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MONOGRAPH

OF THE

MUTILLIDAE

OF

NORTH AMERICA,

BY

CHARLES A. BLAKE.

PHILADELPHIA :

PAUL C. STOCKHAUSEN, ENTOMOLOGICAL PRINTER,

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Monograph of the MUTILLIDÆ of North America.

BY CHARLES A. BLAKE.

The accumulation of much new material, in this interesting family, from all parts of the country has suggested a revision of the "Synopsis" published in the "Transactions" in 1871, which, although tolerably complete at that time, the subsequent discovery of new species and also of a new genus, together with changes in nomenclature, have rendered a review of the work both necessary and desirable.

Full descriptions of all the species known to me are given, and of those that have not been identified descriptions are added, in most cases in the author's own words, thus assisting the student to identify his material without the necessity of consulting scientific works, which are often published in foreign languages, and generally difficult of access.

The Mutillidæ, unlike the Formicidæ, or social ants, are solitary in their habits, and usually found in hot sandy situations. The species of the genus *Mutilla* are now well known to be parasitic, especially on various species of *Bombus*, and it is presumable that those of the other genera of the family are likewise of the same habit.

The characters of *Sphærophthalma*, which was treated as a subgenus in the "Synopsis," appear to be sufficiently constant and distinct to warrant its elevation into a genus; the smooth, round eyes separating it at once from *Mutilla*, which have the body less coarsely sculptured and not so densely hirsute.

The selection of the name *Agama* used for a genus erected for the reception of those species characterized by the more or less shining unicolorous body, unusually large eyes and ocelli, and hyaline wings was unfortunate, as it was preoccupied in the Reptilia, a fact overlooked at the time. The name *Photopsis* is therefore substituted. Of this genus the males only are known, and it is possible that the females, which have thus far escaped the observations of collectors, are larviform and subterranean in their habits.

Chyphotes is the name I propose for a new genus, characterized by the binodose thorax and petiolate abdomen, the first segment of which is very slender at base and suddenly dilated and nodose at apex; the eyes are smooth and round, as in *Sphærophthalma*, while the absence of ocelli separated it from *Myrmosa*

The genus *Apterogyna*, which does not appear to have been found in North America, is remarkable for the two anterior segments of the abdomen being constricted and nodose, and for the great length of the antennæ in the male, being nearly as long as the body, and for the curious neuration of the wings.

The genus *Bradynobænus*, also exotic, is characterized by the large quadrate head, having the anterior and posterior angles acute, and the thorax of the female being divided in two parts; the femora and tibiæ are more robust than in the other genera of the family.

In *Myrmosa* the head is subglobose, eyes small and round; the thorax ovate and the anterior wings have one marginal and four submarginal cells. The females of our species appear to be unknown.

In the genus *Methoca* the ocelli are said to be distinct in both sexes, head subglobose in the female, transverse in the male, eyes ovate, thorax trinodose in the female and oblong in the male.

Nothing definite appears to be known of their habits, although they are supposed to be parasitic. Owing to the dissimilarity of the two sexes Latreille considered the male belonging to a distinct genus, *Tengyra*, which was arranged among the Scoliidæ.

I have divided the family into nine genera, in all of which the females are apterous, and may be tabulated as follows:

- Antennæ of male flabellate.....1, **Psammotherma**.
- Antennæ simple in both sexes.
- Eyes ovate, emarginate in the male, entire in the female.....2, **Mutilla**.
- Eyes round, polished in both sexes.....3, **Sphærophthalma**.
- Eyes large, round; ocelli large; antennæ long and slender; wings hyaline, body unicolorous, shining.....4, **Photopsis**.
- Eyes round and polished; thorax binodose; abdomen petiolate, petiole slender and cylindrical at base.....5, **Chyphotes**.
- First and second abdominal segments nodose, anterior wings with two submarginal cells, marginal cell wanting.....*6, **Apterogyna**.
- Mandibles elongate, arcuate, the maxillary palpi 3-jointed, labial palpi 2-jointed; thorax divided in two parts.....*7, **Bradynobænus**.
- Eyes small, round; head subglobose, mandibles tridentate in the male, unidentate in the female; wings with one marginal and four submarginal cells; margins of the abdominal segments crenate, tridentate at apex. 8, **Myrmosa**.
- Eyes ovate, ocelli placed high on the vertex; antennæ filiform, mandibles arcuate in the female; head subglobose; scape of male antennæ very short; wings with one elongate marginal cell which extends nearly to the tip of the wing; three submarginal cells.....9, **Methoca**.

* These are exotic.

The species of this family, so far known to me, may be tabulated as follows:

Genus 1, **PSAMMOTHERMA** Latr.

Antennæ flabellate ♂ **ajax.**

Genus 2, **MUTILLA** Linn.

MALES.

Antennæ simple.

Eyes ovate, more or less acutely emarginate within.

Abdomen more or less fulvous or ferruginous.

Head and thorax black, with pubescence entirely black.

Abdominal segments fringed at apex with ferruginous pubescence, first segment black..... **hexagona.**

Abdominal segments fringed at apex with golden pubescence, first segment black..... **Grotei.**

Head, thorax and base, and apex of abdomen black; abdomen clothed with bright scarlet pubescence..... **terminata.**

Abdominal segments fringed at apex with golden pubescence.. **oajaca.**

Head, thorax and basal segment of abdomen black, the remaining segments ferruginous, apical margins fringed with ferruginous pubescence.

ordinaria.

Abdominal segments fringed at apex with silvery white pubescence.

copano.

Head black; pro- and mesothorax and abdomen ferruginous; segments fringed at apex with black pubescence..... **Sayi.**

Head black; thorax and abdomen ferruginous, fringed with ferruginous pubescence..... **floridensis.**

Head and thorax black above; abdomen rufo-castaneous; segments fringed with fuscous..... **eximia.**

Head and thorax above reddish brown; abdomen ferruginous; segments fringed at apex with black pubescence..... **promethea.**

Abdomen rufous, with long rufous pubescence..... **rufa.**

Head and thorax black; abdomen ferruginous, fringed with black pubescence..... **contracta.**

Head ochraceous, thorax black, mesothorax brown; abdomen ferruginous; segments fringed at apex with whitish pubescence..... **senex.**

Black; head thinly covered with white pubescence, apical margins of abdominal segments sparsely fringed with white pubescence; wings fuscous..... **nana.**

Abdomen black, banded with silvery pubescence.

Head with short gray pubescence; second segment of abdomen subopaque, with large, coarse punctures; first and second segments with an apical band of silvery pubescence, remaining segments with mixed, black and silvery pubescence..... **scrupea.**

Head with long, dense, silvery pubescence; pleura and metathorax also silvery; second segment of abdomen shining, with less coarse punctures; first segment entirely and broad apical margin of second segment silvery, the whole abdomen with long, silvery pubescence.

gracilis.

Black; head with white pubescence; metathorax, basal segment of abdomen and second, with silvery white pubescence; wings hyaline, clouded at apical margins.....**sapiens**.

FEMALES.

Eyes ovate.

- First abdominal segment small, nodiform, more or less constricted at apex.
- Head ochraceous; body ferruginous; abdomen above with two large black spots, apex ochraceous.....**cubensis**.
- Head ferruginous, vertex golden, occiput black; abdomen without black spots, apex ochraceous.....**cinaloa**.
- Head fuscous, vertex slightly golden; abdomen ferruginous, apex of second segment with cinereous band; body with erect black hairs; size minute.....**yucatan**.
- First abdominal segment gradually dilated to apex and sessile with base of second segment.
- Head black; thorax ferruginous; abdomen black, ornamented with pale golden bands and stripes.....**oajaca**.
- Head ferruginous.
- Size medium; legs black.....**ornativentris**.
- Head black, with erect hairs; vertex with depressed golden pubescence; thorax ferruginous, with long, sparse, erect, black hairs; abdomen black, second segment with three spots of silvery pubescence, the posterior pair large and transverse.....**floridana**.
- Head ochraceous and black; thorax brown, elongate, with a tubercle on each side beyond middle; two ochraceous spots on thorax above; abdomen black, spotted with ochraceous, second segment having two spots at base and a broad ochraceous band at apex, interrupted medially.....**tolteca**.
- Small; head and mesothorax above and three spots on second abdominal segment, posterior pair large and a spot at tip of abdomen silvery white.....**tresignata**.
- Size small; legs ferruginous.....**leona**.
- Head ochraceous.....**palliceps**.
- Head, thorax and abdomen ferruginous, apical margins fringed with pale golden pubescence.....**dubitata**.
- Apical margin of second abdominal segment black, fringed with pale golden pubescence.....**enterpe**.
- Prothorax, apical half of first and apical margin of second abdominal segments with pale golden pubescence.....**peculiaris**.
- Head much wider than thorax; basal segment of abdomen large, second and following segments stained with castaneous at middle..**thoracica**.
- Head twice as broad as thorax, shining; second abdominal segment with two yellow spots on disc.....**rutilans**.
- Head wider than thorax, apical margin of second abdominal segment fringed with pale yellowish pubescence.....**puteola**.
- Ferruginous, metathorax thinly clothed with erect glittering white hairs; apical margins of abdominal segments fringed with pale pubescence.....**parvula**.

Genus 3, **SPHÆROPTHALMA** Blake.

MALES.

Eyes circular, convex, polished.

♂ First abdominal segment small, nodiform, more or less constricted at apex.

/ Head and thorax black, with black pubescence.

α First and second abdominal segments black, remainder with long dense fulvous pubescence.

Large; length 21 mm.....**oreus.**

Small; length 8.5 mm.....**zelaya.**

β Second abdominal segment reddish brown with a broad orange band on posterior half, slightly interrupted medially; first segment black with a reddish brown band remainder black..**castor.**

α Second abdominal segment ferruginous; apical segments darker and fringed with blackish pubescence.....**macer.**

δ Head larger than usual, quadrate; vertex very broad behind the eyes; marginal cell lanceolate, pointed at apex.....**scæva.**

ε Head small and of the usual form.

/ Second abdominal segment bright orange ferruginous *above and beneath*, with short coccineous pubescence; apical margin fringed with black pubescence; first segment flattened; marginal cell short, broadly truncate at tip.....**bexar.**

ρ Head and thorax black, second and following segments of abdomen dark ferruginous; apical margins fringed with black hairs.

admetus.

Second abdominal segment ferruginous *above and beneath*, generally paler on posterior half, sometimes forming two large yellow spots, with golden pubescence, except at extreme base and apex where it is black; first segment nodose; marginal cell truncate at tip.....**fenestrata.**

Head, thorax, petiole and second abdominal segment ferruginous; third, fourth and fifth segments black, apex silvery.....**creon.**

Second abdominal segment *above* yellow, with long, dense, yellow pubescence, *beneath* black; remainder of abdomen above with long black pubescence; first segment nodose; marginal cell truncate at tip.....**macra.**

Second abdominal segment above ferruginous, with black pubescence, fuscous at base and apex and slightly so medially; beneath black; first segment nodose; marginal cell broadly rounded at apex.....**canella.**

Head and thorax black, sparsely mixed with glittering pubescence.

Second segment of abdomen ferruginous, with black pubescence, beneath with a broad, longitudinal, black band; wings fuscous, marginal cell broad and broadly rounded at apex..**macilentia.**

Abdomen, except first segment, ferruginous, with black pubescence, dense on apical margin of segments; apical segment with pale golden pubescence.....**obscura.**

Head with black hairs, except a tuft of reddish golden pubescence on the vertex; wings blackish, with a violet reflection.....**vestita.**

- Head and thorax black; thorax with golden fulvous pubescence above, second and following segments of the abdomen bright ferruginous; wings blackish, paler about the middle.....**ursula**.
- Black; head and thorax with long white pubescence; apical segments of the abdomen with long, coarse, whitish pubescence; wings fuliginous; three submarginal cells.....**Sackenii**.
- Abdomen black, with pale glittering pubescence; a broad band, more or less distinctly defined, of pale glittering pubescence, behind second segment; wings subhyaline, marginal cell lanceolate, not abrupt at apex.....**gibbosa**.
- Head entirely black, mesothorax and scutellum with fulvous pubescence; second abdominal segment with two large apical yellow spots.
bioculata.
- Head and prothorax above, mesothorax and scutellum entirely, with ferruginous or fulvous pubescence.
- First and second abdominal segments (except apex) black.
- Large; apex of second and the following segments of abdomen with ferruginous pubescence.....**comanche**.
- Black; head, thorax and apical half of abdomen with dense fulvous pubescence; robust; wings fuliginous.....**mollissima**.
- Black; head, thorax and abdomen, except first and basal half of second segment clothed with long ochraceous pubescence; wings fuliginous.....**ochracea**.
- Medium; apex of second and the following segments of abdomen with long, dense, bright fulvous pubescence....**fulvohirta**.
- Black; head and thorax with black pubescence; apical segments of abdomen with long, dense, fulvo-ferruginous pubescence.
chiron.
- Medium; apex of second and the following segments of abdomen with long, dense, bright scarlet pubescence.
coccineohirta.
- Thorax and second abdominal segment scarlet-red, metathorax black; wings blackish violaceous; medium..**antiguensis**.
- Abdomen black; apex of second, the third and two apical segments with dense scarlet pubescence.....**occidentalis**.
- Abdomen black, with only the second segment ferruginous above and beneath, and with ferruginous pubescence except at apex.
asopus.
- Abdomen black, second segment yellow ferruginous, with golden pubescence except at apex, remaining segments with mixed, black and golden pubescence.....**hector**.
- Head and prothorax above, mesothorax and scutellum entirely, with dense yellowish white pubescence; abdomen dull ferruginous, clothed with black pubescence; second segment yellowish; two apical segments with a patch of yellowish white pubescence.....**monticola**.
- Head and thorax black, with black pubescence, second abdominal segment dark ferruginous, apex black.....**hispidia**.

Metathorax black; head and prothorax above, scutellum and more or less of metathorax, with fulvous yellow or whitish pubescence.

Abdomen above black, second segment with a broad, transverse, median, dull yellowish band, and the fourth, fifth and sixth segments with a dense, dull, yellowish pubescence; head and thorax above with yellowish fulvous pubescence; wings fuliginous, with a broad, median, subhyaline band..... **iztapa.**

Abdomen above, except extreme base to apex, with a dense, bright scarlet pubescence; head and thorax above with clay-colored pubescence..... **Sumichrasti.**

Abdomen with silvery pubescence; second segment ferruginous, generally with narrow, black, apical margin; three following segments with silvery pubescence, and the two apical segments black, with extreme apex silvery; head and thorax above with silvery pubescence..... **apicalata.**

Abdomen black, basal half of second and the third and fourth segments entirely with dense, pale golden, or yellowish white pubescence; head, prothorax and scutellum with pale golden pubescence; wings dusky, with apical third fuliginous.

azteca.

Abdomen black, apex of first, base of second, and the third and fourth segments with dense, silvery white pubescence; head, thorax, scutellum, pleura and base of metathorax with silvery white pubescence; wings hyaline, the anterior pair bifasciate with fuscous..... **Wilsoni.**

Head and thorax ferruginous, the former larger than usual, quadrate, the vertex very broad behind eyes.

Abdomen beyond second segment black, with black pubescence; first and second segments ferruginous... .. **pennsylvanica.**

Abdomen ferruginous, with golden pubescence; apex of first, second and the following segments blackish..... **auripilis.**

Rufo-fulvous, the pubescence of the abdomen long and dense.

Edwardsii.

II First abdominal segment not nodiform, but gradually dilated towards apex and sessile with base of second segment.

Abdomen black, apical margins of all the segments with a fringe of long, dense, golden pubescence; vertex, pro- and mesothorax, and scutellum with golden pubescence; tegument of prothorax ferruginous..... **propinqua.**

Abdomen black, second segment, except apical margin, yellowish ferruginous, smooth and polished..... **oceola.**

Abdomen ferruginous, second segment paler, all the segments with an apical fringe of black pubescence..... **Sanbornii.**

Abdomen brown, with short golden pubescence; first segment black; second, except narrow basal and apical margins, clay-yellow; head and thorax with short silvery gray pubescence; mesothorax black. **flavida.**

- Abdomen black, with mixed black and silvery pubescence.
 Head very large, quadrate, much broader than thorax.....**laticeps.**
 Head not broader than thorax.
 Abdominal segments with an apical fringe of dense silvery pubescence.
xalapa.
 First and second abdominal segments black, the remainder with dense, pale,
 golden, or yellowish white pubescence**zapoteca.**
 Abdomen with long, thin, white pubescence; size minute..... **gila.**

FEMALES.

Eyes circular, convex, polished.

Body black.

First abdominal segment small, nodiform, more or less constricted at apex.

Head, thorax and abdomen black, ornamented with pale golden or silvery spots.

Large; head with a curved line on vertex and thorax, and abdomen with spots and lines, all of pale golden pubescence; second abdominal segment with four polished dull yellow spots, two anteriorly and two posteriorly.....**melanosoma.**

Head, thorax and abdomen, above with long, dense, white pubescence.

Sackenii.

Head, thorax and abdomen with long, dense, white pubescence; size small.

thetis.

Fuscous, clothed entirely with very long, dense, pale, ochraceous pubescence, more sparse beneath..... **tecta.**

Black; head narrower than thorax; entirely clothed with long, dense, ochraceous pubescence.....**erudita.**

Abdomen above more or less clothed with dense ferruginous pubescence, not spotted with black.

Abdomen above, except first and base of second segments, ferruginous.

Head broad, quadrate.....**gorgon.**

Head of usual size and shape.....**orcus.**

Nigro-castaneous, margins of abdominal segments fringed with pale golden pubescence.....**tisiphone.**

Nigro-castaneous; head, thorax and abdomen with rusty golden pubescence..... **parmosa.**

Castaneous; head, thorax and abdomen with pale golden pubescence.
venifica.

Abdomen above, except first and base of second segment, ochraceous.....**zelaya.**

Second segment of abdomen ferruginous; size small..... **waco.**

Head and thorax above blackish brown; abdomen yellowish ferruginous, base and a band beyond second segment black..**comanche.**

Head and thorax nigro-fuscous, second segment of abdomen with obscure fulvous pubescence..... **texana.**

Rufocastaneous; head round, thorax and abdomen with yellowish white pubescence..... **erato.**

- Black; head rounded, vertex and abdomen clothed with golden pubescence.....**auraria.**
- Brown-ferruginous; head round; head, thorax and apex of abdomen with moderately dense, white pubescence.....**arota.**
- Fuscous; head round, with whitish pubescence; abdomen with long, silky, golden pubescence.....**aspasia.**
- Head, thorax and abdomen with dense fulvous pubescence; robust.
mollissima.
- Black; densely pubescent, that on the vertex and mesothorax bright ochraceous; abdomen shining..... **andreniformis.**
- Black; head, thorax and abdomen, except first, and basal half of second segment clothed with long ochraceous pubescence.
ochracea.
- Head entirely black; thorax and second abdominal segment above yellowish ferruginous, remainder black.....**medea.**
- Black; head not as wide as thorax, clothed above, except basal half of second abdominal segment; with ochraceous pubescence.
elio.
- Head, thorax and abdomen with ochraceous pubescence; head as wide as the thorax.....**holotricha.**
- Head, thorax and abdomen with ochraceous pubescence; second abdominal segment with two small patches of black pubescence; apical margin black.....**Sicheliana.**
- Head and thorax above with ochraceous or ferruginous pubescence.
Femora and base of tibiæ with ochraceous pubescence.....**magna.**
- Legs entirely black.
- Head broader than thorax, subquadrate.....**aureola.**
- Head very large, ferruginous-scarlet; thorax scarlet; abdomen black. second segment scarlet; apical margins of the last three segments fringed with silvery pubescence..... **antiguensis.**
- Black; head large, subquadrate, clothed with dense, coarse, sanguinous pubescence above.....**pacifica.**
- Abdomen above, except base, ferruginous... ..**californica.**
- Abdomen above, except base, coccineous.....**coccineohirta.**
- Second and base of third abdominal segments above, ferruginous..**crensa.**
- Abdomen (as well as head and thorax) above with short, dense, coccineous pubescence; first; base and apex of second and third segments entirely, black.....**occidentalis.**
- Head subquadrate, with black pubescence; second abdominal segment with a broad, emarginate band of reddish golden pubescence.
clotho.
- Black; head quadrate, twice as broad as thorax, which is covered with dense yellow pubescence.....**marpesia.**
- Ferruginous; head subquadrate, vertex and abdomen with dense, deep, golden pubescence; small..... **phædra.**
- Fuscous; head round, with deep golden pubescence; abdomen with dense, reddish golden pubescence; small.....**zenobia.**
- Fuscous; head round, clothed with whitish pubescence; second abdominal segment with long, silky, golden pubescence,
aspasia.

- Body brown; head, thorax and second abdominal segment above with dense ferruginous pubescence.
- Legs black, with pubescence entirely black; abdomen behind second segment entirely black **bellona.**
- Legs black, with mixed black and ochraceous pubescence; abdominal segments fringed at apex with ochraceous..... **regina.**
- Body black, more or less clothed with a golden or ochraceous pubescence.
- Abdomen ornamented with spots of various shapes and proportions.
- Thorax above with a large discoidal black spot.
- Abdomen with a large central black spot on second segment, connected with a small spot on each side; behind second segment two large quadrate black spots..... **Cressoni.**
- Abdomen with a large trilobate black spot on second segment and a black spot at apex..... **arachnoides.**
- Black; head, thorax and abdomen with golden pubescence; second abdominal segment with three black spots..... **luxuriosa.**
- Legs and abdomen black; second segment with two large silvery spots almost confluent on the disc..... **formosa.**
- Head wider than thorax, subquadrate, posterior angles acute, with golden yellow pubescence above; a triangular spot of golden pubescence at base of second abdominal segment.
- salutatix.**
- Legs and second abdominal segment ferruginous, the latter with a median black spot at base and a broad, black, apical band.
- balopilas.**
- Thorax with anterior portions more or less black.
- Head entirely black; second abdominal segment with three black spots, central one large, subovate..... **ariadne.**
- Head golden or ochraceous.
- Abdomen black; second segment with four dull yellowish spots; head and thorax above bright ferruginous..... **proserpina.**
- Ferruginous, vertex and thorax with pale golden pubescence; abdomen clothed with mixed, black and yellow hairs.
- mixtura.**
- Abdomen golden or ochraceous, with black spots or bands.
- Second abdominal segment with three confluent black spots near base, the central one largest.
- Metathorax black; head golden; abdomen above golden, with a broad, black band behind middle..... **Nortonii.**
- Metathorax ochraceous, with a lateral black patch; head and abdomen above ochraceous, the latter with two large black spots behind middle..... **toluca.**
- Rufo-testaceous, prothorax with black, metathorax with pale ochraceous pubescence..... **canina.**
- Metathorax pale golden; second abdominal segment black; apical segments pale golden..... **luteola.**
- Black; head and thorax with long, suberect, yellowish white pubescence, the latter with an ovate tuft of black on the disc.
- vulpina.**

Metathorax orange yellow, with a central black spot; head and abdomen above orange yellow, the latter with a broad, black band behind middle; central black spot at base of second segment very large, lateral spots minute..... **solola.**

Second abdominal segment with two large, elongate, somewhat oblique spots anteriorly, confluent at base; color of pubescence ochraceous and black; abdomen with a broad, black band behind middle; head entirely ochraceous.

Sumichrasti.

Second abdominal segment with one large black spot at base.

Metathorax pale golden, with a central black spot...**altamira.**

Head, thorax and abdomen black, clothed with reddish golden pubescence; legs black, with black hairs**montezumæ.**

Metathorax entirely bright golden; basal black spot on second abdominal segment very large and broad; apical margin also black.....**xalisco.**

Body black and ferruginous.

Head and thorax black, with erect, black and depressed silvery pubescence; apex of metathorax ferruginous, a spot on disc of metathorax and sides of pleura silvery; abdomen pale ferruginous, the segments fringed with silvery white pubescence.....**Ulkei.**

Head entirely black; thorax rufo-ferruginous, with prominent lateral tubercles; second abdominal segment black at base and rufo-ferruginous at apex, beyond which is a broad pale yellowish band; apex of abdomen black.....**nigriceps.**

Head black, thorax ferruginous, apical margin of basal segment and a large, oblong patch on each side of second, and its apical margin with yellowish white pubescence.....**derilieta.**

Black; head wider than thorax, vertex red, with ferruginous pubescence; second abdominal segment with two ovate spots at basal margin**verticalis.**

Head with pale ochraceous pubescence; second abdominal segment with a large black spot of black pubescence.....**rubriceps.**

Head and abdomen black, thorax ferruginous; second abdominal segment with a large oblong patch of yellowish white pubescence on each side at its base.....**ferruginea.**

Head blackish, thorax ferruginous; abdomen black; beneath, the segments fringed with silvery pubescence.....**electra.**

Head and abdomen black, thorax and legs ferruginous; second abdominal segment with two ovate pubescent, pale yellow maculæ.

separata.

Black; head not as wide as thorax, with rusty golden pubescence; abdomen with black pubescence; second abdominal segment with four ochraceous maculæ, fourth and fifth segments ochraceous**munifica.**

Head and thorax ferruginous; abdomen black; second segment with four rather small yellow spots, two at base and two near apex.

4-guttata.

- Head black, with bright golden pubescence ; second abdominal segment with a large angular macula on each side at base and a transverse, oblong, subovate macula on each side, near the apical margin, of a reddish yellow.....**pulchra.**
- Head black ; thorax and abdomen, except base and apical segments, bright brick-red ; second segment with a trilobate black spot at the base.....**militaris.**
- Body ferruginous.
- Second abdominal segment ferruginous, or fusco-ferruginous, with four small yellow spots ; two distant on basal margin and two more approximate near apical margin.....**cypris.**
- Second abdominal segment ferruginous, with four more or less distinct yellowish spots ; two small, on basal margin, and two large, and almost confluent, near apical margin ; size rather large.
mutata.
- Second abdominal segment fuscous with two large, rounded, nearly confluent, yellowish or pale ferruginous spots near apical margin ; size small.....**scaevola.**
- Second abdominal segment ferruginous, with a more or less distinct patch of black pubescence on basal middle, from which, sometimes, proceeds an oblique black line ; apical margin more or less black.....**ferrugata.**
- Second abdominal segment rufous, apical margin and remaining segments fringed with glittering pubescence.....**vesta.**
- Second abdominal segment dark rufous, densely punctured, apical margins fringed with whitish pubescence ; entire insect clothed with white hairs.....**albopilosa.**
- Second abdominal segment ferruginous, its apical margin fuscous ; abdomen clothed with scattered, glittering hairs.....**caneo.**
- Black ; thorax more or less obscurely red above, with black and white pubescence ; thorax bidentate on each side ; apical margin of second abdominal segment with long white pubescence.
melancholica.
- Second abdominal segment ferruginous ; apical margin blackish, with an uninterrupted fringe of dense white pubescence on middle of apical margin.....**balteola.**
- Second abdominal segment castaneous ; apical margin and following segments with silvery pubescence ; head twice as broad as thorax, a strong acute spine behind the cheeks.....**grandiceps.**
- Ferruginous ; head subquadrate, wider than the thorax, the four apical segments and the apical margins of the two basal ones rufopiceous, small.....**frigida.**
- Head wider than the thorax, subquadrate, with ferruginous pubescence ; thorax with black pubescence ; second and following segments of abdomen fringed with black.
macrocephala.
- First abdominal segment gradually dilated at apex and sessile with base of second segment.
- Posterior angles of head acutely produced.

Head very large, nearly twice broader than thorax, with two large spines beneath, behind mandibles.....**Robinsonii.**

Head very large, twice as broad as thorax; second abdominal segment with an ovate spot of deep golden pubescence on the disc.

quadridens.

Head large, a little wider than thorax; cheeks with an acute spine beneath.....**capitata.**

Head subquadrate, as wide as thorax, with two ovate spots of golden pubescence; metathorax with two lateral stripes of golden pubescence, and two similar spots on the second segment of abdomen, black entirely.....**Gabbii.**

Black; head, and a transverse band on the thorax, with bright golden pubescence; second abdominal segment ferruginous, with a large, subovate patch of black pubescence at its base; fourth, fifth and sixth segments with golden pubescence above.

ducalis.

Head wider than thorax, subquadrate, with coarse, golden pubescence.

leda.

Posterior angles of head carinate, ending beneath in a short spine.

Head ferruginous, with golden pubescence on vertex; second abdominal segment with two pale yellowish spots.....**lerma.**

Ferruginous; head and thorax with golden pubescence; second abdominal segment with two large testaceous maculae..**combusta.**

Head entirely ferruginous, shining; second abdominal segment with two large ferruginous spots, occupying nearly the whole segment above.....**canadensis.**

Ferruginous; head wider than thorax, basal margin of second abdominal segment at middle with bright golden pubescence and two ovate spots of same color near its apical margin..**blandina.**

Posterior angles of head carinate, unarmed beneath.

Second abdominal segment above yellowish, a large spot on basal middle, a dot on each side and broad apical margin, narrowed laterally, black; head and thorax black, with golden pubescence.

bisignata.

Black; vertex and prothorax with bright rufo-fulvous pubescence; second abdominal segment with two ovate spots and its apical margin with bright yellowish pubescence.....**araneoides.**

Second abdominal segment above ferruginous, with a large black spot at base and another at apex; head with dense golden pubescence.

connectens.

Second abdominal segment above ferruginous, with three spots at base (middle one largest) and broad apical margin fuscous; head with dense ochraceous pubescence.....**contumax.**

Second abdominal segment above golden yellow, with three black spots, middle one large and longitudinal; head ferruginous, occiput black.....**gothica.**

Second abdominal segment above silvery, with three black spots towards base, middle one large and longitudinal; head ferruginous, occiput with two black spots.....**izucar.**

- Second abdominal segment above golden yellow, with three black spots at base and large transverse one at apex; head very large, quadrate, ferruginous.....**chiapa.**
- Second abdominal segment above black, with a pale golden cross (extending the entire length and width of the segment.**cruciata.**
- Ferruginous; head wider than thorax, subquadrate, clothed with glittering, pale, golden pubescence; abdomen with pale golden, its apical margin and remaining segments with blackish pubescence.....**præclara.**
- Second abdominal segment above fuscous, with a pale golden cross (the longitudinal bar not well defined medially); head entirely ferruginous**petricola.**
- Second abdominal segment above blackish, with a transverse pale golden band, interrupted medially; head ferruginous, vertex with pale golden pubescence.....**auripes.**
- Second abdominal segment above blackish, with transverse, sinuate, pale golden band; head fuscous, vertex with a pale golden pubescence; size minute.....**minutissima.**
- Ferruginous; head round, as wide as thorax; abdomen thinly clothed with long, erect, whitish hairs; apical margins of segments above with white pubescence, small.....**pygmea.**
- Head rounded, not as wide as thorax, ferruginous; abdomen black, sparsely clothed with white hairs; apical margins fringed with white pubescence, small.....**virguncula.**
- Second abdominal segment above black, with two round, *distant*, yellowish spots near apical margin, which is narrowly pale golden, and two approximate ferruginous dots on basal margin; head black, face and cheeks ferruginous.....**psammadroma.**
- Second abdominal segment above ferruginous, with apical margin more or less broadly black; head entirely ferruginous, carinæ on posterior angles not prominent.....**similima.**
- Posterior angles rounded, not carinate.
- Head and thorax black, reddish brown above; second abdominal segment bright ferruginous; apical segments fringed with silvery pubescence.....**brazoria.**
- Head, thorax and second abdominal segment above entirely ferruginous.....**montivaga.**



Genus 1, **PSAMMOTHERMA** Latr.

This is distinguished from all the other genera of Mutillidæ by the male antennæ being flabellate. The neuration of the anterior wing is much like that of the first division of the next genus (fig. 1), except that the third submarginal cell is not hexagonal, but rather subtriangular, shaped considerably like that of *occidentalis* (fig. 2).

This is only the second species of this genus so far known, the first being from Senegal, the *P. flabellata* Latr., which differs by the second abdominal segment being ferruginous.

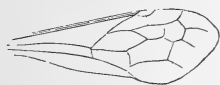


Fig. 1.



Fig. 2.

Psammotherma ajax Blake.

