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STUDIES ON NORTH AMERICAN MORDELLIDAE, II¹ (Coleoptera)

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The present paper is the second of a series dealing with North American members of the family. Six new species from Western North America are hereinafter described. Eleven others are included to expand recorded distributional records. Four of these are listed from the United States for the first time.

Material mentioned below is the result of a partial study of specimens from the collections of the Chicago Natural History Museum, Ohio State University, Cornell University, Oregon State Agricultural College, the Illinois State Natural History Survey, the University of Idaho, the University of Oklahoma, G. Stace Smith, Kenneth M. Fender, Melville H. Hatch, and R. R. Dreisbach. To all concerned indebtedness is acknowledged for the privilege of studying this material.

MORDELLA QUADRIPUNCTATA (SAY)

Anaspis quadripunctata Say, 1824, Jour. Acad. N. S. Phila., 3:276.
Mordella quadripunctata LeConte, 1854, Proc. Acad. N. S. Phila., 7:220.

One specimen, Mesa, Colorado, June 20, 1925 (B. Patterson and J. H. Quinn).

MORDELLA FUSCOCINEREA FALL

Mordella fuscocinerea Fall, 1907, Trans. Amer. Ent. Soc., 33:254.

Twenty-six specimens from the following Arizona localities: Hualpai Mts., July 4, 1937; Wickenburg, June 16, 1937, and July 17, 1940; Tucson, August 13, 1936; Prescott, June 20, 1937; and Congress Junction, June 4, 1937; also specimens from the Davis Mts., Texas, September 20, 1938, and Washington, Utah, June 27, 1937 (D. J. and J. N. Knull).

¹Studies on North American Mordellidae, I. 1936, Can. Ent., 68:124-129, pl. 9.

MORDELLA PRETIOSA CHAMPION

Mordella pretiosa Champion, 1891, Biol. Cent. Amer. Col. 4, 2:302.

One specimen, Brownsville, Texas, May 31, 1939 (D. J. and J. N. Knull). Hitherto known only from Cordoba, Ver., Mexico, the present record is therefore the first from America north of Mexico.

MORDELLA BREVIPTYLIS LILJEBLAD

Mordella breviptylis Liljebblad, 1922, Can. Ent., 54:56.

Six specimens, one male and five females, Davis Mts., Texas, July 2, 1940 (D. J. and J. N. Knull). This species was originally described from New Mexico.

GLIPODES SERICANS (MELSHEIMER)

Mordella sericans Melsheimer, 1846, Proc. Acad. N. S. Phila., 2:312.

Glipodes sericans LeConte, 1862, 1 c., 14:48.

One specimen, Arkadelphia, Arkansas, August 13 (D. J. and J. N. Knull).

ISOTRILOPHUS ERRATICUS (SMITH)

Mordellistena erratica Smith, 1882, Bull. Brk. Ent. Soc., 5:80.

Isotriolophus erratica Liljebblad, 1946, Mis. Publ. Mus. Zool., Univ. Mich., 62:18.

One specimen, Ouachita National Forest, Arkansas, July 3, 1935 (C. H. Seevers).

Mordellistena neocincta Ray, new species

(Figures 5, 10, 15)

Form moderately slender, sides subparallel. Derm black, head fuscocastaneous, with an indistinct dorsal cloud; legs castaneous, except femora, which are fuscocastaneous, maxillary palpi and antennae castaneous, the latter slightly darker at tip, a narrow line along apical margins of abdominal segments castaneous, and a pair of castaneous spots on each elytron, one subbasal and extending diagonally toward suture, the other a postmedian transverse band, expanding slightly basad, sublaterally, but not reaching suture. Surface densely covered with fine, recumbent, whitish pubescence, which, on lighter parts of derm assumes a yellowish tinge.

