

THE CALIFORNIAN SPECIES OF MALTHODES.

By H. C. FALL.

The presence of several species of *Malthodes* among the things which Dr. Blaisdell has asked me to study in connection with his forthcoming paper on the Coleoptera of Humboldt County, California, offers the opportunity of reviewing the Californian species of this genus in the Doctor's and my own collections, a very large proportion of which are as yet undescribed.

These delicate little things have been generally neglected by collectors, and such cabinet specimens as one runs across are too often ruined in mounting. When carefully collected and mounted, they are wonderfully interesting little creatures and offer an almost unparalleled wealth of sexual variation in the formation of the terminal abdominal segments of the male. The females are on the other hand rather monotonous in their uniformity, and are rarely distinguishable specifically except as accompanied by males. In the males themselves there are few taxonomic characters outside of the ventral sexual modifications, and this together with the fact that there is little use in attempting to give comparative measurements in insects having such fragile structure and soft integuments, is a sufficient reason for the brevity of the following descriptions, which indeed might about as well have been made still shorter.

Very little has been said in the descriptions about the females. These almost invariably differ from the males by the smaller, less prominent eyes and consequently narrower head, which is usually scarcely as wide as the thorax; by the shorter antennæ, with joints two to four more nearly equal in length, or at least with the third joint not longer than the second; by the rather more transverse thorax, and sometimes somewhat shorter elytra. The last ventral segment in this sex is rather deeply incised in the same general manner in all the species here treated.

The remarkable modifications of the abdominal apex in the male are often difficult to see in their entirety, but the form of the sixth and seventh ventrals is usually visible, and these

have therefore been selected for representation in the accompanying plate. These sketches are not drawn to any given scale, and are not to be regarded as absolutely accurate as regards relative dimensions of parts, but they are sufficiently so for the purpose they are designed to serve. A certain degree of variation has indeed been observed in these dimensions in one or two species, quite independent of any extension or contraction of the parts, which though sometimes noticeable, is less common than one would expect.

In Le Conte's latest treatment of the Lampyridæ* there is given a table of our species of *Malthodes*, of which three—*laticollis*, *fragilis* and *fuscus*—are accredited to California. The type of *fragilis* is from the Atlantic Coast region, and an examination of the Le Conte specimens some years ago convinced me that the Californian form so referred was not the same. This latter did not appear to be identical with any of the new species herein described. This leaves only two Le-Contean species described from the state, one of which, *fuscus*, I do not recognize in the material at hand. To these two species must be added the *M. ligulifer* described by Bergroth† from Monterey, California, and said to be related by its male sexual characters to *spado* Lec. The prothorax of *ligulifer* is said to be "nigro-piceus, anguste luteo-circumlimbatus," which does not apply normally to any Californian species known to me, and is only approached by some forms of *basalis*, near which it may be listed for the present; the terminal ventral segments of the male are, however, not defined with sufficient exactness to enable me to include it in the following table.

* Trans. Am. Ent. Soc. 1881, p. 60.

† Ann. Soc. Ent. France (Bull. Ent. CCIII) 1889.

TABLE OF SPECIES.

