

STUDIES OF NEW MEXICO ANTS. VIII. A
SOLUTION TO THE FORMICA DENSIVENTRIS
VIERECK PROBLEM (HYMENOPTERA:
FORMICIDAE)¹

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Formica fusca "var. *densiventris* n. subsp." was described by Viereck (1903, p. 74) who based his brief and wholly inadequate description on two workers collected by H. Skinner in Sapello Canyon, 8,000 feet, near Beulah, New Mexico.

In his revision of *Formica*, Wheeler (1913, p. 504) who had never seen Viereck's types, placed *densiventris* in the synonymy of *F. fusca* var. *subaenescens* Emery with an interrogation mark prefixed. Brown (1947, pp. 6-8) examined Viereck's types in the collection of the Academy of Natural Sciences at Philadelphia and came to the conclusion that they could not be synonyms of *subaenescens* which has black or blackish head and thorax instead of the red color which characterizes these regions of *densiventris*. Brown believed *densiventris* to be a valid subspecies of *F. fusca* Linné in the *fuscarrufibarbis* complex and he redescribed the types under the name *F. fusca* subsp. *densiventris* Viereck. In the collection of the Academy of Natural Sciences of Philadelphia Brown discovered two other workers which agree rather closely with the types. These specimens came from the head of Dailey Canyon, near Beulah, New Mexico.

Creighton (1950, p. 499) elevated *densiventris* to specific rank and pointed out that it is likely to be a member of the *microgyna* group rather than the *fusca* group. It is Creighton's opinion that *densiventris* is probably the same insect that Wheeler described later as *spicata*.

It was evident that more material had to be secured before other than assumptions could be made. During the summer of 1952 I had an opportunity to spend two days in intensive collecting of *Formica* in the Beulah area and every effort was made to examine as many colonies as possible of forms with red head and thorax. The Beulah area lies in the region northwest of Las Vegas. Sapello Canyon and the old Dailey Canyon lie rather parallel to each other, are separated by a narrow range of mountains, and extend to elevations somewhat above 8,000 feet. The collecting was done at the 8,000-foot elevation which is approximately that where the types of *densiventris* were secured.

Subsequent sorting of collections isolated two series which were possibly representative of *densiventris*. Some of these specimens were checked by Dr. Brown against Viereck's types, and Dr. Brown has informed me (*in litt.*) that they agree. It would appear then that the name *Formica densiventris* Viereck is valid.

At Hyde State Park, Tesuque Canyon, which is northeast of Santa Fe and not far west of Sapello Canyon but separated from it by a high range of mountains and Pecos Canyon, I collected from a number of colonies in the *microgyna* group. Some of these series were determined later as representing *Formica rasilis spicata* Wheeler. The workers are remarkably like those of *densiventris* and colonies occupy a similar station. I believe that it is likely that *spicata* will eventually fall as a synonym of *densiventris*. The fate of the *whymperi alpina* complex may also hang upon future work. I was unable to find any significant differences in the male genitalia of *densiventris* and *whymperi alpina* Wheeler taken at Hyde Park. Even the workers of the two forms show a considerable degree of similarity. There is a great amount of variability in *whymperi alpina* populations. It seems likely that the latter may prove to be a member of the same species as *densiventris*. Additional collect-

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ing and studying must be accomplished before these matters can be resolved, however.

The nests of *densiventris* which I examined in Sapello Canyon were beneath stones and logs banked with detritus on a moist, rocky, north-facing slope with

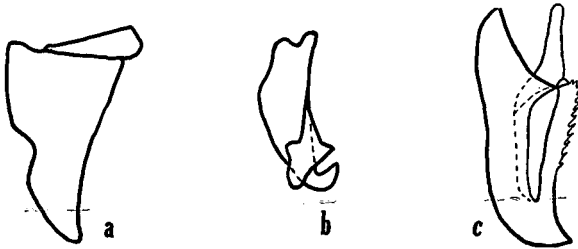


Fig. 1. *Formica densiventris* Viereck. External genitalia of the male; a., paramere; b., digitus volsellaris; c., aedeagus. Each is the right member of a pair. (Terminology after R. E. Snodgrass).

scattered large yellow pine and dense pine duff. A few males were taken and inasmuch as the male caste has heretofore been unknown there follows a brief comparative description of it.

Formica densiventris Viereck

Male (Cole Coll. No. J-25). Length, 6.5-7.2 mm.

Very similar to the male of *F. whymeri alpina* Wheeler, but the apical anterior surface of the petiolar scale is more convex and the scutellum in profile is noticeably higher and more convex. The external genitalia, which are nearly duplicates of those of *alpina*, are shown in Figure 1.

LITERATURE CITED

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