Head strongly convex, but little narrower than pronotum. Antennae short, .72 mm. long, reaching middle of lateral pronotal

margin; segments 1-2 large, the latter distinctly longer; 4 slightly longer and distinctly broader than 3; 5-10 each distinctly longer and much broader than 4; 11 one-third longer but narrower than 10, broadest medially, sides and angles rounded. Terminal segment of maxillary palpi enlarged, with form of a scalene triangle, apical side shortest, outer edge longest, all margins noticeably rounded.

Pronotum strongly rounded, distinctly broader than long (.88x .76 mm.), edges finely margined, apex, sides and basal angles rounded, the latter obtuse, base strongly arcuate, a slight concavity on either side of midbasal lobe, the latter moderately broad and long, rounded in front of scutellum. Scutellum large, broader than long, broadly subtriangular, sides and apex strongly rounded.

Elytra moderately elongate, two and three-fourths times as long as broad (1.92x.88 mm.), sides subparallel on basal two-thirds, thence curved to apex, apices individually rounded. Anterior and intermediate tarsi filiform, shorter than their tibiae, penultimate segment shortest. Posterior tibiae with a single, short ridge, equal in length to subapical ridge; basitarsi with two short ridges near tip; none on second segment. Anal style but twice length of apical ventral segment (.72x.38 mm.), moderately robust, with a premedian constriction, thence acuminate to apex, the latter pointed.

Length: to apices of elytra, 2.68 mm.; to tip of anal style, 3.4 mm.

Holotype. ♂, DAVIS MTS., TEXAS, August 22, 1936 (J. N. Knull); in the collection of Ohio State University.

Paratype. ♂, HUACHUCA MTS., ARIZONA, August 18, 1936 (J. N. Knull); in the collection of Eugene Ray.

This species is most closely allied to *bicinctella* LeConte² and may be separated by the longer antennae, which reach to middle of lateral pronotal margin, with segment four one-third longer and much broader than three, and five to ten subequal in length, the completely black pronotum, the difference in elytral markings—the basal band extending posteriorly toward suture, the shorter and broader anal style, the larger size and the additional ridge on the second segment of the posterior tarsi. The same characters will separate *neocincta* from *ozarkensis* Ray³, to which species it is also allied.

MORDELLISTENA SPARSA CHAMPION

Mordellistena sparsa Champion, 1891, Biol. Centr. Amer. Col., 4, 2:335.

²Proc. Acad. N. S. Phila., 1862, 14:48.

³Can. Ent., 1936, 68:125.

Two specimens, Cayucos ?, California, July 4, 1931 (H. Dorn). This Mexican species is here recorded for the first time as occurring in the United States.

Mordellistena huachucaensis Ray, new species
(Figures 2, 16)

Form elongate, narrow, sides subparallel. Derm fuscobrunneous, head and pronotum somewhat lighter, apical margins of ventral abdominal segments distinctly flavous. Surface completely covered with fine, recumbent pubescence, golden everywhere, except on elytra, where there exists a mixture of golden and fuscobrunneous, the former much more prominent.

Head strongly convex, eyes distinctly emarginate on anterior margin. Antennae 1.32 mm. long, reaching metacoxae; segments 1-2 short, equal; 4 long, twice length of 3; 4-9 subequal; 10 one-third shorter than 9; 11 longer than 10 but shorter than 9, mesal margin and apex rounded. Terminal segment of maxillary palpi enlarged, form of an elongate scalene triangle, outer edge distinctly concave, other margins convex, angles rounded.

Pronotum convex, distinctly broader than long (1.17x1.02 mm.), outer edge completely margined, sides and apex rounded, base arcuate, midbasal lobe short, broad, truncate, subemarginate. Scutellum moderately large, triangular, broader than long, sides straight, apex a right angle.

Elytra more than two and one-half times as long as broad (3.02x1.17 mm.), sides distinctly curved, broadest at one-third from base, apices individually rounded. Basitarsi of anterior and intermediate legs as long as remaining segments together, penultimate segments short, slightly thickened, emarginate at apex. Posterior tibiae with two ridges, the anterior one extending obliquely completely across outer face; basitarsi with four oblique ridges, second segment with two. Anal style more than three times length of apical ventral segment (1.51x.45 mm.), slender, evenly attenuate to apex.