Male.—Black; head round, densely punctured, mouth clothed with pale golden hairs, mandibles black; antennæ: scape finely punctured, clothed with pale glittering hairs; flagellum consisting of eleven joints, ten of which are strongly bipectinate; eyes ovate; thorax elongate quadrate, rounded in front, pro- and anterior half of the mesothoracic disc rufo-ferruginous, coarsely punctured, the latter having two longitudinal, deeply-impressed lines, scutellum black, rounded, closely punctured, post-scutellar groove distinct, metathorax roundly, truncate, coarsely and deeply reticulate; tegulæ rufo-ferruginous, produced posteriorly, finely punctured; wings ample, fuliginous, paler towards the base of the externo-median cell; marginal cell ovate, rounded at, and narrowed to tip, first submarginal large, second elongate subquadrate, acutely pointed towards the base, its apical nervure sinuate, and receiving the first recurrent at middle, third subhexagonal receiving the second recurrent a little before the apical nervure, which is sinuate, its external angles with abbreviated nervures; legs black, clothed with glittering hairs, calcaria pale; abdomen ovate, basal segment campanulate, closely punctured, its apical margin clothed with pale yellowish pubescence, second segment shining, moderately closely punctured, interspersed with a few erect hairs, the apical margin adorned with a band of pale golden pubescence; apical segments black. Length 12 mm.; expanse of wings 22.5 mm.

Hab.—Florida. Harris collection.

This species agrees with Fabricius' description of *M. (Psammotherma) flabellata*, while St. Fargeau describes the second abdominal segment as rufous. They can scarcely be identical, the latter species being from Senegal.

Genus 2, **MUTILLA** Linn.

Male.—Head usually transverse and compressed, eyes moderately large, ovate, more or less emarginate, but in a few species they are entire. The ocelli placed in a triangle on the vertex. The antennæ subfiliform, gradually tapering to the apex, which is acuminate, inserted on the sides of the base of the clypeus. The mandibles arcuate and tridentate, but varying occasionally in this respect. The prothorax extending laterally to the origin of the wings; the tegulæ usually very large. The anterior wings with one marginal and three submarginal cells, the marginal usually of a semi-circular form; the three submarginal cells subequal, the second and third each receiving a recurrent nervure, the second nervure being almost obsolete, as well as the third transverso-cubital nervure, from the middle of which emanates a more or less abbreviated nervure, never extending to the apex of the wing; in a few exotic species the third submarginal cell is obsolete. The legs moderately long and pubescent. Abdomen ovate, the first segment subpyriform or sometimes petiolate, the second campanulate, and the apex curved.

Female.—Head suborbiculate, or subquadrate, sometimes enormously developed and armed beneath with two or more formidable spines; the ocelli always wanting, the eyes ovate, entire; mandibles arcuate and usually unidentate. Thorax longitudinal and truncate anteriorly and posteriorly; in some exotic species much narrowed behind. Legs more robust than in the male and armed exteriorly with spines. Abdomen similar to the male.

The species, which are not numerous, may be divided into three divisions, viz.:

DIVISION I.

Neuration of anterior wing as represented by figure 3; the first abdominal segment small, but gradually dilated to apex, where it is sessile with the base of second segment, as in figures 4 and 5.

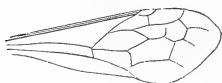


Fig. 3.



Fig. 4.



Fig. 5.

Mutilla hexagona Say.

Male.—Head black, transversely rounded, not as wide as the thorax, closely punctured, thinly clothed with short, erect, silvery hairs; scape of antennæ tufted with silvery pubescence, flagellum blackish fuscous; eyes ovate, emarginate, ocelli distinct; mandibles black. Thorax black, closely punctured and having four slightly impressed, longitudinal lines on the disc, thinly clothed with erect pale hairs, more dense on the prothorax; scutellum rounded; metathorax roundly truncate, with reticulate punctures, dorsal groove not extending to the middle; wings purplish fuliginous, marginal cell ovate rounded at apex; first submarginal cell elongate quadrate, narrowed towards base, second submarginal smaller and sharply pointed towards the base, receiving the first recurrent nervure at middle, its apical nervure arcuate; third submarginal hexangular, receiving the second recurrent nervure a little beyond the middle, its apical angles with abbreviated nervures; a transparent line crosses the first submarginal cell at right angles to the costa and continues longitudinally through the second and third submarginal cells, and a similar spot in the third discoidal cell; tegulæ polished. Legs black, clothed with whitish hairs, calcaria white. Abdomen: basal segment black, finely punctured; second segment dark honey yellow, finely and remotely punctured, its apical margin and remaining segments rufo-fuscous, fringed on the apical margin with pale ferruginous pubescence, ventral surface same as above, with the exception of a dark stain as base of second segment. Length 13-18 mm.; expanse of wings 18-25 mm.

Hab.—Indiana, Missouri, Kansas.

var. *a* BRIAXUS Blake, has the apical margins of the abdominal segments more densely clothed with *black* pubescence, and having the dorsal groove of the mesothorax more distinct.

var. *β* VIGILANS Say, has the marginal cell truncate at tip, the dorsal groove of the metathorax extending beyond the middle. Abdomen: the second segment with large remote punctures, bright rufous, the basal and apical margins black.

Since the publication of the Synopsis (1871) much more material has been collected from all parts of North America, among which I have been fortunate in obtaining *M. hexagona* of Say. On close examination *briaxus* and *vigilans* prove to be only varieties of *hexagona*.

Mutilla Grotei Blake.

Male.—Head and thorax black, head not as wide as the thorax, rounded, closely punctured, clothed with short black hairs; antennæ blackish, scape rufous, clothed with glittering pubescence; eyes ovate, emarginate. Thorax robust, subquadrate, rounded behind, thinly clothed with short black hairs, pro- and mesothorax closely punctured, the latter elevated, metathorax coarsely reticulate, abruptly rounded; wings ample, pale fuliginous, marginal cell large, sublanceolate, gradually rounded to tip, three distinct submarginal cells, the first nearly as long as the marginal, second not quite as long as the first, receiving the first recurrent nervure in the middle. Legs black, clothed with fulvous hairs, calcaria whitish. Abdomen elongate ovate, basal segment black, closely punctured,

thinly clothed with brownish hairs, second segment fulvous, finely punctured, having on the disc a longitudinal black patch, extending nearly to the apical margin, the remaining segments clothed with dense golden fulvous pubescence; under side clothed with short fulvous hairs. Length 15 mm.; expanse of wings 25.5 mm.

Hab.—Colorado.

Mutilla oajaca Blake.

Male.—Head and thorax black, closely and deeply punctured, clothed with scattered pale yellowish pubescence; eyes large, ovate, emarginate; antennæ black; metathorax rounded, posteriorly abrupt, with a scattered black pubescence; wings blackish, paler towards the base, marginal cell moderately long, rounded at tip, extending beyond the third submarginal, three submarginal cells, the first about as long as the marginal, the second shorter and narrowed towards the first, receiving the first recurrent nervure about the middle, the third submarginal clearly defined, subpentagonal. Legs black, clothed with long, pale, yellowish pubescence. Abdomen elongate ovate, ferruginous above and beneath, finely punctured, apical margins of all segments fringed with bright fulvous pubescence; basal segment black. Length 15 mm.; expanse of wings 21 mm.

Female.—Head deep black, densely punctured, wider than the thorax, with scattered, erect black hairs; eyes large, ovate, entire; antennæ black. Thorax ferruginous, elongate quadrate, sides slightly concave; metathorax abruptly truncate behind. Legs shining black, clothed with glittering hairs. Abdomen ovate, black, apical margin of basal segment fringed with pale golden pubescence, on the dorsal surface of second segment there are two elongate quadrate patches of dense, pale, golden pubescence, extending half way to the apical margin, which is ornamented with a broad band of pale golden pubescence having the interior margin sinuate; the remaining segments have a patch of pale pubescence on each side, together forming a V shaped line to the apex; beneath, the margins of the segments are fringed with pale glittering hairs. Length 13 mm.



Hab.—Mexico. Prof. F. Sumichrast.

In some individuals the head is ferruginous.

Mutilla ornativentris Cresson.

Female.—Rufous, very densely punctured. Head transverse, not quadrate, broader than the thorax; the mouth with long ochraceous pubescence; eyes moderate, ovate, entire; mandibles blackish; antennæ blackish, sericeous, the three or four basal joints rufous. Thorax elongate, narrow, somewhat rounded in front, the sides subparallel, a little strangulated about the middle, and again widened posteriorly, the sides and behind abrupt; upper surface with a short fuscous pubescence, the sides with a very short, fine, dense, cinereous pile. Legs rufous, with ochraceous pubescence; tips of the femora, most of the tibiæ and the tarsi, fuscous. Abdomen elongate, ovate, much narrowed to the apex, blackish above, reddish beneath; all the segments with a broad apical band of dense silvery cinereous pubescence, the anterior middle of which is more or less sinuate or emarginate; large basal segment, with a large patch of silvery sericeous pubescence, sometimes obsolete on each side at base; the apical segments above are

sometimes tinged with reddish, and in one specimen the large basal segment above is tinged with reddish; the ventral segments have an apical fringe of silvery cinereous pubescence. Length 9.5-11 mm. (Cresson.)

Hab.—Southern and Western States.

Mutilla floridana Blake.

Female.—Head round, black, vertex clothed with pale golden pubescence, interspersed with scattered erect black hairs; eyes ovate. Thorax ovate, narrowed posteriorly, rufo-ferruginous, closely punctured, the mesothorax produced laterally into obtuse tubercles, and bearing long, erect, black hairs, metathorax abruptly truncate. Legs black, except the posterior femora, which are rufo-fuscous, clothed with pale hairs, intermediate and posterior tibiæ armed with short strong spines. Abdomen ovate, black, sparsely clothed with long, erect, black hairs, basal segment campanulate, clothed with pale golden pubescence, second segment having at the base a round spot of pale golden pubescence, and two similarly clothed subquadrate lateral spots at the apical margin; under side of second segment shining, finely punctured, ventral segments fringed with pale glittering pubescence. Length 9 mm.

Hab.—Florida. Harris collection.

This may be a variety of *M. trisignata*, but is easily distinguished by the shape and color of the thorax, and the basal segment of the abdomen not being petiolate.

Mutilla tolteca Blake.

Female.—Head rounded, wider than the thorax, closely and finely punctured, densely clothed with fine, pale golden pubescence; cheeks and a patch behind each eye black; eyes ovate, large; antennæ and mandibles dark ferruginous, tips of the latter black. Thorax ovate, narrowed behind, closely reticulate, dark ferruginous, anterior margin black, with a small ovate tubercle on each side, mesothorax with two small irregularly defined patches of pale golden pubescence, behind each of which is a small obtuse tooth; metathorax rounded posteriorly, with two lateral stripes of pale golden pubescence. Legs ferruginous, thinly clothed with glittering hairs; calcaria whitish. Abdomen ovate, suddenly narrowed to apex, basal segment subcylindrical, densely clothed with pale golden pubescence, mixed with scattered erect pale hairs; second segment densely punctured, dark ferruginous on the sides and anterior margin, near which are two ovate, exteriorly emarginate maculæ of pale golden pubescence, behind which the dorsal surface of the segment is nearly black; on the apical margin is a band of pale golden pubescence, deeply emarginate internally at the middle, and which extends along the under side of the segment to the base; the third segment has a band of the same, with a small triangular, dark ferruginous space at middle; the remaining segments banded in the same manner, all having lateral blackish patches; apical segments closely punctured; under side of second segment paler than above, closely punctured, and having a central longitudinal carina. Length 8.5 mm.



Hab.—Mexico. Prof. F. Sumichrast.

Mutilla trisignata Blake.

Female.—Black, head round, clothed with dense, pale, golden pubescence, interspersed with scattered, erect, black hairs; eyes ovate. Thorax ovate, suddenly narrowed posteriorly, coarsely punctured, the disc densely clothed with pale golden pubescence, the front and sides bearing long black hairs, metathorax truncate. Legs black, thinly clothed with pale hairs, intermediate and posterior tibiæ armed with spines. Abdomen ovate, petiolate, basal segment finely punctured, the disc thinly clothed with pale golden pubescence, second and following segments clothed with dense black pubescence, the former bearing three round spots of pale golden pubescence, the one at base small, the others larger and placed laterally near the apical margin; apex with a small spot of pale pubescence; under side of second segment coarsely punctured, ventral segments fringed with pale glittering hairs. Length 9 mm.

Hab.—Florida. In the Harris collection.

Mutilla Promethea Blake.

Male.—Rufo-ferruginous, head round, closely punctured, face below the line of the eyes black, clothed with obscure yellowish hairs, eyes large, ovate, emarginate, mandibles black, with a rufous dash before the tips, which are bidentate. Thorax elongate subquadrate, rounded in front, thinly clothed with obscure rufous pubescence, closely punctured, the mesothorax with two deeply impressed longitudinal lines, metathorax rounded, coarsely reticulate; tegulæ finely punctured, fuscous; wings ample, fuliginous, marginal cell elongate ovate, truncate at tip, second submarginal subquadrate, pointed towards base, receiving the first recurrent nervure at middle, third hexagonal, receiving the second recurrent beyond the middle. Legs black, thinly clothed with pale hairs. Abdomen ovate, basal segment campanulate, black, finely punctured, second and following segments rufo-ferruginous, finely punctured, the apical margins fuscous, fringed with blackish pubescence; under side same as above. Length 14 mm.; expanse of wings 25.5 mm.

Hab.—Louisiana.

Mutilla contracta Say.

Male.—Body entirely black beneath, inclusive of the feet; above, ferruginous yellowish. Head black below the line of the eyes; metathorax, petiole, anterior and lateral declivities of the abdomen black; anterior half of the first segment of the tergum black; wings blackish fuliginous, somewhat paler in the middle; second cubital cellule wide beneath and contracted, but not angulated at the radial cellule; third cubital cellule so much contracted at base that its extreme nervure is opposite to and joins the recurrent nervure. Length about half an inch; 13 mm. (Say.)

Hab.—Arkansas and Missouri.

Mutilla Sayi Blake.

Male.—Head transverse, rounded, black, moderately punctured, face thinly clothed with whitish pubescence; antennæ piceous, scape clothed with glittering pubescence; eyes large, ovate emarginate; mandibles dark rufous before the tip; thorax robust, ovate, narrowed posteriorly, pro- and mesothorax rufous, closely punctured, the latter bearing three discal, longitudinal, slightly impressed lines;

scutellum finely punctured; metathorax roundly truncate, coarsely reticulate, dorsal groove not extending to the middle; sides closely punctured; tegulæ ovate, minutely punctured; wings fuliginous, marginal cell elongate ovate, obliquely truncate at tip, first submarginal long, narrowed to base, second similar in form and pointed towards base, its apical nervure arcuate, third irregularly hexagonal, its outer angles with abbreviated nervures; legs black, thinly clothed with glittering hairs, calcaria white; abdomen ovate, narrowed to apex, basal segment black, closely punctured, subsessile with the second, which is bright ferruginous, finely punctured, the punctures becoming finer and denser at sides, apical margin blackish, fringed with black pubescence; segments dark ferruginous, finely punctured, fringed with brownish black pubescence, ventral surface same as above. Length 12 mm.; expanse of wings 19 mm.

Hab.—Texas. Belfrage.

Mutilla senex Guér.

Male.—Head roundly transverse, densely clothed with appressed, pale golden, or ochraceous pubescence; scape of antennæ pale rufous, clothed with pale glittering pubescence, flagellum pruinose, mandibles ferruginous, tipped with black; eyes ovate, acutely emarginate within, ocelli prominent; thorax robust, ovate, finely and densely rugose; prothorax fusco-testaceous; metathorax roundly truncate, castaneous, coarsely reticulate; sides fusco-testaceous, coarsely punctured, entire thorax thinly clothed with short, erect, pale hairs; legs castaneous, clothed with moderately long, pale, glittering hairs, calcaria pale; wings pale fuscous, paler towards the base, three submarginal cells, marginal cell broadly ovate, first submarginal subtriangular, pointed towards base; second smaller and sharply pointed towards the first, and receiving the first recurrent nervure a little beyond the middle; third submarginal hexagonal, its basal nervure arcuate; tegulæ honey yellow, smooth and very convex; abdomen ovate, narrowed to apex; basal segment rufous, second segment fulvous, shining, finely and remotely punctured, thinly clothed with short, pale, erect pubescence; remaining segments rufous; apical margins fringed with pale golden pubescence above and beneath. Length 14 mm.; expanse of wings 23 mm.

Hab.—Cuba.

Mutilla floridensis Blake.

Male.—Head transverse, not as wide as thorax, black, coarsely punctured, face clothed with whitish pubescence, longer and denser about the mouth; antennæ piceous, scape clothed with glittering hairs; eyes ovate, acutely emarginate; thorax robust, ovate, pro- and mesothorax ferruginous, closely punctured, the latter bearing two discal, longitudinal, faintly impressed lines, apical margin black; scutellum rounded, punctured; metathorax rounded, coarsely reticulate, black at apex; tegulæ black, large, polished; wings moderate, fuliginous, marginal cell ovate, obliquely truncate at tip, first submarginal long and narrow, second long, pointed at base, receiving the first recurrent a little before the middle, third irregularly hexagonal, its outer angles with abbreviated nervures; legs black, thinly clothed with glittering hairs, calcaria white; abdomen ovate, narrowed to apex, ferruginous, finely punctured, apical margins of all the segments fringed with ferruginous pubescence, under side of thorax black, coarsely punctured, a ferruginous spot between anterior and middle coxæ. Length 13 mm.

Hab.—Florida. Three specimens.

This species is closely allied to *Sayi*, and may be only a variety; it differs, however, in having the basal abdominal segment ferruginous, and disc of metathorax the same color.

Mutilla eximia n. sp.

Male.—Head rounded, not as wide as thorax, clothed with erect pale hairs; mandibles castaneous, scape of antennæ ferruginous, flagellum pruinose; eyes ovate, very finely reticulate; thorax ovate, pro- and mesothorax black above, rugose, clothed with pale yellowish pubescence; metathorax rufous, closely punctured, pectus black; legs dark fuscous, thinly clothed with pale hairs; wings fuscous, paler about the middle, marginal cell ovate, truncate at tip, first submarginal cell as large as the marginal, second submarginal subtriangular, receiving the first recurrent nervure near the base, third submarginal subpentagonal, its outer nervure sinuate and confluent with the second recurrent; tegulæ castaneous, finely punctured; abdomen elongate ovate, rufo-castaneous, basal segment petiolate, closely punctured, clothed with erect pale hairs; second segment finely punctured, paler on its apical half, thinly clothed with erect fuscous hairs; apical margins clothed with fuscous, mixed with pale glittering hairs; ventral surface same as above. Length 8 mm.; expanse of wings 13 mm.

Hab.—Arizona.

Allied to *M. floridensis* Blake, but can be distinguished by the thorax being black above.

Mutilla leona Blake.

Female.—Head round, as wide as the thorax, ferruginous, closely covered with elongate punctures; mandibles ferruginous, the tips black; eyes large, ovate, entire; thorax quadrate, ferruginous, closely punctured, lateral declivities smooth, metathorax coarsely reticulate, abruptly truncate; legs rufo-testaceous, thinly clothed with pale hairs, calcaria pale; abdomen ovate, black, clothed with appressed black pubescence, basal segment testaceous, its apical margin fringed with pale golden pubescence; second segment having two short longitudinal stripes of pale golden pubescence; placed laterally near the base; apical margin and remaining segments, except the middle of the third and fourth, clothed with pale golden pubescence. Length 5.5 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Mutilla palliceps Cresson.

Female.—Head densely clothed with pale ochraceous pubescence; mouth and antennæ rufo-piceous, the latter blackish towards the tips; thorax densely and roughly punctured, blackish brown above, clothed with reddish pubescence, beneath and behind rufo-piceous, sides without distinct tubercles; pleura concave; metathorax subquadrate, scarcely narrowed behind, the posterior face rather abrupt, the lateral margins dentate; legs rufo-piceous, clothed with ochraceous pubescence; the tibiæ with a row of long acute spines; abdomen subovate, much narrowed towards the tip, convex above, closely punctured; basal segment small, somewhat campanulate, black, with the posterior margin densely clothed with ochraceous pubescence, the base with a stout, obtuse tubercle on each side; second segment large, rufo-ferruginous, thinly clothed with ochraceous pubescence; on the basal middle a subquadrate black patch, slightly margined on each

side with ochraceous, the apical margin densely clothed with ochraceous pubescence, margined before with black, which is deeply crenulated behind, especially on the middle; remaining segments densely clothed with ochraceous pubescence, with a large patch of black pubescence on the disc of the third, fourth and fifth segments, largest on the third segment; beneath ferruginous, the apical margins of the segments fringed with ochraceous pubescence. Length 10 mm. (Cresson.)

Hab.—Cuba.

Mutilla dubiatta Smith.

Female.—Ferruginous, the eyes, flagellum and tips of the mandibles fusco-testaceous; thorax, as well as the head, closely and strongly punctured; the sides of the former parallel, or in some specimens slightly widest posteriorly, tips of the femora and tibiæ slightly fuscous; abdomen ovate, the apical margins of the segments have faciæ of silvery white pubescence; beneath ciliated with similar pubescence. Length 6.5–11 mm. (Smith.)

Hab.—Florida, Georgia, Colorado.

This species in coloring corresponds with *M. ferrugata* of Fabricius, but the thorax is of quite a different form to that of the insect which is considered to represent that species; in the present species the thorax is more elongate and the sides nearly parallel; in the other it is shorter, and gradually narrows towards the abdomen.

Mutilla euterpe Blake.

Female.—Ferruginous; head round, finely and closely punctured, face deeply excavate at insertion of antennæ; eyes ovate, finely reticulate; antennæ fuscous flagellum pruinose, scape finely punctured; mandibles dark ferruginous before the tips; thorax elongate-quadrate, emarginate at sides; pro- and metathorax rounded, the former scarcely as wide as the latter, closely and deeply punctured, metathorax abruptly truncate, stained with fuscous at apex; flanks of mesothorax smooth; legs black, thinly clothed with pale pubescence; intermediate and posterior tibiæ feebly spined, calcaria white; abdomen ovate, basal segment black, second minutely punctured; apical margin broadly black, wider at middle on disc, bearing a short longitudinal line of pale golden pubescence; apical margin fringed with similar pubescence, third segment black, apical segments fusco-ferruginous, fringed with hairs of the same color. Length 12 mm.

Hab.—Florida.

This species is easily recognized by the form of the thorax; it is allied to *fidicula* Smith, which, however, has the abdomen longitudinally rugose.

Mutilla rufa St. Farg.

Male.—Rufo-ferruginous; head pubescent, face black, reddish on the vertex and between the eyes; vertex with blackish hairs; antennæ black; thorax black beneath, reddish above and on the sides, hairs rufo-griceous; abdomen ferruginous, pubescent; first segment and posterior margins of all the segments blackish; second nearly naked, hairs rufo-griceous; legs black, clothed with silvery hairs; wings blackish violet, the first submarginal cell having a transverse.

transparent line extending in an angle to the costa; second and third submarginal and third discoidal cells having a similar line. Length 16 mm.; expanse of wings 24 mm. (St. Farg.)

Hab.—Pennsylvania, Atlantic States.

DIVISION II.

Neuration of anterior wing as represented by figure 6; the first abdominal segment small, subnodiform, or cylindrical as in figures 7 and 8.



Fig. 6.



Fig. 7.



Fig. 8.

Mutilla scrupea Say.

Male.—Black; head and thorax covered with coarse confluent punctures, thinly clothed with scattered, pale yellowish hairs; antennæ and mandibles black; eyes ovate, emarginate; thorax: anterior angles of prothorax subacute sutures of the meso- and metathorax deeply impressed, the latter very coarsely reticulate; wings subhyaline, apical margins slightly clouded, marginal cell sublanceolate, first submarginal small, second large, receiving the first recurrent nerve near the apex, third irregularly pentagonal, its anterior angles with short nerves, second discoidal cell large; legs black, thinly clothed with glittering hairs; abdomen ovate, basal segment short, armed on each side at its base with a stout tooth, the under side having a longitudinal carina, terminating anteriorly in a tubercle; second segment covered with large, deep punctures, apical margin fringed with silvery pubescence; the remaining segments having a few scattered, short, silvery hairs; under side same as above; lateral sutures distinct. Length 9 mm.; expanse of wings 16 mm.

Hab.—Eastern States. Collection of Mr. Edward Norton.

Mutilla gracilis Smith.

Male.—Black; head clothed with silvery pubescence; wings hyaline, apical margin clouded, marginal cell elongate ovate; first and apical margin of second abdominal segment clothed with silvery pubescence; eyes emarginate. Length 7 mm.; expanse of wings 13 mm. (Smith.)

Hab.—Texas, Mexico, Brazil.

Mutilla cubensis Blake.

Female.—Rufo-testaceous; head rounded, clothed with dense, pale golden pubescence; scape of antennæ rufous, flagellum piceous; eyes ovate, prominent; thorax elongate ovate, narrowed posteriorly, coarsely punctured, meso- and metathorax armed at the sides with a tooth, those on the latter acute, metathorax roundly truncate; legs rufo-testaceous, the intermediate and posterior tibiæ

armed with a row of spines, tarsi clothed with pale golden pubescence; abdomen ovate, basal segment cylindrical, clothed with dense, pale pubescence; second segment densely punctured, with a cordate black patch at the base; third segment clothed with dense, pale golden pubescence, with an ovate black patch on the middle; the remaining segments clothed with dense, pale pubescence; ventral segments fringed with pale hairs; under surface of entire insect paler than above. Length 8.5 mm.

Hab.—Cuba.

Mutilla cinaloa Blake.

Female.—Dark ferruginous, head rounded, wider than the thorax, face and vertex clothed with deep golden pubescence, posterior margin black; antennæ: scape and first joint of flagellum ferruginous, the latter fuscous; eyes ovate, large; thorax elongate ovate, narrowed posteriorly, closely reticulate, margins of the disc black, metathorax gradually rounded, armed on each side in front with an acute tooth; legs ferruginous, clothed with a few glittering hairs; abdomen ovate, second segment closely punctured, sides of apical margin with dark stains, the remaining segments clothed with deep golden pubescence, having a denuded central line; under side paler than above, lateral carinæ distinct. Length 6.5–8.5 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Mutilla yucatanana Blake.

Female.—Head round, wider than the thorax, fuscous, finely reticulate, thinly clothed with erect black hairs; antennæ: scape and first joint of flagellum rufous; eyes ovate, granulate; thorax elongate ovate, ferruginous, finely reticulated, thinly clothed with erect hairs, metathorax gradually rounded behind; legs pale rufous, clothed with pale glittering hairs; abdomen ovate, dark ferruginous on the disc, sides fuscous, apical margin of second segment clothed with pale pubescence, the remaining segments with a central row of spots to the apex. Length 3 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Mutilla peculiaris Cresson.

Female.—Long, linear, slender, brown ferruginous; head slightly broader than thorax, transversely subquadrate; cheeks and occiput clothed with long, pale, vertex with black and mouth with long fuscous pubescence; flagellum, except base, blackish; thorax divided into two nearly equal parts: the anterior portion short, quadrate, covered with a dense, appressed, pale golden pubescence; posterior portion of metathorax rather longer than the anterior, rapidly sloping behind, sparsely pubescent and finely reticulated, substriate at base above; legs with long, sparse, pale hairs, anterior tibiæ and extreme tips of the two posterior pairs black, tibial spurs white; abdomen elongate ovate, clothed with appressed fuscous pubescence, the apical margin of first and second segments narrowly and a spot on each side at apex of the first, silvery white; apex of abdomen long, sparse, erect, fuscous hairs; apex of first segment campanulate, petiole short and slender. Length 9 mm. (Cresson.)

Hab.—California.

Mutilla thoracica n. sp.

Female.—Head subquadrate, posterior angles rounded, coarsely and confluent punctured, castaneous, somewhat paler on the vertex, sparsely clothed with very short, black hairs; antennæ: scape and two basal joints of the flagellum honey yellow, the rest fuscous; mandibles black at tip; eyes large, ovate; thorax elongate quadrate, slightly narrowed at middle, prothorax ferruginous, densely punctured, and separated from the mesothorax by a deep sulcus, metathorax abruptly truncate, dark ferruginous and coarsely rugose; sides of mesothorax deeply excavate; legs testaceous, thinly clothed with a glittering silvery pile; abdomen ovate, basal segment very large, subglobose, sessile with the second segment, closely punctured, ferruginous, sparsely clothed with short, pale, yellowish pubescence, second segment with a broad castaneous band, not extending to the basal and apical margins, remaining segments castaneous, the apical margins fringed with pale golden pubescence; first, second and third ventral segments ferruginous, shining, finely and remotely punctured, apical margins fringed as above. Length 5-7 mm.

Hab.—New York.

Allied to *M. peculiaris* Cresson, but may easily be distinguished from that species by the thorax being destitute of the dense, appressed, golden pubescence, and the silvery white apical margin of the basal segment.

Mutilla rutilans Blake.

Female.—Entire insect bright castaneous; head quadrate, wider than thorax, posterior angles rounded, polished, covered with exceedingly minute punctures; eyes small, ovate and finely reticulate; antennæ somewhat pruinose; prothorax smooth, prominent, meso- and metathorax minutely punctured, the latter obliquely truncate, and having on each side a small tubercle; legs slender, tibiæ armed with a row of minute spines; abdomen polished, ovate, short; apical margin of basal segment black, second segment with two subquadrate white spots on the disc, fifth honey yellow, apex black. Length 7 mm.

Hab.—California.

This species differs from all others known to me by the entire absence of pubescence.

Mutilla sapiens Smith.

Male.—Black; the head and thorax coarsely punctured; the abdomen shining and more finely punctured; the head covered with white pubescence; the metathorax, the basal segment of the abdomen, and the apical margin of the second segment with a fascia of silvery white pubescence, the basal segment forming a short petiole; wings hyaline, faintly clouded at their apical margins, the nervures black; the tegulæ large, testaceous at their tips; anterior wings with three submarginal cells; the eyes emarginate. Length 7 mm. (Smith.)

Hab.—Mexico, Orizaba.

Mutilla ordinaria Smith.

Male.—Head, thorax, legs and basal segment of the abdomen black, the other segments ferruginous; wings fuscous and more or less hyaline at their base; the

head and thorax strongly punctured; the eyes emarginate; the face and the metathorax with thin white pubescence, the latter with large shallow punctures, a little silvery pile at the basal margin of the metathorax and also behind the wings, the latter with three submarginal cells; abdomen with fine, scattered punctures, and the segments fringed with ferruginous pubescence. Length 9-15 mm. (Smith.)

Hab.—Mexico, Orizaba.

Mutilla terminata Smith.

Male.—Head, thorax, legs and the base and apex of the abdomen black, the latter otherwise clothed with bright scarlet pubescence; the eyes ovate; the head, thorax anteriorly, and the scutellum with pale fulvous pubescence; wings with two submarginal cells, dark fuscous at their apex, pale towards their base; the abdomen more or less ferruginous beneath. Length 9 mm. (Smith.)

Hab.—Mexico, Orizaba.

Mutilla nana Smith.

Male.—Black; punctured, with the disc of the thorax and abdomen shining; head the width of the thorax, thinly covered with white pubescence; the eyes ovate; the scape of the antennæ and the mandibles obscurely ferruginous; the metathorax with large shallow punctures; the anterior wings fuscous, darkest in the marginal cell, with three submarginal cells; legs fusco-ferruginous; abdomen finely punctured; the apical margins of the segments thinly fringed with white pubescence. Length 6.5 mm. (Smith.)

Hab.—Mexico, Orizaba.

DIVISION III.

Neuration as represented by figure 9, except that the third submarginal cell is obsolete; first abdominal segment as in figure 10.



Fig. 9.



Fig. 10.

Mutilla copano Blake.

Male.—Head and thorax black, coarsely reticulate; head subquadrate, not quite as wide as the thorax, thinly clothed with short silvery hairs; antennæ black, scape punctured, mandibles ferruginous before the tips; eyes ovate, emarginate; thorax robust, narrowed behind, anterior angles of prothorax produced into acute teeth, posterior margin carinate, sides of mesothorax dilated, clothed with silvery pubescence, metathorax roundly truncate; wings pale fuliginous, hyaline at base; marginal cell sublanceolate, obliquely truncate at tip, first and second submarginal cells about equal, the second subtriangular, receiving the recurrent nervure beyond the middle, third obsolete; second discoidal cell large; tegulæ large, ovate, closely punctured, posteriorly ferruginous; legs black, thinly clothed

with white hairs, calcaria white; abdomen ovate, ferruginous, basal segment small, punctured, with a ventral carina terminating in an acute tooth anteriorly; second segment finely and closely punctured, apical margin clothed with silvery pubescence; the remaining segments fringed with a thin golden pubescence, ventral surface same as above, lateral carinæ distinct. Length 8.5 mm.; expanse of wings 11 mm.

