

4913

W. L. Brown
C1

♀

Harpagoxenus

canadensis M. Sm.

R. E. Gregg

Excerpt from The Canadian Entomologist, April, 1945.

THE WORKER CASTE OF *HARPAGOXENUS CANADENSIS* SMITH
(FORMICIDAE).

BY ROBERT E. GREGG,

University of Colorado, Boulder, Colo.

During the summers of 1941 and 1942, with the help of students, I collected in the vicinity of Duluth, Minnesota, some individuals of a species of ant recently described by Dr. M. R. Smith (1939), from Quebec, Canada. The original account of *Harpagoxenus canadensis* was based on the queen caste, an intermediate ergatoid female type, and a simple ergatoid female type, representing 12 specimens in all. No workers apparently were known, but since then this caste has been collected from several localities, and the material from Duluth consists of workers, ergatoids, and one queen. Dr. Smith has kindly confirmed the identity of the specimens, and has suggested that the worker caste be described and figured. Accordingly, I append the diagnosis of this insect, together with notes on additional localities* for the species and a few ecological observations.

***Harpagoxenus canadensis* Smith**

Worker.—Length 3.5-4.0 mm.

Head slightly longer than wide, sides subparallel, only slightly convergent anteriorly; occipital corners rounded and posterior border faintly concave. Clypeus with two, blunt carinae which do not form projecting teeth; area between them depressed and the anterior border broadly emarginate; posterior margin extending deeply between the frontal carinae. Frontal carinae distinct and diverging gradually from anterior to posterior extremities, continuing almost to the occipital angles and forming the medial borders of conspicuous antennal scrobes. The lateral boundaries of these depressions are less distinctly marked by ridges which pass just medial to the eyes, and the antennae in repose are folded into the scrobes. Eyes of medium size, placed slightly anterior to a point mid-way between the mandibular fossae and the posterior angles of the head; distance from fossa to border of eye equal to $1\frac{2}{3}$ the diameter of the eye. Antennae 11-segmented, robust, the last three segments incrassated and forming an indistinct club; last segment slightly larger than the two penulti-

* Dr. M. R. Smith of the Bureau of Entomology and Plant Quarantine in Washington, D. C., has kindly supplied most of this information, and Mr. W. F. Buren has given me the record of the species which he has from Minnesota. Dr. Smith has also read the manuscript and made certain suggestions.

mates. Scape broad, flattened, and curved at the base, reaching only about $\frac{2}{3}$ the distance to the posterior angles of the head. Mandibles broad and abruptly curved so that the basal borders are angled; apical edges concave and without teeth. Maxillary palpi 5-segmented.

Thorax narrower than the head, being widest at the rounded humeral angles; in profile evenly rounded and low, passing into a shallow but distinct mesoepinotal impression. Epinotum with subequal base and declivity and well developed spines which are nearly horizontal, but project slightly upward

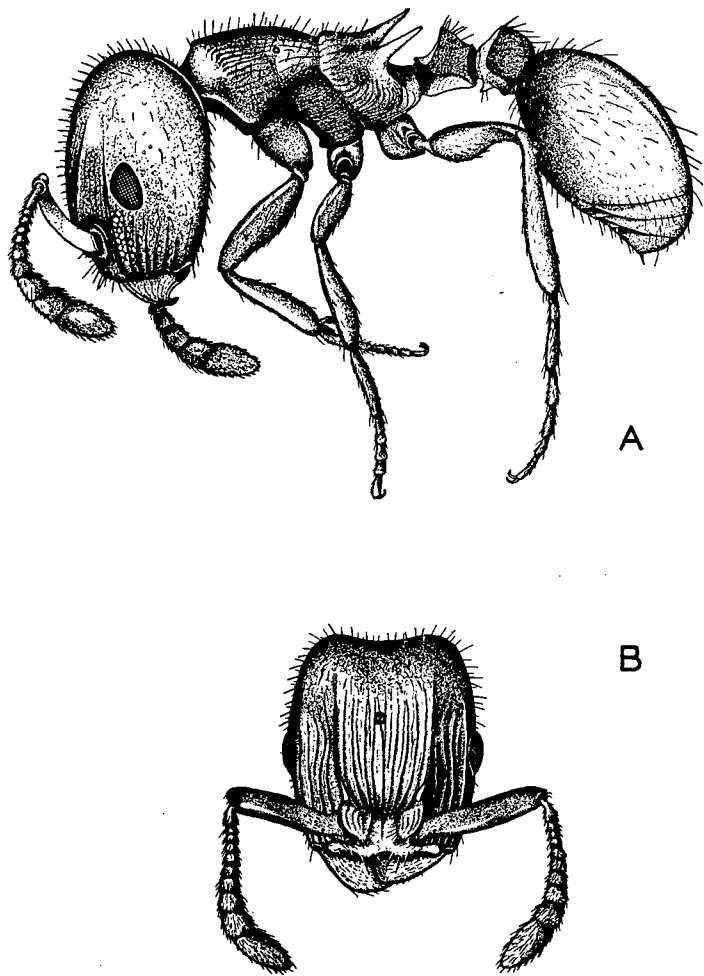


Fig. 1. A, Worker of *Harpagoxenus canadensis* Smith; B, head of same.

