Kenneth M. Fender

Linfield Research Institute
McMinnville, Oregon

New Malthodes from Western North America[1] (Coleoptera: Cantharidae)

The new species described herein are some of the procession of novelties that continue to show up from various sources. The knowledge of these should be presented whenever feasible, in lieu of withholding it for some possible future revision.

I am pleased to acknowledge my indebtedness to my children for their valued assistance by dedicating the first four of these species to them. The fifth species is dedicated to Captain and Mrs. Lawrence Ramsby, two of my very strong supporters. I am indebted to C. P. Alexander, Amherst, Massachusetts, for two of these species and to Vasco Tanner of Brigham Young University for the loan of material under his control.

Malthodes laurae Fender, new species (Figures 1, 2)

Shining, head black, castaneous in front of middle of eye, antennae castaneous. Pronotum flavous, black toward anterior angles, becoming narrowly infuscate at posterior angles. Scutellum black. Elytra piceous becoming black toward bases and apices. Prosternum testaceous becoming blackish along sutures and basal margin. Mesosternum and metasternum black, inner margin of metepisternum becoming flavous posteriorly. Basal three abdominal sternites testaceous, sternites four to six black, becoming more or less widely testaceous apically. Apical abdominal tergites flavous. Pubescence cinereous, fine, sparse and inconspicuous. Length 4 mm.

Male. Head wider than pronotum, finely sparsely punctured in front of antennae, more coarsely punctured behind, eyes moderately large and prominent, antennae missing beyond third segment, third segment half again as long as second. Pronotum transverse, anterior and lateral margins finely beaded, basal margin a little more widely so, anterior angles obliquely subtruncate, sides concavely converging to prominent and obtusely rounded hind angles, disc finely sparsely punctured. Scutellum subtriangular, apex truncated, margins finely beaded. Elytra parallel, extending to base of fifth abdominal sternite, finely rugose. Thorax beneath microreticulate and finely sparsely punctured. Basal abdominal sternites transversely microstrigulose toward sides. In ventral view: sixth sternite widely deeply emarginate, apex of emargination angulate, seventh sternite moderately slender, about twice as long as wide, sides sinuately subparallel, apex with a wide, deep U-shaped notch, penultimate tergite semicircular, ultimate tergite slender. In lateral view: seventh sternite sinuate, apically elevated and somewhat expanded, interior to this a robust ventral accessory process, its apical margin arcuate, apical tergites produced, apical margin of antepenultimate tergite lobed medially and with a fringe of long, depressed hairs, ultimate tergite subtriangular, strongly descending.

Female. Unknown.

Holotype male. Tannery Gulch Forest Camp, Clair Engle Lake, California, June 24, 1967, K. M. & W. M. Fender.

This species is closest to *Malthodes siskiyouensis* Fender. That species differs in color, the seventh sternite is arcuate and not apically expanded in lateral view and it has no ventral accessory process.

Malthodes thedae Fender, new species (Figures 3, 4)

Head black, mandibles testaceous. Pronotum piceous, apical and basal margins rather obscurely paler. Scutellum black. Elytra piceous, feebly paler medially. Body beneath black, apical abdominal segments becoming piceous. Legs black, apices of coxae and bases of trochanters, obscurely paler, more widely so on hind legs. Pubescence cinereous, inconspicuous, short, sparse and suberect. Length 3 mm.