Hab.—Texas. Belfrage.

Mutilla puteola Blake.

Female.—Ferruginous; head round, wider than the thorax, closely and evenly punctured; eyes round, large; cheeks clothed with white sericeous pubescence; antennæ fuscous; thorax elongate ovate, narrowed to apex, closely and regularly punctured, sides slightly sericeous; legs fuscous, thinly clothed with scattered white hairs; abdomen ovate, basal segment clothed with sericeous white pubescence, second closely and regularly punctured, its apical margin fringed at sides with silvery pubescence, fuscous at middle, third segment fuscous, apex paler. Length 5 mm.

Hab.—Texas. Three specimens.

Allied to *pygmea* Blake, from which it differs by the narrow thorax, and in being destitute of the long hairs of the abdomen.

Mutilla parvula n. sp.

Female.—Ferruginous; head rounded, closely punctured; antennæ, scape and first joint of flagellum bright ferruginous, remainder fuscous; eyes ovate, tips of mandibles black; thorax ovate, narrowed posteriorly, closely punctured, metathorax abruptly truncate, thinly clothed with erect, glittering white hairs; legs fusco-ferruginous, thinly clothed with white pubescence; abdomen ovate, basal segment apically broad and sessile with the second segment, which is finely punctured, its apical margin and remaining segments, which are fuscous, thinly fringed with pale pubescence; ventral surface paler than above. Length 4.5 mm.

Hab.—Alabama.

This species corresponds so nearly with *M. puteola* in appearance, that it can only be separated by the form of the basal segment of the abdomen being sessile with the second, whereas in the latter it is cylindrical.

Genus 3, **SPHÆROPTHALMA** Blake.

Male.—Head transversely rounded, or subquadrate, with the posterior angles round, rarely as wide as the thorax, which is generally ovate; eyes round, prominent and polished; the wings vary from dark fuliginous to fusco-hyaline, the latter more or less clouded; abdomen ovate, subpetiolate.

Female.—The form of the head differs widely; in some species it is rounded, or subquadrate; sometimes enormously developed, being twice the width of the thorax, and armed with strong spines beneath

the cheeks; eyes as in the male; thorax ovate, robust; the intermediate and posterior tibiæ are exteriorly armed with spines; abdomen ovate, having the basal segment small, campanulate and sessile with the second segment.

The species of this genus are more densely pubescent than any in the Mutillidæ, often being richly adorned with golden or silvery pubescence and beautiful coloring and markings.

The species are quite numerous, and may be divided into two divisions and subdivisions, viz.:

DIVISION I.

First abdominal segment small, more or less nodose and constricted at apex, as in figures 11 and 12.



Fig. 11.



Fig. 12.

This may be again divided into two subdivisions:

SUBDIVISION I.

Head broad and quadrate behind the eyes, mandibles broad; neu-
ration of anterior wing as represented by figure 13.



Fig. 13.

Sphærophthalma scæva Blake.

Male.—Black; head rounded, as wide as the thorax, closely punctured, space above and between the eyes rufo-ferruginous, with short erect hairs; antennæ black, the scape finely punctured; eyes round, prominent; thorax subquadrate, narrowed posteriorly, mesothorax elevated, metathorax abruptly rounded, coarsely reticulated; wings ample, fuliginous, marginal cell elongate ovate, slightly rounded at tip; two distinct submarginal cells, first moderately long and narrow, second about half as large as the marginal, receiving the first re-
current nervure a little before the middle; legs black, clothed with scattered black hairs, posterior tibiæ armed with a single spur; abdomen ovate, basal segment elongate, closely punctured, thinly clothed with black hairs; second segment pale ferruginous, with scattered hairs of the same color, shining, finely

punctured, lateral carinæ edged internally with black; the remaining segments clothed with dense, coarse, black pubescence. Length 11 mm.; expanse of wings 21 mm.

Hab.—Texas.

In some specimens the disc of the petiole is dark rufous.

Sphærophthalma pennsylvanica St. Farg.

Male.—Head and thorax reddish, clothed with black hairs; antennæ black; abdomen black, clothed with black hairs; first segment globose, ferruginous, its apical margin black; the second segment ferruginous, its apical margin black, nearly naked; legs black, clothed with black hairs; wings blackish violet, first submarginal cell with a transverse, transparent line, descending in an angle from the costa, after which it traverses the second submarginal, and joining a rather large transparent spot, common to the third submarginal and third discoidal cells, this last cell strongly narrowed towards the marginal. Length 18 mm.; expanse of wings 29 mm. (St. Farg.)

Hab.—Pennsylvania.

Sphærophthalma auripilis Blake.

Male.—Dark ferruginous, head quadrate, posterior angles rounded, closely and finely punctured, thinly clothed with scattered black hairs; scape of antennæ dark rufous, flagellum rufo-piceous; mandibles ferruginous, tipped with black; eyes prominent, round, polished; thorax elongate, narrowed behind, closely reticulated, very thinly clothed with dark hairs, posterior margin of prothorax carinate; mesothorax elevated, having four shallow, longitudinal grooves on the disc; metathorax gradually rounded, having a distinct suture in front; wings moderate, fuliginous, marginal cell lanceolate, first submarginal small, narrow, second large, subquadrate, receiving the first recurrent nervure before the middle, third obsolete, not extending as far as the marginal, a hyaline streak passing from the costa through the first and second submarginal cells, terminating in a patch of the same, below the third; legs black, clothed with pale glittering hairs; abdomen elongate ovate, basal segment dark ferruginous, with the apical margin black, closely reticulated, clothed with scattered pale hairs; second segment dusky fulvous, finely punctured, clothed with erect fulvous hairs; apical margin blackish; the remaining segments blackish, very finely reticulated, clothed with golden fulvous pubescence; lateral carinæ distinct. Length 14 mm.; expanse of wings 25.5 mm.

Hab.—Texas.

Sphærophthalma Edwardsii Cresson.

Male.—Elongate, slender, uniformly rufo-fulvous, densely and rather coarsely punctured, more feebly on the abdomen, clothed with short, erect, tolerably dense, golden fulvous pubescence; tips of mandibles and third and following joints of antennæ black; metathorax coarsely reticulated; wings blackish fuscous, with a hyaline spot beneath third submarginal cell; abdomen shining. Length 13 mm. (Cresson.)

Hab.—Oregon.

In one specimen the head, sides of thorax and first and second abdominal segments are nigro-castaneous.

This handsome species is allied to *auripilis* Blake, from which it differs by the less coarse punctuation, and by the more dense, uniform golden pubescence.

SUBDIVISION II.

Head subtransverse or subquadrate, not remarkably enlarged behind the eyes, neuration generally as represented by figure 14.

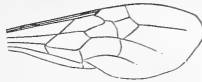


Fig. 14.

Spherophthalma orcus Cresson.

Male.—Elongate; colored similar to the female, but much less coarsely punctured, and the antennæ much longer; the metathorax is large and rounded behind, covered with dense, rather coarse punctures, and clothed rather sparsely with long, black pubescence; wings ample, blackish, paler at tips; marginal cell short, not exceeding the tip of the third submarginal cell, the apex broadly truncate; the three submarginal cells distinctly defined, the first longer and the second as long as the marginal and receiving the first recurrent nervure before the middle; the third submarginal cell subtriangular, much narrowed beneath, so that the side nervures become almost confluent with the second recurrent nervure; legs black, punctured, clothed with black pubescence; abdomen ovate, gradually narrowed to tip, closely and rather finely punctured; apical margin of the large basal segment and all the remaining segments, as well as the lateral apical fringe of the ventral segments, densely clothed with long rufo-ferruginous pubescence, the remainder with black pubescence, sparse on the venter, which is shining; the node rather larger than in the female, coarsely punctured, with a large, flattened, subacute tooth beneath; second ventral segment somewhat concave on the middle, on which there is a deep ovate puncture. Length 35 mm.: expanse of wings 36 mm.

Female.—Deep black, with coarse black pubescence and large, deep punctures; head not wider than the thorax; eyes small, round, entire, very convex and polished; antennæ piceous black at base, the flagellum brownish and sericeous; thorax slightly narrowed behind and abruptly truncate; the excavations on the sides, for the reception of the legs, are smooth and shining, the posterior truncation less coarsely punctured and somewhat shining; legs black, with long, black pubescence; the tibiæ with short, black spines; abdomen large, ovate, coarsely punctured, black; most of the large basal segment and all the remaining segments above clothed with a long, dense, rufo-ferruginous pubescence; the node and the base and sides of the large basal segment, as well as the venter, clothed with black pubescence; the large ventral segment is sparsely pubescent and shining; in one specimen the lateral apical fringe of the ventral segments is reddish; the node or small basal segment is rather small, circular at the tip, narrowed towards the base and depressed above, with a short, stout tubercle on each side at extreme base. Length 19–20 mm. (Cresson.)

Hab.—Texas.

Easily recognized by the large size, the jet-black color, with most of the abdomen above rufo-ferruginous.

Sphærophthalma gorgon Blake.

Female.—Black; head wider than the thorax, subquadrate, posterior angles rounded, thinly clothed with black pubescence, closely punctured, cheeks prominent; eyes round, polished, scape of antennæ punctured; clothed with coarse, black pubescence, mandibles with a tooth before the tip; thorax short, ovate, closely covered with confluent punctures, clothed with black pubescence, metathorax abruptly truncate; legs black, clothed with black hairs, finely punctured, the intermediate and posterior tibiæ armed with spines; abdomen ovate, basal segment closely punctured, dorsal surface, except anterior margin of second segment, clothed with dense, coarse, dark ferruginous pubescence; under surface coarsely punctured, ventral segments fringed with black pubescence. Length 17 mm.

Hab.—Texas. Belfrage.

This species resembles *S. oreus* Cresson, but may be readily distinguished by the large subquadrate head, the shorter thorax, and mandibles being toothed before the tip.

Sphærophthalma tisiphone Blake.

Female.—Nigro-castaneous; head rounded, a little wider than thorax, coarsely punctured, face very broad, the punctures becoming finer about the insertion of antennæ; eyes small, round; antennæ slightly pruinose, scape finely punctured; thorax short, narrowed posteriorly, coarsely, confluent punctured; prothorax fringed with short, erect hairs; metathorax abruptly truncate, deeply reticulate, bearing a few erect hairs, flanks moderately excavate and smooth; legs finely punctured, the intermediate and posterior tibiæ armed externally with spines, mixed with fuscous hairs; abdomen elongate ovate; narrowed to apex, second segment coarsely punctured, its apical margin and remaining segments fringed with golden pubescence; under side as above, except that the marginal fringes are castaneous. Length 17 mm.

Hab.—Texas.

Sphærophthalma parmosa n. sp.

Female.—Black; head quadrate, posterior angles rounded, slightly wider than the thorax, clothed above with obscure rusty golden pubescence, cheeks beneath the eyes coarsely punctured; mandibles and scape of antennæ black, flagellum nigro-castaneous; thorax short, subtriangular, suddenly narrowed posteriorly; pro- and mesothorax above, clothed with rusty golden pubescence; metathorax obliquely truncate, coarsely reticulate, sides and beneath closely punctured; legs black, thinly clothed with black hairs; femora finely punctured, the intermediate and posterior tibiæ armed with strong spines; abdomen elongate ovate, basal segment small, coarsely punctured, and bearing a few erect black hairs; second segment coarsely punctured, its apical two-thirds and remaining segments clothed with rusty golden pubescence; ventral surface finely punctured, apical margins fringed as above. Length 17 mm.

Hab.—California.

Sphærophthalma venifica n. sp.

Female.—Castaneous; head rounded, as wide as the thorax, densely punctured, sparsely clothed with pale golden pubescence, mandibles black at tips; antennæ

fuscous; eyes round, polished; thorax ovate, somewhat constricted behind the middle, coarsely reticulated and thinly clothed with pale golden pubescence; metathorax roundly truncate; legs castaneous, finely punctured, thinly clothed with fuscous hairs, intermediate and posterior tibiæ armed with strong spines; abdomen elongate ovate, basal segment campanulate, clothed with erect black hairs, second segment coarsely and confluent punctured, thinly clothed with pale golden pubescence, that on the apical segments longer and denser, ventral surface coarsely and remotely punctured, shining. Length 12 mm.

Hab.—California.

Allied to *S. parmosa*, but differs in having the pubescence pale golden, and is uniformly castaneous, whereas *parmosa* is entirely black.

Sphærophthalma zelaya Blake.

Male.—Black; head rounded, as wide as the thorax, finely punctured, thinly clothed with erect black pubescence; eyes round, polished; antennæ black; thorax ovate, closely punctured, clothed with erect black hairs, metathorax roundly truncate, closely reticulate; tegulæ small, polished; wings fuscous, marginal cell obliquely subquadrate, truncate at tip, first submarginal large, second subtriangular, wide beneath, its basal and apical nervures sinuate, receiving the first recurrent near the base, third subpentagonal, narrowed beneath; legs black, thinly clothed with black hairs; abdomen elongate ovate, petiolate, petiole pyriform, closely punctured, having a small ventral tubercle, second segment shining, closely punctured, thinly clothed with erect black hairs, the apical margin and following segments clothed with long coarse orange-yellow pubescence; under side shining, black. Length 8.5 mm.; expanse of wings 15 mm.

Hab.—Texas.

Sphærophthalma comanche Blake.

Male.—Black; head not as wide as the thorax, rounded, clothed with long, coarse, dark ferruginous pubescence, scape of antennæ black, flagellum fuliginous, mandibles black; eyes round, prominent; thorax elongate quadrate, pro- and mesothorax thinly clothed with black hairs; wings ample, fuliginous, marginal cell short, abruptly truncate at tip, three distinct submarginal cells, the first a little longer than the marginal, the second subtriangular, having a subhyaline streak through its entire length, and receiving the first recurrent nervure one-third before the middle; the third extending beyond the marginal; tegulæ large; legs black, clothed with black hairs, calcaria black, long, serrated interiorly; abdomen ovate, basal segment closely punctured, clothed with coarse black hairs, second segment finely punctured, shining, thinly clothed with black hairs; apical margin and following segments thickly clothed with long, dark ferruginous pubescence; margins of the second and third ventral segments fringed as above, lateral carinæ distinct. Length 19 mm.; expanse of wings 38 mm.

Female.—Black; head subquadrate, posterior angles rounded, not as wide as the thorax, reticulated, clothed with brown-black pubescence; scape of antennæ black, rugulose, flagellum dark fuscous; eyes round, prominent; cheeks below the eyes closely punctured; thorax short, narrowed behind, coarsely reticulated, clothed the same as the head, the mesothorax has on each side a strong carina.

which terminates at the top in a small obtuse tooth; metathorax abruptly truncate, the sides closely reticulated, and bearing a shining black tubercle on each side; legs robust, black, clothed with long black hairs; abdomen ovate, basal segment coarsely reticulated, clothed with long scattered black hairs; second segment closely punctured, basal and apical margins clothed with black, disc with pale brown pubescence; third segment clothed with brownish black, the remaining segments with ferruginous; under side of second segment closely punctured, lateral carinæ distinct; margins of ventral segments fringed with dark brown pubescence. Length 21 mm.

Hab.—Texas.

Spherophthalma texana Blake.

Female.—Head and thorax coarsely, confluent punctured, nigro-fuscous, thinly clothed with short erect hairs, the former subquadrate, posterior angles rounded, as wide as the thorax; cheeks thinly clothed with glittering hairs; antennæ fuscous, scape punctured, flagellum slightly pruinose; eyes round, prominent, polished; thorax ovate, narrowed posteriorly, metathorax roundly truncate; legs black, clothed with scattered white hairs; femora and tibiæ finely punctured, intermediate and posterior tibiæ armed with spines; abdomen ovate, narrowed to apex, basal segment fuscous, closely punctured, second segment clothed with obscure fulvous pubescence, its apical margin ciliated with yellow, third and fourth segments nigro-fuscous, clothed with black hairs, apex silvery. Length 10 mm.

Hab.—Texas. Two specimens.

Allied to *comanche* Blake.

Spherophthalma clotho Blake.

Female.—Black; head subquadrate, posterior angles rounded, not as wide as the thorax, densely rugose, clothed with black pubescence, cheeks below the eyes closely and irregularly punctured; eyes round, prominent; scape of antennæ punctured, black, flagellum piceous; thorax robust, ovate, narrowed posteriorly, densely clothed above with black pubescence, sides closely punctured, mesothorax armed posteriorly with a small tubercle on each side, metathorax abruptly truncate, closely punctured; legs black, clothed with black hairs, intermediate and posterior tibiæ armed with long spines; abdomen ovate, basal segment closely punctured, clothed with long erect black hairs, second segment having a broad band of reddish golden pubescence, emarginate anteriorly and posteriorly, divided by a narrow central longitudinal line of black, base and apical margin black, third and fourth black, apical segment clothed with reddish golden pubescence; under side black, closely punctured, sparsely clothed with black hairs, margins of all the segments fringed with long black pubescence. Length 21 mm.

Hab.—Texas. One specimen.

This fine species is allied to *comanche*. It differs from the latter in having the head less rounded, and the thorax somewhat longer, the clothing is also less coarse than in *comanche*. It also resembles *occidentalis* in the ornamentation of the abdomen, but the head and thorax are entirely black.

Sphærophthalma erato Blake.

Female.—Rufo-castaneous; head round, not as wide as thorax, clothed with dense yellowish white pubescence; eyes large, round, prominent, polished; antennæ fuscous, scape thinly clothed with whitish hairs, tips of mandibles black; thorax short, ovate, coarsely punctured, metathorax abruptly truncate, thinly clothed with white hairs; legs sparsely clothed with long glittering white hairs. femora punctured; abdomen elongate ovate, coarsely and deeply punctured. thinly clothed with erect glittering white hairs, apical margins of first and second segments densely fringed with white pubescence; under side same as above. Length 8–12 mm.

Hab.—Texas. Two specimens.

Sphærophthalma Saekenii Cresson.

Female.—Deep black, with large, coarse punctures; head not wider than the thorax, clothed above the antennæ with long, dense, erect, whitish pubescence. rest of the head with deep black pubescence; eyes small, round, entire and convex; antennæ black, the flagellum sericeous; thorax ovate, abrupt on the sides and behind, the upper surface densely clothed with very long, erect, somewhat radiating, whitish pubescence; the black upper surface of the thorax is concealed by a short, dense, appressed, whitish pubescence; sides of the thorax and beneath clothed with deep black pubescence, which is exceedingly long and fringe-like on the ridge between the two lateral excavations and immediately opposite the intermediate legs; legs deep black, with long black pubescence, very long on the femora; abdomen ovate, the dorsal surface, except the extreme base, clothed like the thorax, with a very long, somewhat radiating whitish pubescence, which extends beneath on the lateral apical margins of the segments; the node, or small basal segment, is rather small, deeply rugose and clothed with long black pubescence. Length 12–14 mm. (Cresson.)

Male.—Black; head and thorax densely clothed with long whitish pubescence. mandibles and antennæ black; eyes large, round and prominent; sides of thorax densely and coarsely punctured, and clothed with black pubescence; legs black. clothed with long black pubescence; wings fuliginous, three submarginal cells. marginal cell short, ovate, truncate at tip; first submarginal large, second subtriangular, narrowed at the marginal cell, its transverse nervures sinuate, receiving the first recurrent nervure near the base, third submarginal subpentagonal. much narrowed beneath, the second recurrent nervure reaching the cubital a little outside the cell; abdomen ovate, basal segment campanulate, densely clothed with long, coarse, black pubescence; second segment densely and finely punctured, clothed with long black pubescence; apical segments with long, coarse, whitish pubescence; ventral surface coarsely punctured, clothed with black pubescence. Length 12 mm.; expanse of wings 22 mm. (Blake.)

Hab.—California.

This remarkable species may be at once recognized by the deep black color and the exceedingly long, erect, whitish pubescence which clothes the upper surface of the head, thorax and abdomen. giving it a brush-like appearance. The smallest specimen has the whitish pubescence much shorter than the larger ones, as if the very long pubescence had been cropped off.

Sphaerophthalma thetis n. sp.

Female.—Ferruginous, clothed entirely above with long, coarse, whitish pubescence; head transverse, rounded behind the eyes, slightly wider than the thorax; antennæ fuscous, scape clothed with whitish pubescence; eyes prominent, round; thorax short, metathorax abruptly truncate, coarsely punctured, deeply excavate at sides; legs pale ferruginous, thinly clothed with whitish hairs, spines and calcaria castaneous; basal segment of abdomen campanulate, second closely punctured, beneath castaneous; apical margins of all the ventral segments fringed with white pubescence. Length 7 mm.

Hab.—Arizona.

This species is allied to *Sackenii* Cresson, but may readily be distinguished by the tegument being ferruginous, whereas the former is black, and also by its smaller size.

Sphaerophthalma clio Blake.

Female.—Black; head round, not as wide as thorax, clothed on vertex with coarse ochraceous pubescence; eyes round, prominent; antennæ black; thorax robust, ovate, narrowed posteriorly, clothed on disc with coarse ochraceous pubescence, metathorax abruptly truncate, reticulate, flanks impunctate; legs black, having a few scattered, long black hairs, intermediate and posterior tibiæ armed with spines, calcaria long; abdomen ovate, basal half of second segment black, with coarse black pubescence, apical half and sides of third, fourth and fifth segments clothed with coarse ochraceous pubescence, third and fourth, at middle, and apex black. Length 9.5 mm. (H. Edwards.)

Hab.—Vancouver's Island.

Sphaerophthalma magna Cresson.

Female.—Deep black, coarsely punctured; head not wider than the thorax, densely clothed with a long, ochraceous-yellow pubescence, rather thin on the cheeks; eyes small, round, entire, convex; antennæ black, the scape with ochraceous-yellow pubescence, the flagellum sericeous; thorax ovate, abrupt on the sides and behind, the upper surface, except of the metathorax, clothed with long, dense, coarse, ochraceous-yellow pubescence, which also fringes the ridge, between the two lateral excavations; metathorax above clothed with long, dense, black pubescence; legs black; the coxæ beneath, the femora and base of tibiæ and the tarsi with black pubescence; abdomen large, ovate, clothed with a long, dense, coarse, ochraceous-yellow pubescence; the node and the extreme base of the large basal segment clothed with black pubescence; on the venter the pubescence is not so dense. Length 23.5 mm. (Cresson.)

Hab.—Cape St. Lucas, Lower California.

Sphaerophthalma holotricha Sauss.

Female.—Head transverse, rounded, as wide as thorax, densely clothed with ochraceous pubescence; antennæ fuscous; eyes round, prominent; thorax elongate ovate, narrowed posteriorly; pro- and mesothorax densely clothed with ochraceous pubescence; metathorax rufous, closely punctured; legs fuscous; abdomen ovate, basal segment campanulate, rufous, coarsely punctured; second segment densely clothed with ochraceous pubescence, apical margins of segments fuscous, fringed with black hair. Length 14 mm.

Hab.—Mexico.

Sphærophthalma aureola Cresson.

Female.—Black, coarsely punctured; head large, quadrate, wider than the thorax, clothed above the antennæ with a dense, deep golden yellow pubescence; on the rest of the head the pubescence is black; eyes small, round, entire, convex and polished; mandibles black, also polished; antennæ piceous brown, the scape with black pubescence, the flagellum tinged with rufous, sericeous; thorax very short and broad, somewhat strangulated behind the middle, abrupt on the sides and behind, the upper surface densely clothed with a deep golden yellow pubescence; metathorax abruptly truncate behind, and, as well as the sides of the thorax, sparsely clothed with black pubescence; legs black, with long, scattered, black pubescence; abdomen ovate, densely clothed, except base, with long, appressed, deep golden yellow pubescence; the node, the base of the large basal segment above, and the whole of this segment beneath, except its apical margin, clothed with black pubescence: above, the black on the large basal segment slightly indents the yellow on the basal middle; the node is small, circular at tip and flattened above at base; all the ventral segments have an apical fringe of dense golden yellow pubescence. Length 14 mm. (Cresson.)

Hab.—California.

Allied to *californica* Radoszkowski, but differs by the large quadrate head and the shorter thorax.

Sphærophthalma mollissima n. sp.

Male.—Robust; black, head large, rounded, densely clothed with coarse, erect, fulvous pubescence; antennæ black; eyes large, round, prominent; cheeks closely punctured, clothed with black pubescence; thorax short, ovate, pro- and mesothorax clothed on the disc with dense fulvous pubescence, metathorax roundly truncate, coarsely reticulate; wings fuscous, paler about the middle, marginal cell short, truncate at tip, first submarginal cell nearly as large as the marginal cell, pointed towards base, second submarginal subovate, its transverso-cubital nervures arcuate, receiving the first recurrent nervure before the middle, third submarginal subpentagonal, its outer nervure sinuate and confluent with the second recurrent; legs black, thinly clothed with black hairs; abdomen ovate, basal segment campanulate, closely punctured, shining, its apical half and remaining segments clothed with dense fulvous pubescence; ventral surface of second segment finely and densely punctured, apical margins fringed with glittering fulvous pubescence. Length 15 mm.; expanse of wings 25 mm.

Female.—Similar to the male, with the exception of the metathorax, which is very abruptly truncate, the punctures of the second abdominal segment coarser, and the pubescence longer. Length 14 mm.

Hab.—Colorado.

This species is closely allied to *S. aureola* Cresson, but may be separated by the more robust form and the pubescence being fulvous.

Sphærophthalma canina Smith.

Female.—Rufo-testaceous, palest beneath; the vertex and front densely clothed with long, pale ochraceous pubescence; head round, eyes large and prominent; thorax: the anterior half of the mesothorax clothed with black pubescence, the

posterior half with pale ochraceous; the apical margins of the second, third and fourth segments have a broad fascia of pale ochraceous pubescence; that on the second produced in the middle into an angular shape; the basal half of the second segment, and the third and sixth segments entirely clothed with black pubescence; the entire insect sprinkled over with long loose pale hairs. Length 10 mm. (Smith.)

Hab.—Mexico.

Spherophthalma leda Blake.

Female.—Black; head subquadrate, posterior angles rounded, wider than the thorax, densely punctured, thinly clothed with scattered golden hairs; antennæ fuscous; eyes small, round; mandibles ferruginous at base, black at tips; thorax short, ovate, thinly clothed with obscure golden pubescence, sides coarsely reticulate, metathorax abruptly truncate; legs black, clothed with black hairs, intermediate and posterior tibiæ armed with long spines; abdomen ovate, clothed above with coarse golden pubescence; under side covered with coarse confluent punctures, margins of the segments fringed with black hairs. Length 14 mm.

Hab.—Texas. One specimen.

Closely resembles *aureola* Cresson.

Spherophthalma combusta Smith.

Female.—Entirely of a reddish brown; the antennæ, mandibles and legs ferruginous; the head and the thorax above clothed with golden pubescence; the sides of the thorax unarmed, narrowed posteriorly; the basal and four apical segments of the abdomen adorned with golden pubescence; the second segment having two large ovate maculæ, placed transversely a little beyond the middle. Length 10 mm. (Smith.)

Hab.—Mexico.

Spherophthalma tecta Cresson.

Female.—Form elongate, subrobust, fuscous; head narrower than thorax, not broader behind the eyes; thorax short, subquadrate, broadest across the middle; abdomen oblong ovate; entire body and legs clothed with very long, dense, suberect, pale ochraceous pubescence, more sparse on body beneath and legs. Length 13 mm. (Cresson.)

Hab.—California.

Allied to *magna* Cresson, but at once distinguished by the pubescence of the body beneath, and legs being pale ochraceous instead of black.

Spherophthalma rubriceps Cresson.

Female.—Head dull rufous, densely punctured and clothed with pale ochraceous pubescence; mandibles, palpi and antennæ piceous, or rufo-piceous, the latter proportioned as in *nigriceps*; thorax deeply and coarsely punctured, especially on the sides, convex above, deep black, clothed with short, dense, black pubescence; on each side before the middle a small, flattened tubercle, and behind the middle a large, obtuse, rufous tubercle tipped with black; pleura beneath and the metathorax behind densely clothed with a short, fine, appressed, pale, ochra-

ceous, sericeous pubescence; legs piceous, densely clothed with pale ochraceous pubescence; tibiae with a row of long, acute, black spines; abdomen ovate, convex above; basal segment small, quadrate, punctured, clothed with dense, pale ochraceous, silky pubescence; second segment large, dull rufous, tinged with brown, densely, deeply and confluent punctured, clothed with ochraceous pubescence, especially on the extreme sides and on the sides of the apical margin where it is very dense and appressed; on the apical middle of this segment a large black spot, clothed with black pubescence, and on each extreme side another blackish spot, bordered behind with the ochraceous margin; remaining segments piceous, or rufo-piceous, densely clothed, especially at tip, with a short, appressed, pale ochraceous pubescence. Length 12.5 mm. (Cresson.)

Hab.—Cuba.

Sphærophthalma erudita Cresson.

Female.—Form elongate, subrobust, black; head narrower than thorax, not broader behind the eyes; thorax subquadrate; narrowed behind, and slightly so in front; abdomen ovate; head, thorax, abdomen above and sides of apical half of venter clothed with a long, dense, erect, ochraceous pubescence; body beneath and legs sparsely clothed with black hairs, long on the femora beneath. Length 13 mm. (Cresson.)

Hab.—California.

Allied to *Sackenii* Cresson.

Sphærophthalma Siceliana Sauss.

Female.—Head rounded, not quite as wide as thorax, densely clothed with ochraceous pubescence; scape of antennæ castaneous, clothed with glittering hairs, flagellum fuscous; mandibles black; eyes round, prominent, polished; thorax robust, narrowed posteriorly; prothorax densely clothed with ochraceous pubescence, mesothorax finely rugose, black, metathorax abruptly truncate, clothed with ochraceous pubescence; sides dark rufous, coarsely punctured; legs bright ferruginous, clothed with long, pale glittering hairs, femora punctured, intermediate and posterior tibiae armed exteriorly with black spines, knees and calcaria blackish; abdomen broadly ovate, basal segment sessile with the second, its apical margin fringed with ochraceous pubescence; second segment dark rufous, coarsely punctured, having on the disc at middle two small patches of black pubescence, margined laterally with ochraceous, apical margin blackish; third and fourth segments clothed with pale yellow, glittering pubescence; apex black; under side bright ferruginous, coarsely punctured. Length 14 mm.

Hab.—Arizona, Mexico.

Sphærophthalma pacifica Cresson.

Female.—Robust, black; head large, quadrate, slightly broader than thorax, extended and widened behind the eyes, occiput truncate; thorax short, subquadrate, broad anteriorly, slightly narrowed posteriorly; abdomen short, ovate; head, thorax, abdomen above and apical half of venter, clothed with dense, coarse, moderately long, bright sanguineous hairs; base of abdomen, body beneath and legs with less dense, coarse, black hairs. Length 11–15 mm. (Cresson.)

Hab.—California.

Distinguished from *californica* Radosz., by the shorter, more robust form, and large quadrate head.

Sphaerophthalma vestita Klug.

Female.—Head black, clothed with black pubescence, that on the front and vertex reddish golden; antennæ black; thorax black, pubescent beneath and on the sides, tufted on the back, with a red border; abdomen black, clothed above with black hairs on the first and second segments, below the same, the apical segments clothed with tufted reddish golden pubescence; legs black, clothed with black hairs, spines black.

Male.—Head clothed with black hairs, with the exception of a little tuft on the vertex, which is reddish golden; sixth segment of the abdomen same as in the female; wings black, with a violet reflection, nervures, stigma and tegulæ blackish. (Klug.)

Hab —Mexico.

Sphaerophthalma ursula Cresson.

Male.—Black; thorax and scutellum above, and abdomen above, except first and base of second segments, clothed with a dense golden, fulvous pubescence; wings black; second segment of abdomen shining, the pubescence sparse on the disk, the apical half generally divided into two more or less distinct, rounded, bright fulvous spots, sometimes confluent. Length 13 mm. (Cresson.)

Hab —Oregon, Texas.

Allied to *bioculata* Cresson.

Sphaerophthalma auraria Blake.

Female.—Black; head rounded, densely clothed on vertex with golden pubescence, cheeks testaceous, coarsely punctured; antennæ fusco-testaceous, flagellum slightly pruinose; mouth clothed with long white hairs; eyes round, polished; thorax ovate, narrowed posteriorly, densely clothed with golden pubescence; legs blackish fuscous, tarsi, spines and calcaria testaceous; abdomen ovate, clothed with golden pubescence, more dense on apical segments; ventral surface black, thinly clothed with long white hairs, margins of apical segments densely fringed with pale golden pubescence. Length 12 mm.

