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OF WASHINGTON
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The Society does not exchange its publications for those of other societies.

STATEMENT OF OWNERSHIP
Title of Publication: Proceedings of the Entomological Society of Washington.
Frequency of Issue: Quarterly (March, June, September, December).
Editor: Dr. Lloyd Knutson, same address as above.
Managing Editor and Known Bondholders or other Security Holders: none.

This issue was mailed July 22, 1974
Second Class Postage Paid at Washington, D.C. and additional mailing office.

ALLEN PRESS, INC.  LAWRENCE, KANSAS 66044
NOTES ON NEOHARMONIA CROTCH (COLEOPTERA: COCCINELLIDAE) IN THE UNITED STATES AND MEXICO

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ABSTRACT—The genus Harmoniaspis Casey is placed as a junior synonym of Neoharmonia Crotch and Neoharmonia cyanoptera (Mulsant) is made a junior synonym of Neoharmonia ampla (Mulsant). Neoharmonia ampla is reduced to subspecific status as N. venusta ampla, n. comb. Agrabia sicardi Nunenmacher and Agrabia sicardi var. complexa Nunenmacher are placed as junior synonyms of Anisocalvia 14-guttata (L.) and a lectotype is designated for A. sicardi.

Examination of some Mexican Coccinellidae in the Canadian National Collection indicates that the taxonomic status of the genera and species related to the genus Neoharmonia Crotch is not completely clear. Crotch (1871) erected Neoharmonia for 12 Western Hemisphere species, but in his 1874 monograph he made no mention of Neoharmonia and included those species in the genus Coccinella as well as synonymizing Harmonia Mulsant under Coccinella. Neoharmonia seems to have been overlooked or ignored by subsequent authors until Timberlake (1943).

Casey (1899) described a new genus, Neoharmonia (junior homonym), which included Coccinella venusta Melsheimer and Harmonia notulata Mulsant. Casey (1899) also described the genus Agrabia for Harmonia cyanoptera Mulsant. Timberlake (1943) recognized Agrabia Casey and Neoharmonia Casey to be junior synonyms of Neoharmonia Crotch and selected Coccinella venusta Melsheimer as the type of Neoharmonia Casey. Rye (1873) had previously selected Harmonia viridipennis Mulsant as the type of Neoharmonia Crotch. Casey (1908) selected Harmonia sommeri Mulsant as the type-species of Harmonia. Mulsant (1850) described sommeri from specimens labeled "Bresil" and "Mozambique." Weise (1898) stated that sommeri did not occur in Brazil and that Mulsant's specimen or specimens must have been incorrectly labeled. This assumption has been born out in the course of the present study. Harmonia, therefore, is an Old World genus and Neoharmonia a New World genus as Crotch (1871) originally intended when he described Neoharmonia.

Casey (1908) erected the genus Harmoniaspis for the Mexican species Harmonia liteipennis Mulsant, H. ampla Mulsant, Coccinella cyathigera Gorham and C. albopicta Gorham. Harmonia ampla Mulsant is here selected as the type-species of Harmoniaspis. Korchefsky (1931) listed Harmoniaspis as a synonym of Neohalyzia Crotch and

was followed in this by Blackwelder (1945). Neohalyzia is a mono-
basic genus and the type, *perroudii* (Mulsant), is not at all related to
*Neoharmonia ampla* (Mulsant).

Present examination of specimens of *Agrabia* and *Neoharmonia* has
confirmed Timberlake’s findings and indicates that *Neoharmonia cyan-
optera* is a junior synonym of *Neoharmonia ampla* (Mulsant) which is,
at best, a subspecies of *N. venusta* (Melsheimer). *Agrabia sicardi*
Nunenmacher and *Agrabia sicardi* var. *complexa* Nunenmacher are
junior synonyms of *Anisocalvia 14-guttata* (L.).

Thanks are due John Smart, Department of Zoology, University of Cambridge,
Cambridge, England, for the loan of the series of *Harmonia sommeri* and the types
of *Harmonia ampla* and *H. soularysti* from the Crotch Collection, and H. B. Leech,
California Academy of Sciences, for the loan of paratypes and other specimens.
Miss Linda Heath prepared all the illustrations presented herein.

