

**A NEW SPECIES OF *TELENOMUS* (HYMENOPTERA: SCELIONIDAE),
AN EGG PARASITE OF THE AMBUSH BUG, *PHYMATA* SP.
(HETEROPTERA: PHYMATIDAE)**

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Abstract

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Telenomus phymatae n. sp. is described from the New World (Canada, USA, Colombia [S.A.]), reared from the eggs of *Phymata* sp. (Heteroptera: Phymatidae).

The members of the genus *Telenomus* Haliday (s.l.) are egg parasites of a great variety of hosts, the major groups being the Lepidoptera and Heteroptera. Among the Heteroptera the families Pentatomidae, Lygaeidae, Coreidae, Reduviidae, Miridae, and Rhopalidae are known to be parasitized. *Telenomus phymatae* is the first known member of the genus to attack species of ambush bugs (Phymatidae). An undescribed genus of Gryonini (Scelionidae), phoretic on *Phymata guerini* Leth. & Sev. in Florida is the only other presumed scelionid egg parasite of Phymatidae (Masner 1976).

***Telenomus phymatae* n. sp.**

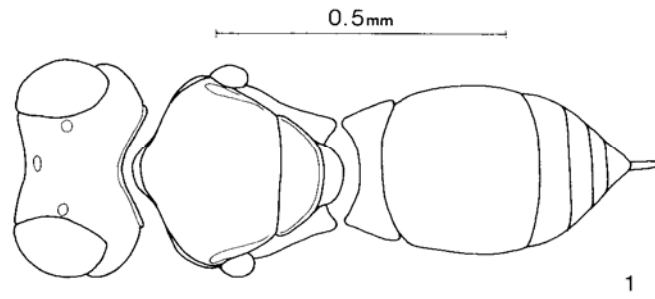
Figs. 1–11

Holotype female. Total length 1.38 mm. Head and body black; all coxae brown; legs otherwise dark brown with trochanters, tarsi, and tips of femora and tibiae yellowish brown; radicle and base of A1 yellowish brown, A2–A11 dark brown; mandibles reddish brown.

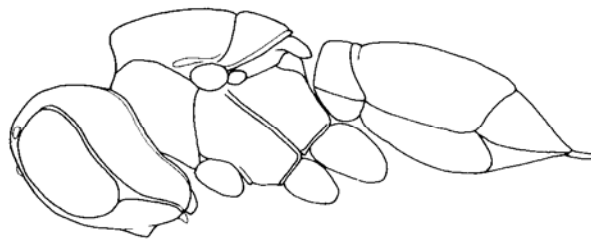
Head, seen from above, appearing hammer-shaped; posterior margin strongly concave, frons slightly concave (Fig. 1), head 1.68 times as wide as its greatest length, vertex without transverse keel, roundly passing over onto occiput; occipital carina complete medially, crenulate, rounded laterally, strongly bowed along upper course; vertex and occiput evenly coriaceous, sculpture becoming finer in texture and extending ventrally along inner eye margin and onto upper portion of frons, frons otherwise smooth and shining; large, umbilicate setigerous punctures scattered upon coriaceous sculpture below anterior ocellus and in a single row along inner margin of eye to malar space (Figs. 6, 7, 8); frons without transverse ledge; frontal depression shallow, vaguely delimited; interantennal carina extending upward to mid point of eyes, with short transverse wrinkles arising from it; eyes large, glabrous; frons narrow, shortest distance between inner orbits of eyes 0.90 eye height; malar space coriaceous, with umbilicate punctures as on frons and concentric wrinkles around antennal insertions; clypeus medially with acute, downwardly directed projection (Figs. 9, 10); mandibles stout, tridentate, middle tooth the shortest, outer two about equal in length; malar sulcus broad, deep, dilated near eye; temples bulging, coriaceous, sculpture extending from posterior margin of eye to occipital carina, head widest across temples; temples with superficial groove arising from malar sulcus and extending upward, fading out before reaching top of eye; head, in full front view, 1.19 times as wide as long.