1. Seventh ventral segment of male not produced, sixth broadly, not deeply emarginate, fifth broadly angulate emarginate.
 - Female apterous.....*reflexus*
 - Female winged.....*laticollis*
- Seventh ventral segment of male more or less strongly produced, sixth very broadly and deeply emarginate, fifth not emarginate.
 - Seventh ventral of male rounded at tip, size large.....*magister*
 - Seventh ventral of male emarginate, notched or forked at tip.....2
2. Seventh ventral of male not or scarcely more than twice as long as wide, never projecting beyond the sixth a distance as great as the length of the latter.....3
- Seventh ventral segment of male much more than twice (usually three to five times) as long as wide, and projecting beyond the sixth a distance equal to or greater than the length of the latter.....4
3. Seventh ventral of male deeply incised at tip, eyes very large, separated anteriorly by not more than their own horizontal width as viewed from the front.....*vigilans*
- Seventh ventral of male broadly notched or emarginate at tip.
 - Antennæ with two basal joints yellow.....*basalis*
 - Antennæ entirely fuscous or piceous.
 - Eyes large and prominent, the head conspicuously wider than the thorax, thorax yellow.....*mitificus*
 - Eyes relatively small, head not very much wider than the thorax, the latter piceous.....*piceolus*
4. Seventh ventral of male with apical notch not deeper than the width of the segment at its narrowest part.....5
- Seventh ventral of male more deeply forked than the minimum width of the segment.....6
5. Apex of seventh ventral of male concavely beveled inferiorly, as seen in profile.
 - Seventh ventral of male nearly straight in profile.....*mollis*
 - Seventh ventral of male distinctly ascending in profile, the tips more diverging as viewed vertically.....*appendiculatus*
- Apex of seventh ventral of male simple.
 - Fifth (?) dorsal segment (♂) with a strongly produced overhanging process which is horizontally dilated and rounded at tip, broadly arched as viewed in profile; seventh ventral not bisinuate...*obductus*
 - Dorsal segments not produced apically, seventh ventral of male strongly bisinuate in profile.....*bicurvatus*
6. Ascending portion of seventh ventral straight (in profile) and lying between long, slender, rectangularly bent dorsal processes.....*complicatus*
- Ascending portion of seventh ventral straight, tip beveled, no slender dorsal processes, ventral segments 3 to 5 silvery sericeous at middle.....*sericeiventris*
- Ascending portion of seventh ventral sinuous or bent.
 - Emargination of sixth ventral (♂) not truncate at bottom, seventh of nearly uniform width, forks parallel.
 - Head (♂) much wider than the thorax, eyes large, separated in front by about their own diameter.....*vapidus*
 - Head (♂) narrower eyes smaller and separated on the front by more than $1\frac{1}{2}$ times their own diameter.....*fuscus*
 - Emargination of sixth ventral truncate at bottom.
 - Seventh ventral sinuate apically in profile, less widely and deeply forked.....*tularensis*
 - Seventh ventral apically bent, more widely and deeply forked...*visceratus*

Malthodes reflexus sp. nov.

Piceous, prothorax not paler. Antennæ piceous, basal joint not appreciably paler, about reaching the elytral tips in the male, a little shorter in the female, joints 2-4 subequal, the third scarcely or barely as long as the second, the fourth only slightly if at all longer than the second, intermediate joints two and one-half times as long as wide in the male, twice as long as wide in the female. Head subequal in width to the thorax in the male, obviously narrower than the thorax in the female; eyes not very prominent, the width of the front between them fully three times that of the eye. Prothorax quite strongly transverse, sides slightly convergent from the anterior angles to the base, the margins more strongly reflexed than usual; disk biimpressed at middle, surface distinctly, moderately closely punctate. Elytra normal in the male, in the female much shorter, less than twice as long as wide, the wings entirely wanting, and the abdomen projecting beyond the elytra a distance as great as the elytral length. Length about 2 mm.

Abdominal sexual characters. The seventh ventral of the male is not produced, the genital appendages are similar in type to those of *laticollis*, the lateral processes broader basally, rapidly narrowing to the acuminate tip, which is slightly curved or everted, central piece not keeled beneath, but angularly prominent at tip superiorly, the filamentous process inferior in position; last ventral of female acutely rather deeply incised.

California. Middle coast region. 4 ♂, 5 ♀, sent by Dr. Blaisdell.

Specific localities are: Marin Co. (type ♂); Fairfax, Marin Co., V-7-11; Vine Hill, Contra Costa Co., VI-7-08; Niles Canon, V-16 (W. M. Giffard).

Very easily recognizable by the entirely piceous color, broad distinctly punctate thorax with entire side margin reflexed, simple, non-produced seventh ventral of male, and apterous female.