**Genus Neoharmonia Crotch**

*Neoharmonia* Crotch, 1871, p. 2. Type-species: *Harmonia viridipennis* Mulsant,
by subsequent designation of Rye, 1873, p. 329.

*Agrabia* Casey, 1899, p. 87.—Timberlake, 1943, p. 20. Type-species: *Harmonia
cyanoptera* Mulsant, monobasic.

*Neoharmonia* Casey, 1899, pp. 90–91 (junior homonym).—Timberlake, 1943, p. 20.
Type-species: *Coccinella venusta* Melsheimer, by subsequent designation of
Timberlake, 1943, p. 20.

*Harmoniaspis* Casey, 1908, p. 404.—Korschefsky, 1931, p. 575.—Blackwelder, 1945,
p. 455. Type-species: *Harmonia ampla* Mulsant, by present designation. New
Synonymy.

*Coccinellini* with form elongate-oval, depressed. Pronotum and elytron with
lateral margins distinctly explanate, usually semi-transparent or at least pale in
color. Anterior margin of mesosternum distinctly notched medially; intercoxal
process of pro sternum wide, flattened, with 2 indistinct, widely separated carinae
extending anteriorly as far as anterior margin of coxa. Male genitalia with phallos-
bases long, slender, basal piece flattened dorsoventrally, tapered toward posterior
margin (fig. 9); sipho robust with large, median, membranous area, apex set off
by a narrow, transverse, membranous area (fig. 10). Female genitalia with sperma-
theca slender, curved, base terminating in a well developed ramus, a long, sclerotized
nodulus present between spermatheca and ductus receptaculum, bursa without
sclerotized infundibulum (fig. 11).

The genera with which *Neoharmonia* is likely to be confused are
*Coccinella* and *Adalia*. *Adalia* has the postcoxal line simply curved
with no oblique, intersecting line as is present in *Neoharmonia*. *Coc-
cinella* has the anterior margin of the mesosternum straight; *Neohar-
monia* has the margin distinctly notched. In addition, the slender,

Elongate phallobase and robust sipho of *Neoharmonia* are unlike anything observed in *Coccinella* or *Adalia*. The female genitalia of *Adalia* and *Coccinella* have a large, distinct infundibulum (fig. 12) and lack the long, tapered nodulus of *Neoharmonia*.

**Key to Subspecies of *Neoharmonia venusta* (Melsheimer)**

Color of pronotum either mostly black (fig. 5) or pale with 4 distinct black spots as in fig. 1; eastern U.S. to eastern Texas .... *venusta venusta* (Melsheimer)

Color of pronotum either entirely pale or pale with red or brown spots as in fig. 2, 3, 8; southwestern U. S. and northern Mexico .... *venusta ampla* (Mulsant)

*Neoharmonia venusta venusta* (Melsheimer)


*Harmonia venusta*: Mulsant, 1856, p. 141.—Mulsant, 1866, p. 61.
Neoharmonia venusta: Crotch, 1871, p. 2.—Casey, 1899, p. 71.—Leng, 1920, p. 216.
Coccinella (Neoharmonia) venusta: Korschefsky, 1931, p. 514.
Harmonia notulata Mulsant, 1850, p. 83.
Coccinella notulata: Crotch, 1874, p. 108.
Neoharmonia notulata: Crotch, 1871, p. 2.—Casey, 1899, p. 91.—Leng, 1920, p. 216.
Coccinella (Neoharmonia) notulata: Korschefsky, 1931, p. 514.
Neoharmonia venusta var. dissimila Blatchley, 1914, p. 65.—Leng, 1920, p. 216.
New synonymy.
Coccinella (Neoharmonia) venusta ab. dissimila: Korschefsky, 1931, p. 514.
Neoharmonia venusta var. fattigi Blatchley, 1920, 43.—Leng and Mutchler, 1927, p. 33. New synonymy.
Coccinella (Neoharmonia) venusta ab. fattigi: Korschefsky, 1931, p. 514.
Coccinella (Neoharmonia) venusta ab. centralis: Korschefsky, 1931, p. 514.

