

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XVIII.

NOVEMBER, 1907.

No. 9.

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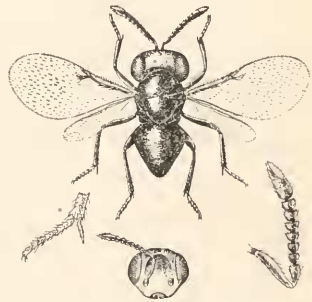
A Chalcidid Parasite of a Tick.

BY L. O. HOWARD.

(Plate XIV)

Although the Chalcidoid parasites of the family Encyrtidae have varied hosts, none has ever been recorded from any but a true insect, and even in the Insecta the field is rather definitely limited. In fact, there seems to be no record that any Hymenopterous parasite has ever been reared from an Ixodid, although some are known to breed in Araneids. On March 15, 1907, however, Mr. J. D. Mitchell, of Victoria, Texas, sent to the laboratory of the Bureau of Entomology of the United States Department of Agriculture, at Dallas, Texas, a number of specimens of *Haemaphysalis leporis-palustris*, collected on a cottontail rabbit in Jackson County, Texas. These included two nymphs and numerous adults. The nymphs were placed in a pill-box by Mr. W. A. Hooker to obtain data regarding the time from dropping to molting. The bottom of the pill-box was perforated with a pin and placed on moist sand in a petri dish. On May 1st the box

was examined, and six Hymenopterous parasites, all dead, were found. A large hole, considered to be an emergence hole of parasites, was noticed in one nymphal tick. On the same day Mr. Mitchell sent in a number of specimens of the same tick taken alive from a jack rabbit in the same county. There were several nymphs in this lot, and these were placed in a pill-box exactly as in the other case. On May 6th this box was examined; no parasites were seen and no emergence hole was observed. But on May 8th another examination showed six specimens of the supposed parasite, all alive. As before, a large hole was observed near the posterior margin of one of the nymphal ticks. The pill-boxes were carefully examined by Mr. Hooker, without finding the remains of any insects. Mr. F. C. Pratt examined the sand in the petri dish, and reported that no cast skins or other indications of the presence of insects could be found. From these circumstances Mr. W. D. Hunter, in charge of the laboratory, concluded that the ticks had been parasitized while they were still on their host, or, possibly, while on the ground after transformation from the hexapod to the nymphal stage, and the parasites were sent to the writer at Washington for examination. Not perfectly satisfied with this evidence, the writer sent to Dallas, and had the pierced skins of the nymphal ticks sent to Washington, placing them in the skillful hands of Mr. R. E. Snodgrass. A very close examination finally indicated a portion of the cast skin of the head of a Chalcidoid larva, showing the characteristic mandibles. These are illustrated at Fig. c, Plate XIV, and the emergence hole is shown at Fig. f.



Ixodiphagus texanus.—Female: adult above; front view of head below; antenna at right; middle tarsus and tip of tibia at left. Greatly enlarged (original). Drawn by J. F. Strauss.

The evidence now seems conclusive that in the species described below we have a true primary parasite of an injurious Ixodid. Whether this parasite will equally affect the Texas

cattle tick is something which the writer's assistants hope to investigate should they be able to secure further living specimens. The observation is most interesting from the biological standpoint. The parasite appears to be quite new, belonging to the sub-family Encyrtinæ of Ashmead's family Encyrtidæ, but does not fit well into either of the tribes founded by him. It may be described as follows:

IXODIPHAGUS gen. nov.

Female.—Mesoscutum entire, convex, parapsidal furrows entirely absent. Mandibles broad, bidentate, with an inner chisel-shaped tooth and a canine tooth. Maxillary palpi 4-jointed, joints 2 and 3 shorter than 1 and 2. Labial palpi 3-jointed short and very stout, joint 2 very short. Hypopygium not prominent. Marginal vein punctiform; post-marginal short, shorter than stigmal which is triangular and descends at a narrow angle into the wing disk. Body robust. Head lenticular from dorsal aspect; eyes well separated; ocelli at angles of right-angled triangle, the distance of the middle ocellus from each of the laterals about equal to that of a lateral from the eye-margin; eyes faintly pubescent, Antennæ somewhat pilose, slightly club-shaped; scape slightly swollen; pedicel ob-conical, longer than joints 1 and 2 of the funicle together; funicle joints subequal in length but gradually widening from 1 to 6; club with its 3 joints visibly separated, somewhat longer than last 3 funicle joints together, and with a long lateral flattened area. Antennæ inserted just below middle of face, their bases widely separated. Antennal scrobes deep. Checks and lower face well rounded. Mesoscutum and mesoscutellum subequal in length; axillæ nearly meeting at tips. Legs normal.

Ixodiphagus texanus n. sp.

Female.—Length 0.8 mm; expanse 1.5 mm; greatest width of fore wing 0.2. Body black, shining, somewhat pubescent. Antennæ brown, scape yellowish, especially near base; all tibiæ and tarsi honey yellow; front femora entirely black; middle and hind femora honey yellow at either end. Head and thorax shining, coriaceous. Wings generally and very faintly infuscated; wing veins light-brown, distinct.

Described from nine ♀ specimens reared as above described from two nymphal specimens of *Haemaphysalis leporis-palustris*, one from cottontail rabbit, one from jack rabbit, collected by J. D. Mitchell in Jackson Co., Tex.

Type No. 10820 U. S. National Museum.

EXPLANATION OF PLATE XIV.

Ixodiphagus n. gen. *texanus* n. sp., detailed parts:

a, Labium with palpus of adult, from side.

b, Labium with palpi of adult, from below.

c, Mandibles of larva.

d, Maxilla with palpus of adult, from below.

e, The same from above.

f, Outline of body of *Haemaphysalis leporis-palustris*, showing exit hole of adult *Ixodiphagus*.

g and h, Mandibles of adult.

A new Butterfly from California.

BY HENRY SKINNER.

Thecla loki n. sp.

♂.—Expanse 27 mm. Antennae annulate black and white, tip ferruginous, club black. Upper side: Primaries pale brown, with an almost obsolete black lunule near anal angle, with some brighter colored scales above it. A long tail and a short tail, each tipped with white. Under-side: Primaries light brown, with a greenish tinge; a mesial white line edged internally with black, crosses the wing but does not reach the inner margin. Secondaries same color, with a tortuous mesial white line from costa to inner margin, edged with black. In some specimens a white discal dash, wanting in others; space outside of mesial band lighter in color. Crossing this space from costa to inner margin is a row of about seven or eight black spots, a black spot between this row and the outer margin and one at anal angle; the margin is a narrow black line.

From five specimens taken by Mr. W. S. Wright at Mt. Springs, San Diego County, Cal., July 5, 1906.

This species is allied to *damon*, *castalis* and *blenina*, and can be at once separated from them by the difference in the character of the band of black spots which runs from the costa to the inner margin. In the other species this band of spots begins near or below the middle of the outer margin.