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# Observations on Anatis mali (SAY) stat. n., and A. quindecimpunctata (OLIVIER)

(Coleoptera: Coccinellidae)

By

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With 2 figures in the text

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Of the two species of the ladybird beetle genus *Anatis* MULSANT, 1851 known to occur in Québec, specimen of one was collected by my wife and myself shortly after our arrival in Canada. Unfortunately, the two species have not been satisfactorily distinguished in both sexes and the last attempt made nearly thirty years ago, though still useful, does not consider the female (MCKENZIE, 1936). Species of *Anatis* are beneficial to mankind and our species are known to attack several pests of economic importance, including the Colorado potato beetle, the cottony maple scale, young caterpillars of the gipsy moth and the browntail moth, the yellow cankerworm, and the maple mealybug.

Characters, most probably of generic value, not previously described are for *A. quindecimpunctata* (OLIVIER) and *A. mali* (SAY): hind wing with anal (or wedge) cell closed; met-endosternite (or furca) transverse, with lateral arm provided with a posterior narrow extension, anterior tendons arising at junction of arm with main body.

This species was originally considered a subspecies of *A. quindecimpunctata* and was transferred to *A. ocellata* (from Europe and Siberia) by MCKENZIE (1936: 266) who remarked "it may well be considered as a subspecies of *ocellata*". This view has been accepted by HATCH (1961: 182). Whereas the exclusion of *A. mali* from *A. quindecimpunctata* is justified as suggested by the shapes of the aedeagus in the male (MCKENZIE, 1936 figs. 4, 10) and the coxites of the ovipositor in the female (figs. 1, 2), the inclusion of *A. mali* as a subspecies of *A. ocellata* L. is unjustified. In my opinion *A. mali* deserves a distinct specific status on account of its geographical distribution coupled with the shape of the aedeagus in the male (vide MCKENZIE, 1936 figs. 4, 10) and the coxites of the ovipositor in the female (figs. 1, 2), the inclusion of *A. mali* as a subspecies of *A. ocellata* L. is unjustified. In my opinion *A. mali* deserves a distinct specific status on account of its geographical distribution coupled with the shape of the aedeagus in the male (vide MCKENZIE, 1936, figs. 2, 4). The median lobe is more pointed at apex in *A. ocellata* and much wider in middle than in *A. mali*. Information concerning the ovipositor of *A. ocellata* is not available!s this character was excluded from consideration by MCKENZIE,

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(1936: 264), and I have not examined the specimens. *A. mali* is, however closely related to *A. ocellata* and should be placed in the *OCELLATA*-GROUP of McKENZIE (op. cit.).

### Distinctions between *A. mali* and *A. quindecimpunctata*

Specialists realize that the two species have been confused or misidentified in the past so that "most records cannot be accepted" (McKENZIE, 1936: 266). Some of the important distinctions will be considered here. The most obvious one being the presence of "whitish areola" or a yellow ring around the black elytral spots in *A. mali* which are absent in *A. quindecimpunctata*. However, some specimens of the latter species, possibly overwintering ones (BRITTON, 1910), are so dark that the black spots on the elytra could only be distinguished in sufficient light on magnification. This applies to *A. mali* also, which presents a difficulty due to the poor visibility of the yellow ring around the black elytral spots. When this is the case, one has to look for other distinguishing characters in both sexes.

I have been able to separate the two sexes by the shape of the apex of the last (or fifth) visible abdominal sternite which is truncate or weakly emarginate in the male and weakly trilobed or with slight median projection in the female. The distinction between the male of the two species was recognized and the aedeagus illustrated by McKENZIE (1936: figs. 4, 10). It may be seen that the median lobe is distinctly arrow-shaped in *A. quindecimpunctata* and not so in *A. mali*. The ovipositor of the two species were not critically examined before. The distinction is slight but is nevertheless noticeable. When the coxite and stylus are carefully examined, an emargination on the inner side becomes quite obvious near the base of the coxite in *A. quindecimpunctata* (fig. 2) which is absent in *A. mali* (fig. 1). The styli are retractable in both species but the general shape and arrangement of setae are reliable.

### Aberrations of *Anatis*

Latin names for varieties of *Anatis* have been generously given by "specialists" but the pronotal or elytral pattern has not been correlated with distinctions that may exist in the shapes of the aedeagus and the coxite of the ovipositor. JOHNSON (1910: 74) describes giving illustrations of the pronotal and elytral pattern in a population of *A. quindecimpunctata* from Stony Lake, Michigan. I am not currently interested in these variations or their genetical basis and it is sufficient to inform that for practical purpose the species could be separated despite these and some more existing patterns. POLENTZ (1944: 15) and KREJČÁREK (1949: 120) describe some aberrations of the European *A. ocellata*.

