM BEUTENMÜLLER, NEW YORK CITY.

THROUGH the kindness of Mr. C. W. Johnson, I was enabled to examine the types of the species of Cynipidae described by the late Thaddeus William Harris, whose collection is in the Boston Society of Natural History.

RHODITES SEMIPICEUS (*Harris*).

Cynips semipiceus HARRIS, Rep. Ins. Mass. Inj. Veget. 1841, p. 400; Treat. Ins. New Engl. Inj. Veget. 2nd edit. 1852, p. 436; Treat. Ins. Inj. Veget. 3rd edit. 1862, p. 549; *ibid.* New Edit. Flint, 1862, p. 549; *ibid.* 1863, p. 549; *ibid.* 1880, p. 549.

One gall and one female adult are in the collection. The head and abdomen of the specimen are wanting, but from the remaining parts and the characteristic gall, the species may be recognized as being the same as *Rhodites fulgens* Gillette. Harris's species was heretofore erroneously considered to be a guest-fly (*Periclistis semipiceus*) of *Rhodites radicum* by the late R. von Osten Sacken.

The type gall is very similar to the one I figured in the Bulletin of the American Museum of Natural History, Vol. XXIII, 1907, plate XLVI, fig. 2. The galls may be found at or on the roots of *Rosa rubiginosa, Rosa humilis, Rosa carolina* and probably other species of wild roses.

RHODITES BICOLOR (*Harris*).

Cynips bicolor HARRIS, Rep. Ins. Mass. Inj. Veget. 1841, p. 399; Treat. Ins; New Engl. Inj. Veget. 2nd Edit. 1852, p. 435; Treat. Ins. Inj. Veget. 3rd Edit. 1862,