Parallel Color Variation in *Bombus impatiens* Cr. and *Bombus bimaculatus* Cr. (Hymenoptera, Apidae)

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Recently, this author (3) published on some bumble bee species which exhibited atypical coloration. However, the coloration exhibited by those specimens was not consistent for color or for the position of the color patches. Such "freak" or "sport" specimens seem to be of importance in that such aberrations sometimes make identification difficult in instances where differentiating morphological characters are slight. Perhaps equally important is the recognition of the tendency of certain species or groups of species to develop these atypical color patterns.

Among the species previously reported upon were *Bombus impatiens* Cr. and *B. bimaculatus* Cr., closely related species (4) of the subgenus *Pratobombus*. Of these two, *B. bimaculatus* exhibits the greater tendency to vary in coloration as three color variants have been described and recognized as valid by Burks (2). There are no described color variants of *B. impatiens*.

Examinations of two collections of bumble bees which the University of Missouri Collection loaned to this writer through the courtesy of Dr. W. R. Enns, and the Indiana University Collection loaned through the courtesy of Dr. Frank N. Young, have revealed a distinct color variant of *B. impatiens* which seems worthy of recognition.

Bombus (Pratobombus) impatiens var. *deayi* is the new variety. The female is morphologically identical with the typical *Bombus impatiens* queen. The coloration of the pile on the head, thorax and first abdominal tergite is the same as in the typical species. It differs in coloration from that in typical species as follows: second and third abdominal tergites covered with bright ferruginous pile; fourth tergite mostly covered with black pile but with traces of ferruginous pile scattered throughout, especially on the sides of the segment; fifth and sixth tergites with black pile only. Corbicular fringes bright ferruginous.

Holotype labeled, "Bloomington, Ind., 5-3-38; B. Kinsey, collector." The specimen is from the Indiana University Collection.

Paratype labeled, "Columbia, Missouri"; without further data. The specimen is from the University of Missouri Collection.

The holotype is to be deposited in the collection of the Illinois Natural History Survey, Urbana, Illinois. The paratype is in the collection of the author.

This color variety is known only from the queen. I take great pleasure in naming this variety for Dr. H. O. Deay, Professor of Entomology, Purdue University.

The coloration of this variety parallels the coloration of *B. bimaculatus* var. *ahenus* (Bequaert and Plath) (1). It may be distinguished from that form by the distinctly shorter malar space, the absence of the basal median patch of yellow pile on the second abdominal tergite and

the bright ferruginous pile, instead of rufous pile, of the second and third tergites.

The holotype was found in a series of 43 *B. impatiens* queens collected near Bloomington, Indiana, April 23, 28 and May 3, 1938 by B. Kinsey. In addition to the new variety, three of the remaining specimens have the following aberrant color patterns:

a) One with an apical fringe of light pile on each the second and third abdominal tergites.

b) One with the second tergite with a basal and an apical band of light pile; third tergite with an apical fringe of light pile.

c) One with an apical, median, triangular patch of ferruginous pile on each the second and third tergites.

Through the courtesy of Dr. H. H. Ross of the Illinois Natural History Survey the writer was able to examine the collection of bumble bees maintained there under the direction of Dr. Ross. No specimens of *B. impatiens* were found which were of atypical coloration. Specimens of *B. bimaculatus* were present which had considerable amounts of ferruginous or rufous pile on certain of the abdominal tergites but none which approached the variety *B. bimaculatus* var. *ahenus* in the extent of this coloring. The corbicular fringes on all of the specimens studied were black. Dr. H. J. Franklin has informed the writer *(in litt.)* that he believes that he has seen specimens colored in the manner of the new variety but that none were at hand. Dr. Karl V. Krombein checked the specimens of *B. impatiens* in the collection of the United States National Museum and reported (*in litt.*) that there were no individuals with this color pattern.

Despite the fact that a small number of individuals of both *B. impatiens* and *B. bimaculatus* have been observed to bear ferruginous or rufous pile on certain of the abdominal tergites it is the intent of the writer to restrict the varietal names to those specimens which bear ferruginous or rufous pile on the abdomen and also have the corbicular fringes reddish. The individuals bearing some reddish pile do not seem to be intergrades from the typical color to the varietal pattern since the color patterns of these are most often asymmetrical and there is never any tendency for the corbicular fringes to become lighter even when large areas of the abdomen are covered with rufous or ferruginous pile.

Literature Cited

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