Antennae (Fig. 3) 11-segmented; length A2 equal to or slightly greater than length A3; A6 strongly transverse; club 5-segmented, A8–A10 transverse.

Mesosoma: mesoscutum slightly flattened, anterior edge strongly declivous, dropping off sharply to pronotum (Fig. 2), coriaceous-pustulate, sculpture fading posteriorly; parascutal furrows deep, well defined; mesoscutum and scutellum evenly setose; scutellum otherwise smooth and shining, slightly truncate posteriorly; dorsellum longest medially, punctate reticulate, overlapping propodeum; metanotum between dorsellum and base of hind wing with row of crenulae; pronotum laterally with smooth, mirror-like field above fore coxae, separated dorsally from coriaceous part of pronotum by row of deep crenulae (Fig. 11); acetabular carina crenulate; mesepisternum without diagonal foveolate line; ventral part of mesepisternum

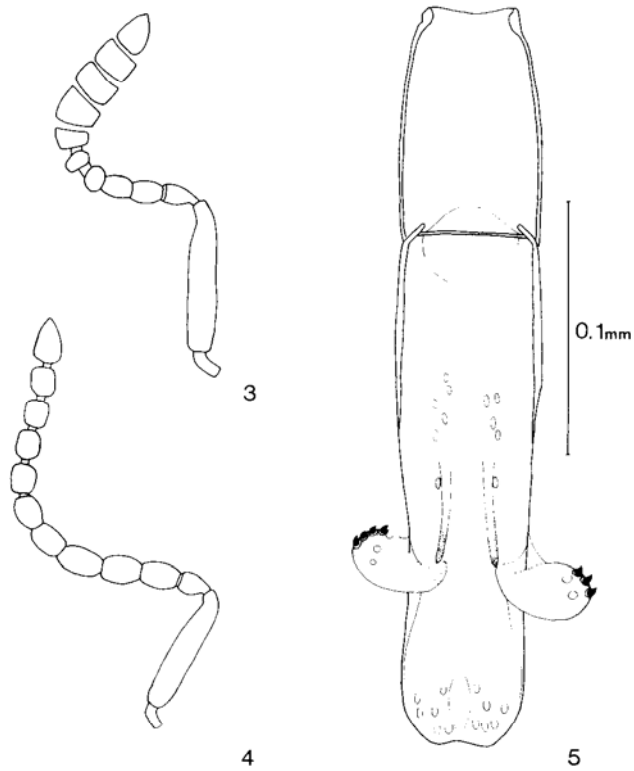


1



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FIGS. 1-2.