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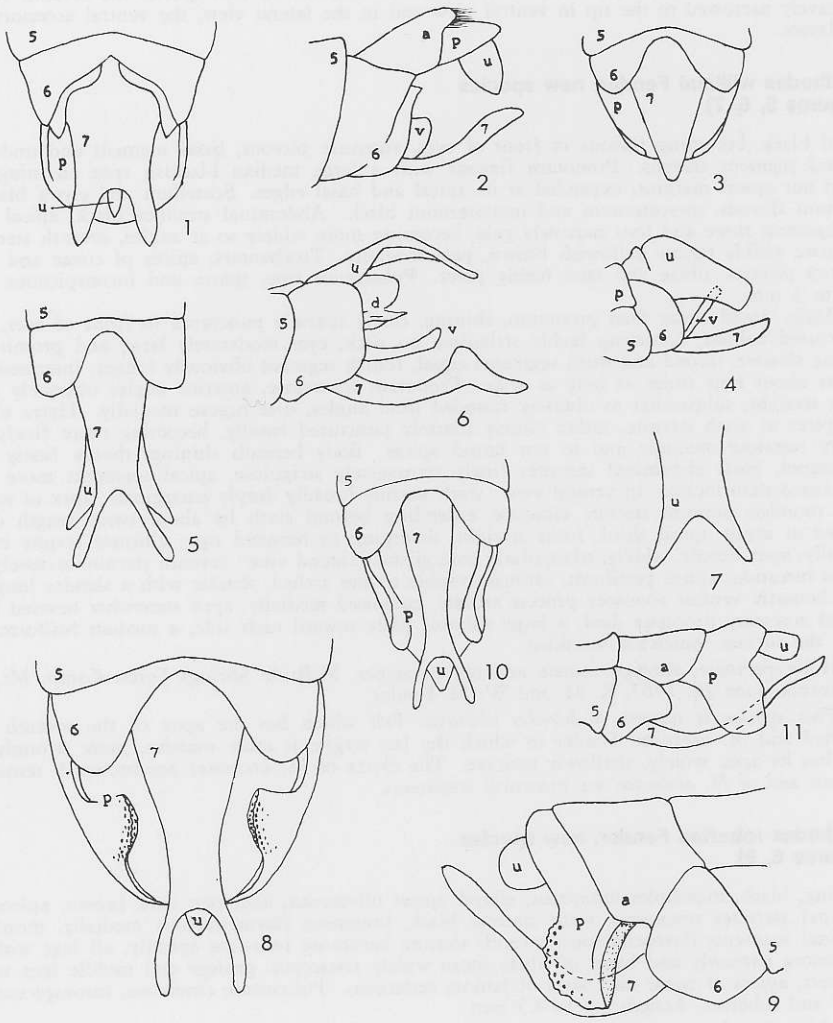
Male. Head wider than pronotum, shining, finely sparsely punctured in front of antennae, finely sparsely granular behind, vertex with a large triangular impression, interantennal area strongly longitudinally impressed, antennae slender, extending to tip of abdomen, second segment a little shorter than third, third and four equal, intermediate segments about four times as long as wide. Pronotum transverse, anterior angles rounded, lateral margins nearly straight, unbeaded, converging slightly to obtusely rounded hind angles, disc shining, rather finely sparsely punctured. Scutellum subtriangular, finely punctured, apex rounded. Elytra extending to base of fifth abdominal segment, finely sparsely punctured basally, becoming finely rugose punctate medially, apices feebly tumid and finely moderately closely punctured. Body beneath shining, finely sparsely punctured.



Male terminal abdominal segments of Malthodes. Figure 1. *Malthodes laurae,* ventral view. Figure 2. Same, lateral view. Figure 3. *Malthodes thedae,* ventral view. Figure 4. Same, lateral view. Figure 5. *Malthodes williami,* ventral view. Figure 6. Same, lateral view. Figure 7. Same, dorsal view of apical portion of ultimate tergite. Figure 8. *Malthodes robertae,* ventral view. Figure 9. Same, lateral view. Figure 10. *Malthodes ramsbyorum,* ventral view. Figure 11. Same, lateral view.

Symbols: 5, fifth sternite; 6, sixth sternite; 7, seventh sternite; a, antepenultimate tergite; p, penultimate tergite; u, ultimate tergite; d, dorsal accessory process; v, ventral accessory process.