Hab.—Nevada. (Morrison.)

Sphaerophthalma arota Cresson.

Female.—Robust; brown-ferruginous; head round, narrower than thorax; thorax short, subquadrate, slightly narrowed posteriorly; abdomen short ovate, much broader than thorax; head, thorax at sides and beneath, and apex of abdomen and beneath, clothed with a moderately dense silvery white pubescence, interspersed with long erect hairs of same color; the appressed pubescence on the head is very dense; thorax above and second abdominal segment above with a dense, appressed golden fulvous pubescence, also interspersed with longer erect hairs of same color; legs blackish, with long pale pubescence. Length 7 mm. (Cresson.)

Hab.—San Diego, California.

Sphaerophthalma marpesia Blake.

Female.—Black; head subquadrate, rounded posteriorly, clothed with yellow pubescence, cheeks coarsely punctured, mouth densely clothed with pale pubescence; antennæ fuscous, scape clothed with whitish pubescence, flagellum slightly

pruinose; eyes round, polished; thorax ovate densely covered with yellow pubescence; legs black, thinly clothed with long silvery hairs, spines of tibiæ and tarsi fuscous; abdomen ovate, apical margin of basal segment fringed with pale pubescence, basal half of second segment black, closely punctured, clothed with erect black hairs, apical margin and remaining segments clothed with yellow pubescence; ventral segments black, deeply punctured; entire insect beneath thinly clothed with long silvery hairs, more dense on apical margins. Length 10-12 mm.

Hab.—Kansas, Utah. (Snow.)

Sphærophthalma californica Radosz.

Female.—Black; the head above the eyes, the thorax above and the abdomen above, except the extreme base, densely clothed with ferruginous pubescence, sometimes varying to golden ochraceous; the head is subquadrate, but not broader than the thorax, the eyes are small, rounded, entire and convex, the antennæ are black, and somewhat sericeous; the thorax is short, broad ovate when viewed from above, the punctures are close and rather coarse, the metathorax abruptly truncate behind; the legs are entirely black, with black pubescence: the abdomen is ovate, closely and deeply punctured; the node, the base and sides of the large basal segment as well as the venter entirely, more or less clothed with black pubescence. Length 9-15 mm. (Cresson.)

Hab.—California.

Sphærophthalma phædra Blake.

Female.—Ferruginous; head subquadrate, posterior angles rounded, vertex clothed with deep golden pubescence; antennæ fuscous, flagellum pruinose, tips of mandibles blackish; eyes round, cheeks fuscous, closely punctured; thorax short, ovate, clothed on disc with deep golden pubescence, flanks fuscous, metathorax abruptly truncate; legs fuscous, thinly clothed with long whitish hairs; abdomen elongate ovate, densely clothed above with deep golden pubescence, interspersed with long erect hairs of same color, fringes of apical margins more dense; under side fusco-ferruginous, sparsely punctured. Length 7 mm.

Hab.—Nevada.

Allied to *auraria*, but may be distinguished by the tegument being ferruginous.

Sphærophthalma fulvohirta Cresson.

Male.—Head black, coarsely punctured, with long black pubescence, mixed with fulvous on the vertex; eyes small, rounded, entire and convex: antennæ about as long as the head and thorax, black, sericeous; thorax coarsely punctured, black, the upper surface clothed with a long, dense, bright fulvous pubescence; on the sides and beneath it is black; metathorax broad, abrupt behind, rounded on the sides, reticulated with coarse punctures and thinly clothed with fulvous pubescence; wings ample, blackish, much paler about the middle; the cells much as in *S. monticola*, except that the third submarginal cell (which is also very indistinctly defined) is more narrowed beneath, and the second submarginal receives the first recurrent nervure more towards the middle; legs entirely black, with black pubescence; abdomen ovate, black, shining, closely punctured and clothed with black pubescence; apical margin, sometimes the apical half of the

large basal segment and all the other segments above, clothed with a dense, bright fulvous pubescence; beneath, entirely black. Length 11-13 mm.; expanse of wings 19-23.5 mm. (Cresson.)

Hab.—Colorado.

The pubescence on the upper surface of the head, thorax and abdomen varies from ochraceous to ferruginous, but generally it is bright fulvous. This may be the male of *S. californica* Radosz.

Spherophthalma aspasia Blake.

Female.—Fuscous; head round, scarcely as wide as thorax, closely punctured, clothed with whitish pubescence; antennæ fuscous, flagellum paler, scape finely punctured, clothed with glittering hairs; eyes round, polished; thorax quadrate, slightly narrowed behind, clothed with coarse golden pubescence; metathorax abruptly truncate; legs fuscous, clothed with pale glittering hairs; abdomen ovate, second segment clothed with long, silky, golden pubescence; apical margins of segments fringed with pale yellowish hairs. Length 7 mm.

Hab.—Nevada.

Allied to *auraria* Blake.

Spherophthalma chiron Blake.

Male.—Black; head not as wide as the thorax, clothed with long black pubescence; antennæ black; eyes small, round, prominent; thorax short, ovate, clothed with long black pubescence; metathorax coarsely reticulate; wings moderate, fuliginous, three submarginal cells, the marginal cell truncate at tip, first submarginal large, second small, subtriangular, its basal and apical nervures sinuate, receiving the first recurrent nervure near the base; third submarginal larger, slightly narrowed beneath, receiving the second recurrent close to its apical nervure; legs black, clothed with black hairs; abdomen ovate, petiolate, basal segment coarsely punctured, second closely and finely punctured, clothed with long, erect, black pubescence, remaining segments densely clothed with long fulvo-ferruginous pubescence; under side shining, second segment closely punctured. Length 9 mm.; expanse of wings 13 mm.

Hab.—Texas. Two specimens.

This species is closely allied to *fulvohirta* Cresson, but may be readily distinguished by the clothing of the head and thorax being black, and having the third submarginal cell distinct. One variety has the thorax and apical segment of the abdomen clothed with fulvous pubescence.

Spherophthalma zenobia Blake.

Female.—Fuscous; head round, not as wide as thorax, clothed with dense, deep golden pubescence; eyes round, prominent; antennæ fuscous; thorax quadrate, narrowed posteriorly, clothed with reddish golden pubescence, flanks smooth, metathorax abruptly truncate, clothed with long erect hairs; legs fuscous, thinly clothed with long pale hairs; abdomen ovate, basal segment with long, erect hairs, second and following segments clothed with dense reddish golden pubescence; ventral fringes whitish. Length 6 mm.

Hab.—California.

Allied to *auraria* Blake.

Sphærophthalma bellona Cresson.

Female.—Rufo-piceous; closely and deeply punctured; head not wider than the thorax, clothed above the antennæ with a long, dense, rufo-ferruginous pubescence, beneath the antennæ and on the cheeks the pubescence is black and scattered; eyes small, rounded, entire, convex and polished; mandibles black, smooth and polished; antennæ deep black, the flagellum subsericeous; thorax ovate, slightly narrowed behind, clothed above with a long, dense, rufo-ferruginous pubescence, longer on the summit of the metathorax, which is abruptly truncate behind; sides of the thorax sparsely clothed with long black pubescence; beneath, it is more or less mixed with pale yellowish; legs black, clothed with black pubescence, slightly mixed with pale yellowish, especially on the femora beneath; base of the coxæ rufo-piceous; abdomen ovate, closely punctured, the large basal segment above clothed with a dense rufo-ferruginous pubescence; the node, the extreme base of the large basal segment and the apical segments above more or less clothed with black pubescence, except the apical margins of all the segments above and beneath, where the pubescence is pale yellowish; sometimes the pubescence of the third segment above is tinged with reddish; the node beneath and the large ventral segment has a scattered, pale yellowish pubescence; the node above is blackish or piceous-black, circular and rugose at tip, and smooth, shining and depressed at base. Length 13-15 mm. (Cresson.)

Hab.—Colorado.

Allied to *S. californica* Radosz., but is distinguished by the color of the body being rufo-piceous instead of black, and by the abdomen having only the large basal segment reddish above.

Sphærophthalma verticalis Smith.

Female.—Black; the head broader than the thorax; the vertex red and clothed with ferruginous pubescence; thorax narrowed posteriorly, the sides slightly contracted a little beyond the middle, the lateral margins crenulated; the mesothorax has a broad red stipe on each side; the legs and the thorax beneath thinly covered with pale glittering pubescence; the intermediate and posterior tibiæ armed exteriorly with a row of sharp spines; abdomen: the second segment has two small ovate spots at its basal margin and beyond them two large ovate ones almost touching in the centre of the segment; the four apical segments fringed with long, pale, yellow, glittering pubescence. Length 12 mm. (Smith.)

Hab.—Mexico.

Sphærophthalma ægina Cresson.

Female.—Very closely allied to *S. bellona*, from which it differs only by having the pubescence of the legs and of the abdomen, except on the large basal segment above, *entirely* deep black, and the segments not fringed with yellowish; the pubescence of the head, thorax and large basal segment of the abdomen above varies to yellowish ferruginous. Length 13 mm. (Cresson.)

Hab.—Colorado.

Sphærophthalma coccineohirta Blake.

Male.—Black; head round, not as wide as the thorax, coarsely reticulated, clothed with long, coarse, scarlet pubescence; antennæ black; eyes round; thorax short, narrowed behind, pro- and mesothorax clothed similar to the head,

metathorax abruptly rounded, coarsely punctured; wings dark fuscous, marginal cell small, abruptly truncate at tip; first submarginal larger than the marginal, second subtriangular, receiving the first recurrent nervure, near the first submarginal, third distinct and extending beyond the marginal; legs black, with black hairs; abdomen ovate, basal segment clothed with erect black hairs; abdomen ovate, basal segment clothed with erect black hairs, apical half of second and the following segments clothed with long, coarse, scarlet pubescence; under side black, shining. Length 11 mm.; expanse of wings 20 mm.

Female.—Same as the male, with the exception of the second segment of the abdomen being entirely covered with coarse scarlet pubescence. Length 8.5–13 mm.

Hab.—California. (Mr. Iulich.)

Closely allied to *fulvohirta* Cresson, but may be distinguished by the marginal cell being smaller and the clothing much coarser.

Sphaerophthalma pulchra Smith.

Female.—Black; head small, narrower than the thorax and densely clothed with bright golden pubescence; thorax deeply notched at the sides and having a transverse curved fascia of golden pubescence a little beyond the middle; the thorax beneath and the legs have a pale ochraceous glittering pubescence; abdomen: the second segment has on each side at its base a large angular macula, and towards its apical margin on each side a transverse, oblong, subovate macula of reddish yellow; the three apical segments clothed with golden pubescence, the fifth having on each side a mixture of black and fuscous hairs. Length 19 mm. (Smith.)

Hab.—Mexico.

Sphaerophthalma Sumichrasti Sauss.

Male.—Head and thorax black, clothed with ochraceous pubescence, mesothorax black; wings hyaline, clouded at apex, marginal cell short, truncate at tip; abdomen above clothed with scarlet pubescence, apex black; eyes round. Length 13 mm.; expanse of wings 17 mm.

Female.—Head subquadrate, posterior angles rounded, clothed with dense ochraceous pubescence; eyes round, convex, polished; antennæ black; thorax short, subquadrate, somewhat wider than the head, narrowed posteriorly, disc clothed with black pubescence, margined laterally and posteriorly with ochraceous; legs black, clothed with yellowish hairs; abdomen ovate, second segment clothed with dense ochraceous pubescence, having on the disc a bilobate patch of black, somewhat resembling a horseshoe in form, extending to the anterior margin, third and fourth segments with black pubescence, the remaining ones ochraceous, apex black. Length 8.5–13 mm.



Hab.—Mexico.

Sphaerophthalma militaris Smith.

Female.—Bright brick-red; the head, legs, basal segment of the abdomen, a trilobate spot at the base of the second segment, an angular one on its apical margin, and also the four apical segments, black; all the black parts of the insect, except the legs, are clothed with black pubescence, on the legs and the red portions it is griceous. Length 13 mm. (Smith.)

Hab.—Jamaica.

Sphærophthalma occidentalis Linn.

Male.—Black; head rounded, clothed with scarlet pubescence; eyes large, round and prominent; antennæ and mandibles black; thorax robust, ovate, clothed on the disc with scarlet pubescence; metathorax roundly truncate, coarsely and confluent punctured; legs black, clothed with black hairs; wings ample, fuliginous, three submarginal cells, marginal cell short, abruptly truncate at tip; first submarginal pointed at either end, second elongate subquadrate, its transverso-cubital nervures sinuate, receiving the first recurrent nervure near the base; third submarginal subpentagonal, much narrowed beneath, its apical nervure confluent with the second recurrent; tegulæ clothed anteriorly with fine scarlet pubescence; abdomen ovate, basal segment petiolate, finely punctured, clothed with erect black hairs; second segment black, shining, minutely punctured, clothed with short, black pubescence, its apical margin and third and sixth segments clothed with scarlet pubescence, fourth and fifth with black; ventral surface shining, finely and remotely punctured; pubescence coarser than that of the female. Length 16–22 mm.; expanse of wings 30–40 mm.

Female.—Head round, not as wide as the thorax, dark rufous, densely clothed with scarlet pubescence, cheeks coarsely punctured, scape of antennæ castaneous, finely punctured, flagellum fuscous; mandibles black at base and tips; eyes round, polished; thorax robust, ovate, narrowed posteriorly, coarsely punctured, densely clothed on the disc with dense, scarlet pubescence; pro- and mesothorax armed on each side with an ovate tubercle; metathorax abruptly truncate, its posterior surface finely punctulate, lateral declivities of the thorax black, finely punctured; legs black, clothed with black hairs, femora finely punctured, intermediate and posterior tibiæ armed with spines, calcaria black; abdomen ovate, basal segment campanulate, black, finely punctured at apical margin; second segment blackish castaneous, finely punctured, with a broad band of scarlet pubescence, deeply emarginate at basal and apical margins, in some individuals almost forming two large ovate spots; third segment black, remaining segments clothed with scarlet pubescence; ventral surface black or castaneous, finely punctured. Length 16–27 mm.

Hab.—North America.

This is the largest and most conspicuous species we have, and is very abundant in individuals. The vestiture varies considerably, the pubescence is sometimes ochraceous or fulvous, more especially in the males. In some males the apical segments are entirely covered with scarlet pubescence, while others are banded with black.

Sphærophthalma andreniformis Smith.

Male.—Black, densely pubescent, that on the vertex and mesothorax bright ochraceous, on the legs and rest of the body it is cinereous, tinged with yellow on the abdomen above; the wings smoky hyaline, having a broad darker band on their apical margins; the abdomen petiolated, the petiole having a broad longitudinal groove, not quite reaching the apex, and on each side an obtuse tooth near its base; the abdomen is strongly punctured and shining. Length 9 mm.

Hab—Mexico.

Sphærophthalma creusa Cresson.

Female.—Black, closely and roughly punctured; head not wider than the thorax, piceous-black, with black pubescence; the vertex with golden ferrugin-

ous pubescence; eyes small, rounded, entire and convex; antennæ black, the flagellum sericeous; thorax elongate, slightly narrowed behind the middle, rufopiceous above, with dense golden ferruginous pubescence, the sides and beneath black, with sparse black pubescence; metathorax very abruptly truncate behind; legs entirely black, shining, with black pubescence; abdomen large, ovate, densely and finely punctured, black, with black pubescence, except the large basal segment above, which is densely clothed with golden ferruginous pubescence, almost concealing two large, ill-defined, nearly confluent, ferruginous spots on the disk; the pubescence on the upper surface of the third segment is mixed with golden; the node black, short, circular at tip and depressed at base, with a short emarginate process beneath; venter entirely black and somewhat shining. Length 16 mm. (Cresson.)

Hab.—Colorado.

This may be the female of *S. bioculata*.

Sphærophthalma antiguensis Fab.

Male.—Body with dense, bright scarlet red hairs above; beneath black; antennæ and inferior part of the head black; wings black violaceous; radial cellule truncate at tip; third cubital cellule pentagonal, contracted on the anal side, its apical nervures almost obsolete; metathorax black; abdomen, anterior declivity of the basal segment extending in an angle on the superior portion of the segment, black; petiole black; venter with a slight scarlet red band rather behind the middle. Length about nine-twentieths of an inch, 12 mm. (Say.)

Female.—Head very large, of a ferruginous scarlet, the parts of the mouth black; antennæ black; thorax of a ferruginous scarlet; abdomen black, clothed with black hairs, second segment scarlet, having sometimes a small black spot near the base; apical margins of the last three segments fringed with silvery pubescence; legs black, clothed with black hairs; spines black. Length 15 mm. (St. Farg.)

Hab.—Antigua, Mexico.

Sphærophthalma medea Cresson.

Female.—Deep black, coarsely punctured; head entirely black, suborbicular, not wider than the thorax, clothed with coarse black pubescence; eyes small, rounded, entire and convex; antennæ black, the flagellum sericeous; thorax elongate, slightly narrowed behind the middle, clothed above with dense yellowish ferruginous pubescence, on the sides and beneath with black pubescence; abdomen ovate, black, closely punctured, the punctures not so rough as those of the thorax; the large basal segment above obscure ferruginous and densely clothed with yellowish ferruginous pubescence, the extreme base, the sides and the rest of the abdomen with black pubescence. Length 14.5 mm. (Cresson.)

Hab.—Colorado.

Sphærophthalma bioculata Cresson.

Male.—Black; closely punctured, densely clothed with long black pubescence; head entirely black; eyes small, round, entire and very convex; antennæ nearly as long as the head and thorax, black, the flagellum sericeous; thorax ovate, clothed above with long, dense, yellowish ferruginous or golden yellow pubescence, beneath with black pubescence, as well as the metathorax, which is broad,

rather abrupt behind and coarsely reticulated; tegulæ punctured, shining; wings ample, blackish, sometimes slightly paler about the middle, with a longitudinal subhyaline streak in the second submarginal and second discoidal cells; marginal cell short, broadly truncate at tip and not exceeding the tip of the third submarginal cell; three submarginal cells, the first longer than the marginal, pointed at either end; the second as long as the marginal, pointed at base and greatly narrowed towards the marginal, receiving the first recurrent nervure about one-third from the base; the third submarginal subobsoletely defined, short, the tip extending beyond the marginal cell and pointed, the side nervures descending almost parallel below the middle to the cubital nervure, where the apical nervure becomes confluent with the second recurrent nervure; legs deep black, with black pubescence; abdomen oblong ovate, gradually narrowed to the tip, black, somewhat shining, closely and finely punctured, clothed above with dense black pubescence, especially on the apical margins of the third and following segments, large basal segment clothed, except at base, with short, dense, yellowish ferruginous or golden yellow pubescence, but not so dense as to hide two large, round, yellowish ferruginous spots, one on each side behind the middle of the segment; these spots appear sometimes more or less confluent, having the appearance of a broad band; the node is short and shining black, with a sparse black pubescence except on the apical margins of the segments, where it is dense. Length 11-17 mm.; expanse of wings 19-28.5 mm. (Cresson.)

Hab.—Colorado.

Sphærophthalma asopus Cresson.

Male.—Black, with large, close, deep punctures, and long black pubescence; head, above the antennæ, clothed with long red pubescence; eyes small, rounded, entire and convex; antennæ black at base, the flagellum brown sericeous; thorax: prothorax, mesothorax and scutellum rufous and clothed with long, dense, bright red pubescence; pleura and metathorax rufo-piceous, the latter more reddish at base, reticulate with coarse punctures and clothed with long thin black pubescence; tegulæ with reddish pubescence; wings blackish, paler about the middle, with a subhyaline dash in the second submarginal and second discoidal cells; marginal cell short, very abruptly and broadly truncate at tip; two distinct submarginal cells, the first as long as the marginal, the second a little shorter, receiving the first recurrent nervure about the middle; the third submarginal cell obsoletely defined; legs entirely black, with black pubescence; abdomen ovate, gradually narrowed behind, the punctures not so large as those of the thorax; large basal segment rufous, less bright beneath, with a blackish longitudinal stripe on the dividing suture between the dorsal and ventral surface, except extreme base and apex is clothed with a dense, bright red pubescence; on the rest of the abdomen the pubescence is deep black, large ventral segment with a central longitudinal carina, more sharply developed on the posterior half of the segment. Length 11.5 mm.; expanse of wings 19.5 mm. (Cresson.)

Hab.—Colorado.

This may be the male of *S. ægina*, as it resembles that species in the distribution of color.

Sphærophthalma hector Blake.

Male.—Head black, round, coarsely punctured, clothed with coarse ferruginous pubescence; eyes small, round, prominent; antennæ black, scape closely punctured.

tured; thorax ovate, posteriorly narrowed, pro- and mesothorax clothed above with dense, coarse, ferruginous pubescence, metathorax roundly truncate, coarsely reticulate, dorsal groove not extending to the middle, sides closely punctured; wings fuliginous, marginal cell subovate, truncate at tip, first submarginal nearly as large as the marginal, second wide beneath, receiving the recurrent nervure before the middle, its apical nervure arcuate; legs black, with scattered black hairs; abdomen ovate, basal segment campanulate, black, closely punctured, second segment fulvo-ferruginous, finely punctured, bearing a scattered ferruginous pubescence, its basal and apical margins black, remaining segments black, clothed with dark ferruginous pubescence; ventral surface of second segment with a longitudinal carina. Length 12 mm.; expanse of wings 19 mm.

Hab.—Kansas. Collection of Mr. Norton.

This may prove to be the male of *S. agina* Cresson.

Sphærophthalma monticola Cresson.

Male.—Black, closely and deeply punctured; head and thorax clothed above with long, dense, grayish ochraceous pubescence, beneath with black pubescence; eyes small, round, entire and very convex; antennæ black at base, the flagellum brown sericeous, metathorax rounded, rather abrupt behind, reticulate with coarse punctures and clothed with black pubescence; wings blackish, paler about the middle; marginal cell short, truncate at tip, not exceeding the tip of the third submarginal cell; three submarginal cells, the first as long as the marginal, the second shorter, much narrowed towards the marginal, receiving the first recurrent nervure one-fourth from the base, the third submarginal subobsoletely defined, subtriangular, extending beyond the marginal cell, pointed towards the apex of the wing and much narrowed beneath, the apical nervure confluent with the second recurrent nervure; a curved subhyaline line commences at the stigma and runs through the first and second submarginal cells and at the tips of the latter it becomes confluent with a spot on the upper margin of the second discoidal cell; legs piceous black, with black pubescence, the tibiæ and tarsi more or less tinged with brownish; abdomen short, broad ovate, or subglobose, ferruginous, or honey yellow above and beneath, closely and rather deeply punctured, clothed with black pubescence, rather thin on the large basal segment and dense on the apical margins of all the segments; the apex with a patch of glittering grayish ochraceous pubescence, the venter also sprinkled with a similar pubescence; the node sometimes blackish, rugose, swollen at tip, with a prominent central carina beneath. Length 8.5-11 mm.; expanse of wings 14-17 mm. (Cresson.)

Hab.—Colorado.

Sphærophthalma hispida n. sp.

Male.—Head transversely rounded, narrowed behind the eyes, black, closely punctured, clothed with erect black pubescence; mandibles and scape of antennæ black, the latter closely punctured, flagellum piceous; eyes large, round and prominent; thorax elongate ovate, narrowed posteriorly, closely punctured, thinly clothed with erect black hairs, metathorax roundly truncate, coarsely reticulate; legs black, clothed with black hairs; wings fuliginous, marginal cell ovate, roundly truncate at tip, first submarginal cell as large as the marginal, second triangular, its transverso-cubital nervures sinuate, receiving the first recurrent nervure before the middle; a hyaline spot common to the third dis-

coidal and second submarginal cells, terminating in a streak, extending to the first submarginal cell; tegulæ round, polished; abdomen roundly ovate, basal segment petiolate, black, coarsely punctured, clothed with erect black hairs, second segment dark ferruginous, finely punctured, clothed with long fulvo-ferruginous pubescence, remaining segments black, densely clothed with long, coarse, black pubescence; ventral surface entirely black, second segment finely punctured, shining. Length 9 mm.; expanse of wings 16 mm.

Hab.—Colorado.

This species is allied to *S. monticola* Cresson, but may be separated by the head and thorax being black, and the ventral surface entirely so, and by the wings being fuliginous, whereas in *monticola* they are fuscous.

Sphærophthalma castor Blake.

Male.—Black; head rounded, closely punctured, clothed with erect black hairs; eyes round, prominent; thorax elongate subquadrate, anterior angles rounded, densely punctured, thinly clothed with long black pubescence, metathorax roundly truncate, closely reticulate; tegulæ round, polished; wings ample, blackish, marginal cell elongate subquadrate, truncate at tip, second submarginal subtriangular, wide beneath, receiving the first recurrent a little before the middle, third subpentagonal, so much narrowed at base that its extreme nervure is opposite to and joins the second recurrent; legs black, thinly clothed with black hairs; abdomen ovate, petiolate, petiole closely punctured, having a longitudinal carina on each side, clothed with erect blackish hairs, disc dark ferruginous, base and apical margin black, second segment having the basal half castaneous, apical half bright ferruginous, apical margin and following segments black, clothed with dense black pubescence; under side of second segment castaneous, the abdominal fovea large and deep. Length 12–18 mm.; expanse of wings 19–27 mm.

Hab.—Kansas, Texas.

In some individuals the petiole and basal half of second abdominal segment is entirely black. The neuration of the wings in this species is similar to that of *S. contracta* described by Say.

Sphærophthalma macer n. sp.

Male.—Head transversely rounded, black, finely punctured, thinly clothed with mixed pale and black hairs; mandibles and antennæ black, eyes round and prominent; thorax ovate, closely punctured, black, metathorax roundly truncate, coarsely reticulate, lateral declivities of the mesothorax smooth and shining; legs black, thinly clothed with pale hairs, as well as thorax beneath; wings fuliginous, marginal cell ovate roundly truncate at tip, first submarginal cell large, pointed at base and apex, second subtriangular, and having a faint hyaline streak longitudinally through its entire length, and receiving the first recurrent nervure before the middle; tegulæ round, finely and remotely punctured anteriorly; abdomen ovate, basal segment petiolate, black, coarsely punctured, second and following segments finely punctured, feebly pubescent with black, fusco-ferruginous, second segment paler on disc, apical margins fringed with blackish pubes-

cence, except apex, which is pale yellow, lateral carinæ of second segment prominent, ventral surface somewhat paler than above, apex black. Length 8-12 mm.; expanse of wings 14-20 mm.

Hab.—Kentucky, Colorado, Montana.

This species is allied to *S. castor* Blake, but can easily be separated by the abdomen being entirely, except basal segment, fusco-ferruginous, whereas in that species the apical segments are black. In some specimens the pubescence is entirely black.

Sphærophthalma fenestrata St. Farg.

Male.—Black; head and thorax with black pubescence; wings blackish, marginal cell truncate at tip; abdomen petiolate, second segment pale ferruginous, nearly naked, apical segments clothed with black pubescence; eyes round. Length 11-13 mm.; expanse of wings 19 mm.

Hab.—Atlantic States.

Sphærophthalma ochracea Blake.

Male.—Black; head, thorax and abdomen, with exception of the first, and basal half of second segments, clothed with long, erect, ochraceous pubescence; head round, closely punctured; eyes prominent, round, polished; antennæ black, scape finely punctured; thorax robust, ovate, metathorax abruptly truncate, coarsely reticulate, flanks coarsely punctured; wings fuliginous, marginal cell short, truncate at tip, three distinct submarginal cells, first longer than the marginal, the second subquadrate, receiving the first recurrent nervure near the base, the third pentagonal, extending beyond the marginal; tegulæ large; legs black, clothed with black hairs; abdomen ovate, basal segment coarsely punctured, clothed with erect black hairs, second more moderately punctured; under side black. Length 16 mm.

The female differs in having the sculpture of thorax much coarser and the pubescence somewhat paler. Length 12 mm.

Hab.—Nevada. (Morrison.)

This species closely resembles *aureola* Cresson, but may be distinguished by the smaller size of the head.

Sphærophthalma creon Blake.

Male.—Ferruginous; head round, closely punctured, thinly clothed with erect black hairs; scape of antennæ castaneous, flagellum piceous; eyes round, prominent; thorax ovate, densely punctured, sparsely clothed with erect black hairs, metathorax roundly truncate, coarsely reticulate; wings moderate, fuscous, subhyaline from base to beyond the middle, marginal cell subovate, roundly truncate at tip, three submarginal cells, second subtriangular, receiving the first recurrent nervure at middle, third narrowed beneath, receiving the second recurrent close to its apical nervure; tegulæ round, tufted posteriorly with pale hairs; legs black, thinly clothed with whitish hairs; abdomen ovate, petiolate, basal segment densely punctured, second segment fulvo-ferruginous, darker at base, finely and closely punctured, apical margin black, third, fourth and fifth segments black, clothed with long black pubescence, apical segments with pale yellowish; ventral segments fringed with pale yellowish hairs; apex with two sharp longitudinal carinæ. Length 11 mm.; expanse of wings 14 mm.

Hab.—Texas. One specimen.

Sphærophthalma bexar Blake.

Male.—Black; head rounded, not as wide as the thorax, closely punctured, thinly clothed with erect black hairs; antennæ black, as long as the head and thorax; eyes round, prominent; thorax subquadrate, slightly narrowed posteriorly, prothorax closely covered with confluent punctures, those on the mesothorax finer; metathorax roundly truncate, coarsely reticulated, dorsal groove not extending to the middle; wings ample, fuliginous, slightly paler about the middle, marginal cell elongate subquadrate, abruptly truncate at tip, first submarginal nearly as large as the marginal, second receiving the first recurrent nervure a little before the middle, third pentagonal, its extreme nervure extending beyond the marginal; tegulæ ovate, punctured; legs black, clothed with black hairs; abdomen subpetiolate, first segment black, closely punctured, second bright ferruginous, finely punctured, thinly clothed with reddish pubescence; remaining segments blackish, punctured, clothed with black pubescence; under side of second segment bearing a short longitudinal carina towards the apical margin, ventral segments same as above. Length 9-12 mm.; expanse of wings 15-21 mm.

Hab.—Texas.

Sphærophthalma waco Blake.

Female.—Dark fuscous; head quadrate, posterior angles rounded, not quite as wide as the thorax, closely reticulated, clothed with erect black hairs; scape of antennæ black, flagellum piceous; mandibles black; eyes round, polished; thorax short, subquadrate, closely reticulated, metathorax abruptly truncate; legs black, clothed with fuscous hairs, intermediate and posterior tibiæ armed with spines; abdomen: basal segment subsessile with the second, closely punctured, clothed with black hairs; second segment bright ferruginous, finely reticulated, clothed with scattered ferruginous pubescence and a few black hairs at base; apical segments dark fuscous, fringed with dark ferruginous pubescence; under side chestnut brown, coarsely punctured, clothed with scattered, pale, glittering hairs. Length 11 mm.

Hab.—Texas.

Taken on sandy roads.

Sphærophthalma admetus Blake.

Male.—Head and thorax black; the former round, not as wide as the thorax, coarsely punctured, thinly clothed with erect hairs; antennæ black; eyes round, prominent; thorax ovate, narrowed posteriorly, coarsely punctured, metathorax roundly truncate, deeply reticulate; wings fuliginous, marginal cell short, roundly truncate at tip, second submarginal subtriangular, its basal nervure sinuate, receiving the first recurrent nervure before the middle, third submarginal indistinctly defined; legs black, thinly clothed with black hairs; abdomen ovate, petiolate, basal segment black, coarsely punctured, second and following segments dark ferruginous, closely punctured, thinly clothed with erect black hairs, margins of the segments fringed with black pubescence. Length 13 mm.; expanse of wings 18 mm.

Hab.—Texas.

This may be the male of *S. waco*.

Spherophthalma macra Cresson.