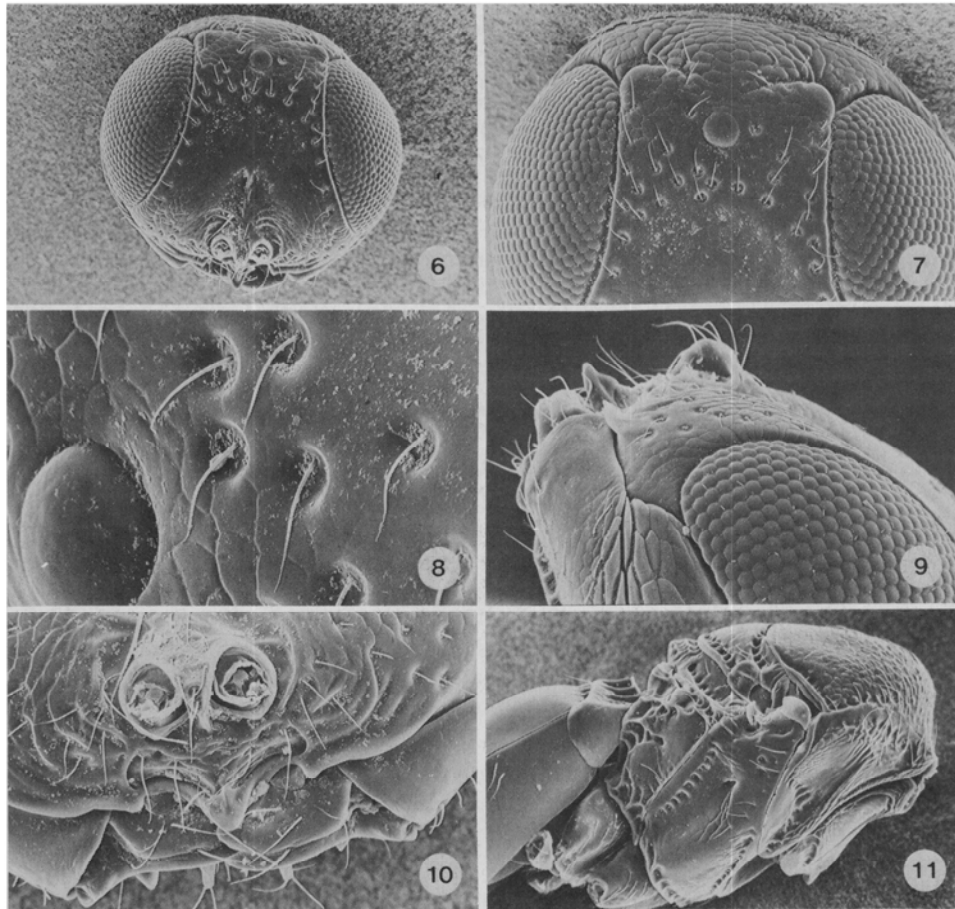


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FIGS. 3-5.



FIGS. 1–11. *Telenomus phymatae* n. sp. 1, habitus, dorsal view, female; 2, habitus, lateral view, female; 3, antenna, female; 4, antenna, male; 5, genitalia, male; 6, head, female (196 \times); 7, head, frontoververtex, female (292 \times); 8, head, frontoververtex, female (1600 \times); 9, head, lateral view, female (404 \times); 10, head, clypeus, female (488 \times); 11, mesosoma, lateral view, female (200 \times).

longer than setae arising from its surface, posterior margin not expanded; mesopleural declivity deep, anterior margin rounded, not carinate; posterodorsal corner of metapleuron and posterior margin of propodeum expanded, lamellate; fore wing: stigmatalis 3 times as long as marginalis, postmarginalis long, fading into costal margin, no indication of basalis; hind wing broad, greatest width 3 to 4 times length of fringe at that point; wings surpassing apex of metasoma; fore leg: length of basitarsus 0.30 length of tibia.

Metasoma 1.48 times as long as wide; T1 strongly transverse, 6.0 times as wide apically as long medially, with 3 pairs of lateral and 2 pairs of sublateral setae, coarsely fluted over entire length; T2 1.07 times as wide as long, length of basal longitudinal striae not exceeding length of T1; bases of following tergites punctulate; setae arising from posterior margins of T3–T6 long, broadly overlapping bases of setae on next tergite; metasoma without distinctly longer pair of apical setae.

Male. Total length 1.21–1.31 mm. Head and body dark brown to black; all coxae dark brown; legs otherwise uniformly brownish yellow; radicle and A1 yellow; A2–A12 yellowish brown to dark brown, becoming darker distally.

Differing from female only in the following: eyes slightly shorter, ratio of frons width to eye height ranging from 0.85 to 0.95; antennae 12-segmented. A3 distinctly longer and wider than A2 (Fig. 4); metasoma shorter, 1.20–1.46 times as long as wide; genitalia (Fig. 5); digital teeth small, penis valves and ventral region of aedeago-volsellar shaft weakly sclerotized, laminae volsellares well developed only apically, length of aedeagal lobe and aedeago-volsellar shaft 3.5 times greatest width, 2.3 times length of basal segment.

TYPE MATERIAL. Holotype female (No. 76126, U.S. National Museum, Washington, D.C.), allotype male and 6 paratypes (4 females, 2 males) Geneva, N.Y., Lot 64820, V.H. Lowe, em. Mar. 4, 1895, parasitic on eggs of *Phymata erosa* (in U.S. National Museum, Washington, D.C.).