Malthodes laticollis Lec.

Piceous or piceo-testaceous, head darker, thorax yellow with the front angles more or less infusate. Antennæ fuscous, basal joint paler, as long as the body in the male, second and third joints equal, fourth just visibly longer, intermediate joints about three times as long as wide. Head slightly wider than the thorax in the male, eyes moderately large, their longest diameter not much less than the minimum width of the front between them; head in the female a little narrower than the thorax, the eyes notably smaller. Thorax strongly transverse, a little more so in the female as usual, widest at the front angles, which are reflexo-incrassate, sides nearly straight and parallel posteriorly, the margin distinctly reflexed throughout; surface evidently but finely

punctate, disk biimpressed at middle, sometimes only feebly so. Length about $2\frac{1}{2}$ mm.

Abdominal sexual characters. Seventh ventral of male simple and not produced; genital appendages short, consisting of two piceous slender lateral processes, hooked (abruptly bent at right angles and acuminate) at tip; a central piece, pale in color, broad at base, with a very thin laminate keel beneath and a curved terminal filamentous process.

California. Described from Santa Cruz Island. Specimens in my collection are from Riverside, Pomona, Pasadena, Mt. Wilson and San Bernardino Mts., May, July.

The abdominal characters of the male as given by Le Conte in his synopsis of the Lampyridæ (Trans. Am. Ent. Soc., 1881, p. 60), do not seem to apply to the species here described, but the fact remains that there are no males in the Le Conte collection. Two females only represent the species, the first (on the label) being the original Santa Cruz Island type, while the second—a later acquisition—is evidently a different species. Specimens of the species I have described above were carefully compared with the Santa Cruz type and are to all appearances identical.

***Malthodes magister* sp. nov.**

Piceo-testaceous, head darker, thorax fulvotestaceous with a blackish discal spot in the type which is nearly obsolete in a second example. Antennæ entirely fuscous, passing the elytral tips in the male; joints 2-4 distinctly increasing in length, the intermediate joints fully four times as long as wide. Head (σ^7) distinctly wider than the thorax, eyes only moderate in size, separated in front by more than twice their own width as seen from the front. Thorax but slightly wider than long, the front angles a little prominent and reflexed, sides behind the angles narrowly margined, surface finely sparsely punctulate. Length 4.5 to 5 mm.

Abdominal sexual characters. Male: Sixth ventral deeply, broadly emarginate; seventh moderately produced, tip gradually narrowed and rounded, entire. Within the seventh ventral is a broad tongue-like process which is emarginate at tip. The terminal dorsal segments project considerably beyond the ventral at apex. Female not known.

California. Humboldt Co. The type collected at Blair's Ranch, Redwood Cr., Sept. 6, by H. S. Barber; the second example at Green Point, June 4, by Dr. F. E. Blaisdell. This is the largest species yet discovered in our fauna and is quite distinct in the male sexual characters.

Malthodes vigilans sp. nov.

Piceo-testaceous, head darker, thorax yellow. Antennæ fuscous, slightly longer than the entire body in the male, joints 2-4 increasing in length, the third however, only slightly longer than the second; intermediate joints (♂) about five times as long as wide, (♀) twice as long as wide. Head much wider than the thorax in the male, scarcely at all so in the female; eyes (♂) very large and prominent, separated in front by but little more than their own width. Thorax moderately transverse, a little more so in the female as usual, sides parallel, feebly margined, the margin just perceptibly thicker at the front angles, surface scarcely visibly punctate. Length about 3 mm.

Abdominal sexual characters. Male with sixth ventral deeply, broadly emarginate, seventh rather short and broad, projecting beyond the sixth a distance less than the length of the latter, the tip deeply narrowly incised. Last dorsal not projecting beyond the last ventral. Female as usual.

California. San Bernardino Mts., July; 2 ♂, 1 ♀, collected by the writer. The type is a male.

Malthodes basalis sp. nov.