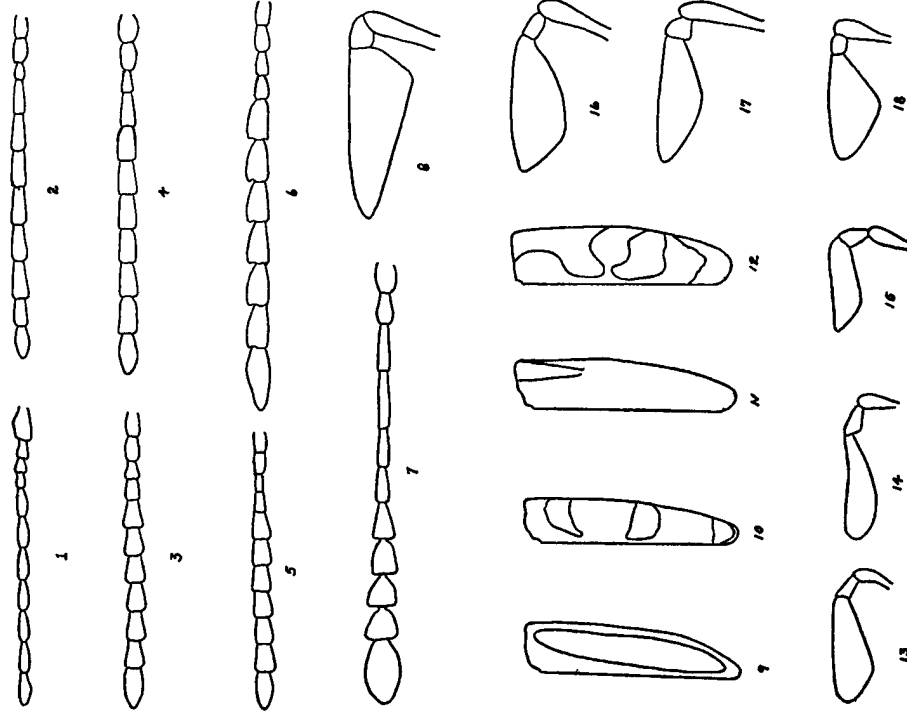
Length: to apices of elytra, 4.04 mm.; to tip of anal style, 5.55 mm.

Holotype. ♀, HUACHUCA MTS., ARIZONA, July 20, 1936 (J. N. Knull); in the collection of Ohio State University.

Paratype. ♀, type locality, June 9, 1935 (J. N. Knull); in the collection of Eugene Ray.

This species is most closely allied to *rufæ* Liljeblad⁴, but may be separated by the darker and different color, larger size, longer antennae, segment four of which is twice as long as three, the absence of sutural and marginal black lines on the elytra and

⁴Can. Ent., 1917, 49:11.



EXPLANATION OF PLATE

1. Antennae of *Mordellistena diversa*. 2. Antenna of *M. huachucaensis*. 3. Antenna of *M. arcuata*. 4. Antenna of *M. humerosa*.
5. Antenna of *M. neocincta*. 6. Antenna of *M. terminata*. 7. Antenna of *Pentaria bicincta*. 8. Maxillary palpus of *P. bicincta*.
9. Elytron of *Mordellistena arcuata*. 10. Elytron of *M. neocincta*.
11. Elytron of *M. humerosa*. 12. Elytron of *Pentaria bicincta*.
13. Maxillary palpus of *Mordellistena humerosa*. 14. Maxillary palpus of *M. diversa*. 15. Maxillary palpus of *M. neocincta*.
16. Maxillary palpus of *M. huachucaensis*. 17. Maxillary palpus of *M. arcuata*. 18. Maxillary palpus of *M. terminata*.

the broader form. Comparison has been made with the type of *rufa*, based on a single specimen collected at Palos Park, Illinois.

