DISTINCTION BETWEEN THREE SPECIES OF EUMERUS (SYRPHIDÆ, DIPTERA), WITH DESCRIPTION OF A NEW SPECIES

BY LESLIE M. SMITH
Berkeley, California

Knowledge of the species of Eumerus now established in the United States seems to be very meager. Most writers have published notes on damage, and occurrence, under the name of Eumerus strigatus Fallén. Although some sixty species, many of which are probably synonyms, are recorded in Europe, most American workers have regarded all specimens taken in this country as E. strigatus. In an article published in Entomologist's Monthly Magazine, May 1920, Mr J. E. Collin called attention to the fact that E. strigatus was not the only injurious species of this genus, but that the little known species, E. tuberculatus Rondani, was often found attacking bulbs. Mr. Collin pointed out that many references to E. strigatus probably referred to E. tuberculatus.

While making a study of the internal anatomy of the male reproductive system of what was believed to be E. strigatus, the writer became aware of the fact that two species were being examined. Investigation of the literature, together with determinations by several authorities on this group, showed one species to be E. tuberculatus while no name could be found for the other. Obviously it was not E. strigatus. All of the specimens were reared from bulbs of Narcissus collected in Santa Cruz, California.

The three species here dealt with, namely, Eumerus strigatus Fallén, E. tuberculatus Rondani, and E. narcissi n. sp., are so nearly identical in appearance that they can be distinguished only with considerable difficulty. Dr. F. R. Cole in Entomological News, Vol. XXXI, p. 31, 1920, gives a complete description of E. strigatus. The other two species differ so slightly from this that a general description will be omitted here and only certain characters in which they vary will be mentioned. Of these characters the shape of the fifth sternite, and certain features of the anal appendages and genitalia are most valu-
EXPLANATION OF FIGURES

Fig. 1. Fifth sternite of *E. narcissi*.
2. Fifth sternite of *E. tuberculatus*.
3. Fifth sternite of *E. strigatus*.
4. Lateral view of anal appendages of *E. narcissi*.
   b — anal cercus; c — style.
5. Lateral view of anal appendages of *E. tuberculatus*.
6. Lateral view of anal appendages of *E. strigatus*.
7. Lateral view of genitalia of *E. narcissi*.
   a — position of internal lobes, b — position of sustentacular apodeme, c — superior lobe.
8. Lateral view of genitalia of *E. tuberculatus*.
9. Lateral view of genitalia of *E. strigatus*.

All figures by about 110. Fig. 9 redrawn from Collin.
able. Mr. Collin in the reference previously cited illustrated the characters above mentioned. In the following descriptions of the male terminalia, the terminology suggested by C. L. Metcalf (Ann. Ent. Soc. Am., Vol. 14, p. 169), is used.

**Eumerus strigatus** Fallén

**Male.** Fifth sternite with a notch in the median line of the posterior margin. Postero-lateral corners of chitinized area of fifth sternite gently rounded to give a bilobed appearance. Margin of each pseudolobe entire. Anal cerci small, club-shaped, bent away from the styles. Styles elongate, bearing a distinct terminal enlargement and a lateral accessory tooth on the inner surface. Genitalia straight. Superior lobes terminal on sheaths. Hind femora and tarsi without basal tubercles below. (See Figs. 3, 6, and 9.)

Length, 5.5 to 7.5 mm.

**Eumerus tuberculatus** Rondani

**Male.** Fifth sternite with a notch in the median line of posterior margin. Sides of the notch indented laterally into the sternite. Chitinization heavy on the sides, membranous in the median line. Lateral corners somewhat rounded, giving a bilobed appearance. Margin of each pseudolobe entire. Anal cerci small, straight-sided and bluntly truncate, not bent away from styles. Styles elongate, not greatly enlarged terminally, bearing no accessory tooth, having distally a few heavy, recurved spines on the inner surface. Genitalia straight. Superior lobes terminal on sheaths. Hind femora and tarsi bearing basal tubercles below. (See figs. 2, 5, and 8.)

Length, 5.5 to 7.0 mm.

**Eumerus narcissi** L. Smith, spec. nov.

**Male.** In general appearance closely resembling the other two species mentioned. Fifth sternite without a notch in posterior margin. Posterior margin arcuato-emarginate, covered with minute, blunt projections. Postero-lateral corners prolonged. Chitinization heavy in the center. Anal cerci large, nearly rectangular in lateral view. Styles very much reduced, no terminal enlargement. Genitalia with a distinct angle. Superior lobes slightly subterminal. Hind femora and tarsi without basal tubercles below.

Length, 5.5 to 7.0 mm.

Thus far the author has not been able to distinguish the females of these various species, but no doubt future studies of these closely related forms will reveal characters by which they may be recognized.
Smith, L M. 1928. "Distinction between three species of Eumerus (Syrphidae, Diptera), with description of a new species." The Pan-Pacific entomologist 4, 137–139.

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