Fuscous, front anteriorly yellow, prothorax varying from yellow with faint diffuse fuscous discal cloud, to nearly evenly fuscous with the extreme basal and apical edge yellow. Antennæ fuscous with basal two joints yellow, as long as the body in the male, joints two to four increasing slightly in length, intermediate joints about three times as long as wide. Head (♂) slightly wider than the thorax, the eyes only moderately prominent, separated in front by twice their own width or slightly less. Thorax moderately transverse, sides parallel, narrowly margined, the front angles scarcely more prominent. Length 2 to 3 mm.

Abdominal sexual characters. Male: sixth ventral deeply emarginate; seventh broad, nearly straight in profile, extending beyond the sixth a distance subequal to the length of the latter, the tip broadly emarginate; last dorsal not produced.

California. Yosemite, June 16 (W. M. Giffard), sent by Dr. Blaisdell; Licking Fork, Mokelumne River, June, (Blaisdell); Lake Tahoe, July 17-21.

Nevada. Ormsby Co., July (Baker).

Fifteen examples are before me. The type is a Yosemite male.

The bright yellow basal two joints of the antennæ will probably serve to separate this from the other California species.

***Malthodes mitificus* sp. nov.**

Fuscotestaceous, thorax yellow. Antennæ longer than the body in the male, entirely fuscous, joints two to four distinctly increasing in length, intermediate joints about four times as long as wide. Head (♂) conspicuously wider than the thorax; eyes large and prominent, separated anteriorly by a distance not much greater than their own diameter. Prothorax moderately transverse, sides parallel, narrowly margined, front angles slightly thickened but scarcely more prominent; surface shining, minutely sparsely punctulate. Length about 3 mm.

Abdominal sexual characters. Male: sixth ventral deeply emarginate, seventh broad, extending beyond the sixth by about the length of the latter, gradually narrowed apically, the tip broadly notched; last dorsal segment not produced.

California. Mokelumne Hill. 5 ♂, sent by Dr. Blaisdell.

This species should be easily recognizable by the tabular characters. The ventral sexual structure is nearly as in *basalis*.

***Malthodes piceolus* sp. nov.**

Piceous, elytra, body beneath and legs more or less piceotestaceous as usual. Prothorax entirely piceous except for paler basal and apical edge; mouth yellowish in some examples, not so in others. Antennæ entirely dark, fully as long as the entire body in the male, in which sex joints two to four are evidently increasing in length, and the intermediate joints fully four times as long as wide. Head a little wider than the prothorax in the male, eyes not very large, separated anteriorly by rather more than twice their own width as viewed from the front. Prothorax only moderately transverse, sides parallel or slightly convergent behind, margin narrow, slightly thickened at the front angles, surface moderately shining and very finely punctate. Length (head deflexed) 2 mm. to tip of elytra.

Abdominal sexual characters. Male: sixth ventral deeply emarginate, seventh broad, nearly parallel, passing the apex of the sixth by a distance rather less than the length of the latter, tip broadly not deeply emarginate, a little deflexed at its extremity as seen in profile.

California. Green Point, Humboldt Co., June 4-7 (Blaisdell). The type is a male.

***Malthodes mollis* sp. nov.**

Fuscotestaceous, head blackish, thorax rufotestaceous, frequently with a more or less evident diffuse darker discal shade. Antennæ about as long as the body in the male, entirely piceous, second and third joints subequal, the fourth slightly longer; intermediate joints three to three and one-half times as long as wide. Head a little wider than the thorax in the male, the eyes not very prominent. Thorax moderately transverse, sides parallel, margin fine, not appreciably thickened at the front angles. Length about $2\frac{1}{2}$ mm. to the tips of the elytra.

Abdominal sexual characters. Male: sixth ventral deeply emarginate, seventh rather broad, strongly produced, passing the sixth by nearly twice the length of the latter, gradually somewhat narrowed apically, the tip notched or narrowly emarginate, medially grooved or impressed and appendiculate each side near the base of the emargination; last dorsal not produced, broadly rounded at tip.