Mordellistena diversa Ray, new species

(Figures 1, 14)

Elongate, subparallel; moderately robust; color rufocastaneous, vertex of head and disc of pronotum fuscocastaneous, appendages, apex of metasternum and apical half of ventral abdominal segments 2, 3 and 4, castaneous. Surface densely covered with fine, short, recumbent pubescence, densest along base of elytra.

Head strongly convex; eyes entire, covered with short, erect hairs. Antennae 2-2.2 mm. long, reaching base of abdomen; segments 3-4 equal in length, the former slightly broader; 5-10 each twice as long as 4 and considerably broader, widest postmedially; 11 distinctly longer and narrower than 10, mesal and apical margins rounded, outer edge straight. Terminal segment of maxillary palpi enlarged, form of a scalene triangle, more than twice as long as broad, sides straight, angles rounded.

Pronotum convex, distinctly broader than long (1.7:2x1.45-1.7 mm.), finely, completely margined, sides and angles rounded, basal lobe short, rounded. Scutellum large, triangular, rounded at apex.

Elytra more than twice as long as broad (4-4.5x1.7-1.9 mm.), sides subparallel to within one-fourth of apex, apices individually rounded. Posterior tibiae with three short ridges, basitarsi with three ridges (a fourth rudimentary one in one specimen), second segment with two ridges. Anal style short, less than twice length of apical ventral segment (1.3-1.45x.75-.85 mm.), sides gently constricted beyond middle, abruptly rounded at apex.

Length: to apices of elytra, 5.45-6.2 mm.; to tip of anal style, 6.75-7.65 mm.

Holotype. ♀, SEATTLE, WASHINGTON, July 3, 1941 (O. T. Grande); in the collection of Melville H. Hatch.

Paratypes. Four ♀♀; two, same data as holotype; one, WALDPFORT, OREGON, July 1, 1934 (J. Schuh); one, McMinnville, OREGON (K. M. Fender); in the collections of Melville H. Hatch, Oregon State Agricultural College, K. M. Fender and Eugene Ray.

This species is somewhat allied to *nunemacheri* Liljeblad⁵ and may be separated by the different color, broader pronotum, the absence of a v-shaped notch on basal margin of pronotum, the larger size and the shorter anal style. Distinct differences in color, size, the short anal style, and the peculiar antennae, will

⁵Can. Ent., 1918, 50:157.

separate *diversa* from other allied species, such as *unicolor* LeConte⁶ and *sericans* Fall.⁷

Mordellistena humerosa Ray, new species
(Figures 4, 11, 13)

Moderately robust, subcuneate, sides strongly curved caudad to middle of elytra. Derm black, front, clypeus, labrum and anterior and intermediate legs castaneous, except tarsi, which are fuscocastaneous, basal segments of antennae fuscocastaneous. Surface densely covered with fine, recumbent pubescence, yellowish cinereous on head and pronotum, with golden pubescence at base of elytra, in the form of a wedge-shaped area extending from the humeri one-third length, not touching lateral margins and separated from suture by a distance more than half their breadth; golden along sides of metasternum and bases of abdominal segments.

Head strongly convex; eyes entire, densely covered with short, erect hairs. Antennae 1.05 mm. long, reaching to base of pronotum; segments 1-2 large, equal; 4 one-half longer than 3 and slightly broader; 5-10 each no longer than 4 and but slightly broader; 11 distinctly longer than 10, broadest at apical third, sides and apex rounded. Terminal segment of maxillary palpi enlarged, with the form of a fairly broad scalene triangle, apical edge shortest, but one-half length of lateral margin, sides and corners rounded.

Pronotum strongly convex, distinctly broader than long (1.09x.98 mm.), apical and lateral margins rounded, basal angles but slightly obtuse, mid-basal lobe broad and fairly long, but truncate at apex. Scutellum triangular, sides and apex rounded.

Elytra two and three-tenths times as long as broad (2.49x1.09 mm.), sides subparallel to middle, thence strongly curved to apex, apices individually rounded. Anterior and intermediate tarsi filiform, equal in length to their tibiae. Posterior tibiae with three oblique, parallel ridges extending across less than half outer face, second ridge somewhat longer than other two; basitarsi with four short, oblique ridges, second segment with two. Anal style short, robust, slightly more than one-half longer than apical ventral segment (.98x.6 mm.), acuminate to apex, the latter blunt, but not truncate.