In ventral view: sixth sternite broadly deeply emarginate, apex of emargination rounded, seventh sternite elongate, extending beyond sixth by about twice length of sixth, widest basally, evenly tapering to sharply rounded apex; ultimate tergite broader than seventh sternite forming a large canopy over seventh sternite, subtruncate apically. Lateral view: seventh sternite boat-shaped, rather feebly curved up to apex; ultimate tergite large, produced, angulately turned down to truncate apex; ventral accessory process slender, straight, arising near juncture of sixth and seventh sternites, apically elevated.

Female. Unknown.

Holotype male. Hat Creek, Lassen National Forest, California, June 24, 1961, S. L. Wood, J. B. Karran and D. E. Bright, in the collection of Brigham Young University.

This species would key to *Malthodes alexanderi* Fender. In that species the seventh sternite is concavely narrowed to the tip in ventral view and in the lateral view, the ventral accessory process is clavate.

Malthodes williami Fender, new species (Figures 5, 6, 7)

Head black, becoming flavous in front of eyes, antennae piceous, basal segment and underside of second segment flavous. Pronotum flavous with a large median blackish spot attaining neither basal nor apical margins, expanded at its apical and basal edges. Scutellum and elytra black. Prosternum flavous, mesosternum and metasternum black. Abdominal sternites black, apical margins of segments three and four narrowly pale, becoming more widely so at angles, seventh sternite and ultimate visible tergite yellowish brown, pale medially. Trochanters, apices of coxae and bases of femora piceous, tibiae and tarsi feebly paler. Pubescence fine, sparse and inconspicuous. Length 2.5 to 3 mm.

Male. Head wider than pronotum, shining, finely sparsely punctured in front of eyes, coarsely punctured behind, becoming feebly strigulose on neck, eyes moderately large and prominent, antennae slender, second and third segments equal, fourth segment obviously longer, intermediate segments about four times as long as wide. Pronotum transverse, anterior angles obliquely truncate, sides straight, subparallel to obtusely rounded hind angles, disc rugose medially. Elytra extending to apices of sixth sternite, rather closely coarsely punctured basally, becoming more finely so and finely rugulose medially and to not tumid apices. Body beneath shining, thorax finely sparsely punctured, basal abdominal sternites finely transversely strigulose, apical segments more coarsely punctured than thorax. In ventral view: sixth sternite broadly deeply emarginate, apex of emargination rounded, seventh sternite elongate, extending beyond sixth by about twice length of sixth, forked at about apical third, forks straight, diverging to rounded tips; ultimate tergite expanded apically, apex deeply, widely, triangularly emarginate. Lateral view: seventh sternite arcuately curved up to furcation, apices podiform, ultimate visible tergite arched, slender with a slender longitudinal keel beneath, ventral accessory process arcuate, narrowed medially, apex somewhat beveled beneath, dorsal accessory processes dual, a large suboval plate toward each side, a median fusiform process with the surface somewhat wrinkled.

Holotype male, allotype female and ten paratypes, McBride Springs Forest Camp, Mt. Shasta, California, June 26, 1967, K. M. and W. M. Fender.

This species is nearest *Malthodes obductus* Fall which has the apex of the seventh sternite notched and *M. oregonus* Fender in which the last tergite is more massive, more strongly arched and has its apex widely, shallowly concave. The elytra of *M. oregonus* are brownish testaceous to piceous and of *M. obductus* are brownish testaceous.

Malthodes robertae Fender, new species (Figures 8, 9)

Shining, black, mandibles testaceous, elytral apices olivaceous, abdomen dark brown, apices of abdominal sternites testaceous, sixth sternite black, becoming flavotestaceous medially, terminal abdominal segments flavotestaceous, seventh sternite becoming infuscate apically, all legs with apices of femora narrowly and bases of tibiae more widely testaceous, prolegs and middle legs with trochanters, apices of coxae and bases of femora testaceous. Pubescence cinereous, inconspicuous, fine, short and suberect. Length 3.5 to 4.5 mm.