California. Marin Co., numerous specimens from Muir Woods, IV-23; Lagunitas, IV-25, and "Marin Co," (type ♂), all sent by Dr. Blaisdell.

Var. *longipennis* var. nov.

Two examples (♂, ♀) from Eureka, Cal. (H. S. Barber), are provisionally separated as a variety of the preceding. In the male the elytra seem slightly longer than in the typical form, or any other form known to me; the antennæ are a little paler basally, the seventh ventral of the male narrower, not medially impressed beneath at tip, the appendix therefore not double, but continuous from side to side.

***Malthodes appendiculatus* sp. nov.**

Fuscous, thorax yellow. Antennæ (♂) attaining the tips of the wings, fuscous, basal joints paler; third joint slightly or scarcely longer than the second, fourth evidently longer, intermediate joints four times as long as wide. Head distinctly wider than the thorax, eyes rather large, separated anteriorly by a distance less than twice their width as viewed from the front. Thorax moderately transverse, sides just perceptibly converging posteriorly, margin fine, scarcely thickened at front angles. Length $3\frac{1}{2}$ mm. to tip of wings.

Abdominal sexual characters. Male: sixth ventral deeply broadly emarginate; seventh rather narrow, passing the sixth by nearly twice the length of the latter, gradually narrowed for three-fourths its length, then widening, ascending and forked at tip, each fork appendiculate beneath or emarginate at tip as viewed in profile; last dorsal not produced, broadly rounded at apex.

California. "Mts. near Claremont" (Baker); Pasadena.

A single male from each locality, the first named being the type.

This species is rather closely allied to *mollis*, but differs appreciably in the seventh abdominal segment of the male, which is here narrower, curved upward at its extremity, the forks more divergent. The eyes are a little more prominent, the thorax feebly narrowed posteriorly, and there are some other slight differences which may however be constant. The genital appendages also appear to be different, but these are not very clearly visible in *mollis*. In *appendiculatus* there is a long curved central ligula narrower than the seventh ventral,

above which it lies, horizontally flattened and notched at tip, and on either side of this a very slender straight needle like process.

***Malthodes obductus* sp. nov.**

Brownish testaceous, thorax yellowish, disc clouded with fuscous. Antennae as long as the body in the male, fuscous, the basal joints paler; joints two and three subequal, four a little longer, intermediate joints about three and one-half times as long as wide. Head obviously wider than the thorax in the male, the eyes only moderately prominent. Thorax moderately transverse, sides straight and parallel or very nearly so, side margins fine, not thickened at the front angles. Length 2 mm. to tip of elytra.

Abdominal sexual characters. Male: fifth dorsal segment strongly produced, arched, overhanging the terminal segments, broader at tip, which is truncate with rounded angles, strongly carinate beneath except at apex, which is concave; sixth ventral deeply, broadly emarginate; seventh strongly produced, deeply notched at apex, in profile bent upward a little at about apical third, the tip again horizontal.

California. Green Point, Humboldt Co., June 4-7 (Blaisdell); Washington, Seattle (Prof. O. B. Johnson).

The type is a male from the first named locality.

In the typical form the apical notch of the seventh ventral is as deep as the terminal width of the segment. In the Seattle males the segment is more deeply cleft, the forks more diverging and the tip of the produced fifth dorsal is a little different. These may represent a closely allied species, but as the sexual modifications are of the same type throughout, I prefer to consider it a varietal form.

***Malthodes bicurvatus* sp. nov.**

Fuscotestaceous, thorax entirely yellow, head piceous. Antennae as long as the body in the male, fuscous, scarcely paler basally in fully colored specimens; third joint slightly or scarcely longer than the second, fourth distinctly longer than the third, intermediate joints about four times as long as wide. Head evidently but not greatly wider than the prothorax, eyes only moderately prominent. Thorax moderately transverse, sides straight, finely margined, front angles not thickened. Length (head deflexed) about 2 mm. to tips of elytra.