Male.—Elongate, rather slender, black, with long, dense, coarse, black pubescence, and close, rather rough punctures; eyes small, round, entire and very convex; mandibles rufo-piceous at base; antennæ black, the flagellum sericeous; thorax slightly narrowed behind, the metathorax rounded, somewhat abrupt behind and reticulate with coarse punctures; wings blackish, with two or three pale streaks beneath the stigma; marginal cell broadly truncate at tip, not exceeding the tip of the third submarginal cell; two distinct submarginal cells, the first about as long as the marginal, the second a little short, much narrowed towards the marginal and receiving the first recurrent nervure near the base; third submarginal cell subrhomboidal, indistinctly defined, the outer nervure being obsolete; legs black, with black pubescence; abdomen petiolate, ovate, much narrowed towards the tip, black, with long, dense, black pubescence above, shining beneath; large basal segment above orange ferruginous, with pubescence of the same color and close, rather deep punctures; the node rather elongate, swollen at tip, coarsely rugose, the base depressed, with a short, stout tubercle on each side; venter shining and sparsely pubescent, the second segment closely punctured. Length 11 mm.: expanse of wings 15 mm.

Var. *β*.—Head and thorax black, with grayish pubescence; abdomen more or less reddish.

Hab.—Texas.

Closely allied to *S. fenestrata* St. Farg., (the supposed male of *S. ferrugata* Fab.) but is distinct.

Spherophthalma apicalata Blake.

Male.—Head round, black, clothed with pale golden pubescence; antennæ black; eyes round, prominent; thorax coarsely punctured, pro- and metathorax clothed with scattered pale golden pubescence, the latter roundly truncate, scutellum black; wings fuscous, paler about the middle, marginal cell sublanceolate, rounded at tip, first submarginal as large as marginal, second subtriangular, receiving the first recurrent nervure about the middle, third extending as far as the marginal; tegulæ large; legs black, clothed with pale glittering hairs, calcaria white; abdomen petiolate, petiole black, closely punctured, clothed with erect silvery hairs; second segment ferruginous, finely punctured, apical margin black, disc clothed with scattered erect hairs, third, fourth and fifth segments clothed with silvery pubescence, apex black; under side same as above. Length 11 mm.; expanse of wings 19 mm.

Var. *a*.—Second abdominal segment entirely ferruginous; third, fourth and fifth segments sparsely clothed.

Hab.—Mexico. Prof. F. Sumichrast.

Spherophthalma canella Blake.

Male.—Black; head narrower than the thorax, subquadrate, posterior angles rounded, closely punctured, clothed with long black erect hairs, eyes large, round, convex; antennæ black, having the scape clothed with scattered black hairs; thorax subquadrate, narrowed posteriorly, mesothorax elevated, closely punctured, metathorax roundly truncate, having the punctures much coarser and denser; wings moderate, blackish, paler about the middle, marginal cell abruptly truncate at tip; three submarginal cells, the second subtriangular, receiving the

first recurrent nervure a little before the middle, third, obsolete, extending a little beyond the marginal cell; legs black, clothed with long hairs of the same color, tibial spurs long; abdomen ovate, gradually narrowed behind, basal segment nodose, coarsely punctured; second segment shining ferruginous, darker towards the base, finely punctured, thinly clothed with blackish hairs, lateral carinæ distinct; apical segments clothed with long dense, black pubescence, under side of entire abdomen closely punctured. Length 7 mm.; expanse of wings 13 mm.

Hab.—Texas.

Sphærophthalma macilenta Blake.

Male.—Black; head rounded, not as wide as the thorax, closely punctured, thinly clothed with erect black hairs; eyes round, prominent; antennæ black; thorax robust, gradually narrowed behind, closely punctured, thinly clothed with erect black hairs; metathorax abruptly rounded; wings moderate, fuliginous, marginal cell broad, short, and obtusely rounded at tip, second submarginal subquadrate, not as large as the first, receiving the first recurrent nervure a little before the middle, third submarginal obsolete; legs black, thinly clothed with pale hairs, calcaria long, rufo-piceous; abdomen elongate ovate, basal segment elongate, much enlarged at apex, shining, closely punctured; second segment ferruginous, shining, finely punctured, thinly clothed with erect blackish hairs; lateral carinæ distinct, ventral surface having a central black line; apical segments closely fringed with long black hairs. Length 8.5 mm.; expanse of wings 13 mm.

Hab.—Texas.

Sphærophthalma obscura Blake.

Male.—Head black, rounded, closely punctured, clothed with obscure black and golden hairs; eyes round, polished; antennæ black, scape finely punctured; thorax subovate, narrowed posteriorly, closely punctured, prothorax clothed with obscure yellow hairs, metathorax coarsely reticulated; tegulæ convex, punctured; wings fuliginous, paler about the middle, marginal cell elongate ovate, rounded at tip, first submarginal moderately large, second subquadrate, receiving the recurrent nervure before the middle, third obsolete; legs black, clothed with black hairs, calcaria pale; abdomen petiolate, black, closely punctured, bearing a few erect black hairs; second and following segments dark brown, closely punctured, apical margins clothed with black pubescence, apex bearing a few obscure yellow hairs. Length 8.5 mm.; expanse of wings 13 mm.

Hab.—Massachusetts. Collection of Prof. Agassiz.

Sphærophthalma gibbosa Say.

Male.—Body black; with numerous gray, but not concealing, hairs; densely punctured, punctures large on the head and trunk; wings hyaline; at tip and including the radial cellule, fuliginous; stigma moderate; third cubital cellule incomplete; abdomen, first segment petioliform, as long as the second and somewhat gibbous at tip, distinguished from the second by a deep stricture. Length over three-tenths of an inch, 11 mm. (Say.)

Hab.—Indiana.

Resembles *scrupea*, but is larger, has a stigma and longer petiole; wings dusky at tip, and the petiole more gibbous at tip.

Sphærophthalma Wilsoni Cresson.

Male.—Deep shining black; head small, subglobose, rather densely clothed with silvery cinereous pubescence; eyes small, rounded, prominent and olive-green; antennæ black; thorax closely punctured, the prothorax broad and rather densely clothed with silvery white pubescence as well as the pleura; mesothorax deeply punctured, clothed with short black pubescence; scutellum clothed with long cinereous pubescence, with its anterior margin flattened, smooth and shining, and armed on each extreme side with a stout tooth, obtusely bifid or constricted at tip; postscutellum silvery on the middle and sides; metathorax covered with numerous interlacing, well defined carinæ with appressed, silvery white pubescence; tegulæ black, polished; wings hyaline, the anterior pair with a median transverse band, and the apical fourth dark fuscous; nervures blackish, marginal cell short, truncate at tip; two complete submarginal cells, the second largest and receiving the first recurrent nervure near the base; posterior wings hyaline, slightly dusky at tips; legs slender, black, clothed with whitish pubescence; apical spurs of four posterior tibiæ long and whitish; abdomen black, the first segment small, narrow at base and swollen at tip, roughly punctured, with a small tubercle on each side of the base and middle; apical margin densely clothed with silvery white pubescence; second segment large, convex, shining black, finely punctured, clothed with black pubescence, the basal third with silvery white pubescence; third and fourth segments densely clothed with silvery white pubescence, the remaining segments with dense black pubescence. Length 9.5 mm.; expanse of wings 18 mm. (Cresson.)

Hab.—Cuba.

Sphærophthalma azteca Blake.

Male.—Black; head not as wide as the thorax, subquadrate, clothed with dense, pale golden pubescence; antennæ and mandibles black; eyes round, prominent; thorax robust, narrowed posteriorly, pro- and mesothorax rugose, the former with pale golden pubescence, the latter elevated, metathorax coarsely reticulated, abruptly truncate behind; wings fusco-hyaline, marginal cell short, abruptly truncate at tip, first submarginal about as large as marginal, second receiving the first recurrent nervure a little before the middle, third about equal to the second and extending a little beyond the marginal; legs petiolate coarsely punctured, clothed with scattered, erect, whitish hairs; second segment rugulose, with a broad band of pale golden pubescence at the base, posterior half clothed with black, third and fourth segments clothed with pale golden pubescence, apex black; under side of second segment finely punctured, thinly clothed with pale hairs; margins of ventral segments fringed with pale golden pubescence. Length 12 mm.; expanse of wings 16 mm.

Hab.—Mexico. Prof. F. Sumichrast.

This species is closely allied to *Wilsoni* Cresson, but may be distinguished by the large size of abdomen and the clothing, which is much more dense, and the clouding of the wings, which is more suffused; the margins of the fuscous portions in *Wilsoni* being sharply defined.

Sphærophthalma montezumæ Spin.

Female.—Head black, with black hairs, front and vertex clothed with depressed reddish golden pubescence; antennæ black; thorax black, with black hairs, the dorsum clothed with depressed reddish golden pubescence; abdomen black, ven-

tral segments fringed with silvery pubescence; first segment above clothed with black hairs; the remaining segments clothed with depressed reddish golden pubescence; legs black, with black hairs, spines black. Length 9 mm.

Hab.—Mexico.

Sphærophthalma melanosoma Blake.

Female.—Deep black, head rounded, with narrow lunate band of pale golden pubescence between the eyes; antennæ black, scape clothed with fine glittering hairs; eyes round, prominent; thorax subquadrate, narrowed posteriorly, coarsely reticulated, anterior angles armed with a short tooth; mesothorax with two subovate spots of pale golden pubescence, behind which, on the metathorax, are two narrow longitudinal lines of the same; legs black, thinly clothed with glittering white hairs, intermediate and posterior tibiæ armed with a row of spines, calcaria white, tipped with brown; abdomen ovate, clothed with dense black pubescence, second segment with two small, ovate, dusky fulvous maculæ at the base, and two larger ones of the same before the apical margin, on the middle of which is a small round spot of pale golden pubescence, the apical segments adorned with a row of similar spots; ventral segments and lateral sutures clothed with pale golden pubescence. Length 16 mm.

Hab.—Panama. Collection of Mr. Norton.

Sphærophthalma iztapa Blake.

Male.—Black; head round, not as wide as the thorax, clothed with coarse fulvous pubescence; antennæ and mandibles black; eyes round, prominent; thorax short, dilated at middle, pro- and disc of metathorax clothed with coarse fulvous pubescence, the latter roundly truncate, coarsely punctured, clothed with long, pale, erect hairs; wings fuliginous, subhyaline at middle, marginal cell subovate, abruptly truncate at tip, second submarginal elongate, pointed towards the base, near which it receives the recurrent nervure; tegulæ round, finely punctured; legs black, clothed with pale hair, calcaria long; abdomen ovate, second segment finely punctured, with a broad, lunate, polished, dull yellowish band on the disc, bearing a thin scattered pubescence, posterior margin and third segment clothed with black pubescence, apical segments clothed with pale fulvous; under side of entire insect sprinkled with pale hairs. Length 13 mm.; expanse of wings 23.5 mm.

Hab.—Honduras. Collection of Mr. Norton.

This may prove to be the male of *proserpina*.

Sphærophthalma proserpina Blake.

Female.—Black; head round, not as wide as the thorax, clothed with dense bright cupreous pubescence; antennæ and mandibles black; eyes round, prominent; thorax robust, subquadrate, sides produced into an obtuse tooth, anterior angles acute, mesothorax black, rugose; metathorax abruptly truncate behind, clothed with dense bright ferruginous pubescence, having a central black patch on the posterior surface; legs black, finely punctured, clothed with silvery hairs, intermediate and posterior tibiæ armed exteriorly with long sharp spines; abdomen ovate, closely punctured, basal segment dentate at base, second segment with four pale luteous spots, thinly clothed with pubescence of the same color, the two at the base round, those near the apical margin ovate, the fourth segment and the sides of the others clothed with pale golden pubescence; lateral carina distinct; under side of entire insect clothed with pale hairs. Length 12 mm.

Hab.—Honduras. Collection of Mr. Norton.

Sphaerophthalma mixtura Blake.

Female.—Ferruginous; head round, scarcely as wide as thorax, vertex clothed with pale golden pubescence; eyes prominent, flagellum of antennæ fuscous, slightly pruinose, tips of mandibles blackish; thorax subovate, narrowed posteriorly, clothed above with pale golden pubescence; metathorax obliquely truncate, flanks coarsely punctured; legs thinly clothed with white hairs, spines of the tarsi black; abdomen ovate, closely punctured, thinly clothed with mixed black and yellow hairs, apical half of second segment pale ferruginous, margin blackish, apical margin above and beneath fringed with glittering whitish hairs. Length 7 mm.

Hab.—Colorado.

Sphaerophthalma Cressoni Blake.

Female.—Black; clothed with dense golden pubescence; head subquadrate, somewhat narrower than the thorax, posterior angles rounded; antennæ rufopiceous, flagellum clothed with scattered glittering hairs; eyes prominent, polished, rounded; thorax subovate, narrowed posteriorly and abruptly truncate, mesothorax with lateral carinæ, disc black, coarsely granulate, with a few scattered black hairs and margined with dark golden pubescence; abdomen ovate, deeply punctured, basal segment black, the apical margin fringed with pale pubescence, second segment with two ovate fulvous spots at the basal margin and a broad anteriorly emarginate band of the same color near the apical margin, clothed with deep golden pubescence; third and fourth segments black, with a longitudinal line of paler pubescence, forming the black ground into two lateral quadrate spots; fifth and sixth segments clothed entirely with pale golden pubescence, apex black; ventral segments fringed with pale golden hairs; legs black, intermediate and posterior tibiæ armed with a row of spines and clothed with long pale hairs; entire insect beneath clothed with long pale glittering hairs. Length 19 mm.



Hab.—Mexico.

Sphaerophthalma Nortoni Blake.

Female.—Head rounded, wider than the prothorax, posterior angles more acute than in the preceding species, coarsely punctured, clothed with short golden pubescence, interspersed with longer hairs; antennæ black, naked; eyes round, prominent, polished; thorax black, narrowed posteriorly, somewhat constricted, coarsely punctured, with a broad discal band clothed with appressed, bright golden pubescence, metathorax slightly truncate, sides clothed with a dense silvery pile; abdomen ovate, coarsely punctured, basal segment clothed with pale golden pubescence; second segment with four orange spots, clothed with a scattered golden pubescence, the two at the basal margin subtriangular, those on the apical margin are larger and nearly joined together, third and fourth segments black, fifth and sixth with golden pubescence, apex black; ventral segments fringed with long pale hairs; legs black, middle and posterior tibiæ and tarsi clothed with silvery hairs, those on the tarsi being longer and much more dense; under side of thorax and abdomen clothed with obscure grayish hairs. Length 17 mm.



Hab.—Mexico.

Closely resembles *S. Cressoni*, but is readily distinguished by the bands on the thorax and by the less robust form.

Sphaerophthalma toluca Blake.

Female.—Black; head rounded, clothed with dense, pale, ochraceous pubescence; antennæ black; eyes round, prominent; thorax ovate, narrowed posteriorly, clothed with coarse, black, meso- and metathorax with coarse ochraceous pubescence, sides of the latter black, abruptly truncate; legs black, clothed with scattered glittering hairs, intermediate and posterior tibiæ armed with spines; abdomen ovate, basal segment clothed with pale hairs; second segment closely punctured, having two small ovate spots at the base and a broad, internally emarginate band of coarse ochraceous pubescence, pointed towards the apex; apical segments clothed with similar pubescence; under side of entire insect clothed with pale hairs. Length 11 mm.



Hab.—Mexico. Prof. F. Sumichrast.

Sphaerophthalma luteola n. sp.

Female.—Head black, rounded, not quite as wide as the thorax, clothed on vertex with pale golden pubescence, front and mouth densely, with pale luteous pubescence; eyes large, round and prominent; antennæ fuscous, cheeks finely and confluent punctured; thorax ovate, black, closely punctured, clothed above with pale golden pubescence, metathorax obliquely truncate, its posterior surface clothed with white pubescence; legs nigro-castaneous, clothed with long, glittering white hairs, femora very finely and remotely punctured, intermediate and posterior tibiæ armed with fuscous spines; abdomen black, ovate, basal segment campanulate, short and sessile with the second, its apical margin fringed with dense, pale, luteous pubescence; second segment coarsely reticulate and clothed with black pubescence, its apical margin and remaining segments densely clothed with pale golden pubescence; ventral surface finely punctured, the apical margins fringed with white pubescence; entire insect sparsely clothed with long glittering white hairs. Length 10–12 mm.

Hab.—Utah, Kansas.

This species is allied to *S. toluca* Blake, but differs from that by the absence of the pubescent spots. It may possibly prove to be the female of *S. flavida*.

Sphaerophthalma ariadne Blake.

Female.—Head rounded, not quite as wide as the thorax; black, rugose, with a few scattered erect hairs; antennæ black; eyes round, polished; thorax short, suddenly narrowed behind, clothed with bright golden pubescence; mesothorax with a triangular black, granulate patch; mesothorax abruptly truncate; sides deeply compressed, coarsely punctured, clothed with silvery pubescence; legs black, clothed with scattered silvery hairs, intermediate and posterior tibiæ armed exteriorly with a row of spines; abdomen ovate, basal segment black, its apical margin clothed with silvery pubescence; second segment coarsely punctured, clothed with bright golden pubescence, having on the disc a large ovate black patch extending to the basal margin, on each side of which is a small one of the same color with thin black pubescence; apical margin black; third and fourth segments clothed with dense black pubescence, fifth bright golden,



apex black; under side black, closely punctured, ventral segments fringed with pale golden mixed with silvery hairs. Length 7-11 mm.

Hab.—Mexico. Prof. F. Sumichrast.

In some specimens the head is clothed with a dense golden pubescence.

Spherophthalma solola Blake.

Female.—Black; head rounded, densely clothed with coarse, deep golden pubescence; antennæ black; eyes round, prominent; thorax short, clothed similar to the head, except a round black patch on the disc of mesothorax, which is laterally produced into obtuse angles, metathorax abruptly truncate behind; legs black, thinly clothed with pale hairs; intermediate and posterior tibiæ armed exteriorly with a row of strong spines, calcaria black; abdomen broadly ovate, closely punctured, basal segment small, second segment having a broad emarginate band of deep golden pubescence at its apical margin and two round spots of the same color placed laterally near the base; third segment clothed with deep black, apical segments with pale golden pubescence; under side coarsely punctured, lateral carinæ distinct, ventral segments fringed with pale glittering hairs. Length 7-8.5 mm.

Hab.—Guatemala. Prof. F. Sumichrast.

Closely allied to *S. Cressoni*.

Spherophthalma arachnoides Smith.

Female.—Black; densely pubescent, that on the head ochraceous; thorax and legs covered with ochraceous pubescence, the former having a large rounded patch of black on the disc; the abdomen is also covered with ochraceous pubescence, the second segment having a large trilobate black pubescent patch, which extends from the basal to the apical margin of the segment; the fifth and sixth segments are covered with black pubescence, the sides being pale. Length 12 mm.



Hab.—Mexico.

A very distinct and well marked species. In the series before me the individuals vary in length from 11 mm. to 14 mm.

Spherophthalma formosa Blake.

Female.—Head quadrate, slightly wider than the thorax, clothed with dense bright golden pubescence, interspersed with erect hairs of the same color; antennæ piceous, mandibles rufo-piceous, tips black; eyes round, prominent; thorax short, subovate, finely reticulated, anterior margin fringed with deep golden pubescence, behind which is a lunate patch of brownish black, apical half clothed with glittering pale golden pile, metathorax roundly truncate, with a small obtuse black tooth on each side; sides of thorax clothed with silvery pubescence; legs rufo-piceous, clothed with glittering silvery hairs, intermediate and posterior tibiæ armed with a row of spines, posterior femora with an acute tooth, calcaria pale yellow tipped with brown; abdomen ovate, apical margin of basal segment clothed with silvery pubescence, second segment clothed with glittering, pale golden pile, with a round patch of black pubescence at the base, connected with the apical margin, which is of the same color, by a nar-



row line, third and fourth segments clothed with pale, the fifth with dark golden pubescence, apex black; under side closely punctured, thinly clothed with silvery hairs, lateral sutures fringed with silver, ventral segments same as above. Length 6.5-12 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Sphærophthalma balopilus Blake.

Female.—Head quadrate, wider than the thorax, posterior angles subacute, clothed with dense golden pubescence; antennæ rufo-piceous; eyes round, prominent; thorax subovate, closely reticulate, narrowed posteriorly, clothed with golden pubescence, mesothorax with a subcordate black patch on the disc, metathorax abruptly truncate; legs rufous, thinly clothed with fine, glittering hairs, calcaria pale; abdomen ovate, second segment thinly clothed with glittering golden pile, on the disc is a round, brown-black spot connecting with the apical margin, which is black, remaining segments clothed with golden pubescence; ventral segments fringed with pale hairs. Length 8-10 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Sphærophthalma altamira Blake.

Female.—Head rounded, not as wide as thorax, clothed with bright golden pubescence, interspersed with erect hairs; antennæ and mandibles black; eyes round, prominent; thorax short, slightly dilated at middle, closely reticulated, anterior angles acute, mesothorax black, metathorax abruptly truncate, clothed with bright golden pubescence, a round black spot on the disc, on each side of which is a small tubercle; legs black, thinly clothed with glittering hairs; abdomen ovate, narrowed to apex, basal segment black, closely punctured, apical margin clothed with bright, pale golden pubescence; second segment thinly clothed with glittering golden pubescence, bearing on disc a large subtriangular black patch, below which the tegument has a pale rufous tinge; apical margin fringed with silvery pubescence, third segment black, apical segments adorned with pale golden pubescence; lateral sutures fringed with silvery pile; under side dark ferruginous. Length 8.5-9 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Sphærophthalma xalisco Blake.

Female.—Head round, not as wide as thorax, clothed with bright golden pubescence; scape of antennæ and mandibles rufous, tips of the latter black; eyes round, large, prominent; thorax short, subovate, closely reticulate, mesothorax black, metathorax clothed with bright golden pubescence, roundly truncate behind; legs rufo-piceous, clothed with scattered glittering hairs, intermediate and posterior tibiæ armed with spines, calcaria white; abdomen ovate, basal segment clothed with silvery pubescence on its apical margin, second segment black, having a broad band of fine, golden pubescence, slightly contracted at the middle, third with a small central patch of pale pubescence, following segments similarly clothed; under side dark chestnut brown, irregularly punctured. Length 5.5-6.5 mm.



Hab.—Mexico. Prof. F. Sumichrast.

Spherophthalma Ulkei Cresson.

Female.—Head large, broader than the thorax, black, densely and coarsely punctured, with a very fine, appressed, silvery pile, glittering in certain lights and a sparse, erect, black pubescence; on the clypeus the pubescence is long dense and tinged with reddish; eyes small, rounded, entire and convex; mandibles black, red at base; antennæ piceous, the flagellum sericeous, the scape clothed with a silvery pubescence; thorax broad and truncate in front, narrowed behind, covered with dense, large punctures, and clothed with a sparse, erect, black pubescence; disk of metathorax rounded off with a central patch of silvery cinereous pubescence, the posterior face flattened and strongly tinged with reddish; sides of the thorax with a very dense, fine, appressed, silvery cinereous pile, especially in the excavations; legs piceous black, with a long, thin, cinereous pubescence; posterior tibiæ and tarsi rufous, the former with a double row of long blackish spines; tips of tarsal joints spinose and blackish; abdomen ovate, ferruginous, densely and coarsely punctured, the large basal segment tinged with honey yellow, especially above; the whole abdomen has above a sparse, rather long, erect, blackish pubescence; beneath, the pubescence is cinereous and very dense on the apical segments; above, the apical margin of the small basal segment a subobsolete patch on the basal middle of the large basal segment, extending narrowly to the apex, and a patch on middle of the remaining segments, all of silvery cinereous pubescence; the node moderate, of nearly equal width, much depressed, tinged with fuscous, and a rather large, obtuse tubercle on each side at base. Length 12 mm.

Hab.—Cape St. Lucas, Lower California.

Spherophthalma nigriceps Cresson.

Female.—Head black, clothed with dense, black pubescence, that about the mouth, as well as the mandibles and palpi, piceous; antennæ piceous, basal joint long and slightly curved, second small and subglobose, third three times as long as the second and widened at tip, the nine following joints subequal, each shorter than the third, slightly involute, compressed and widened in the middle and narrowed towards the tip, which is pointed; thorax broader in front, rufous, covered with large, deep, rough, confluent punctures and clothed with long, erect, ochraceous pubescence, that on the anterior margin black and rather dense; on each side behind the middle two rather large, obtuse tubercles, the posterior ones placed on the lateral base of the metathorax, which is narrowed towards the tip, convex and gradually sloped behind, the sides abrupt and densely pubescent; legs piceous black, densely clothed with ochraceous pubescence, very long on the femora; the tibiæ with a row of long, acute, black spines; abdomen ovate, convex; first segment small, campanulate, black, densely clothed with long and short ochraceous pubescence; second segment large, rufous, roughly and confluent punctured, the basal half above with a large black mark, densely clothed with black pubescence, with the posterior margin lobed on the middle, rest of the segment clothed with short ochraceous pubescence, and on the apical margin a band of dense ochraceous pubescence, sometimes with a transverse patch of black pubescence on each side of the middle; third segment densely clothed with ochraceous pubescence, with a slight mixture of black on the basal middle; remaining segments densely clothed with black pubescence. Length 12–15 mm. (Cresson.)

Hab.—Cuba.

Sphærophthalma 4-guttata Say.

Female.—Head rounded, as wide as the thorax, ferruginous, finely punctured, clothed with appressed reddish golden pubescence, thinly interspersed with erect, fuscous hairs; antennæ: scape testaceous, finely punctured, clothed with reddish golden pubescence, flagellum fuscous; base of mandibles testaceous, tips black; head beneath clothed with long pale hairs; eyes round, prominent and polished; thorax ovate, narrowed posteriorly, ferruginous; closely punctured and clothed with appressed reddish golden pubescence; metathorax abruptly truncate and having on each side a small, rounded, polished tubercle, and three minute, transverse, elevated ridges on the disc; lateral excavations smooth, shining; legs ferruginous, clothed with pale glittering hairs; knees and tarsi fuscous, intermediate and posterior tibiæ armed exteriorly with spines; abdomen ovate, basal segment rufous, or rufo-fuscous, thinly clothed with erect pale hairs; second segment black, closely and finely punctured, clothed with fine, appressed, black pubescence, and having two large, ovate, fulvous spots before the apical margin and two of the same color, but smaller, at the basal margin, remaining segments black, having the apical margins fringed with pale yellowish pubescence; ventral surface of second segment testaceous. Length 9-14 mm.

Hab.—Texas.

In some specimens the basal abdominal segment is black, and without the two fulvous spots at basal margin of second segment.

Sphærophthalma frigida Smith.

Female.—Ferruginous, closely punctured; head subquadrate, wider than the thorax: the flagellum, except the three basal segments, the eyes and tips of the mandibles fuscous; thorax oblong quadrate, very slightly narrowed posteriorly, the tibiæ and femora fuscous; their base, the tarsi and coxæ pale ferruginous; abdomen: the four apical segments and the apical margins of the two basal ones rufo-piceous, the marginal band on the second segment produced into an angular shape in the middle; the margins of the four apical segments ciliated with cinereous hairs. Length 4.5 mm. (Smith.)

Hab.—Arctic America (the Great Bear Lake).

Sphærophthalma cypris Blake.

Female.—Dark ferruginous; head round, as wide as the thorax, closely punctured, mandibles and antennæ black; eyes round, convex; thorax elongate ovate, closely covered with confluent punctures, slightly constricted behind the middle, with a small tubercle in the constriction; metathorax roundly truncate; legs testaceous, knees black, thinly clothed with pale hairs, intermediate and posterior tibiæ armed with long spines; abdomen elongate ovate, basal segment fringed with pale golden pubescence; second segment covered closely with elongate punctures and having four small honey yellow maculæ, two at the base, the others placed a little before the apical margin, which is fringed with pale golden pubescence; apical segments blackish, clothed with appressed pale golden hairs; ventral segments same as above. Length 11-14 mm.

Hab.—Georgia.

Sphærophthalma ferrugata Fab.

Female.—Ferruginous; head round, not as wide as thorax, finely punctured, clothed with fine, appressed, glittering, ferruginous pubescence; antennæ fuscous

or testaceous; eyes large, round, polished; base of mandibles ferruginous, tips; black; thorax elongate ovate, narrowed posteriorly, closely punctured and clothed with appressed ferruginous pubescence; pro- and mesothorax having on each side a small ovate tubercle; metathorax truncate, and having on the disc a slight transverse ridge; legs blackish, clothed with glittering white hairs, intermediate and posterior tibiæ armed exteriorly with strong spines; abdomen ovate, basal segment small, testaceous, apically margined with black; second segment finely punctured, clothed with fine appressed ferruginous pubescence, and having a small, rounded, testaceous spot at the basal margin, its apical margin black; apical segments fringed with pale glittering pubescence; ventral surface shining, finely punctured; apical margins clothed as above, but less densely. Length 7-13 mm.

Hab.—United States.

This is a very variable and abundant species; in some individuals the legs are ferruginous, and without the dark spot on the second abdominal segment, while in some instances there are indications of small lateral spots, and occasionally the disc of the thorax and abdomen beneath is testaceous. Its geographical range is quite extended, being found from Maine to Texas, and westward to California.

It resembles *S. simillima* Smith, but is recognized by the more elongate thorax, which is narrowed behind, and the smaller head; the head in *simillima* being broad and quadrate.

Sphærophthalma vesta Cresson.

Female.—Rufous, densely and rather roughly punctured; head and thorax clothed with a sparse, glittering, ochraceous pubescence, but very dense on the apical segments of the abdomen; head not wider than the thorax, the vertex with a few scattered, long, blackish hairs, the pubescence about the mouth long, dense and glittering ochraceous; eyes small, rounded, entire and convex; mandibles piceous; antennæ piceous, the basal joint with a short ochraceous pubescence; thorax rather short, truncate in front, narrowed behind the middle and slightly strangulated, rounded above and behind, but abrupt on the sides, the metathorax is rather abruptly rounded and excavated on each side; the thorax above has a long, scattered, erect, blackish pubescence, and a short, appressed, reddish pile, having a beautiful golden-red hue when viewed in certain lights; sides of the thorax have a thin, fine, pale pubescence, more dense in excavations; legs black, or piceous black, clothed with a glittering ochraceous pubescence; in some specimens the coxæ and femora are more or less tinged with dull rufous; abdomen ovate, rather less coarsely punctured than the thorax; the node and the large basal segment, except their apical margins, rufous; the remaining segments blackish, all the segments above and beneath have an apical fringe of long, dense, glittering ochraceous pubescence; the large basal segment above and beneath has a short, scattered, ochraceous pubescence, occasionally with a rounded patch of short, black pubescence on the basal middle above; sometimes the apex of this segment is broadly black, and sometimes the segment is divided down the middle by a blackish line. Length 8.5-11 mm.

Sphærophthalma albopilosa Blake.

Female.—Ferruginous; head subquadrate, posterior angles rounded, closely and finely punctured; eyes small, round; antennæ fusco-ferruginous; mandibles tipped with black; thorax subquadrate, narrowed behind, densely punctured, metathorax abruptly truncate; legs castaneous, clothed with glittering white hairs; abdomen ovate, second segment densely and finely punctured, apical segments blackish, fringed with whitish pubescence; under side paler than above; entire insect clothed with erect white hairs. Length 8.5 mm.

Hab.—Texas. (Belfrage) One specimen.

This species closely resembles some individuals of *ferrugata*, but may be readily distinguished by the rather dense, white, erect pubescence.

Sphærophthalma caneo Blake.

Female.—Ferruginous; head round, not as wide as thorax, clothed with cinereous pubescence; eyes large, round, prominent; scape of antennæ with whitish hairs; thorax ovate, narrowed posteriorly, thinly covered with griseous hairs, metathorax obliquely truncate; legs thinly clothed with glittering whitish hairs; abdomen ovate, finely punctured, thinly covered with erect white hairs; apical margin of second segment fuscous at middle, fringes of segments white. Length 8 mm.

Hab.—Texas.

Allied to *ferrugata* Fab.

Sphærophthalma mutata Blake.

Female.—Ferruginous; head rounded, transverse, finely and densely punctured, mandibles blackish at tip; antennæ nigro-fuscous; eyes small, round, convex; thorax robust, ovate, slightly narrowed posteriorly, coarsely punctured, armed at the sides with two obtuse tubercles, metathorax roundly truncate; legs black, thinly clothed with pale glittering hairs; abdomen ovate, second segment with four pale ferruginous spots, two at base small, those at apical margin larger; the remaining segments fusco-ferruginous, the apical margins fringed with pale yellowish or white pubescence. Length 8.5-13 mm.

Hab.—Atlantic and Southern States.

Upon the examination of a large series of specimens this may prove to be only a variety of *ferrugata*. It is distinguished by the more or less distinct pale spots on the second abdominal segment; thorax is rather shorter and broader, and the color of the apical fringe of the segments varies precisely as in *ferrugata*.