### Additional Records

The following specimens of *A. mali* were examined in the LYMAN Entomological Museum. MAINE: "Chebeague", August 14, 1920 (A. F. WINN), 1 male, 2 females. NEWFOUNDLAND: St. Johns: June 10, 1958 (A. F. BUTT), 1 female; August 20, 1958 (A. F. BUTT), 1 female; August 22, 1958 (A. F. BUTT), 1 female. NORTHWEST TERRITORIES: (G. J. BOWLES), 2 females. NOVA SCOTIA: Aldershot, July 24, 1938, 1 male; Kentville, May 22, 1947 (V. R. VICKERY), 1 female; Woodville, June 4, 1952 (V. R.

VICKERY). ONTARIO: Chalk River, July 24, 1936, on spruce, 1 female; Ottawa, July 27, 1955 (E. A. MAGINNES), 1 male. PRINCE EDWARD ISLAND: Upton: August 12, 1955 (A. W. DOUGLAS), 1 female; September 9, 1957 (A. W. DOUGLAS), 1 male. QUEBEC: Bondville, July 24, 1915, 1 female; Knowlton, August 1, 1965, sweeping vegetation (Mohammad and Abida ABDULLAH), 1 female; L'Epiphanie, July (G. CHAGNON), 1 male; Lanoraie, April 20, 1962, 1 female; Lanoraie, May 23, 1953 (G. A. MOORE), 1 female; Lanoraie, May 24, 1952, 3 females; Levis (T. W. FYLES), 2 females; Montreal, May 10, 1891 (ex. coll. A. F. WINN), 1 female; Morgan Woods or Arboretum, June 2—July 1, 1953, 3 females; Shawbridge, July 11, 1926 (A. F. WINN), 1 male, 1 female; Ste-Anne-de-Bellevue, May 25, 1953, 1 female; Ste-Anne-de-Bellevue, June 11, 1954, on *Quercus*, 1 female; Ste-Anne-de-Bellevue, June 14, 1964 (G. JAMIESON), 1 female; Ste-Anne-de-Bellevue, 1855, 1 female; St. Hilaire, May 24, 1909 (H. H. LYMAN), 1 male, 2 females; St. Hilaire, July 1, 1920 (A. F. WINN), 1 female. UNLOCATED: Mt. Washington ( ? KENTUCKY), August 1921 (WALLACE), 1 female; New Ross, " ? Mo.", August 11, 1915, 1 female; N. Richmond ( ? QUEBEC), 1956 (F. A. PILON), 1 female. NO LOCALITY DATA: (G. R. KEARLEY), 1 male; 1 male, 1 female.

The following specimens of *A. quindecimpunctata* were examined in the LYMAN Museum collection. MAINE: "Chebeague", August 11, 1920 (A. F. WINN), 1 female. MISSOURI: Willard: May 9, 1921 (A. E. BROWER), 2 females; June 23, 1921, 1 male. QUEBEC: Brome County, July 16, 1917 (A. F. WINN), 1 female; Levis (T. W. FYLES), 1 male; Montreal, October 4, 1891 (H. H. LYMAN), 1 female; Montreal August 1, 1920, 1 female; Ste-Anne-de-Bellevue, July 16, 1954, on "Carya", 2 females; Ste-Anne-de-Bellevue, June 15, 1965 (W. BOYLE), 1 female; Ste-Anne-de-Bellevue, July 1, 1965 (E. VLASAK), 1 female; Phillipsburg, June 30—July 21, 1961 (C. BERTRAND), 2 females; St. Hilaire, June (G. CHAGNON), 1 female. NO LOCALITY DATA: 2 males, 1 female.

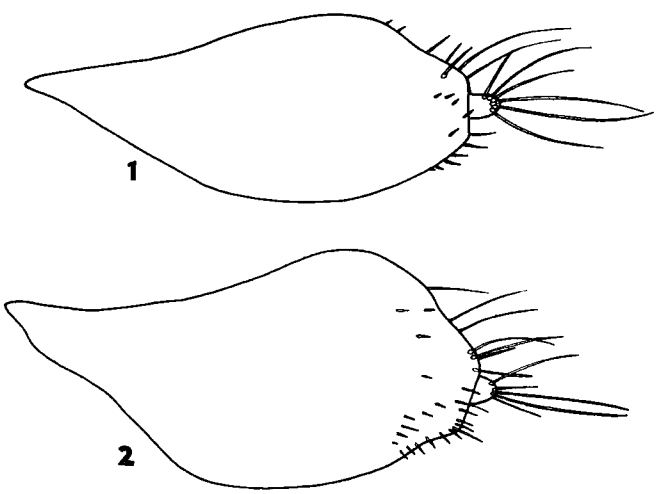


Fig. 1. *Anatis mali* (SAY), left coxite and stylus of ovipositor, ventral view; fig. 2, *A. quindecimpunctata* (OLIV.), left coxite and stylus of ovipositor, ventral view.

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