Abdominal sexual characters. Male: last visible dorsal segment broadly truncate, the lateral angles produced downward and backward in a rather broad process which is dilated and rounded at tip. Sixth ventral broadly deeply emarginate, the curvature becoming more narrowly parabolic at the bottom of the emargination; seventh ventral narrow, elongate, notched at tip, bisinuate in profile, with a short tooth-like process at middle of upper side.

California. Mokelumne Hill, April (Blaisdell), type ♂; Adams Springs, Lake Co., June 18 (Blaisdell).

Malthodes complicatus sp. nov.

Fuscotestaceous, head piceous, thorax entirely yellow or with the extreme margin at apical angles infusate. Antennæ longer than the body in the male, entirely fuscous, second and third joints subequal, fourth evidently longer, intermediate joints more than four times as long as wide. Head (♂) wider than the prothorax, eyes moderately prominent. Prothorax moderately transverse, sides parallel and narrowly margined, margin not appreciably thickened at the front angles. Length (head deflexed) $2\frac{1}{4}$ mm. to tips of elytra.

Abdominal sexual characters. Male: last (?) dorsal with a slender descending lateral process, which is abruptly bent at right angles, the terminal portion horizontal. Sixth ventral deeply, broadly emarginate, the bottom of the emargination truncate; seventh ventral received between the descending dorsal processes, elongate, narrow, forked rather deeply at tip, obliquely ascending in profile in its apical two-thirds.

California. Pomona, March 25 (type ♂); Pasadena; Claremont (Baker); Santa Barbara, Feb. 4; Ojai Valley, March 5.

Superficially closely resembling the preceding species, but very distinct by the sexual characters.

Malthodes sericeiventris sp. nov.

Fuscotestaceous, head piceous, thorax entirely clear yellow. Antennæ as long as the body in the male, entirely fuscous, joints two to four visibly increasing in length, intermediate joints nearly five times as long as wide. Head (male type) notably wider than the thorax, with prominent eyes; less wide in a second male. Thorax moderately transverse, sides straight and nearly parallel, side margins fine, not appreciably thickened at the front angles. Length (head deflexed) $2\frac{1}{2}$ mm.

Abdominal sexual characters. Male: ventral segments 3 to 5 silvery sericeous at middle throughout their length; sixth deeply emarginate; seventh elongate, narrow, deeply divergently forked apically, in profile obliquely ascending in about its apical half, the tips of the forks thickened and concavely beveled.

California. Pomona, April 25-May 20; 2 ♂, 2 ♀; type ♂.

The sericeous ventral area of the male is quite unique and has the appearance of an excessively short and dense silvery pile, but it is not resolvable, as such by a $\frac{1}{4}$ inch triplet, and is probably due to surface sculpture.

***Malthodes vapidus* sp. nov.**

Fuscotestaceous, head piceous, thorax yellow. Antennæ entirely fuscous, as long as the entire body in the male; joints two to four increasing in length, intermediate joints four times as long as wide. Head much wider than the thorax, the eyes large and prominent, separated anteriorly by not more than their own diameters. Thorax moderately transverse, sides straight and nearly parallel, side margins very fine, not thickened appreciably at the front angles. Length (head deflexed) about 2 mm. to tips of elytra.

Abdominal sexual characters. Male: last dorsals not produced; sixth ventral deeply broadly emarginate; seventh ventral rather wide, parallel sided, deeply widely divided at apex, sinuately ascending in profile.

California. Lake Tahoe, July 17-21, '97 (type ♂).

***Malthodes fuscus* Lec. Proc. Acad. Nat. Sci. Phila. V, p. 346.**

Le Conte's description, Synopsis of Lampyridæ, Trans. Am. Ent. Soc., IX, 1881, is as follows:

"Last ventral (♂) bent in a sinuate manner obliquely upwards and more deeply nicked at tip than in *fragilis*; prothorax transverse, finely margined, tinged with testaceous; head black, eyes large, prominent, antennæ long, slender, fourth and following joints longer than the second or third, ♂ two-thirds, ♀ one-half as long as the body. Length 3 mm. Cal."