and outward from their bases. Petiole much narrower than postpetiole (the latter $\frac{1}{3}$ wider); node tapered to a thin but truncated superior border, and the sides converging dorsally when viewed from behind; anterior slope steep and peduncle very short; posterior slope somewhat lower; antero-lateral corners tuberculate, sides carinate, and a pronounced ventral tooth present at the anterior end. Postpetiole globose in profile and trapezoidal from above. Gaster of the usual shape, anterior face flattened to receive the postpetiole, and the antero-lateral margins angled.

Sculpture: Front of head with straight rugae paralleling the frontal carinae and continuing as finer striations onto the clypeus; antennal scrobes punctate and the genae punctato-rugulose; occipital angles and centre

of gula glabrous. Thoracic dorsum with fine, longitudinal rugae interspersed with small punctures; pleurae of the same texture except that the punctation is more evident. Epinotal base and sides punctato-rugulose; declivity transversely striated. Petiole coarsely, and postpetiole finely punctate. Gaster smooth and shining.

Pilosity: Hairs abundant and clavate on the upper surface of the head, thorax, petiole, postpetiole, and gaster, and arranged in transverse rows at the posterior margins of the abdominal segments; present though less numerous on the gula, pleurae, coxae, femora, and tibiae. Pubescence sparse and most easily detected on the head, gaster, and legs; long and closely appressed.

Color: Head and gaster dark brown, thorax lighter; legs and mandibles yellowish to yellowish brown; eyes and cutting edges of mandibles black.

Host.—*Leptothorax acervorum* subsp. *canadensis* Provancher.

Morphotype.—Present in the author's collection.

Additional specimens of the worker caste.—In the author's collection and deposited at the U. S. National Museum.

Described from one specimen in a colony of 16 adult individuals (10 workers and 6 ergatoids). Twenty-two winged, female pupae and 15 male pupae were present in the same nest which was collected from a rotting log (stage 2) in a tamarack-spruce bog near Duluth, Minnesota. Additional specimens were obtained by Messrs. A. Wiljamaa, R. Freeman, and J. Zygmanski; one of these records is from a maple-basswood forest. In no case was a large colony found, and most of the collections were represented by isolated ants. In the nest from which the worker is described a number of individuals of the host species of ant were present, and were sufficiently like the slave-maker that the mixed state of the colony was not noticed until after the return to the laboratory. Unfortunately, no males were obtained, though, as indicated, male pupae were secured and no doubt would have emerged in a few days.

Localities from which *H. canadensis* is known to date are as follows:

Quebec, Province of Quebec, Canada (Jos. I. Beaulne)—Type locality. (3 queens and 9 ergatoids).

Kentville, Nova Scotia (R. P. Gorham). (1 winged female).

Ponsford, Minnesota (W. F. Buren).

Duluth, Minnesota (R. E. Gregg). (1 queen, 17 ergatoids, and 13 workers).

The worker of *H. canadensis* differs from the worker of *H. americanus* in that the head is larger, rugose instead of punctate, subopaque, and lacks a median frontal ridge. The antennal scrobe is slightly shallower, and the masticatory border of the mandible forms a smooth cutting edge rather than being dentate. The anterior clypeal margin is broadly concave in the middle instead of sinuate, and the posterior clypeal margin extends between the frontal carinae as a more quadrate (or less rounded) lobe. The petiole is wider and the node is entire whereas in *americanus* it is distinctly notched in the specimens before me. Epinotal spines are a little longer and straighter in *canadensis*. Thoracic dorsum is rugose, while in *americanus* it is punctate with only the epinotum rugose in the latter. Color of thorax is noticeably lighter brown, and even the head and petiole are a shade lighter in *canadensis*.

LITERATURE CITED

- Smith, M. R. The North American ants of the genus *Harpagoxenus* Forel, with the description of a new species. Proc. Ent. Soc. Wash. 41:165-172, 2 fig., 1939.