Sphærophthalma scævola Blake.

Female.—Ferruginous; head subquadrate, posterior angles rounded, slightly wider than the thorax, finely punctured, thinly clothed with appressed reddish golden pubescence; antennæ fuscous, mandibles blackish at tips; eyes round, prominent; thorax ovate, much narrowed posteriorly, closely punctured; sides of metathorax smooth; legs blackish, thinly clothed with pale glittering hairs, sides of metathorax smooth; legs blackish, thinly clothed with pale glittering

hairs, calcaria whitish; abdomen ovate, the second segment having on the disc near apical margin two large subquadrate patches of pale ferruginous and occasionally two small spots of the same color at basal margin; apical margins of all the segments fuscous, third, fourth and fifth fringed with pale silky pubescence. Length 6.5-9 mm.

Hab.—Atlantic States.

This is very near to *mutata*, from which it differs by its much smaller size, by the second abdominal segment having generally only two large, subquadrate, or ovate, pale, ferruginous spots, and by the thorax being slightly longer and narrower posteriorly.

Sphærophthalma balteola Blake.

Female.—Ferruginous; head rounded, closely covered with confluent punctures, mandibles blackish at tips; antennæ fuscous; eyes small, round, polished; thorax elongate ovate, narrowed posteriorly, sides armed with two small tubercles, sparsely clothed with short pale hairs; legs fuscous, or blackish, thinly clothed with pale hairs; abdomen elongate ovate, the basal segment clothed on middle of disc and apical margin with pale pubescence, second segment closely and finely punctured, the posterior margin stained with darker color and fringed with white pubescence, remaining segments blackish, clothed with black hairs, apex with pale pubescence; under side paler. Length 6.5-11 mm.

Hab.—Atlantic States, Texas.

This species varies considerably in size. Easily recognized by the continuous pure white fringe at apical margin of second abdominal segment.

DIVISION II.

First abdominal segment gradually dilated to apex, as represented by figures 15 and 16.



Fig. 15.



Fig. 16.

Sphærophthalma propinqua Cresson.

Male.—Black, closely punctured, somewhat shining, clothed with black pubescence; vertex tinged with rufo-piceous and clothed with golden pubescence; eyes small, round, entire and convex; antennæ black, subsericeous; thorax black, with black pubescence; the prothorax above, the mesothorax and scutellum rufous, clothed with long golden pubescence; metathorax black, rounded behind, with large, coarse punctures and sparse black pubescence; tegulæ black, punctured; wings dark fuscous, paler about the middle; marginal cell large, rather

long, rounded or somewhat pointed at tip, and exceeding the tip of the third submarginal cell; three distinct submarginal cells, the first nearly as long as the marginal; the second broad beneath, much narrowed towards the marginal and receiving the first recurrent nervure about the middle; the third submarginal distinctly defined, short, pointed at tip and much narrowed beneath and receiving the second recurrent nervure; legs black, or piceous black, the femora beneath fringed with long grayish pubescence, the tibiæ and tarsi with blackish pubescence; abdomen ovate, black, closely punctured, the large basal segment shining, clothed with a very thin, black pubescence; apical margins of all the segments, both above and beneath, fringed with long golden pubescence. Length 9 mm.; expanse of wings 16 mm. (Cresson.)

Hab.—Colorado.

A very distinct species, easily recognized by the red thorax, with its golden pubescence, as well as of the apical margins of the abdominal segments. It is closely allied to *S. fulvohirta*, but quite distinct by the coloration of the thorax and by the different shape of the marginal and submarginal cells of the anterior wings.

Sphærophthalma ocoala Blake.

Male.—Black; head rounded, narrower than the thorax, densely and finely punctured, thinly clothed with black pubescence; antennæ black; eyes round and prominent; thorax robust, subquadrate, narrowed posteriorly, densely and finely punctured, clothed with scattered black hairs; metathorax rounded, coarsely reticulated; tegulæ ovate, very finely reticulated; wings fuliginous, marginal cell elongate ovate, rounded at tip, first submarginal nearly as large as the marginal, narrowed towards the base, second subtriangular, its basal nervure sinuate, and receiving the first recurrent at the middle, third narrowed beneath, indistinctly defined; legs black, the intermediate and posterior tibiæ and tarsi clothed with pale brownish pubescence, calcaria pale; abdomen ovate, basal segment black, shining, punctured, bearing a few black hairs, second segment ferruginous, shining, finely and remotely punctured, interspersed with short ferruginous hairs, its apical margin and following segments black, densely clothed with black pubescence; under side of second segment darker than above. Length 11 mm.; expanse of wings 17 mm.

Hab.—Florida, Southern States. Collection of Mr. Norton.

This may prove to be the male of *S. dubitata*, Smith.

Sphærophthalma Sanbornii Blake.

Male.—Head black, rounded, closely punctured, thinly clothed with erect black hairs; eyes round, convex, polished; antennæ black; thorax elongate subquadrate, rounded in front, closely punctured, sparsely clothed with black hairs, metathorax roundly truncate, coarsely reticulate; tegulæ convex, very finely punctured; wings pale fuliginous, slightly paler towards base, marginal cell ovate lanceolate, rounded at tip; first submarginal large, narrow; second subtriangular, receiving the first recurrent at middle, its basal nervure sinuate, third pentagonal, with abbreviated nervures from its exterior angles; legs black, thinly clothed with black and white hairs, femora minutely punctured, calcaria white; abdomen ferruginous, basal segment campanulate, closely punctured, punctures

finer at apical margin, which is fuscous, and fringed with dark hairs; second segment closely punctured, thinly clothed with glittering white hairs, apical margins fuscous, thinly fringed with black hairs, third and fourth segments somewhat darker, finely punctured, apex black. Length 7 mm.; expanse of wings 12 mm.

Hab.—Massachusetts. Collection of Prof. Agassiz.

This may prove to be the male of *S. simillima* Smith.

Sphærophthalma flavida Blake.

Male.—Head and thorax black, the former subquadrate, posterior angles rounded, closely punctured, vertex thinly clothed with pale yellowish hairs; eyes round, prominent; thorax closely punctured; prothorax, sides and scutellum clothed with pale hairs, metathorax roundly truncate, closely reticulate; tegulæ ovate, closely punctured; wings pale fuscous, faintly iridescent, marginal cell elongate ovate, rounded at tip; first submarginal long and narrow; second subtriangular, obliquely narrowed towards base, its basal nervure sinuate, receiving the first recurrent at middle, third narrowed beneath, receiving the second recurrent at middle, its apical nervure faintly defined; legs black, thinly clothed with pale hairs, calcaria pale; abdomen elongate ovate, basal segment campanulate, fuscous, finely punctured, the apical margin fringed with golden pubescence; second segment, except base and apical margins, which are fuscous, bright yellow, finely punctured, the punctures more dense at sides, remaining segments black, margined with fuscous, finely punctured, fringed with orange-yellow pubescence; under side of abdomen blackish brown, finely punctured. Length 11 mm.; expanse of wings 16 mm.

Hab.—Texas.

Sphærophthalma laticeps Blake.

Male.—Black; head quadrate, wider than the thorax, posterior margin concave, angles acute, very finely punctured, clothed with scattered white hairs; antennæ and mandibles black, the latter clothed with fine white hairs; eyes round; thorax elongate quadrate, pro- and mesothorax finely punctured, metathorax reticulated, rounded; wings subhyaline, iridescent, submarginal cell ovate lanceolate, first submarginal, bisected by a white line, second receiving the first recurrent nervure a little before the middle; tegulæ round, polished; legs black, clothed with white hairs, calcaria white; abdomen ovate, shining, first segment campanulate, with a small tubercle on each side near the base, second segment with remote, minute punctures bearing a few scattered silvery hairs; apical segments thinly fringed with the same; under side of entire insect clothed with scattered hairs. Length 6.5 mm.; expanse of wings 12 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Sphærophthalma grandiceps Blake.

Male.—Bright ferruginous; head subquadrate, nearly three times as wide as the thorax, hind margin deeply concave, posterior angles produced into acute teeth, finely and closely punctured, cheeks armed posteriorly beneath with a long acute spine; mandibles long, bidentate at the tips, which are blackish; antennæ: scape and two basal joints of flagellum pale ferruginous, remaining joints fuscous; eyes small, round; thorax elongate subquadrate, feebly narrowed

at middle, prothorax with a small tubercle on each side, metathorax roundly truncate; wings only rudimentary; legs castaneous, thinly clothed with whitish hairs, calcaria white; abdomen elongate ovate, sessile, stained with castaneous, closely and finely punctured, thinly clothed with silvery hairs. Length 6.5 mm.

Female.—Bright ferruginous; head nearly as large in proportion to the thorax as that of the male; thorax robust, subquadrate, minutely punctured, sides deeply excavate; legs castaneous, thinly clothed with glittering hairs, posterior tibiæ armed with spines; abdomen above stained with castaneous, thinly clothed with silvery pubescence. Length 5.5 mm.

Hab.—Texas. Two specimens (♂ ♀).

A very curious little species; in structure allied to *laticeps* Blake.

Sphærophthalma xalapa Blake.

Male.—Black; head rounded, thinly clothed with erect pale hairs; antennæ black; eyes round, prominent; thorax elongate ovate, prothorax rounded in front, finely punctured, posterior margin carinate, bearing a few erect, pale hairs; mesothorax finely punctured; metathorax roundly truncate; coarsely reticulate; wings pale fuliginous, paler towards the base; marginal cell ovate, roundly truncate at tip, second submarginal receiving the recurrent nervure a little beyond the middle, a faint hyaline streak running through the first and second submarginal cells; tegulæ round, finely punctured; legs black, clothed with pale glittering hairs, calcaria white; abdomen elongate ovate, shining, finely punctured, apical margins of all the segments ciliated with silvery pubescence; under side of entire insect sprinkled with pale hairs. Length 9 mm.; expanse of wings 15 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Sphærophthalma zapoteca Blake.

Male.—Black; head subquadrate, posterior angles rounded, closely punctured, thinly clothed with yellowish white hairs; antennæ black; eyes moderate, convex, rounded; mesothorax elevated, coarsely punctured; metathorax rounded and posteriorly truncate, coarsely punctured; wings subhyaline, with an iridescent lustre, marginal cell moderately long, rounded at tip, three submarginal cells, first about as large as the marginal, the second subtriangular, receiving the first recurrent nervure about the middle, the third obsolete defined and not extending beyond the marginal; legs black, tibiæ clothed with long, pale, glittering hairs; abdomen ovate, basal segment subsessile with the second, both of which are polished, moderately punctured and thinly clothed with erect, pale golden yellow hairs; apical segments clothed with dense, pale golden pubescence. Length 7 mm.; expanse of wings 11 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Sphærophthalma gila Blake.

Male.—Black; entire insect closely punctured; head subquadrate, posterior angles rounded; mouth clothed with pale pubescence; eyes round; thorax elongate ovate, metathorax roundly truncate, finely reticulate; wings ample, hyaline, iridescent, marginal cell elongate ovate, pointed to tip, first submarginal nearly as long as the marginal, second subtriangular, pointed towards base, receiving the recurrent nervure before the middle; nervures fuscous; legs black, thinly

clothed with pale hairs; abdomen ovate, the segments fringed with glittering white hairs; entire insect sprinkled with pale pubescence. Length 3.5 mm.; expanse of wings 6.5 mm.

Hab.—Texas. Belfrage.

Spherophthalma Robinsonii Blake.

Female.—Black; head quadrate, double the width of thorax, posterior angles produced into acute spines, densely punctured, vertex clothed with dense, bright, deep golden pubescence; cheeks prominent, finely punctured, thinly clothed with pale glittering hairs; on the cheeks below the eyes are two small bilobed tubercles ferruginous in front, just beneath which there is a stout tooth on each side projecting behind, ferruginous at tip; below these are two others much larger, projecting beneath, black, shining, finely punctured and clothed at base



with pale glittering hairs: mandibles stout, with a tooth about one-third of their length from the tips, a bright ferruginous dash before the tooth; antennæ black, the scape thinly clothed with pale glittering pubescence; eyes prominent, round, polished; thorax subquadrate, slightly constricted, reticulate; anterior angles armed with a small tooth; disc clothed with bright golden pubescence, except a rounded black patch on mesothorax and a longitudinal patch of the same color on the metathorax, which is abruptly truncate; legs black, clothed with pale glittering hairs, the intermediate and posterior tibiæ armed

exteriorly with a row of spines; tarsal joints fringed with ferruginous hairs, calcaria pale, ferruginous; extremity of anterior tibiæ and first joint of tarsi deeply emarginate, with the spur lanceolate; abdomen ovate, basal segment broad at its apical margin, clothed with pale golden pubescence, second segment finely punctured, clothed with dense black pubescence and bearing two large quadrant-shaped fulvous patches, the third and following segments fringed with pale golden pubescence; under side of entire insect thinly clothed with pale hairs. Length 18 mm.

Hab.—Mexico (Prof. F. Sumichrast). Five specimens.

In some specimens the basal joint of abdomen is entirely black.

This species is nearly allied to *capitata* Smith, but is readily distinguished by the shape of the thorax and the greater width of the head in proportion to the thorax, as well as the large tooth behind the mandibles.

Spherophthalma capitata Smith.

Female.—Black; head quadrate, wider than the thorax, densely clothed with pale golden pubescence, the cheeks furnished with a stout tooth; the apical joints of the flagellum ferruginous beneath; the mandibles ferruginous, their apex black; thorax short, broad and narrowed posteriorly, rounded in front, suddenly contracted, on each side a short tooth before the contraction; the metathorax truncate, the disc covered with pale golden pubescence, having in front a large, rounded, black patch; the legs thinly covered with pale golden pubescence, the calcaria and apical joints of the tarsi pale ferruginous, the intermediate and posterior tibiæ armed exteriorly with a row of spines; abdomen: the second segment having a large, transverse, yellow macula clothed with golden pubescence.

the macula deeply emarginate anteriorly and posteriorly, narrowest towards the base of the segment and slightly emarginate at the sides, the posterior angles rounded; the third and following segments covered with very pale golden pubescence, the fourth having a central patch of black pubescence; beneath, the margins of the segments ciliated with silvery pubescence. Length 17 mm.

Hab.—Mexico.

Spherophthalma quadridens Blake.

Female.—Black; head quadrate, double the width of thorax, posterior angles acute, face densely rugose, vertex clothed with pale golden pubescence, cheeks prominent, deeply punctured, bearing beneath two strong spines, curved forward. in front of these, behind the mandibles, are two shorter ones, head below clothed with long glittering hairs; mandibles black, polished, stout, with two teeth before the apex; antennæ black, scape clothed with long, pale, golden pubescence, flagellum dark ferruginous in front; eyes moderately prominent, rounded; thorax subquadrate, slightly constricted, rugose, prothorax with a stout tubercle on each side posteriorly, disc of mesothorax clothed with pale golden pubescence; metathorax roundly truncate, flanks polished, very thinly sericeous; legs black, polished, clothed with long glittering hairs, the intermediate and posterior tibiæ armed exteriorly with a row of spines, calcaria long, black; abdomen ovate, basal segment nodose, second segment having an ovate spot of deep golden pubescence on the disc, apical margins of segments thinly fringed with long pale hairs; under side shining, punctured, thinly clothed with pale glittering hairs. Length 19 mm.

Hab.—Panama (H. Strecker). This species is allied to *Robinsonii* and *capitata*, but is readily distinguished from the former by the ovate spot on second abdominal segment, and from the latter by the size of the head.

Spherophthalma Gabbii Blake.

Female.—Black; head subquadrate, as wide as thorax, posterior angles rounded, densely rugose, sparsely clothed with erect black hairs; above the eyes on vertex are two ovate spots of appressed pale golden pubescence, cheeks prominent, coarsely, confluent punctured; mandibles black, mouth clothed with pale yellowish hairs; scape of antennæ clothed with pale golden pubescence, flagellum slightly pruinose; eyes prominent, round, polished; thorax subquadrate, narrowed posteriorly, densely rugose, anterior angles of prothorax armed with a short tooth; disc of mesothorax bearing a transverse band of pale golden pubescence, anterior angles produced into acute teeth, flanks deeply excavate, filled with pale pubescence below, above which they are polished; metathorax roundly truncate, with an obtuse tooth on each side anteriorly, disc having on each side an elongate ovate stripe of pale golden pubescence; legs clothed with pale yellowish hairs, calcaria pale; abdomen elongate ovate, basal segment having two lateral patches of pale golden pubescence, second finely rugose, the dorsal surface bearing numerous, minute, longitudinal, parallel carinæ; on the disc are two round, yellow spots and two lateral stripes, thinly clothed with pale golden pubescence; apical segments black at middle, sides clothed with golden pubescence; under side black, second segment moderately coarsely punctured with a lateral oblique stripe, and apical margins of all the segments clothed with silvery pubescence; anterior margins of all finely aciculate. Length 18 mm.

Hab.—Costa Rica. Two specimens; collected by the late W. M. Gabb.

Sphærophthalma electra Blake.

Female.—Head black, subquadrate, posterior angles rounded, closely punctured, vertex clothed with reddish golden pubescence; eyes round, prominent; scape of antennæ castaneous, flagellum piceous; mandibles ferruginous at base, black at tips; thorax ovate, narrowed posteriorly, bright ferruginous, finely punctured, thinly clothed with reddish golden pubescence, bearing on each side two small tubercles; metathorax coarsely rugose on disc, abruptly truncate; legs black, thinly clothed with glittering white hairs; abdomen ovate, entirely black above, closely and minutely punctured, thinly clothed with black pubescence; under side closely and finely punctured, clothed with silvery pubescence, the margins of the second, third and fourth segments fringed with silvery pubescence, apex black. Length 9-13 mm.

Hab.—Texas. Two specimens.

Very distinct by the abdomen being entirely black above and clothed with silvery pubescence beneath.

Sphærophthalma lerma Blake.

Female.—Head subquadrate, wider than the thorax, posterior angles rounded, cheeks produced into an acute tooth, dark ferruginous, vertex thinly clothed with scattered golden pile, interspersed with a few erect hairs; face, scape of antennæ and mandibles rufous, the latter black at tips; eyes round, prominent; thorax finely reticulated, subovate, contracted behind the mesothorax, which, with the anterior angles, is armed at the sides with a stout tooth, metathorax gradually rounded posteriorly, with a row of small teeth on each side; lateral declivities polished; legs rufous, clothed with glittering hairs, intermediate and posterior tibiæ armed with spines; abdomen ovate, very finely punctured, dark chestnut brown, second segment having a broad band of appressed, bright golden pubescence, posteriorly emarginate, apical margin nearly black; the remaining segments thinly clothed with bright golden pubescence; under side paler than above, finely punctured, shining. Length 6.5 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Allied to *denticulata* Smith, but may be distinguished from that species by the cheeks being spined, and the absence of the abdominal tubercles.

Sphærophthalma canadensis Blake.

Female.—Fusco-testaceous; head subquadrate, wider than the thorax, posterior angles acute, finely punctured; face fuscous; antennæ and mandibles pale rufous, tips of the latter black; eyes black, round, polished; thorax short, quadrate, anterior angles acute, sides crenulated, densely and finely punctured, metathorax roundly truncate; legs rufo-testaceous, thinly clothed with pale glittering hairs, calcaria white; abdomen ovate, second segment finely punctured, clouded towards the base with dark stains, apical margin and remaining segments dark fuscous, thinly clothed with pale golden pubescence. Length 5.5 mm.

Hab.—Canada.

Sphærophthalma bisignata Blake.

Female.—Head subquadrate, wider than the thorax, posterior angles not rounded, vertex and face clothed with pale golden pubescence, posterior margin black, cheeks prominent, clothed with silvery hairs; antennæ black; eyes round, polished; thorax short, suddenly narrowed behind, clothed with pale golden pubescence, mesothorax with triangular, granulate, black patch, metathorax abruptly truncate; legs rufo-piceous, clothed with pale glittering hairs; abdomen ovate, basal segment black, second segment with a large subquadrate black patch on the disc, surrounded by an emarginate band of golden pubescence, enclosing two small lateral black spots; apical margin clothed with dense black pubescence, remaining segments fringed with silvery pubescence; ventral segments thinly clothed with long pale hairs. Length 11 mm.



Hab.—Mexico. Prof. F. Sumichrast.

Sphærophthalma connectens Cresson.

Female.—Ferruginous or fusco-ferruginous, closely and rather finely punctured; head large, quadrate, wider than the thorax, clothed with a short, dense, golden sericeous pubescence; eyes small, round, entire and convex; apical half of mandibles black; antennæ ferruginous, dusky towards the apex; thorax short, subquadrate, broad and slightly rounded in front, somewhat strangulated about the middle and abrupt and truncate behind, the lateral margins serrate; upper surface blackish, with fuscous pubescence; a patch on each side of the metathorax above, as well as most of its posterior face, with a short golden sericeous pubescence; the lateral excavation very large, rather deep, smooth and polished; legs ferruginous, with yellowish pubescence; abdomen ovate, broad at base, rather densely clothed with short, appressed, golden sericeous pubescence, paler on the apical segments; on the basal middle of the second segment above a large rounded, fuscous spot extending a short distance on the apical margin of the first segment, and on the apical middle of the second segment another large dark fuscous spot, rather transverse, and connected with the basal spot by a short, narrow, fuscous line down the middle of the segment; both spots are clothed with fuscous pubescence, that on the apical spot darkest; apical segments above and beneath densely clothed with golden sericeous pubescence. Length 9-11 mm. (Cresson.)

Hab.—Cape St. Lucas, Lower California.

Sphærophthalma ferruginea Smith.

Female.—Ferruginous, rugose; the head wider than the thorax, subquadrate, the hinder angles acute, the posterior margin nearly straight, densely covered above with pale golden colored pubescence, that on the cheeks is thin and silvery white; thorax oblong, pyriform, with a thin, short, pale golden pubescence, and, as well as the head, thinly sprinkled with erect pale hairs; the legs with thin pale pubescence; the intermediate and posterior tibiæ with black spines; the first segment of the abdomen small and with a spot of silvery white pubescence; the second segment with a subovate patch of black pubescence in the middle towards the basal margin, its apical margin with black pubescence; the third, fourth and fifth segments with silvery white pubescence in the middle, that at the side of the apical segment being black; beneath the segments are fringed with white. Length 13 mm. (Smith.)

Hab.—Mexico, Orizaba.

Sphærophthalma contumax Cresson.

Female.—Obscure rufous, very densely and somewhat coarsely punctured; head very large, quadrate, broader than the thorax and densely clothed with a silvery ochraceous pubescence; eyes small, round, entire, convex and polished; mandibles black at tips: antennæ entirely ferruginous; thorax short, subquadrate, broad and truncate in front, strangulated behind the middle, declivious on the sides and behind; upper surface with a sparse blackish pubescence; on the lateral margins and behind with long, scattered, ochraceous pubescence; the deep lateral posterior excavation large, smooth and polished; legs pale rufous, thinly clothed with ochraceous pubescence; abdomen ovate, rather broad at base, the large basal segment clothed above with a very short, appressed, golden sericeous pubescence, on the basal third a large, quadrate, pale fuscous, central spot, and another smaller one on each side, all connected at base by a narrow transverse band, the apex with a broad transverse band of the same color; the remaining segments above and beneath with a dense fringe of long silvery ochraceous or cinereous pubescence; the node, or small basal segment is shaped like that of *S. montivaga*, but less broad, its apical margin is pale fuscous. Length 11 mm. (Cresson.)

Hab.—Colorado.

This pretty species is easily recognized by the large ochraceous head and the ornamentation of the large basal segment of the abdomen. It has a close ally in *S. connectens* Cresson, from Lower California, which differs principally by the second segment of the abdomen having two large fuscous spots, one on the basal middle and the other on the apical middle, both connected by a short, narrow, fuscous line.

Sphærophthalma gothica Blake.

Female.—Head and thorax dark ferruginous, densely and finely reticulated, thinly clothed with pale golden pubescence, interspersed with blackish hairs; head slightly wider than the thorax, quadrate posterior angles rounded, hind margin blackish; antennæ: scape and first joint of flagellum ferruginous, mandibles black at tip; eyes large, round, polished; thorax quadrate, metathorax abruptly truncate, coarsely reticulated, lateral declivities concave, polished; legs ferruginous, thinly clothed with pale glittering hairs, intermediate and posterior tibiæ armed externally with spines, calcaria pale; abdomen ovate, basal segment ferruginous, darker towards the apical margin, which is fringed with pale golden pubescence; second segment pale fulvous, having on the disc an elongate quadrate black patch extending from the apical margin to the base, where it terminates in a point, on each side of which there is an ovate spot of the same color near the anterior margin; apical segments blackish, clothed with pale golden pubescence; under side of entire insect ferruginous. Length 8.5 mm.



Hab.—Mexico. Prof. F. Sumichrast.

Sphærophthalma izucar Blake.

Female.—Head and thorax ferruginous, the former quadrate, posterior angles acute, wider than the thorax, finely reticulate; scape of antennæ and mandibles rufous, tips of the latter black; eyes round; thorax short, subquadrate, rounded in front, slightly constricted at the sides, which are finely dentate, metathorax abruptly truncate, coarsely reticulate; legs rufo-testaceous, with a few glittering hairs, intermediate and posterior tibiæ armed with spines, calcaria white; abdomen ovate, second segment with a broad band of pale golden pile on the apical margin, having a semicircular notch on its anterior edge, apical segments fringed with pale golden pubescence; under side dark rufous, inclining to black at the base. Length 6.5 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Sphærophthalma chiapa Blake.

Female.—Head and thorax ferruginous, closely and finely punctured, the former quadrate, posterior angles acute, wider than the thorax; antennæ: scape and first joint of flagellum rufous, mandibles black at tips; eyes round, polished; thorax short, subquadrate, rounded in front, slightly constricted at sides, metathorax abruptly truncate; legs pale rufous, thinly clothed with whitish hairs, intermediate and posterior tibiæ armed with long spines, calcaria pale; abdomen ovate, black; apical margin of basal segment fringed with pale golden pubescence, second segment having a lunate band of pale golden pubescence, connected with the anterior margin by two longitudinal lines of the same; apical segments fringed with pale golden pubescence; ventral segments same as above. Length 7 mm.



Hab.—Mexico. Prof. F. Sumichrast.

Sphærophthalma cruciata Smith.

Female.—Head and thorax ferruginous, the former quadrate, the posterior angles acute; the cheeks produced into an obtuse spine; the posterior margin of the vertex and the sides of the head fuscous; the vertex more or less adorned with silvery pile; the antennæ rufo-fuscous; thorax fiddle-shaped, the lateral margins denticulate; legs rufo-testaceous, differing in depth of coloring; abdomen: the base more or less rufo-testaceous, a central narrow line of silvery pubescence runs from base to apex, a transverse fascia crosses the second segment a little within the apical margin. Length 6.5 mm.



Hab.—Brazil (Para), Mexico.

The specimens from Mexico have the central and transverse lines of pale golden pubescence.

Sphærophthalma salutatrix Smith.

Female.—Black, with the thorax and legs ferruginous, the antennæ and mandibles obscurely so; head much wider than the thorax, subquadrate, the posterior angles acute, with golden yellow pubescence above and a black, semicircular spot on the vertex anteriorly; thorax narrowed behind, constricted about the middle, the margins with a series of compressed teeth, closely and strongly punctured above; abdomen, with the margin of the first segment, a triangular spot at the

base of the second, from which a narrow line emanates and unites with a broad fascia near the apical margin of the same segment of bright golden colored pubescence: from the transverse fascia a line of similar pubescence runs longitudinally to the apex. Length 6.5-8.5 mm. (Smith.)

Hab.—Mexico, Orizaba.

Sphaerophthalma petricola Blake.

Female.—Head quadrate, wider than the thorax, finely punctured, having a thin scattered pubescence; antennæ: scape and first joint of flagellum ferruginous, remaining joints piceous; mandibles ferruginous, tips black; eyes round, polished; thorax short, closely punctured, constricted before the metathorax, which is abruptly truncate, sides deeply impressed, shining; legs pale ferruginous, thinly clothed with shining hairs, intermediate and posterior tibiæ armed with spines, calcaria white; abdomen ovate, basal segment fringed with golden pubescence, second segment dark chestnut brown, having a transverse band of golden pubescence before the apical margin, remaining segments ferruginous, fringed with pale golden hairs; under side paler than above, shining. Length 6.5 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Sphaerophthalma præclara n. sp.

Female.—Ferruginous; head transversely subquadrate, wider than the thorax, posterior angles subacute, clothed with appressed, glittering, pale, golden pubescence; antennæ and mandibles ferruginous, tips of the latter black; eyes round, polished; thorax short, abruptly narrowed behind the middle and obliquely truncate, posteriorly dark ferruginous, finely rugose; prothorax thinly clothed with erect, blackish hairs, metathorax with pale hairs; legs pale ferruginous, thinly clothed with pale glittering hairs; intermediate and posterior tibiæ armed with spines; abdomen ovate, basal segment small, sessile with the second, its apical margin at middle testaceous, second segment ferruginous, sparsely clothed with short, pale golden pubescence, its apical margin and remaining segments blackish, third and fourth segments fringed with silvery pubescence; ventral surface finely and remotely punctured, the pubescence longer than above. Length 8 mm.

Hab.—Arizona.

Allied to *S. cruciata* Smith, but may be readily separated by the abdomen being ferruginous, whereas in that species it is black.

Sphaerophthalma auripes Blake.

Female.—Head rounded, finely punctured, dark ferruginous, vertex and cheeks thinly clothed with fine, pale, golden pubescence; antennæ: scape and first joint of flagellum ferruginous, remaining joints piceous; mandibles dark ferruginous, tips black; eyes round, prominent; thorax coarsely reticulate, rounded in front, constricted before the metathorax, which is abruptly truncate, dark ferruginous, sides of metathorax deeply impressed, shining; legs ferruginous, clothed with scattered, glittering hairs; knees black, intermediate and posterior tibiæ armed with a row of spines; tarsi clothed with pale golden pubescence; abdomen ovate, dark ferruginous, closely punctured, basal segment small, the apical margin on the disc clothed with golden pubescence, second segment with a fascia of golden

pubescence, interrupted at the middle, apical margin black; the remaining segments fringed with golden pubescence; under side finely punctured, shining, paler than above. Length 6.5 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Spherophthalma minutissima Blake.

Female.—Head quadrate, wider than the thorax, posterior angles acute, fuscous, thinly clothed with pale glittering pubescence; face, scape of antennæ and mandibles ferruginous; eyes round, prominent; thorax ovate, dark ferruginous, clothed with erect dark hairs, metathorax roundly truncate, sides denticulate; legs fuscous, clothed with pale hairs, intermediate and posterior tibiæ armed with spines; abdomen ovate, basal segment ferruginous, second segment fuscous, having on the disc a transverse, posteriorly emarginate band of fine glittering pubescence; apical segments clothed with pale pubescence. Length 3 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Spherophthalma pygmea Blake.

Female.—Ferruginous; head round, wide as thorax, moderately coarsely punctured; antennæ honey yellow, scape clothed with yellowish pubescence; tips of mandibles blackish; thorax subovate, narrowed posteriorly, densely punctured, sparsely clothed with erect white hairs; legs honey yellow, clothed with pubescence of the same color; abdomen elongate ovate, closely punctured, thinly clothed with long, erect, whitish hairs; apical margins of segments above fringed with white pubescence. Length 4.5–7 mm.

Hab.—Texas, Colorado, Nevada. Four specimens.

Spherophthalma virguncula n. sp.

Female.—Head rounded, not as wide as thorax, ferruginous, covered with coarse, confluent punctures; antennæ fusco-ferruginous; eyes round and prominent; thorax robust, ovate, narrowed posteriorly, ferruginous, confluent punctured, thinly clothed with short, erect, pale hairs, a small lateral notch behind the mesothorax; metathorax obliquely truncate; legs castaneous, thinly clothed with pale hairs, the tarsi somewhat paler; abdomen ovate, black, finely and closely punctured, sparsely clothed with erect white hairs; apical margins of all the segments fringed with white pubescence. Length 5.5 mm.

Hab.—New Mexico.

Spherophthalma psammadroma Blake.

