ENTOMOLOGICAL NEWS

VOL. LIV DECEMBER, 1943 No. 10

A New Metallic Ant from the Pine Barrens of New Jersey.

By WILLIAM LOUIS BROWN, JR., State College, Pennsylvania.

Monomorium viridum new species

Female. Length 5.3 to 5.7 mm. The distance through the compound eyes as great or greater than the distance from vertex to the apices of the clypeal teeth. The latter distance varies from about .88 to .92 mm. Antennal joints 12 in number. The frons is smooth and convex; the frontal carinae possess outer margins which are nearly or quite parallel. The clypeal teeth are more acute than in the female of *minimum,* incurved, their apices distant from each other by three times their length (two to two-and-a-half times in *minimum*) ; the clypeal carinae high and sharp, with the space between so concave as to be described as "scooped-out." This concavity is much more extreme than that displayed by *minimum.* Compound eyes large, coarse, and prominent. Ocelli large and very prominent, the color of medium honey.

Thorax more robust than in *minimum,* with the metanotum larger and forming a distinct "hump." The structure of the thorax in other particulars is much the same as in *minimum,* with an epinotum evenly rounded in profile.

Nodes of the petiole and postpetiole higher than those of *minimum,* the former being markedly compressed in an antero-posterior direction. The petiole bears a prominent ventral keel with a downward-directed spine or process which varies greatly in size and shape, rarely absent, but more often enlarged and acute. When present, this spine springs from the anterior third of the petiolar keel. The profile view of the petiole from behind reveals a slight concavity of the upper margin, coupled with a

greater width in the dorsal half of the node than in the ventral half. Viewed from the side, the postpetiole appears larger in relation to its petiole than does that of *minimum*. The gaster is large, robust, and oval in shape.

The large, strong wing fragments on most of the females indicate the former presence of well-developed flight apparatus.

Seen from the front, the whole head is striated strongly and regularly in a longitudinal direction, the striae finally curving and passing just outside of and over the occipital angles. The mandibles, frontal area, clypeal teeth and their immediate bases, a small space just outside each lateral ocellus, and a small space on the vertex are all smooth and shining. The triangular area enclosed by the ocelli is striated transversely, as is the space just behind the ocellar trio, the latter striae extending laterally to curve posteriorly just inside the occipital angles. Coarse, often elongate punctures are interspersed with the striae in the areas of the vertex, the occipital angles, and just inside the compound eyes.

The pronotum, scutum, mesothoracic pleuro-ventral fusion sclerite, and the major portion of the scutellum smooth and shining, with numerous small, regular punctures. When viewed laterally, the scutellum is seen to be edged with faint striations. A number of fine, very regular striations start in the region of the metathoracic fusion segments and continue horizontally along the sides of the epinotum, from thence traversing the major portion of the epinotal face and imparting to it the "ladder-like" resemblance seen when the epinotum is viewed from behind and above.

The petiole and postpetiole exhibit regional sculpture varying from disordered rugosity on the sides of the nodes to fine, even, curved striations on the posterior faces, while the anterior faces are smooth and shining. The gaster is smooth and shining and bears numerous scattered punctures on the dorsum. Each of the first three gastric segments bears a narrow band of fine, pebbled reticulation on its posterior border. In addition, several of the more posterior segments bear varying areas of fine, curving striations.

. Hairs creamy white; conspicuous and abundant, especially on the head and antennae, less so on the dorsum of the gaster. The hairs are more abundant than in *minimum,* and seem to be relatively more conspicuous and slightly longer than those of the latter. Pubescence absent or scanty.

Wing fragments hyaline, covered rather densely with short, appressed hairs.

Color of the head, with the exception of the mouthparts, is a dark metallic green which is most intense on the frontal and dorsal regions. The thorax is basically of a deep ferruginous color, though very large central areas of each sclerite are impregnated with varying degrees of green. The scutum is of a very deep olivaceous green metallescence. The declivity of the epinotum, upper surfaces of the petiolar and post-petiolar nodes, femora, tibiae, and antennal clubs are tinged with a fainter green varying with the light. Tarsi, antennal scapes, and mandibles ferruginous. The entire gaster is highly polished, with distinct, dark metallic green and blue tones. This description was made in bright sunlight (direct), and was done with the aid of a 40 × binocular magnifying glass.

Holotype.—Female; Lakehurst, Ocean Co., NEW JERSEY; August 23, 1940; W. L. Brown); [Acad. Nat. Sci. Philadelphia, Pa., No. 10561].

Worker. Total length 1.8 to 2.8 mm. The head, from tips of clypeal teeth to vertex, is approximately .53 mm. in length, while the width through the eyes varies from .42 to .46 mm. Clypeal teeth more prominent than in *minimum* (Buckley), with more acute apices. The clypeal carinae, of which the teeth are a continuation, are much higher and sharper than the same structures in *minimum,* and the concavity between them is correspondingly deeper. The teeth are noticeably incurved, with no evident swelling of the bases. The posterior border of the head is slightly concave when seen from the front. Antennal joints are twelve in number; otherwise, the head is much as in *minimum.*

Thorax low and gently rounded as in *minimum,* though a few individuals possess an epinotum which is very slightly more

angular in profile than were the specimens of *minimum* studied, suggesting a transition in this respect to *carbonarium* and its subspecies *ebeninum*.