Male. Head as wide as pronotum, finely punctured in front of antennae, finely moderately closely granulate behind, eyes moderately large and prominent, antennae extending to apex of abdomen, second and third segments nearly equal, fourth evidently longer, intermediate segments about three times as long as wide. Pronotum transverse, finely sparsely punctured, anterior margin feebly arcuate, anterior angles rounded, sides nearly straight, converging slightly to feebly prominent, explanate and obtusely rounded hind angles, basal margin arcuate, a pair of small, nearly adherent elevations medially near base, a second pair of more remote small elevations near middle. Scutellum small, short, semicircular, finely punctured. Elytra finely sparsely punctured, feebly sparsely rugose, apices feebly tumid and somewhat dehiscent. Thorax beneath, shining, finely sparsely punctured. Abdomen a little more coarsely punctured. Sixth sternite widely deeply emar-

ginate, apex of emargination rounded. Seventh sternite slender, elongate, produced beyond sixth by about twice length of sixth, unevenly sinuately bent up at middle, apical fourth furcate, forks becoming parallel toward the acute tips, base of furcation rounded. Sides of penultimate tergite produced downward as large unevenly digitate processes, often more or less enveloping seventh sternite medially, caudal margin of side pieces eroded and roughly punctured.

Female. Similar to male. Head narrower than pronotum, eyes smaller and less prominent, antennae shorter, intermediate segments about two and a half times as long as wide. Last abdominal segments normal for the sex.

Holotype male, allotype female and ten paratypes, Nymph Lake, Rocky Mountain National Park, Colorado, 9500 feet, July 15, 1955, C. P. Alexander.

This species keys to *Malthodes bakeri* Fender, in which species the forks of the seventh ventral are straight and divergent and the apex of the furcation is V-shaped.

Malthodes ramsbyorum Fender, new species (Figures 10, 11)

Head black, mandibles pale, antennae piceous. Pronotum flavous, lateral and basal margins and an uneven median stripe black. Scutellum and elytra piceous. Thorax beneath black. Basal three abdominal sternites black with apical margin narrowly and lateral margins widely pale, fourth sternite black, fifth sternite black with apical margin pale medially, sixth piceous becoming widely flavous medially, seventh sternite and last two tergites testaceous. Pubescence cinereous, very short sparse and inconspicuous above, longer and more conspicuous on abdomen. Length 3 mm.

Male. Shining, head wider than pronotum, finely sparsely punctured throughout, eyes moderately large and prominent, antennae extending to about tip of abdomen, segments two to four progressively longer, intermediate segments about two and a half times as long as wide, apical three or four segments somewhat compressed. Pronotum transverse, anterior angles rounded and reflexed, lateral margins feebly sinuate and nearly parallel to prominent obtusely rounded and explanate hind angles, disc finely sparsely punctured. Scutellum wider than long, apically rounded, finely rather closely punctured. Elytra finely sparsely punctured, feebly rugose toward apices. Body beneath finely sparsely punctured, abdomen a little more coarsely so. Sixth sternite widely deeply emarginate, sides of emargination concave, the apex subtruncated. Seventh sternite elongate, slender, evenly narrowed to forked apical fifth, forks becoming parallel apically, tips rounded, sinuate in profile. Last two tergites produced caudally, sides of penultimate tergite produced ventrad in an uneven triangular extension, the apices more or less rounded, ultimate tergite narrow, short and ovate.

Female. Unknown.

Holotype male and one paratype, Bridalveil Falls, Yosemite National Park, California, July 12, 1950, C. P. Alexander.

This species is most closely related to *Malthodes humidus* Fender which is known from the Coast Range of Oregon, has the tips of the produced sides of the penultimate tergite angulate, the seventh sternite less strongly sinuate in profile and the coloration of the pronotum, when present, is not irregular in outline.

The types of all but *Malthodes thedae* (in collection of Brigham Young University) are to be deposited in the collection of the California Academy of Sciences. The paratypes are in the writer's collection.

Pertinent Literature

Fall, H. C. 1919. The California species of Malthodes. Ann. Ent. Soc. Am., XII:31-42, Pl.

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