Female.—Head black, somewhat wider than the thorax, quadrate, posterior angles acute; face, scape of antennæ and mandibles ferruginous, tips of the latter black; eyes large, round, prominent; vertex and posterior margin nearly black, clothed with scattered golden pile; thorax short, sharply constricted at middle, sides crenulated, ferruginous; legs pale ferruginous, thinly clothed with glittering hairs, intermediate and posterior tibiæ armed with spines, calcaria white; abdomen ovate, black, basal segment margined with golden pubescence, second segment with two small fuscous spots at the base and two ovate spots clothed with pale golden pile near the apical margin, which is adorned in the same manner; apical segments fringed with pale golden pubescence; under side pale rufous, shining, finely punctured. Length 5.5–6.5 mm.

Hab.—Mexico. Prof. F. Sumichrast.

Spherophthalma simillima Smith.

Female.—Ferruginous, closely covered with strong, elongate punctures, those on the abdomen running into striæ; the eyes, tips of mandibles and the flagellum black; the legs fuscous; the thorax rounded in front, narrowed posteriorly, the sides crenulated, the lateral margins of the metathorax crenulated; abdomen: the apical margins of the segments fuscous, those of the first and second fringed with black pubescence, the four apical margins fringed with cinereous pubescence. Length 7-14 mm. (Smith.)

Hab.—Massachusetts.

This species is very like the *S. ferrugata* of Fabricius, but is easily distinguished by its coarse sculpture, and by having the base of the abdomen broad, whereas in *S. ferrugata* it is much narrowed at the base. This species varies greatly in size.

Spherophthalma brazoria Blake.

Female.—Head subquadrate, posterior angles rounded, closely reticulated; face and cheeks black, vertex dark chestnut brown, thinly clothed with short, erect, black hairs; antennæ blackish brown; eyes round, prominent; thorax quadrate, coarsely reticulated, slightly constricted at middle, the disc dark ferruginous, with scattered, erect, black hairs; metathorax abruptly truncate; legs black, clothed with scattered pale hairs, intermediate and posterior tibiæ armed with a row of spines; abdomen ovate, basal segment reticulated, clothed with black, its apical margin fringed with bright ferruginous pubescence, second segment very finely punctured, ferruginous, densely clothed with pubescence of the same color, interspersed with silvery hairs; the remaining segments black, fringed with pale golden pubescence; under side closely punctured, lateral carinæ distinct, ventral segments fringed with mixed black and white hairs. Length 9 mm.

Hab.—Texas.

Allied to *S. waco*.

Spherophthalma montivaga Cresson.

Female.—Rufous, or rufo-ferruginous, brighter above, which is clothed with a short, dense, appressed, silky red pubescence, very densely but not coarsely punctured; beneath more or less tinged with fuscous, with a silky ochraceous pubescence; head large, quadrate, a little broader than the thorax, the vertex has a few scattered, long, blackish, erect hairs, the cheeks and mouth more or less tinged with fuscous; eyes small, rounded, entire, convex and polished; mandibles also polished and black at tips; antennæ reddish at base, the scape with ochraceous pubescence; the flagellum rufo-piceous; thorax short, very broad and truncate in front, subcordate, being deeply strangulated on each side behind the middle, the apex truncate and very abrupt; upper surface red, or ferruginous; the sides, under surface and metathorax behind often more or less fuscous, sometimes almost black; lateral excavation deep, smooth and polished; posterior face of the metathorax slightly concave, finely sculptured, sometimes shining; sides of thorax and summit of metathorax sometimes with a long, erect, fuscous pubescence; legs black, sometimes more or less piceous, clothed with a glittering ochraceous pubescence, longer and more dense on the coxæ and femora beneath; abdomen large, ovate, broad at base, gradually narrowed towards the apex; large

basal segment above clothed with a short, dense, appressed, reddish pubescence; remaining segments above and beneath fringed with a long, dense, pale, ochraceous, or cinereous pubescence, which also covers the large ventral segment; the apical segments above and the venter entirely is often more or less fuscous; the node is very broad, being nearly as broad as the base of the second segment, flattened, sometimes black, with black pubescence, mixed on the sides with ochraceous. Length 8.5-13 mm. (Cresson.)

Hab.—Colorado.

The node of the abdomen in this species is differently shaped from that of any of the preceding species, being as broad as the base of the large second segment, whereas in all others it is rather small and narrow.

Sphærophthalma luxuriosa Smith.

Female.—Black; the legs ferruginous, adorned with bright golden yellow pubescent marking; head large, wider than the thorax and subquadrate, above covered with golden colored pubescence; the antennæ obscurely ferruginous; thorax slightly narrowed behind, above with golden pubescence; the truncation of the metathorax and a subtriangular space in front black, the coxæ and tips of the femora and tibiæ black; abdomen with the basal segment black; the second with golden pubescence, a semicircular spot at its basal margin in the middle, a somewhat angular one on each side and its apical margin with a broad fascia that is widest in the middle, black; the following segments with pale golden yellow pubescence. Length 12.5 mm. (Smith.)

Hab.—Mexico.

Sphærophthalma vulpina Smith.

Female.—Black and densely pubescent; the head with long, suberect, yellowish white pubescence; the thorax covered with similar pubescence and having an ovate tuft of black on the disc; the abdomen with a large, semicircular, black pubescent space at the base, then a broad band of yellowish white followed by one of black, the apex being whitish, except the apical segment, which is black. Length 14 mm. (Smith.)

Hab.—Mexico, Oajaca.

Sphærophthalma derilieta Smith.

Female.—Head, antennæ, legs and abdomen black; thorax ferruginous; head and thorax rugose, the former the same width as the latter, which is elongate, with the lateral margins nearly parallel, being very slightly narrowed in the middle and rounded anteriorly and posteriorly; the legs with a thin, pale pubescence; the spines at the apex of the tibiæ and also those at the apex of the joints of the tarsi pale ferruginous; the apical margin of the basal segment of the abdomen, a large oblong patch on each side of the second segment at its base, a broad fascia on its apical margin and the following segments covered laterally with yellowish white pubescence. Length 13 mm. (Smith.)

Hab.—Central America.

Sphærophthalma melancholica Smith.

Female.—Black, with the thorax more or less obscurely red above and with black and white pubescence; the thorax and abdomen rugose, the former biden-

tate on each side; the metathorax clothed with long white pubescence, as well as the intermediate and posterior legs; the basal segment of the abdomen, the apical margin of the second segment and the third entirely with long white pubescence; the second segment with a large black tuft; the apical segments entirely clothed with black pubescence. Length 11-16 mm. (Smith.)

Hab.—St. Domingo.

Spherophthalma araneoides Smith.

Female.—Black; the vertex and a semicircular spot on the thorax in front of bright rufo-fulvous pubescence; the head and thorax beneath with white pubescence; a spot on each side of the metathorax, two ovate ones on the second segment of the abdomen, a narrow fascia on its apical margin, the third segment and the fourth laterally covered with bright, pale, yellowish white pubescence; the rest of the thorax and abdomen with black pubescence; the legs have a bright pale pubescence, the posterior femora with black pubescence at their apex. Length 13 mm. (Smith.)

Hab.—Nicaragua, St. Juan del Sur.

Spherophthalma macrocephala Smith.

Female.—Clothed with ferruginous pubescence; head and abdomen obscure, ferruginous; thorax black; head wider than the thorax, subquadrate, the cheeks armed with a sharp spine; the thorax short, narrowed behind; the metathorax with black pubescence. Length 14 mm. (Smith.)

Hab.—Orizaba.

Spherophthalma munifica Smith.

Female.—Black, with rusty golden spots; head narrower than the thorax and covered above with rusty golden pubescence; beneath, and also on the thorax and abdomen beneath, the pubescence is pale yellowish white; thorax with black pubescence in front and with rusty golden behind, the latter partly covering the sides of the truncation, which is black in the middle; the legs with a whitish pubescence; abdomen with black pubescence and with two ovate, deep, ochraceous maculæ at the base of the second segment and two larger ones towards its apical margin; the maculæ with rusty golden pubescence; the fourth and fifth segments with ochraceous pubescence in the middle. Length 9-15 mm. (Smith.)

Hab.—Mexico.

Spherophthalma ducalis Smith.

Female.—Black, clothed with black pubescence; the head above and a broad transverse band on the thorax, which curves slightly backwards, of bright gold colored pubescence; the second segment of the abdomen ferruginous above, and having at its base a large, subovate, black pubescent macula; also smaller ovate maculæ placed laterally about the middle of the segment, the apical margin of the segment and also the third segment black; the black bands not usually extending to the lateral margins, which have silvery white pubescence, similar to that which clothes the thorax beneath and fringes the segments of the abdomen: the fourth, fifth and sixth segments have golden colored pubescence above, the fifth with more or less of black laterally. Length 15-20 mm. (Smith.)

Hab.—Orizaba.

Sphærophthalma separata Smith.

Female.—Head and abdomen black; thorax and legs ferruginous; the head a little wider than the thorax, slightly narrowed and rounded behind; the thorax somewhat fiddle-shaped and finely rugose; legs obscurely ferruginous; abdomen with a sharp carina in the middle from the base to the apex of the second segment; the margin of the basal segment and an elongate angular spot at the base of the second segment of silvery white pubescence; the second segment with two ovate, pubescent, pale yellow maculæ; the following segments with white pubescence. Length 6.5–8.5 mm. (Smith.)

Hab.—Mexico, Orizaba.

Sphærophthalma blandina Smith.

Female.—Ferruginous; the head and thorax finely rugose; the flagellum of the antennæ and the tips of the mandibles black; the head wider than the thorax and subquadrate; the latter fiddle-shaped, its margins crenulated; the apical margin of the basal segment of the abdomen, and the middle of the basal margin of the second with bright golden colored pubescence, with two ovate spots of the same color near the apical margin of the second segment; the apical margins of the rest of the segments with bright golden pubescence; a black spot between the ovate maculæ. Length 6.5–7 mm. (Smith.)

Hab.—Mexico, Orizaba.

Genus 4, **PHOTOPSIS** Blake.

Body unicolorous, smooth and shining; head transverse; eyes large, round and prominent; ocelli large; antennæ long and slender; basal joint of anterior tarsus deeply emarginate; thorax narrowed posteriorly; wings hyaline, sometimes slightly clouded, stigma prominent; abdomen sparsely clothed with pubescence, basal segment more or less petiolate, apex of male furnished with two minute recurved spines. Female unknown.

The species may be tabulated as follows:

*Abdomen petiolate.**Wings with two submarginal cells.*

Wings yellow, with fuscous spot on posterior margin.....**mendica**.

Wings subhyaline, fuliginous spot on posterior margin.....**orizaba**.

Head black, thorax honey yellow, first abdominal segment rufo-testaceous, wings ample.....**nokomis**.

Second abdominal segment coarsely punctured; anterior wing bifasciate, with dusky on apical half.....**danaus**.

Abdomen with pale yellowish pubescence; wings faintly yellowish; anterior pair with dusky spot on anterior margin..**unicolor**.

Wings varied at apex with dusky spots; apical segments of abdomen blackish, with long white pubescence.....**clara**.

- Abdomen slender; head scarcely wider than thorax; legs pale, tips of femora blackish.....**melicausa.**
- Abdomen slender; wings with an apical fuscous cloud.....**mellipes.**
 First segment of abdomen elongate pyriform; wings with a distinct fuscous cloud before the apex.....**Belfragei.**
- Head narrowed behind the eyes, vertex rugose..**triangularis.**
- Wings with a faint fuscous cloud apically, stigma lying almost entirely within the marginal cell.....**attenuata.**
- Wings fuscous, first abdominal segment subpyriform.....**ferruginea.**
- Wings with a distinct fuscous cloud beyond the marginal cell; abdomen slender, petiole and second abdominal segment coarsely punctured.....**melaniceps.**
- Moderately robust, dark honey yellow; wings hyaline, marginal cell ovate lanceolate, pointed to tip, stigma fuscous.....**concolor.**
- Wings with three submarginal cells.*
- Head, thorax and first abdominal segment black, with pale pubescence; mesothorax and abdomen ferruginous, with golden pubescence, anterior wing broadly fuliginous at apex.....**imperialis.**
- Head rounded, as wide as the thorax, both with ferruginous pubescence, third submarginal cell narrowed beneath, its outer nervure nearly obsolete.....**contracta.**
- Second submarginal cell receiving both recurrent nervures, the third small and quadrate.....**nubecula.**
- Wings extending beyond the apex of abdomen, hyaline, stigma very large.....**ampla.**
- Wings yellowish hyaline, second submarginal cell very small, triangular, stigma large.....**nitida.**
- Large; body pale castaneous; head entirely black; posterior femora blackish.....**alcanor.**
- Black, shining; wings hyaline, stigma black.....**atrata.**
- Wings faintly clouded apically, stigma fuscous, third submarginal cell small and quadrate.....**albipes.**
- Wings hyaline, second submarginal small, triangular, stigma large, fuscous; body shining.....**sobrinus.**
- Large; body smooth and shining; wings yellowish hyaline, stigma fuscous, first submarginal cell as large as the second and third combined.....**lepidus.**
- Abdomen with the first and second abdominal segments more or less sessile.*
- Wings with two submarginal cells.*
- Abdomen robust, head broader than thorax, femora blackish.....**tapajos.**
- Robust; abdomen with long, pale pubescence; wings hyaline, immaculate, nervures honey yellow.....**venustus.**
- Wings hyaline, stigma and nervures pale honey yellow.....**juxta.**
- Head subquadrate, posterior angles rounded; wings yellowish hyaline, stigma fuscous, small.....**aulus.**
- Head round, as wide as the thorax; thorax black, clothed on disc with coarse fulvous pubescence; wings yellowish hyaline, clouded about the middle and apex.....**rustica.**
- Head and thorax dark honey yellow, the former subquadrate; wings yellowish hyaline, marginal cell ovate.....**bicolor.**

- Robust; fusco-ferruginous; wings yellowish hyaline, first submarginal cell small and narrow.....**astyanax.**
- Robust, uniform honey yellow; wings yellowish hyaline, the marginal cell broadly ovate.....**inconspicuus.**
- Head round, wings hyaline, stigma large, pale fuscous, lying almost within the marginal cell.....**minuta.**

Wings with three submarginal cells.

- Ferruginous; head round, not as wide as thorax; wings yellowish hyaline. marginal cell ovate, lanceolate, truncate at tip, third submarginal cell narrowed beneath, its outer nervure nearly obsolete.....**uro.**
- Third submarginal cell narrow, transversely elongate quadrate, color dark castaneous, with pale pubescence; antennæ and legs paler; apex of first abdominal segment nearly as broad as the base of the second.....**castanea.**
- Medium; head black, clypeus and mandibles dull honey yellow, concolorous with body; legs paler.....**glabella.**
- Second abdominal segment immaculate.....**hyalina.**
- Robust, apical segments of abdomen clothed with yellow pubescence; wings yellowish, more or less faintly clouded, stigma pale honey yellow.....**nebulosus.**
- Dark honey yellow, shining, apical segments of abdomen polished, pale honey yellow basally; apically margined with fuscous; marginal cell broadly ovate, stigma fuscous..**abdominalis.**
- Bright honey yellow, second abdominal segment with lateral black line.....**pallida.**

DIVISION I.

Abdomen more or less petiolate, as in figs. 17 and 18; wings with two submarginal cells.



Fig. 17.



Fig. 18.

Photopsis mendica Blake.

Male.—Uniform brown-black; head round, densely punctured, thinly clothed with scattered, long, yellowish white hairs; eyes round, polished, prominent; mouth clothed with yellowish hairs; antennæ rufo-fuscous, as long as the head and thorax; thorax ovate, narrowed posteriorly, closely punctured, clothed with yellowish white hairs; sides, metathorax and scutellum reticulate, the latter finely; tegulæ convex, polished; wings ample, yellowish hyaline, paler about the apex; marginal cell elongate ovate, rounded at tip, first submarginal elongate subquadrate, pointed towards base; second short, obliquely subquadrate, its basal nervure sinuate; third obsolete; costal cell moderately wide, stigma honey yel-

low, nervures yellowish; a round fuscous cloud beneath the cells; legs blackish, thinly clothed with long, pale, yellowish pubescence; abdomen elongate ovate, basal segment campanulate, finely punctured, second segment shining, minutely and remotely punctured, sparsely clothed with yellowish white hairs, apical margins of all the segments fringed with long, coarse, yellowish white pubescence; apex armed with two long, acute, recurved spines. Length 11-14 mm.; expanse of wings 21-25.5 mm.

Hab.—Nevada. Collection of Mr. Norton.

Photopsis orizaba Blake.

Male.—Black; head round, as wide as the thorax, finely punctured, thinly clothed with erect yellowish hairs; eyes very large, round, convex; ocelli prominent; antennæ piceous, as long as the head and thorax; thorax: pro- and mesothorax coarsely punctured, the latter with two longitudinal impressed lines on the disc and two short ones near the tegulæ; metathorax rounded, coarsely reticulate, with three short, sharp, longitudinal carinæ not extending to the middle; tegulæ round, convex, polished; wings ample, yellowish hyaline, marginal cell elongate ovate, first submarginal long and narrow, second subquadrate, pointed towards the base, receiving the first recurrent nervure before the middle and having a faint fuscous cloud divided by a longitudinal transparent line; a large fuscous cloud in the discoidal region; apex slightly clouded; legs black, femora clothed with long scattered hairs, tibiæ and tarsi with yellowish pubescence; abdomen elongate ovate, petiolate, petiole segment one-third the length of entire abdomen, shining, feebly punctured, thinly clothed with erect hairs, second segment polished, having a few very minute punctures, interspersed with scattered hairs; lateral carinæ distinct, clothed above and beneath with dense white pubescence; apical margins of the segments clothed with long yellowish pubescence; under side polished, having a few scattered hairs. Length 13 mm.; expanse of wings 21 mm.

Hab.—Mexico.

Photopsis nokomis Blake.

Male.—Head black, shining, punctures very minute and bearing a few scattered, erect, yellowish hairs; eyes large, round, convex; ocelli prominent; antennæ and mandibles dull rufo-fuscous, tips of the latter black; thorax honey yellow, shining, closely punctured, disc of mesothorax with two longitudinal impressed lines; metathorax rounded, coarsely reticulate, the disc having three short longitudinal carinæ not reaching the middle; wings ample, hyaline, marginal cell elongate ovate, pointed at tip, first submarginal long and narrow, second elongate subquadrate, its basal and apical nervures sinuate, receiving the recurrent nervure before the middle; stigma prominent, fuscous, its apical half within the marginal cell; legs fusco-piceous, thinly clothed with pale hairs; abdomen elongate ovate, petiolate, petiole pyriform, rufo-testaceous, paler at base, closely punctured and sparsely clothed with erect hairs; second segment black, polished, finely and remotely punctured, interspersed with long, scattered, pale hairs; remaining segments black; apical margins ciliated with glittering yellow pubescence; under side dark fuscous, apex armed with two minute, acute, recurved spines. Length 11 mm.; expanse of wings 17 mm.

Hab.—Arizona.

In some specimens the head is honey yellow.

Photopsis danaus Blake.

Male.—Dark honey yellow, thinly clothed with erect white hairs; head round, finely punctured; eyes round, large, prominent; antennæ fuscous; thorax elongate subquadrate, rounded in front, closely punctured, disc of mesothorax with two longitudinal impressed lines, scutellum rounded, finely reticulate; metathorax roundly truncate, coarsely reticulate; tegulæ convex; wings hyaline, faintly iridescent, marginal cell elongate ovate, second submarginal obliquely subquadrate, pointed towards base, its basal nervure sinuate, receiving the recurrent nervure before the middle; nervures fuscous, a pale fuscous cloud extending from the stigma and gradually widening to the first apical cell; three faint streaks of the same at apex; legs fuscous, paler towards the joints, femora finely punctured, thinly clothed with white hairs, calcaria pale; abdomen ovate, petiolate, petiole coarsely reticulate, second segment closely punctured, apical segments fringed with whitish pubescence; under side same as above. Length 9 mm.; expanse of wings 16 mm.

Hab.—Texas.

A variety has the basal segment more elongate.

This species closely resembles *P. clara* Cresson, but may be easily distinguished by the transverse fuscous cloud in the wings and the coarse puncturing of the abdomen.

Photopsis unicolor Cresson.

Male.—Uniform pale honey yellow; head rather large, polished, with fine, scattered punctures, and long, thin, yellowish hairs; eyes very large and prominent, slightly emarginate behind; ocelli also large; face much depressed beneath the antennæ; tips of mandibles black; antennæ not quite as long as the head and thorax, luteous yellow, the flagellum opaque; thorax densely and deeply punctured, clothed with a long, thin, yellowish pubescence; mesothorax with four longitudinal impressed lines, the lateral one abbreviated before; metathorax rounded above, rather abrupt on the sides and behind, coarsely reticulated and clothed with a long, thin, whitish pubescence; wings large, yellowish hyaline, slightly varied with pale fuscous, the largest and darkest mark being on the posterior margin beneath the stigma; nervures yellowish, stigma fulvous; marginal cell moderately long, the lower nervure gradually curved to the apex, which is somewhat pointed; two submarginal cells, the first narrow and elongate, the second rather large and subquadrate, receiving the first recurrent nervure before the middle, the basal nervure angular; legs color of the body, tibiæ and tarsi paler, clothed with whitish pubescence; abdomen elongate ovate, petiolate, smooth and polished, pointed at tip, clothed with bright yellow pubescence, rather sparse on the second segment and dense and rather long on the apical segments, which are tinged with yellow; the first or petiole segment elongate, slender at base and dilated towards the tip; the pubescence on the two basal segments whitish. Length 12–15 mm.; expanse of wings 18–23.5 mm.

Hab.—California. (Baron R. Osten Sacken) Two specimens.

This is closely allied to *P. concolor*, and which differs from this species by the darker color, by the hyaline wings, and by the pubescence more sparse and entirely whitish; the pubescence of the present species is of a beautiful golden yellow, except on the metathorax, legs and base of the abdomen, where it is whitish.

Photopsis clara Cresson.

Male.—Uniformly honey yellow, polished, clothed with a long, thin, whitish pubescence; eyes rather large, rounded, entire, very convex and blackish; ocelli large, enclosed by a blackish spot; tips of mandibles also blackish; antennæ as long, or rather longer than the head and thorax, brownish, honey yellow at base; thorax densely punctured; mesothorax polished, with a few scattered punctures and two deeply impressed longitudinal lines; metathorax abruptly rounded behind, coarsely reticulate, with a broad, smooth, shining space on the middle, bounded on the sides and divided down the middle by three sharply defined longitudinal carinæ; tegulæ honey yellow; wings ample, hyaline, faintly tinged with yellowish, with three elongate, longitudinal, pale, fuscous streaks on the apical margin and a large, pale, fuscous spot beneath the second submarginal cell; nervures pale testaceous; stigma rather large and blackish; marginal cell short, rounded at tip; two distinct submarginal cells, the second obliquely subquadrate, receiving the first recurrent nervure before the middle, the basal nervure sinuate; third submarginal obliterated; legs slender, thinly clothed with pale pubescence; coxæ and trochanters honey yellow; femora and tibiæ, except extreme base and apex, blackish, rest of the legs yellowish testaceous; abdomen petiolated, smooth and polished; the node or petiole segment elongate, slender at base and much swollen at tips, and clothed with a long, thin, whitish pubescence; large basal segment highly polished, naked, except its apical margin, which has a long, dense fringe of whitish pubescence; remaining segments fuscous, densely clothed with a long, whitish pubescence, more sparse beneath. Length 8.5 mm.; expanse of wings 16 mm.

Hab.—Colorado.

Photopsis melicausa Blake.

Male.—Uniform dark honey yellow; thinly clothed with erect yellowish hairs; head rounded, shining, finely punctured; eyes large, round and prominent, as well as the ocelli; antennæ pale fuscous, except the scape, which is pale honey yellow; tips of mandibles black; thorax: pro- and mesothorax closely punctured, the latter with two short, feebly impressed longitudinal lines; metathorax rounded, coarsely reticulate; tegulæ ovate; wings moderate, hyaline, marginal cell sublanceolate, first submarginal long, narrow and subparallel, second subquadrate, narrowed towards the base, its apical nervure sinuate and receiving the first recurrent before the middle, third obsolete; stigma lanceolate, dark brown; a faint streaked fuscous cloud in the discoidal region; legs pale yellow, except the apices of the femora and tibiæ, which are pale fuscous, thinly clothed with pale hairs; abdomen elongate ovate, petiolate, smooth, shining, thinly clothed with erect, pale, yellowish hairs, petiole as long as the second segment, moderately punctured, the latter having a few very minute scattered punctures; lateral carinæ distinct, apical margin fringed with fine, white pubescence, the remaining segments margined with long, thin, yellowish hairs; ventral segments same as above; apex armed with two long, acute, recurved spines. Length 11 mm.; expanse of wings 17 mm.

Hab.—Texas. Mr. Belfrage.

Photopsis mellipes n. sp.

Male.—Uniform dark honey yellow; head transversely rounded, wider than the thorax, minutely punctured and bearing a few scattered, pale, glittering

hairs, base of mandibles pale honey yellow, tips castaneous, clothed with glittering pubescence, clypeus round; eyes large, round, prominent; antennæ: scape pale honey yellow, clothed with yellow sericeous pubescence, flagellum yellowish fuscous; thorax elongate ovate, slightly narrowed posteriorly, pro- and mesothorax closely punctured, metathorax obliquely truncate, coarsely and confluent punctured; wings hyaline, with a faint fuscous cloud before the apex, two submarginal cells, the marginal cell sublunate, roundly truncate at tip, first submarginal large, elongate subquadrate, second small, subconical, pointed towards the base and receiving the recurrent nervure near the base; stigma large, occupying the greater part of the marginal cell; tegulæ small, pale honey yellow; legs uniformly pale honey yellow, thinly clothed with glittering hairs; abdomen elongate ovate, petiolate, petiole long, pyriform, closely covered with confluent punctures, second segment finely punctured, third segment with a narrow, transverse, castaneous band on disc at middle, apical margins of the fifth and sixth segments fringed with pale pubescence, entire abdomen thinly clothed with erect glittering white hairs, ventral surface same as above. Length 10 mm.; expanse of wings 14 mm.

Hab.—Arizona.

Photopsis Belfragei Blake.

Male.—Uniform fuscous, shining, thinly clothed with erect whitish hairs; head rounded, as wide as the thorax, very finely punctured; eyes very large, round, prominent, as well as the ocelli; antennæ luteous, as long as the head and thorax; tips of the mandibles black; thorax elongate, subparallel, rounded in front, pro- and mesothorax very finely punctured, metathorax roundly truncate, coarsely reticulated; tegulæ small, honey yellow; wings hyaline, faintly iridescent, having a large fuscous cloud just beyond the marginal cell, darker towards the base; marginal cell short, rounded at tip, two distinct submarginal cells, the second subtriangular, narrowed towards the base and receiving the two recurrent nervures; stigma as long as the marginal cell, which encloses three-fourths of it, pale yellow; nervures hyaline; legs pale yellow, except the femora, which are fuscous, clothed with scattered long hairs; trochanters broadly dilated; abdomen elongate ovate, coarsely punctured, first or petiole segment more than one-third the length of entire abdomen, its apical half suddenly enlarged and ovate, third segment nearly black; segments fringed with pale hairs, the apex armed with an acute, recurved spine. Length 13 mm.; expanse of wings 18 mm.

Hab.—Texas.

This species is closely allied to *P. nubecula* Cresson, but is readily distinguished by having two submarginal cells and the sudden dilatation of the basal segment of the abdomen.

Photopsis triangularis Blake.

Male.—Uniform dark honey yellow; head small, subtriangular, closely punctured; eyes large, prominent; tips of mandibles black; antennæ flavo-fuscous; thorax ovate, narrowed posteriorly, mesothorax with two longitudinal impressed lines, coarsely punctured; scutellum rounded, finely punctured; metathorax coarsely reticulate; wings yellowish hyaline, marginal cell ovate lonceolate, first submarginal long and narrow, second subtriangular, its basal nervure arcuate, receiving the first recurrent near the base; stigma small, fuscous; legs rufo-fus-

cous about the joints, thinly clothed with scattered pale hairs; abdomen elongate ovate, petiolate; basal segment subpyriform, second segment shining, minutely and remotely punctured, bearing a few scattered, long, pale hairs; remaining segments fringed with long, pale pubescence; apex fuscous. Length 9 mm.; expanse of wings 17 mm.

Hab.—Nevada. Collection of Mr. Norton.

This species is easily recognized by the triangular head.

Photopsis attenuata Blake.

Male.—Uniform dark honey yellow; head round, shining; eyes large, prominent; antennæ honey yellow; thorax elongate ovate, shining, finely punctured, disc of mesothorax elevated, sides closely punctured, metathorax closely and finely reticulate, gradually roundly truncate; wings moderate, hyaline, with a faint fuscous cloud in the apical region, marginal cell ovate, truncate at tip, first submarginal large, second very small, subtriangular, receiving the second recurrent nervure before the middle; stigma large, yellowish, lying almost wholly within the marginal cell; tegulæ minute, pale honey yellow; legs pale honey yellow, thinly clothed with concolorous hairs; abdomen elongate, petiolate, petiole one-third the length of the entire abdomen, pyriform, densely punctured, second segment finely punctured, third castaneous; entire insect sprinkled with erect whitish hairs. Length 4.5 mm.; expanse of wings 11 mm.

Hab.—Texas. Belfrage.

Photopsis ferruginea Blake.

Male.—Uniform ferruginous; head not as wide as thorax, finely punctured; eyes large, prominent; tips and upper edges of mandibles blackish; flagellum of antennæ fuscous, slightly pruinose; thorax ovate, narrowed posteriorly, mesothorax with two longitudinal, parallel, impressed lines; scutellum rounded, closely punctured, metathorax coarsely reticulate, flanks punctured; wings fuscous, marginal cell ovate lanceolate, first submarginal small, narrow, second subquadrate, receiving the first recurrent about the middle, stigma small, fusco-ferruginous; tegulæ polished, dark honey yellow; legs thinly clothed with scattered hairs; abdomen elongate ovate, petiolate, shining, thinly clothed with erect pale hairs; basal segment subpyriform, second minutely and remotely punctured. Length 11 mm.

Hab.—Nevada.

Photopsis melaniceps n. sp.

Male.—Head black, shining, transversely rounded, narrowed posteriorly, as wide as the thorax and bearing a few erect, glittering white hairs, minutely punctured; eyes and ocelli large and prominent; scape of antennæ pale honey yellow, flagellum slightly darker; face beneath the antennæ honey yellow; tips of mandibles blackish; thorax ovate, dark honey yellow; pro- and mesothorax finely punctured, thinly clothed with erect pale hairs, metathorax roundly truncate, coarsely and confluent punctured; wings hyaline, with a small fuscous cloud beyond the marginal cell, which is narrow and roundly truncate at tip, two submarginal cells, the first long and pointed at base, the second elongate subtriangular, its outer nervure sinuate and receiving both recurrent nervures, the first at the base and the second a little before the middle; stigma pale honey yellow and lying three-fourths within the marginal cell; tegulæ small, pale honey yellow.

low; legs honey yellow, clothed with long pale hairs; abdomen dark honey yellow, elongate ovate, petiolate, thinly clothed with erect, pale yellowish hairs; petiole pyriform, much narrowed at base, coarsely punctured, second segment coarsely and deeply punctured, polished; apex somewhat more densely clothed. Length 12 mm.; expanse of wings 18 mm.

Hab.—Arizona.

This species is allied to *P. albipes* Cresson, but is easily separated by the black head.

SUBDIVISION I.

Wings with three submarginal cells.

Photopsis imperialis Blake.

Male.—Head black, rounded, finely punctured, thinly clothed with scattered whitish hairs; eyes round, polished, prominent; antennæ piceous, as long as the head and thorax; thorax ovate, dark ferruginous above, closely punctured, disc of mesothorax with two longitudinal impressed lines, scutellum blackish, finely punctured, metathorax roundly truncate, coarsely reticulate, dorsal groove not extending to the middle, sides coarsely punctured; wings ample, basal half hyaline, apical half pale fuscous, marginal cell elongate ovate, three submarginal cells, first narrow, second obliquely subquadrate, pointed towards base, its basal and apical nervures sinuate, receiving the first recurrent before the middle, third narrowed beneath, so that its apical nervure is opposite to and joins the second recurrent; legs black, thinly clothed with silvery hairs, calcaria reddish; abdomen ovate, petiolate, basal segment pyriform, coarsely punctured, thinly clothed with erect silvery hairs; second and following segments brownish, finely punctured, the apical margins clothed with reddish golden pubescence; under side same as above. Length 13 mm.; expanse of wings 23.5 mm.

Hab.—Texas.

Photopsis contracta Blake.

