JOURNAL OF THE TENNESSEE ACADEMY OF SCIENCE
Volume 31, Number 3, July, 1956

IN DEFENSE OF THE INTEGRITY OF AN ANT[1]

A. C. COLE
Department of Zoology and Entomology
University of Tennessee, Knoxville

The writer has at hand sufficient specimens and field notes to make it possible and desirable for him to defend the original status of an ant, named by him *Formica oregonensis.* Recently two of my colleagues, Wilson and Brown (1955), have re-evaluated the complexes which have been classified under the subgenus *Raptiformica,* or the Sanguinea Group, of the genus *Formica* and have presented a rather drastic reorganization of the component forms. One of several species which were relegated to synonomy by Wilson and Brown (1955, p. 127) is *Formica oregonensis* Cole. This species was described from a series of seventeen workers attending aphids on an herb in an alpine meadow above timberline near Pendleton, Oregon.

In the original description (Cole, 1938, p. 369) it was stated that, although *oregonensis* shows close affinities with *manni* Wheeler, it differs from *manni* in its average larger size and much darker body color. From an examination of four paratypic workers of *oregonensis,* which are deposited in the Museum of Comparative Zoology, and a comparison of them with types as well as other series of *manni,* Wilson and Brown concluded that the two forms are conspecific and therewith placed *oregonensis* in the synonomy of *manni.* Head width measurements, based solely on the four paratypes of *oregonensis,* which Wilson and Brown (1955, p. 127) examined, varied from 1.05 to 1.27 mm. The M.C.Z. *manni* type series is reported to range from 0.97 to 1.29 mm. The conclusion of Wilson and Brown is that there is no significant mean difference between the two samples studied. It might be pointed out that with a sample (of *oregonensis)* so small, one can scarcely consider statistical differences involving any degree of soundness.

The writer has examined critically the paratypic series of *oregonensis* in his collection. I have also made measurements of head width of a total of twenty-eight workers of this form obtained from two nests near Weed, California. The head width varies from 1.12 mm. to 1.58 mm. I have found the head width range of the specimens of *oregonensis* which I measured to be significantly different from that reported for *manni* by Wilson

[1]I have not considered it desirable that I aceede to a request (in litt.) by Dr. W M. Brown that publication of this paper be delayed until a general agreement on the status of manni and oregonensis has been reached.

and Brown and from that determined by my examination of long series of *manni* from various western states.

The two nests of *oregonensis* which I found were six miles north of Weed, California, at a station near the Oregon-California state line. Each nest was beneath a flat stone in an unshaded and very dry, rocky, semidesert area, with sagebrush and bromegrass, at an elevation of 3,400 feet. My field notes show several xerophyllic cohabitants of the station. Samples taken from the nests are of a consistent deep brown color. In their paper, Wilson and Brown (1955, p. 127) express the notable difference in color between *oregonensis* and *manni,* as reflecting an apparent tendency for a species to darken in its southward distribution, pointing out that darker series of *manni* from Hammett and Twin Falls, Idaho, are evidence of this trend. They also believe that the extreme coloration of *oregonensis* may be the result of the unusual environment in which the type colony lived.

The writer has in his collection numerous nest series of *manni* from Idaho, Utah, and Nevada. With the exception of an occasional sample, from southern Idaho, which shows mild infuscation (but not at all approaching the deep brown color of *oregonensis),* all of the ants definitely and consistently represent the usual, light-colored *manni.* Series from eight nests in a dry, sagebrush area, forty-three miles west of Austin, Nevada, at an elevation of 7,150 feet, are fully as light as any of my Idaho specimens. Six nest samples from Fallon, Nevada, taken at an elevation of 3,900 feet, are all light in color. It must be admitted that the type series of *oregonensis* did come from a rather drastic environment. But both nests of this species were in a dry, semidesert area at a reasonably low (3,400 ft.) elevation. From the data presented herein, it follows, I believe, that evidence of a darkening of *manni* (to give the color of *oregonensis)* associated with its southward range is, even if plausible, too weak to be of any systematic significance. Furthermore, unless my interpretation of Gloger's rule is erroneus, one would not expect a darkening of pigmentation in the southern part of the range of an insect (Allee, Emerson, et al, 1949, p. 187 and Dobzhansky, 1951, p. 152), but rather a lightening of body color. The types of *manni* were taken at Kiona, Washington. Wilson and Brown (1955, p. 127) mention light-colored series from Wenatchee and Wapato, Washington. Thus the known range of *oregonensis* lies south of the Washington series and north of the Nevada, Idaho, and Utah collections discussed previously. It is, then, virtually surrounded by light-colored *manni* which occurs also in California, south of the known range of *oregonensis.* The ecological conditions which prevail at the station from which the type series of *oregonensis* was collected would not appear to be responsible for the dark color, for the nests which were

sampled near Weed, California, were at a very dry and much warmer station which contrasts sharply with the habitat of the types.

Dark body color and distinctively larger average size would still seem to be the best means of separating the *oregonensis* population from that of *manni*. Unless or until sufficient conclusive evidence can be presented to show that the population of *oregonensis* is not discrete, I propose that *oregonensis* be recognized as an independent population and its original status be vindicated. It is unfortunate that more representatives of this species have not come to light and that we know practically nothing about the extent of its range. Intensive collecting in northern California and southern Oregon would yield, I feel sure, quantities of workers and perhaps even the sexes of *oregonensis*. Until this is accomplished, *oregonensis*, although it may be suspected of not being a distinctive population, should not, in my opinion, be synonymized.

Literature Cited

Allee, W. C., A. E. Emerson, *et al.* 1949. Principles of animal ecology. W. B. Saunders Co., Philadelphia, pp. 1-837.

Cole, A. C. 1938. Descriptions of new ants from the western United States. *Amer. Midl. Nat.*, 20: 368-373.

Dobzhansky, T. 1951. Genetics and the origin of species. Columbia Univ. Press, N. Y., pp. 1-364.

Wilson, E. O. and W. L. Brown. 1955. Revisionary notes on the sanguinea and neogagates groups of the ant genus Formica. Psyche, 62: 108-129.

Leptothorax stenotyle (*n. nov.*) for leptothorax angustinodus Cole

A. C. Cole
The University of Tennessee, Knoxville

Dr. W. M. Brown has kindly informed me that the name *angustinodus* which I applied to a new species of *Leptothorax* from Arizona (*Jour. Tenn. Acad. Sci.*, 31; 1956) is preoccupied. The name *angustinodus* was published by Stitz in 1917 (*Mitt. Zool. Mus. Berlin*, 8:336; fig. 3, worker) to designate a variety of *Leptothorax angustulus* from Tripoli. I wish to replace my homonymic name *angustinodus* with the name *stenotyle*.