Length: to apices of elytra, 3.47 mm.; to tip of anal style, 4.45 mm.

Holotype. Sex undetermined, CHIRICAHUA Mts., ARIZONA, June 15, 1939 (D. J. and J. N. Knull); in the collection of Ohio State University.

This species is most closely allied to *schauppi* Smith⁸ and

⁶Proc. Acad. N. S. Phila., 1862, 14:150.

⁷Trans. Amer. Ent. Soc., 1907, 38:256.

⁸Trans. Amer. Ent. Soc., 1882, 10:96.

may be distinguished by the darker, unicolored derm of body, with the exception of the head, the bicolored appendages, the presence of a basal, pubescent elytral spot, the much shorter anal style, the much broader, shorter form, and the truncate basal lobe of the pronotum.

MORDELLISTENA SERICANS FALL

Mordellistena sericans Fall, 1907, Trans. Amer. Ent. Soc., 33:256.

One specimen, Pasadena, California (H. Dorn).

MORDELLISTENA INCOMMUNIS LILJEBLAD

Mordellistena incommunis Liljeblad, 1921, Can. Ent., 51:185.

One specimen, Laramie, Wyoming, July 5, 1938 (D. J. and J. N. Knull).

Mordellistena terminata Ray, new species

(Figures 6, 18)

Form moderately slender, sides subcuneate. Derm fuscopiceous, antennae, maxillary palpi and anterior and intermediate legs castaneous, posterior tibiae and tarsi fuscocastaneous, caudal margins of metasternum and abdominal segments narrowly fuscocastaneous. Surface densely covered with fine, recumbent, yellowish-cinereous pubescence.

Head strongly convex, distinctly narrower than pronotum; eyes entire, densely covered with fine, short, erect hairs. Antennae 1.43 mm. long, the three terminal segments extending beyond base of pronotum; segments 1-2 short, equal; 3-4 equal, each as long as 2; 5 almost twice as long as 4 and broadening until at apex it is one-half broader than 4; 6-10 each as long and broad as 5; 11 one-half longer than 10, subquadrate, sides but gently curved, broadest premedially, apex rounded. Terminal segment of maxillary palpi enlarged, moderately robust, with the form of an isosceles triangle, lateral margin longer than the other two sides, angles rounded.

Pronotum strongly rounded, distinctly broader than long (1.32x 1.21 mm.), completely and finely margined, apex, sides and basal angles broadly rounded, the latter obtuse, base arcuate, midbasal lobe broad, short, rounded. Scutellum small, broadly triangular, sides and apex rounded.

Elytra narrow, elongate, more than twice as long as broad (2.83x1.32 mm.), broadest at base, sides subcuneate from base to apex, strongly rounded on apical half, apices individually rounded. Anterior and intermediate tarsi as long as their tibiae, segments filiform, penultimate segment the shortest. Posterior tibiae with four oblique, parallel ridges (excluding subapical one), each ex-

tending one-third distance across outer face, basitarsi with four oblique ridges, second segment with two. Anal style three times as long as apical ventral segment (1.51x.49 mm.), moderately robust, acuminate to apex, the latter blunt.

Length: to apices of elytra, 4.04 mm.; to tip of anal style, 5.55 mm.

Holotype. ♀, BROKEN BOW, OKLAHOMA, June 13, 1939 (Kaiser-Nailon); in the collection of the University of Oklahoma.

This species is somewhat allied to *aethiops* Smith⁹, but may easily be separated by the much longer antennae, the three terminal segments of which extend beyond the base of the pronotum, the longer, narrower terminal segment of the maxillary palpi, the rounded basal lobe of the pronotum, the elytra, which are as broad as the pronotum, the castaneous anterior and middle legs, the yellowish-cinereous pubescence and the larger size.