A variety is mentioned with the prothorax "yellow testaceous ♀."

While probably most closely related to *vapidus*, this species is at once separable by the much smaller eyes and consequently narrower head, which is not very much wider than the prothorax. The last ventral is forked in a similar manner, but the emargination is much less deep than in *vapidus*, the depth being subequal to the width of the segment at the bottom of the emargination, while in *vapidus* it is much deeper than the segmental width at this point. In *fuscus* the forks comprise not more than one-fourth the entire length of the segment, in *vapidus* about one-half the length of the segment.

The type was taken at or in the vicinity of San Francisco.

***Malthodes tularensis* sp. nov.**

Fuscous, thorax yellowish, more or less tinged with fuscous, especially along the side margins. Antennæ entirely fuscous, as long as the body in the male; third joint scarcely longer than the second, fourth evidently longer, intermediate joints four times as long as wide.

Head evidently wider than the thorax, eyes moderately prominent. Thorax quite strongly transverse, sides straight and parallel, rather strongly margined. Length (head deflexed) $2\frac{1}{4}$ mm. to tips of elytra.

Abdominal sexual characters. Male: sixth ventral very deeply, broadly emarginate, the emargination truncate at bottom, seventh narrow, very elongate, polished, yellow, very sparsely pubescent, gradually narrowed for two-thirds its length, then widened and deeply forked; as viewed in profile, horizontal in rather more than basal half, then rather abruptly sinuately ascending; last dorsal not produced.

California. Tulare Co., June 25, 2 ♂, 1 ♀. Type ♂.

Malthodes visceratus sp. nov.

Fuscous or fuscotestaceous, thorax yellow with side margins more or less infuscate. Antennæ entirely fuscous, as long as the body in the male, third joint but slightly longer than the second, fourth a little longer, intermediate joints fully four times as long as wide. Head (♂) not much wider than the thorax, narrower than the thorax in the female. Thorax strongly transverse in both sexes, sides nearly straight and parallel, strongly margined, the margin thickened at front angles. Length 2 to $2\frac{1}{2}$ mm.

Abdominal sexual characters. Male: sixth ventral broadly, deeply emarginate, the emargination truncate at bottom; seventh elongate, deeply, broadly divided at apex, the forks slender, strongly up-curved basally in profile, then bent suddenly in horizontal direction; sixth (?) dorsal acutely projecting downward at sides to enclose the last ventral.

California. Mill Valley, III-3-'07 (type ♂); Mt. Tamalpais, V-1-'13; Green Point, Humboldt Co., VI-5-'16; Mariposa Co., VI-16 (W. M. Giffard), all from Dr. Blaisdell.

EXPLANATION OF PLATE III.

All figures show the outline of the sixth and seventh ventral segments of the male, and beneath them in each case, except Fig. 1, the seventh ventral as viewed in profile. In *complicatus*, Fig. 11, is shown also one of the downward projecting dorsal appendages, between which the seventh ventral lies.

- Fig. 1. Terminal ventral segments of *Malthodes reflexus* and *laticollis*.
- Fig. 2. Same of *magister*.
- Fig. 3. " *vigilans*.
- Fig. 4. " *basalis*.
- Fig. 5. " *mitificus*.
- Fig. 6. " *piceolus*.
- Fig. 7. " *mollis*.
- Fig. 8. " *appendiculatus*.
- Fig. 9. " *obductus*.
- Fig. 10. " *bicurvatus*.
- Fig. 11. " *complicatus*.
- Fig. 12. " *sericeiventris*.
- Fig. 13. " *vapidus*.
- Fig. 14. " *tularensis*.
- Fig. 15. " *visceratus*.



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