Paratypes: 3 ♀♀ Ottawa, Ont. June 28, 1940 and Aug. 14, 1940, O. Peck, in CNC and Cornell U.; ♀, and ♂ Stittsville, Ont., Aug. 21–31 and June 16–21, 1977, Malaise trap, in CNC; 3 ♀♀ Crow Lake, Marmora area, Ont., Aug. 17–24, 1959, L.K. Smith, in CNC and Cornell U.; ♀ Punta Gorda, Fla., Apr. 9, 1952, O. Peck, in CNC; ♀ Gainesville, Fla., Doyle Conner Bldg., Sept. 8, 1972, Dodge, in Florida State Coll. Arthropods; 6 ♀♀ 17 km S. Cali, Colombia, Valle, 1000 m, Apr. 10, 1971, sweepings of roadside weeds, W. Eberhard & C. Garcia, in CNC and Cornell U.; ♀ Choco, Colombia, 5°45' N & 76°30' W, 450–500 m, Apr. 13, 1973, montane rain forest, J. Helava, in CNC.

REMARKS. *T. phymatae* may be conveniently distinguished from all other known species of *Telenomus* by the deep punctation of parts of the frons as well as by the pointed apex of the clypeus. Similarly, the shape of the head is unusual for the genus. The bulging temples, narrow frons, crenulate occipital carina as well as the structure of the male genitalia indicate that this new species belongs to a group of species typified by *T. pentatomus* Kieffer, the members of which are egg parasites of the Reduvioidea (Heteroptera).

VARIABILITY. Females: total length 1.09–1.40 mm; ratio of head width to length measured dorsally, 1.61–1.77; ratio of head width to length measured in full front view, 1.11–1.23; ratio of frons width to eye height, 0.71–0.90; ratio of length of metasoma to width, 1.32–1.58; ratio of width of T1 to length, 4.4–6.0; ratio of width of T2 to length, 1.03–1.12.

The eight specimens from New York are over 80 years old and slightly lighter than the other, fresher material. The color of the legs of all specimens varied from that described for the holotype to completely yellow. In those specimens with yellow legs the radicle and proximal two thirds of A1 are yellow, the undersides of A2–A4 and the apical third of A1 brownish yellow, and the remaining antennomeres dark brown.

Considerable variability was observed in the sculpture of the frons, in the density of the large umbilicate punctures below the anterior ocellus, and in the shape and orientation of the clypeal process. The sculpture of the frontal scrobe varies from evenly coriaceous to partly smooth between the anterior ocellus and the antennal insertions. The dense belt of umbilicate punctures may be partly interrupted below the anterior ocellus. The clypeal process is better developed in some specimens, sometimes more flexed and projecting almost forwards. However, none of the variations could be correlated geographically or with each other within the material available.

DISTRIBUTION. The high degree of variability may perhaps be explained in part by the relatively wide range of distribution of *T. phymatae*. Specimens were examined from eastern Ontario and the eastern United States (from New York and Florida) as well as two places in Colombia, South America. The existing gaps are probably due to inadequate sampling rather than to a disjunct distribution.

BIOLOGY. Another factor that may affect the variability is the potential spectrum of hosts between Canada and Colombia. We expect that *T. phymatae* is confined to members of the family Phymatidae. The only available host record of 1895 gives *Phymata erosa* (L.) in New York. However, this old record probably refers to either *P. pennsylvanica* Handlirsch or *P. americana* Melin. *P. erosa* is a South American species (Kormilev 1960) whereas *americana* and *pennsylvanica* are the only two potential hosts in upstate New York. The latter two species extend southward to Mexico, but not to Colombia, indicating that the Colombian populations of *T. phymatae* are probably attacking other members of the Phymatidae. The potential polyphagy may partly account for the variability discussed above.

Balduf (1941) reviewed the life history of a species referred to *Phymata pennsylvanica americana*. He noted that the species has only one generation per year in the northern US. The eggs laid in summer-fall overwinter and the parasites should then emerge the following spring or early summer. The series from Geneva (N.Y.) was most likely reared in the laboratory and therefore the individuals appeared as early as the beginning of March. It is highly probable that *T. phymatae* has only one generation per year in the northern areas of its distribution.

Acknowledgments

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