Mordellistena arcuata Ray, new species
(Figures 3, 9, 17)

Moderately elongate, sides subcuneate. Derm black, elytra with base broadly black, suture more narrowly black to apex, the latter and side margins black, the disc fuscocastaneous, giving the appearance of a broad, subbasal, discal vitta extending almost to apex, legs and antennae varying from fuscocastaneous to completely black, anterior legs the lightest, abdominal segments with a narrow fuscocastaneous line at apex. Surface completely covered with fine, recumbent pubescence, silvery on the ventral surface, tinged with yellow on the head, yellowish on the pronotum but most dense broadly along margins, golden on fuscocastaneous parts of elytra and partaking of ground color along suture, side margins and apex.

Head strongly convex; eyes entire, densely covered with short, erect hairs. Antennae 1.13 mm (♂) and 1.43 mm. (♀) long, reaching one-third from base of pronotum; segments 1-2 large, equal; 3-5 successively longer, 5 one-half longer than 3; 4 broader than 3, but not as broad as 5; 5-10 equal in both length and breadth, each broadest at apex and subserrate; 11 distinctly longer than 10, broadest one-third from apex, sides rounded. Terminal segment of maxillary palpi enlarged, form of an elongate scalene triangle, apical margin one-third length of lateral edge.

Pronotum convex, broader than long (1.02x.94 mm. in ♂, 1.4x 1.25 mm. in ♀), apex and sides rounded, basal angles obtuse, basal margin arcuate, midbasal lobe large, broad, subtruncate at middle. Scutellum small, rounded-triangular.

Elytra distinctly more than twice as long as broad (2.26x1.02

⁹Trans. Amer. Ent. Soc., 1882, 10:98.

mm. in ♂, 2.9x1.4 mm. in ♀), sides rounded from base to apex, broadest one-fourth from base, apices individually rounded. Anterior and intermediate tarsi filiform, shorter than their tibiae. Posterior tibiae with four or five subequal, oblique ridges extending less than half width of outer face; basitarsi with four ridges, second segment with two. Anal style twice length of apical ventral segment .98x.49 mm. in ♂, 1.2x.6 mm. in ♀, broad, abruptly constricted at middle, apex truncate.

Length: to apices of elytra, (♂) 3.2 mm. and (♀) 4.15 mm.; to tip of anal style, (♂) 4.18 mm. and (♀) 5.35 mm.

Holotype. ♂, DAVIS MTS., TEXAS, June 8, 1939 (D. J. and J. N. Knull); in the collection of Ohio State University.

Paratypes. Two ♀♀, same data as holotype; one ♀, type locality, July 6, 1939 (J. N. Knull); in the collections of Ohio State University and Eugene Ray.

This species is most closely allied to *attenuata* (Say)¹⁰ and may be separated by the peculiar antennae, in which segments three to five are successively longer, with the latter one-half longer than three, by the longer and narrower maxillary palpi, by the entire elytral vitta and by the bicolored condition of the latter, with its suture, base and margins black and the rest fuscous-ferruginous.

PENTARIA BICINCTA CHAMPION

(Figures 7, 8, 12)

Pentaria bicincta Champion, 1891, Biol. Centr. Amer. Col., 4, 2:254.

Thirty-three specimens, Brownsville, Gillespie County, Uvalde and Davis Mts., Texas, and Chiricahua Mts., Arizona, May 2 to July 6 (D. J. and J. N. Knull). This species, hitherto recorded only from Chihuahua, Mexico, is a new record for the United States. It exhibits considerable variation in size and in the distinctiveness of the markings on the pronotum and elytra.

PENTARIA BRUNNEIPENNIS CHAMPION

Pentaria brunneipennis Champion, 1891, Biol. Centr. Amer. Col., 4, 2:253.

One specimen, Davis Mts., Texas, July 11 (H. A. Wenzel). Known hitherto only from Chilpancingo, Mexico, this specimen is the first to be recorded from the United States.

¹⁰Journ Acad. N. S. Phila., 1826, 5:243.