The extreme variability of the color pattern (fig. 1, 5, 6) in the subspecies has long been recognized. Except for Casey, most authors have considered the names listed in synonymy above as subspecies or varieties of venusta. In the course of this study color forms have been seen in series from each locality and it is apparent that geographic subspecies cannot be established based on color pattern. There being no apparent morphological differences, all of the names listed above are here considered to be junior synonyms of venusta (Melsheimer). Neoharmonia venusta venusta occurs from Maine and Florida west to Illinois, Kansas and eastern Texas. Specimens have been seen from as far west as Columbus, Texas.

Neoharmonia venusta ampla (Mulsant), n. comb.
Harmonia ampla Mulsant, 1850, p. 81.—Mulsant, 1866, p. 61.
Coccinella (Neoharmonia) ampla Korschefsky, 1931, p. 509.
Harmonia soulariyi Mulsant, 1866, p. 63.
Coccinella soulariyi: Crotch, 1874, p. 109.—Gorham, 1891, p. 156.
Coccinella (Neoharmonia) soulariyi: Korschefsky, 1931, p. 509.
Harmonia cyanoptera Mulsant, 1850, p. 82.—Mulsant, 1866, p. 61. New synonymy.
Coccinella cyanoptera: Crotch, 1874, p. 373.—Gorham, 1891, p. 155.
Agraria cyanoptera: Casey, 1899, p. 87.—Leng, 1903, p. 196.—Leng, 1920, p. 216.
—Korschefsky, 1931, p. 438.—Blackwelder, 1945, p. 454.
Harmonia virdipennis Mulsant, 1866, p. 60.
Coccinella virdipennis: Crotch, 1874, p. 108.
Agraria cyanoptera ab. virdipennis: Korschefsky, 1931, p. 438.—Blackwelder, 1945, p. 454.
Coccinella ampla var. rufa Nunenmacher, 1944, p. 146. New synonymy.
As in the case of *Neoharmonia venusta*, we have here an extreme instance of color variation. Mulsant described *cyanoptera* from a form with entirely greenish or bluish-black elytra (fig. 7, 8) and *ampla* from a pale, somewhat spotted form (fig. 2, 3, 4). Crotch (1874) suspected they might be the same species but did not actually synonymize them. A series of specimens (12) in the Canadian National Collection, all with identical data, “5 mi. S. Monterrey, N. L., Mexico, VII-12-1963, H. F. Howden/on *Platanus*” is composed of examples of both typical *cyanoptera* and typical *ampla* and it is apparent that the 2 names apply to a single subspecies. *Neoharmonia venusta ampla* occurs from Brownsville, Texas, and central Texas west to southern California and south to Nuevo Leon, Mexico and Oaxaca, Mexico. *Neoharmonia virdipennis* (Mulsant) is simply a synonym of *ampla*.

The types of *Agrabia sicardi* Nunenmacher and *Agrabia sicardi var. complexa* Nunenmacher in the California Academy of Sciences collection have been examined. thanks to a loan by Hugh Leech, and have been found to be conspecific with *Anisocalvia 14-guttata* (L.). The male of *sicardi* bearing the labels “Hornbrook/Siskiyou Co., Cal., VI-11-coll’d by F. W. Nunenmacher/Agrabia sicardi Nun. Type” is here designated lectotype. The female bearing identical data is designated paralectotype. The female type of *complexa* is unique and also bears the same data as the lectotype of *sicardi*. Nunenmacher (1912) lists the type locality as “Hamburg” but the specimens are labeled “Hornbrook.” It is apparently not possible to definitely establish which is correct, but, since the specimens are labeled “Hornbrook” and, as pointed out by Leech (personal comm.), Hornbrook is higher in altitude (14-guttata is a northern species), that locality is here considered to be the type locality.

A single female in the Crotch Collection, University of Cambridge, England, bearing the following labels “TYPE/TYPE ampla” is here considered to be a type of *H. ampla* and is here designated lectotype. A single male in the Crotch Collection, bearing the following labels, “Playa Vicente/Mexico. Salle Coll./Harmonia soularyi Muls.. Type. and Salle” is here considered to be a type of *H. soularyi* and is here designated lectotype.

Five paratypes of *Coccinella ampla* var. *rufa* Nunenmacher have been examined and are simply intermediate color forms between typical *ampla* and *cyanoptera*.

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