The nodes of the petiole and postpetiole are higher in relation to their antero-posterior thickness than are those of *minimum*, this conformation causing the postpetiole to be much greater in bulk relative to the petiole than is the postpetiole of *minimum* referred to its petiole. The altered height antero-posterior thickness ratio is achieved by a marked front to rear compression, presenting evidence of a relationship with *carbonarium* and *ebeninum*. The ventral keel of the petiole tends to be both narrow and straight. The gaster is larger and more bulky in profile than in the worker *minimum*, is evenly rounded and oval in profile.

The head is smooth and shining with scattered punctures, except for the few striae running upward fanwise from the mandibular insertions and a few that are oriented longitudinally on the frontal carinae. A few short longitudinal striae also sit astride the upper rounded fossa of the frontal area. The lower halves of the sides of the thorax bear faint striae which continue around the base of the epinotal declivity and are more or less horizontal to the axis of the insect. The gaster is smooth and shining.

The hairs are, on the average, longer than those found on *minimum*, whitish in color. These are scattered rather sparsely over the dorsum and sides of the body, where they are most numerous on the gaster, which latter also bears a few hairs on the venter. There is a noticeable development of gular ammochetae. Pubescence very scarce.

The color in most specimens is a deep brown overlaid on the dorsum of the body and the facial aspect of the head with a greenish metallescence. In the best lights, the green color appears to be strongest on the vertex of the head, the dorsum of the thorax, and especially so on the gaster. The mouthparts and appendages are of a lighter brown color, the greenish reflections being evident on the antennae and often on the legs. The green coloration is nowhere as definite as that of the female,

but approaches that of typical specimens of *Macromischa squamifera* in the possession of the author. The metallescence survives in the dead specimen after long immersion in alcohol and is not noticeably heightened by the addition of glycerine. A few specimens lack most or all of the metallescence in a dead and dried state. Possibly these are teneral. Alive and to the naked eye, the workers appear jet-black, as do those of *minimum*.

Ergatotype.—Worker, with same data as for female holotype.

Described from workers and (often only partially) dealate females taken August 25, 1940, and workers taken June 14, 1942, from about ten nests in yellow and white sand among the scanty, low weeds of a roadside strip within the limits of Lakehurst, Ocean County, NEW JERSEY. The nests were apparently restricted to the narrow strip, which is about 70 feet long. The craters were large, 5 to 8 inches in diameter, compared to the smaller ones I have seen of *minimum*, which are usually not half as large. On the first date mentioned above, a dry, sunny day, one to five queens were found in each nest, while on the second date, which was rainy, only workers could be found. The colonies were extremely populous.

"Associated" at varying distances were nests of *Aphaenogaster treatae, Leptothorax texanus* subsp. *davisi, Trachymyrmex septentrionalis,* and *Dormyrmex* (*Conomyrma*) *pyramicus*. The situation is now greatly changed due to the encroachment of the road and nearby residences with their cleared spaces, but closely adjacent groves of pitch pines (*Pinus rigida*) and other characteristic vegetation testify to the fact that the area once must have been the same as the typical pine barren forest completely surrounding the town. If so, *viridum* should be expected to turn up elsewhere in the barrens. That such energetic collectors as Wheeler and Davis should have missed it in their extensive collecting around the town's outskirts is probably due to the extreme superficial resemblance to *minimum* of the worker phase; the common *minimum* is found everywhere in the barrens.

This insect presents characters which ally it on the one hand with *Monomorium minutum* subsp. *minimum* and on the other with *M. carbonarium* and its race *ebeninum*. It differs from

both in its larger size, green coloration, conformation of clypeus and clypeal teeth, and in sculpture. In the form of its petiole it resembles *carbonarium* and *ebeninum,* but the thorax is much as in *minimum,* which it also resembles in having a winged female caste. The female may be distinguished at once by the naked eye because of the metallescence of the gaster, which surpasses in intensity any other green that I have yet seen in the *Formicidae.*

I wish to thank Drs. Frank McKim Swartz and Stuart W. Frost for their loans of equipment and advice and Dr. Wm. S. Creighton for permission to examine related species in his collection and also for advice.

Note Regarding Authorship of Hexagenia limbata (Serville) (Ephemeroptera).

F. EARLE LYMAN, Norris, Tennessee.

Most North American mayfly workers have been for some years consistently ascribing the authorship of *Hexagenia limbata* (Serville) to Guerin. Since this *Hexagenia* is the most common of our Great Lakes species, it seems that attention should be called to this fact.

Although Guerin [1] was author of the book in which the original description appeared, he definitely gave to Serville credit for writing the specific description and right to authorship. His statement to this effect is quoted as follows: "Cette espece est nouvelle. Voici la description que M. Serville en a faite." Moreover, in citing the species name for the first time immediately above the specific description, Guerin placed Serville's name in abbreviation after it, thus *"Ephemera limbata* Serv." Most European workers have given Serville proper recognition as author of the species.

Dr. E. O. Essig, Professor of Entomology, has been appointed head of the division of Entomology and Parasitology at the University of California, Berkeley, California.

[1] Iconographie du regne animal de G. Cuvier. III. Insectes. 1829.