Male.—Uniform bright ferruginous, thinly clothed with erect hairs; head rounded, as wide as thorax; eyes round, prominent; flagellum of antennæ slightly pruinose; upper edges and tips of mandibles blackish; thorax ovate, rounded posteriorly, minutely punctured, mesothorax with two faintly impressed lines, scutellum rounded, metathorax abruptly truncate, reticulate; wings fuscous, marginal cell short, ovate, first submarginal long, narrow, second subtriangular, its apical nervure sinuate and receiving the first recurrent near the middle, stigma small, fuscous; tegulæ dark honey yellow; legs thinly clothed with scattered hairs; abdomen ovate petiolate, short, shining; apical margin of petiole blackish, margins of remaining segments fringed with ferruginous pubescence. Length 9 mm.

Hab.—Nevada.

Photopsis concolor Cresson.

Male.—Uniform honey yellow, polished, clothed with a thin, long, whitish pubescence; eyes large, round, entire and prominent, as well as the ocelli, which are enclosed by a blackish spot; antennæ long, honey yellow, the flagellum

above dusky; thorax rather closely punctured; the suture between the pro- and mesothorax deeply impressed; scutellum subdepressed, rugose, with a transverse excavation at base; metathorax rounded, coarsely reticulated, with a double shining space at base enclosed by well defined carinæ; tegulæ luteous; wings ample, obscure hyaline; nervures testaceous, stigma fuscous; marginal cell elongate, regular, pointed at tip; two submarginal cells, shaped as in *P. clara*; third submarginal cell obliterated; legs luteous, with long, whitish pubescence; the four posterior femora and tibiæ, except extreme base and apex, more or less blackish; abdomen elongate, petiolated, oblong ovate, smooth and shining, clothed with a long, thin, whitish pubescence, very sparse on the disk of the large basal segment, but rather dense on the apical margins of all the segments above and beneath; the first or petiole segment elongate, rather slender at base and swollen beyond the middle, with a small prominence on each side about the middle. Length 9-11 mm.; expanse of wings 17-18 mm. (Cresson.)

Hab.—Colorado.

Allied to *P. clara*, but easily distinguished by the hyaline wings.

Photopsis nubecula Cresson.

Male.—Uniform dull honey yellow, shining, thinly clothed with a rather long whitish pubescence; eyes large, round, entire and very prominent, as well as the ocelli; tips of mandibles black; antennæ longer than the head and thorax, luteous yellow; thorax above shining, with scattered punctures, those on the pleura very dense; metathorax rugose; tegulæ honey yellow; wings hyaline, faintly iridescent, with a rather large fuscous cloud just beyond the marginal cell; nervures yellowish, stigma rather large and blackish; marginal cell short, not longer than the stigma, broadly rounded at tip; three distinct submarginal cells, the second small, subtriangular and receiving the two recurrent nervures, the third still smaller and quadrate, the apical nervure about on a line with the tip of the stigma; legs entirely luteous yellow, with thin, pale pubescence; abdomen oblong ovate, pointed at tip, petiolated, rather closely punctured, shining and with a scattered, long, pale pubescence; the first, or petiole segment, half the length of the whole abdomen, very slender at base, with the posterior half greatly swollen and ovate; the extreme apex of the abdomen with a short, acute, recurved spine, and the fourth and fifth ventral segments have at the extreme apical middle of each two tufts of erect setæ. Length 7-8.5 mm.

Hab.—Colorado. Two specimens.

Easily recognized by the fuscous cloud beyond the stigma on the anterior wings; the small specimen has the neuration of the anterior wings remarkably variable; on the left wing the third submarginal cell is very narrow and transverse, while on the right wing it is obliterated and thrown into the second submarginal, making that cell nearly as large as the first; the marginal cell in both wings is narrower than in the large specimen, and merely margins the stigma.

Photopsis ampla Blake.

Male.—Head transverse, small, black, polished; eyes and ocelli large, prominent; mandibles honey yellow before the tips; antennæ fulvous; thorax elongate ovate, narrowed to apex, dark honey yellow, shining; metathorax tapering

posteriorly, smooth; flanks of mesothorax swollen; wings as long as entire insect, hyaline, iridescent; marginal cell short, arcuate, lying almost entirely beneath the stigma, which is large, lanceolate, fuscous, first submarginal as large as the second and third together, second small, triangular, receiving the first recurrent near the base, third subquadrate, receiving the second recurrent near the middle; tegulæ honey yellow; legs pale honey yellow, thinly clothed with yellow pubescence; abdomen elongate ovate, petiolate, petiole long, thinly clothed with white hairs, second and following segments fuscous, with the apical margins dark honey yellow, clothed with a few scattered hairs. Length 14-16 mm.

Hab.—Colorado. Two specimens.

Allied to *alcanor* Blake, but may be easily separated by the form of the metathorax.

Photopsis nitida Cresson.

Male.—Pale chestnut brown, polished, very sparsely punctured, clothed with a long, scattered, pale pubescence; antennæ and tegulæ pale testaceous; post-scutellum with a central pit; disk of metathorax with a shallow, longitudinal depression, slightly striated at base; wings hyaline, faintly tinged with yellowish; nervures and stigma fuscous; marginal cell very short, appendiculated at tip; second submarginal cell triangular, petiolated; third submarginal cell large, subquadrate; abdomen very feebly punctured; basal segment petiolate, gradually dilated to tip; disk faintly sulcate; venter tinged with fuscous. Length 11-14 mm.

Hab.—Colorado. Lieutenant C. W. Whipple.

This is allied to *P. alcanor* Blake.

Photopsis alcanor Blake.

Male.—Head black, rounded, wider than the thorax, very finely punctured, mandibles black, tridentate at tips; eyes very large, prominent; ocelli also large; antennæ fulvo-testaceous, more than half as long as entire insect, the joints curved, presenting a slightly scolloped appearance when viewed laterally; thorax chestnut brown, elongate subquadrate, truncate in front, disc of mesothorax subconvex, shining, feebly and remotely punctured, with two lateral, longitudinal impressed lines, the lateral lobes finely and closely punctured, metathorax truncate, shining, the dorsal groove extending to apex; wings pale yellowish hyaline, nervures pale fuscous; stigma large, marginal cell short, roundly obliquely truncate at tip, three distinct submarginal cells, the first nearly as long as the stigma and marginal cell combined, dilated towards the base, second subtriangular, truncate at base and lying entirely beneath the first, receiving the first recurrent beyond the middle; legs castaneous, thinly clothed with pale hairs, more dense on the tibiæ and tarsi; abdomen elongate, petiolate, chestnut brown, shining, petiole pyriform, minutely punctured, punctures coarser about the apex, second and following segments feebly punctured and sparsely clothed with scattered pale pubescence. Length 13 mm.; expanse of wings 23.5 mm.

Hab.—Arizona.

This species resembles *P. castanea* Cresson, but may be known by the greater length of antennæ and the head being entirely black.

Photopsis atrata Blake.

Male.—Uniform black, shining, thinly clothed with a few scattered, erect hairs; head transverse, as wide as thorax; antennæ fuscous, mandibles dark ferruginous; eyes large, round, prominent; thorax robust, ovate, narrowed posteriorly, flanks beneath the wings much swollen; wings hyaline, iridescent; marginal cell very short, arcuate, rounded at apex, first submarginal large, second triangular, receiving the first recurrent near the base, third quadrate, receiving the second recurrent before the middle; stigma large, black; tegulæ honey yellow; femora black, tibiæ and tarsi fuscous, clothed with pale pubescence; abdomen elongate ovate, petiolate; petiole pyriform, with a longitudinal dorsal impression, not extending to apical margin, which is constricted, and on ventral surface a longitudinal sulcus, widening to apex; apical margins of segments narrowly fusco-ferruginous. Length 7–9 mm.

Hab.—Nevada. Seven specimens.

Easily distinguished by the uniform black color and extreme shortness of the marginal cell.

Photopsis albipes Cresson.

Male.—Uniform dark honey yellow, clothed with long, thin, pale pubescence, more dense on abdomen, sparsely punctured, metathorax closely and rather coarsely reticulated; mandibles pale, with black tips and long hairs; palpi pale; antennæ yellowish white, scape with long hairs; wings pale yellowish hyaline; marginal cell with a fuscous cloud, rather narrow, about equal in length with the stigma, truncate at tip; second submarginal cell subtriangular, the third subquadrate, slightly narrowed beneath; legs entirely yellowish white, clothed with long whitish pubescence; abdomen more or less tinged with fuscous, ovate, petiolate, the petiole long, much swollen beyond the middle, strongly and rather closely punctured, the apex strongly constricted. Length 11–12 mm. (Cresson.)

Hab.—Nevada.

Photopsis sobrinus n. sp.

Male.—Uniformly dark honey yellow, transversely rounded, as wide as the thorax, shining and minutely punctured; eyes and ocelli large and prominent, mandibles bidentate at tips; antennæ long, fulvo-testaceous; thorax elongate ovate, narrowed posteriorly, mesothorax convex, shining, very minutely and distantly punctured and having on the disc two deeply impressed, longitudinal lines extending to the scutellum, which is convex and polished; metathorax roundly truncate, the dorsal groove reaching to the apex; wings faintly yellowish hyaline, marginal cell short, ovate and abruptly truncate at tip, three submarginal cells, the first elongate subquadrate, as large as the second and third combined, the second forming a small right angle triangle and receiving the first recurrent nervure close to the base, the third quadrate, receiving the second recurrent nervure at middle; stigma large, ovate, dark honey yellow; tegulæ moderately large, pale honey yellow, polished; legs concolorous with the body, very sparsely clothed with yellowish hairs; abdomen elongate ovate, petiolate narrowed to apex, polished; petiole subpyriform, having a slight longitudinal depression on the disc, extreme apex fuscous, ventral surface, second and remaining segments more or less stained with testaceous. Length 12 mm.; expanse of wings 22 mm.

Hab.—Colorado.

This species is allied to *P. alcanor*, but may be distinguished by the head being concolorous with the body, whereas it is black in that species, and by the paler color of the entire insect.

Photopsis lepidus n. sp.

Male.—Uniform dark honey yellow; head transversely rounded, not as wide as the thorax, minutely punctured; eyes and ocelli large and prominent, tips of mandibles black; antennæ fusco-ferruginous, scape very short, minutely punctured, joints of the flagellum crenulate when viewed laterally; thorax robust, prothorax narrow, mesothorax convex, shining, very feebly punctured and bearing two lateral, longitudinal, impressed lines on the disc; scutellum prominent, triangular, rounded posteriorly, shining, very feebly punctured, metathorax roundly truncate, smooth, dorsal groove extending to apex, lateral lobes of mesothorax very prominent, closely and finely punctured; wings ample, three submarginal cells, the first as large as the second and third combined, second triangular, receiving the first recurrent nervure before the middle, second elongate subquadrate, its outer nervure arcuate, receiving the second recurrent at middle; marginal cell short, roundly truncate, stigma large, fuscous; all the nervures fuscous; tegulæ large, dark honey yellow, polished; legs uniform honey yellow, very feebly pubescent; abdomen elongate, sparsely clothed with pale hairs, basal segment pyriform and having on the disc a shallow, longitudinal groove, second and following segments shining, more or less stained laterally with testaceous patches, disc of second segment beneath castaneous. Length 16 mm.; expanse of wings 28 mm.

Hab.—Colorado.

This species is allied to *P. ampla* Blake, but may be separated by the head being concolorous with the body, whereas in the latter it is black.

Photopsis tapajos Blake.

Male.—Uniform dark honey yellow; thinly clothed with long whitish hairs; head subquadrate, as wide as the thorax, very finely punctured, shining, the space behind the ocelli deeply impressed; eyes large, round and prominent; antennæ brownish, pale yellow at base; tips of the mandibles black; thorax densely punctured; mesothorax with four longitudinal, impressed lines; metathorax very coarsely reticulated, roundly truncate; tegulæ small; wings hyaline, marginal cell elongate, rounded to tip, first submarginal long, narrow, second obliquely subquadrate, pointed towards the base and receiving the first recurrent nervure a little before the middle, third nearly obsolete, narrowed beneath, so that its apical nervure is opposite to and joins the second recurrent; stigma nearly black, the apical half lying within the marginal cell; a faint fuscous cloud in the discoidal region, nervures fuscous; legs thinly clothed with pale hairs, coxæ and trochanters pale yellow; abdomen elongate ovate, petiole closely punctured, second segment shining, very finely and remotely punctured, apical margins of the segments fringed with pale white pubescence, ventral segments same as above; apex armed with two acute, recurved spines. Length 11–12 mm.; expanse of wings 19 mm.

Hab.—Texas. Mr. Belfrage.

Closely allied to *P. clara* Cresson, but may be distinguished by the greater length of the marginal cell and the absence of the apical fuscous streaks in the wings.

Photopsis venustus n. sp.

Male.—Robust, uniformly dark honey yellow; head subquadrate, posterior angles rounded, finely and irregularly punctured, shining, thinly clothed with erect, pale yellowish hairs; mandibles finely punctured, black at tips and thinly clothed with pale hairs; eyes large, round and polished; antennæ fuscous, scape clothed with fuscous pubescence; thorax ovate, slightly narrowed posteriorly, pro- and mesothorax finely punctured, clothed with erect yellowish hairs; metathorax roundly truncate, coarsely reticulate, thinly clothed with erect white hairs; scutellum very finely punctulate; wings hyaline, two submarginal cells, marginal cell elongate ovate, first submarginal cell long and narrow, second elongate subquadrate, pointed towards base and receiving the first recurrent nervure before the middle, stigma small, costal cell wide, tegulæ pale honey yellow; legs pale honey yellow, clothed with long pale hairs; abdomen ovate, shining, finely and remotely punctured, sparsely clothed with moderately long, whitish hairs; basal segment campanulate, subsessile with the second, apical margins of all the segments fringed with whitish pubescence; under side of entire insect finely punctured. Length 15 mm.; expanse of wings 24 mm.

Hab.—Arizona.

Allied to *P. tapajos* Blake, but may be distinguished by the greater length of the marginal cell, and by being more robust.

Photopsis juxta Blake.

Male.—Uniform dark brown; thinly clothed with whitish hairs; head rounded, narrowed posteriorly, finely punctured; eyes large, prominent as well as ocelli; antennæ pale honey yellow; mandibles tipped with black; thorax robust, elongate ovate, shining, finely punctured; mesothorax with four longitudinal impressed lines, metathorax roundly truncate, broadly reticulate; wings moderate, yellowish hyaline; marginal cell broadly ovate, first submarginal elongate, second subquadrate, pointed towards base, its basal nervure sinuate; stigma elongate, its apical three-fourths lying within the marginal cell; tegulæ round, polished, honey yellow, thinly clothed with whitish hairs, calcaria fuscous; abdomen elongate ovate, petiole subpyriform, second segment shining, feebly and remotely punctured; apical margins of all the segments castaneous, thinly fringed with pale yellowish pubescence. Length 9 mm.; expanse of wings 18 mm.

Hab.—Texas. Belfrage.

Photopsis aulus Blake.

Male.—Uniform dark honey yellow, thinly clothed with erect white hairs; head subquadrate, posterior angles rounded, shining, very minutely and distantly punctured; eyes large, round, prominent, ocelli moderate; scape of antennæ honey yellow, scutellum fuscous; tips and upper edge of mandibles blackish; thorax elongate subquadrate, rounded in front, pro- and mesothorax finely punctured, the latter with four faintly impressed longitudinal lines, metathorax roundly truncate, broadly and shallowly reticulate; wings moderate yellowish hyaline, marginal cell large, ovate lanceolate, first submarginal cell narrow,

second subquadrate, pointed towards base, its basal nervure sinuate, third subobsolete; stigma fuscous, its apical two-thirds lying within the marginal cell; tegulæ round, polished, honey yellow; legs fuscous, thinly clothed with whitish hairs; abdomen elongate ovate, petiole pyriform, its ventral carina terminating anteriorly in an obtuse tooth, second segment shining, minutely and distantly punctured; apical margins of all the segments fringed with white pubescence. Length 11 mm.; expanse of wings 18 mm.

Hab.—Texas. Belfrage.

DIVISION II.

Abdomen, with the first abdominal segment, more or less sessile with the second, fig. 19; wings with two submarginal cells.



Fig. 19.

Photopsis rustica Blake.

Male.—Head round, as wide as the thorax, honey yellow, clothed with erect fulvous hairs; eyes and ocelli prominent; antennæ fuscous, as long as the head and thorax, flagellum pruinose; thorax black, disc of mesothorax clothed with coarse fulvous pubescence, metathorax roundly truncate, coarsely and broadly reticulate; wings yellowish hyaline, clouded about the middle and apex; marginal cell ovate lanceolate, first submarginal narrow, pointed towards the base, second subquadrate, receiving the first recurrent near the base; legs black, thinly clothed with white hairs, calcaria fuscous; abdomen elongate ovate, petiolate, narrowed to apex, petiole fuscous, finely punctured, thinly clothed with long white pubescence, apical fringe yellow, second and following segments honey yellow, the apical margins fringed with long yellow pubescence, second segment beneath fuscous. Length 16 mm.

Hab.—California. Henry Edwards.

Photopsis bicolor Blake.

Male.—Head and thorax dark honey yellow, thinly clothed with erect white pubescence; head subquadrate, posterior angles rounded, finely punctured; eyes round, large, prominent; antennæ fuscous toward the tips; tips of mandibles fuscous; thorax ovate, narrowed posteriorly, closely punctured, metathorax roundly truncate, broadly reticulate; wings hyaline, faintly tinged with yellowish toward apex, marginal cell ovate, first submarginal narrow, second subtriangular, receiving the first recurrent about the middle; tegulæ round, honey yellow; legs fuscous, paler about the joints, clothed with fine white pubescence, calcaria long; abdomen fuscous, ovate, petiolate, petiole subsessile with the second segment, smooth, minutely and remotely punctured, thinly clothed with long, erect, white pubescence. Length 5 mm.

Hab.—Texas. Two specimens.

Allied to *P. nokomis* Blake, but may be easily separated by the small size and the triangular second submarginal cell.

Photopsis astyanax Blake.

Male.—Fusco-ferruginous; head quadrate, posterior angles rounded, finely punctured, thinly clothed with erect yellowish hairs; eyes large, prominent, polished; antennæ fuscous, scape punctured, flagellum pruinose; thorax ovate, narrowed posteriorly, closely punctured, mesothorax with two short, impressed, longitudinal lines, thinly clothed on disc with yellowish pubescence, metathorax roundly truncate, broadly reticulate, flanks deeply excavate; wings yellowish hyaline, marginal cell ovate, lanceolate, roundly truncate at tip, first submarginal small, narrow, second subquadrate, narrowed to apex, receiving the first recurrent before the middle; tegulæ dark honey yellow; legs fuscous, clothed with yellowish pubescence, calcaria long; abdomen ovate, basal segment campanulate, subsessile with the second, minutely punctured; apical margins of the segments fringed with white. Length 14 mm.

Hab.—Texas. Two specimens.

Photopsis inconspicuus n. sp.

Male.—Uniform honey yellow; head rounded, minutely punctured, thinly clothed with erect, coarse, yellowish hairs; eyes and ocelli large and prominent, mandibles stout, tipped with black, clothed with scattered yellowish pubescence; antennæ fulvo-ferruginous, scape closely punctured and clothed with yellow pubescence; thorax ovate, pro- and mesothorax coarsely punctured and moderately densely clothed with coarse fulvous pubescence, metathorax roundly truncate, coarsely and deeply reticulate; lateral lobes of mesothorax finely punctured; wings faintly yellowish hyaline, two submarginal cells, the first long and narrow, the second elongate subquadrate, pointed towards base and receiving the recurrent nervure before the middle, the marginal cell broadly ovate, rounded to tip; stigma small, honey yellow; tegulæ pale honey yellow, shining; legs pale honey yellow, thinly clothed with glittering yellow hairs; abdomen elongate ovate, basal segment campanulate, sessile with the second, minutely punctured and clothed with long whitish pubescence, second segment shining, very minutely punctured and sparsely clothed with whitish hairs, the remaining segments more densely clothed; ventral surface somewhat paler than above. Length 14 mm.; expanse of wings 22 mm.

Hab.—California.

Photopsis minuta Blake.

Male.—Uniform dark honey yellow; head round, shining, minutely punctured; eyes large, prominent; antennæ pale fuscous; thorax elongate ovate, closely punctured, metathorax roundly truncate, broadly and feebly reticulate; wings hyaline, marginal cell ovate, first submarginal large, second small, subtriangular, pointed towards base, receiving the first recurrent nervure at base; stigma large, pale fuscous, two-thirds within the marginal cell; tegulæ round, pale honey yellow; legs honey yellow, thinly clothed with white hairs; abdomen elongate ovate, petiole pyriform, the ventral carina terminating in a sharp tooth anteriorly, second segment shining, minutely punctured; apical margins of all the segments thinly fringed with pale pubescence. Length 4 mm.; expanse of wings 7 mm.

Hab.—Texas. Belfrage.

SUBDIVISION II.

Wings with three submarginal cells.

Photopsis uro Blake.

Male.—Ferruginous; head round, not as wide as thorax, minutely punctured, thinly clothed with erect white hairs; eyes round, prominent; scape of antennæ finely punctured; thorax robust, ovate, closely punctured, mesothorax with two longitudinal, impressed lines, sparsely clothed with erect white hairs, metathorax roundly truncate, coarsely reticulate, excavations of the flanks smooth; wings yellowish hyaline, marginal cell ovate lanceolate, abruptly truncate at tip; first submarginal subovate, pointed at base, second subtriangular, receiving the first recurrent nervure before the middle; tegulæ honey yellow; legs fuscous, clothed with whitish pubescence; abdomen short, petiolate, minutely punctured, smooth; apical margins of segments thinly fringed with white pubescence. Length 10 mm.

Hab.—Texas. Two specimens.

Photopsis castanea Cresson.

Male.—Uniform dark chestnut brown, densely and finely punctured, shining, clothed with a thin, palish-pubescence; head slightly wider than the thorax, the eyes very large and prominent, entire; ocelli very large and prominent, enclosed by a black spot; face much depressed beneath the antennæ; upper surface of the mandibles broad and concave, outer surface rather densely clothed with short yellowish pubescence; palpi pale luteous; antennæ longer than the head and thorax, fulvo-testaceous, and when viewed sideways they have a scoloped appearance, the joints beneath being contracted at their sutures; thorax broad and truncate in front, prothorax closely punctured, depressed above and somewhat prominent on each side; mesothorax subconvex, with large, deep, sparse punctures; on each side over the tegulæ a deeply impressed longitudinal line; scutellum large, with large, scattered punctures; pleura densely punctured; metathorax quadrate, with scattered punctures, shining, abrupt on the sides and behind, the posterior face concave; on the dorsal middle two longitudinal approximated carinæ, confluent behind; tegulæ smooth and polished, chestnut brown; wings pale yellowish hyaline; nervures fuscous, stigma rather large; marginal cell short, obliquely truncate at tip; three distinct submarginal cells, the first long and narrow, nearly as long as the stigma and marginal cell taken together; the second longitudinally subtriangular, much narrowed towards the base of the wing and continued beneath the first submarginal to near its base, receiving the first recurrent nervure beyond the middle; third submarginal very short, narrow, transversely quadrate, receiving the second recurrent nervure at the apex; legs fulvo-testaceous, clothed with pale yellowish pubescence, quite dense on the tibiæ and tarsi; abdomen elongate, sparsely punctured, shining, the punctures becoming finer and less distinct towards the apex, the pubescence on the basal segments short and thin, longer and thicker on the apical segment; first segment large and much swollen, with a short peduncle, the segment nearly as broad as the second, the apical margin constricted; last ventral segment with a long, acute, recurved spine. Length 13 mm.; expanse of wings 22.5 mm.

Hab.—Lower California. Mr. H. Ulke.

This may be distinguished by the uniform dark chestnut brown color, the elongate abdomen and the singular neuration of the wings.

Photopsis glabrella Cresson.

Male.—Uniform obscure honey yellow, very smooth and polished, clothed with a thin, pale yellowish pubescence: head black, with fine scattered punctures; eyes very large and prominent, entire and rounded; ocelli also large and prominent; clypeus and mandibles obscure honey yellow, the former very transverse and much depressed; the mandibles large, broad, the upper margin sinuate and acutely carinate, the apex with three short, obtuse, blackish teeth; antennæ longer than the head and thorax, filiform; thorax rather broad in front, with thin, subappressed, yellowish sericeous pubescence; prothorax sunken, not prominent; mesothorax large, rather broadly margined anteriorly and on each side over the tegulæ a finely impressed longitudinal line, the surface polished, with a few scattered delicate punctures; scutellum smooth, with a few long pale hairs; pleura rather closely punctured, very prominent on the sides and beneath and behind it a very deep, oblique excavation; metathorax very finely sculptured, subopaque, subquadrate, abrupt on the sides and behind with a long, thin, pale pubescence; wings ample, hyaline; nervures fuscous, stigma moderate, blackish; marginal cell very short, scarcely more than half the length of the stigma the apex appendiculated and subacute, the lower nervure more robust than the upper; three distinct submarginal cells, the first as long as the stigma, much narrowed at tip; the second small, triangular, receiving the first recurrent nervure near the base, which is pointed; the third submarginal rather large, quadrate and receiving the second recurrent nervure about the centre; legs color of the body, thinly pubescent, the tibiæ and tarsi paler; abdomen elongate ovate, pointed at apex, petiolated, clothed with a long yellowish pubescence, more dense towards the apex; first or petiole segment very slender at base and greatly swollen behind the middle and subglobose; posterior margins of the segments depressed or broadly margined. Length 11 mm.; expanse of wings 17 mm.

Hab.—Colorado.

Closely allied in form and color to *P. nubecula*, but may be at once distinguished from that species by the smoother surface of the body, the black head, hyaline wings and the shape of the metathorax.

Photopsis hyalina Blake.

Male.—Uniform honey yellow; head subquadrate, posterior angles rounded, finely punctured; eyes large, prominent; antennæ pale honey yellow; mandibles black at tips; thorax elongate quadrate, finely punctured, mesothorax with two faintly impressed longitudinal lines; metathorax roundly truncate, coarsely reticulate; tegulæ small, pale yellow; wings hyaline, faintly iridescent, marginal cell ovate, first submarginal small, narrow; second short, obliquely subquadrate, receiving the recurrent nervure near the base, stigma prominent; legs pale honey yellow; abdomen ovate, narrowed to apex, shining, finely punctured, basal segment campanulate, apical margins of segments fringed with silvery pubescence; entire insect sprinkled with pale hairs. Length 5.5 mm.; expanse of wings 9 mm.

Hab.—Texas. Mr. Belfrage.

Photopsis nebulosus n. sp.

Male.—Uniform honey yellow; head rounded, not as wide as the thorax, moderately densely clothed with long, glittering whitish hairs, closely punctured, shining; eyes large, polished; tips of mandibles black, scape of antennæ clothed with sericeous honey yellow pubescence; thorax elongate ovate, pro- and mesothorax finely punctured, clothed with glittering, erect honey yellow pubescence, metathorax roundly truncate, coarsely reticulate, thinly clothed with long, erect, white hairs; lateral declivities deep, polished; wings hyaline, having a fuscous cloud in the third discoidal and first apical cells, the marginal cell ovate, roundly pointed at tip, first submarginal narrow and pointed at base, second short, subquadrate, receiving the first recurrent nervure about the middle, third nearly obsolete, narrowed beneath and receiving the second recurrent nervure before the middle, stigma moderate, its apical two thirds being within the marginal cell; tegulæ small, honey yellow; legs: femora fuscous, thinly clothed with glittering white hairs, tibiæ and tarsi honey yellow, clothed with shorter hairs; abdomen ovate, shining, minutely punctured, clothed above with erect, pale yellowish hairs; basal segment campanulate, subsessile with the second and having on each side a minute tubercle; apical margins of segments fringed with pale yellowish above, shining. Length 13 mm.; expanse of wings 24 mm.

Hab.—Southern California.

Photopsis abdominalis n. sp.

Male.—Dark honey yellow; head subquadrate, posterior angles rounded, shining, minutely punctured; eyes and ocelli prominent, a rounded tubercle beneath the eyes, mandibles densely and finely punctured, clothed with yellow pubescence; antennæ fulvo-ferruginous; thorax ovate, thinly clothed with white pubescence, mesothorax minutely punctured and having two impressed longitudinal lines on the disc, metathorax obliquely truncate, covered with broad, shallow reticulations; lateral lobes coarsely and confluent punctured; wings hyaline, faintly iridescent; marginal cell short, broadly ovate, truncate at tip, first submarginal elongate, second subquadrate, pointed to base, receiving the first recurrent near the base, third narrowed beneath, its outer nervure nearly obsolete, stigma large, fuscous; nervures of all the wings fuscous; tegulæ pale honey yellow; legs obscure honey yellow, posterior femora and tibiæ fuscous, clothed with glittering white hairs; abdomen elongate ovate, thinly clothed with erect, glittering white hairs; basal segment campanulate, subsessile with the second, shining, with a few minute punctures; second segment polished, its apical margin fringed with short, silvery pubescence, the remaining segments broadly fuscous, apically, shaded with pale honey yellow basally, ventral surface same as above. Length 10 mm.; expanse of wings 18 mm.

Hab.—Colorado.

Photopsis pallida Blake.

Male.—Uniform pale honey yellow; sparsely clothed with yellowish white hairs; head rounded, feebly punctured; eyes and ocelli round, prominent; antennæ nearly as long as the head and thorax; thorax: pro- and mesothorax finely punctured, shining; metathorax rounded, broadly reticulate, with a smooth, shining space at middle; tegulæ small; wings moderate, hyaline, marginal cell rather broadly lanceolate, first submarginal long and narrow, second obliquely subquadrate, pointed towards the base, its basal nervure slightly sinuate and

receiving the first recurrent before the middle; third subobsolete; stigma fuscous, elongate lanceolate, its apical half lying within the marginal cell; legs dark honey yellow, thinly clothed with yellowish hairs; trochanters and coxæ pale yellow; abdomen elongate ovate, shining, finely and remotely punctured; basal segment campanulate, second segment somewhat darker about the base; the sutural carinæ prominent; dark fuscous, apical margin of the segments thinly fringed with pale hairs; apex armed with two minute recurved spines. Length 7 mm.; expanse of wings 11 mm.

Hab.—Texas. Mr. Belfrage.

This species is closely allied to *P. unicolor* Cresson, but may be distinguished by the absence of the thoracic lines and the distinct fuscous lateral carinæ of the second abdominal segment.

Genus 5, **CHYPHOTES** nov. gen.

Females apterous; mandibles arcuate, with small tooth before the apex; maxillary palpi 4-jointed, the labial palpi 2-jointed, short; eyes roundly ovate, polished; thorax divided in two parts, prothorax short and convex, meso- and metathorax in one, globose; basal joint of anterior tarsus deeply emarginate within; femora and tibiæ more robust than in *Photopsis*; abdomen petiolate, the petiole slender and cylindrical to base, suddenly and greatly dilated at apex, where it is subglobose and sessile with the second segment.

Figs. 19 and 20 give a dorsal and lateral view.

This remarkable form may possibly prove to be the female of *Photopsis*.



Fig. 19.

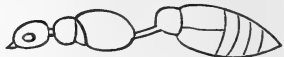


Fig. 20.

Chyphotes elevatus n. sp.

Female.—Uniformly ferruginous; head round, closely punctured, thinly clothed with pale, glittering pubescence; mandibles black at tips; antennæ fulvo-ferruginous; eyes polished; thorax very convex, densely punctured and thinly clothed with pale hairs; legs clothed with glittering yellowish hairs, honey yellow, with the apical half of the intermediate and posterior femora fuscous; abdomen elongate ovate, closely punctured and thinly clothed with erect, pale, glittering hairs; the apical margin of second and the following segments stained with castaneous; ventral surface of second segment with a narrow, central blackish line not quite reaching the apical margin. Length 6–8.5 mm.

Hab.—Arizona, Southern California. Six specimens.

Genus 6, **APTEROGYNA** Latr.

Head roundly transverse; antennæ of male nearly as long as the body; thorax more or less ovate, metathorax bidentate posteriorly; abdomen petiolate, basal segment globose, second transversely subglobose; wings hyaline, one submarginal cell, entire neuration confined to the basal area (fig. 21); thorax of the female divided into two parts; basal segment of abdomen similar to the male, second large and sessile with the third. Unrepresented.



Fig. 21.

Genus 7, **BRADYNOBÆNUS** Spin.

Female.—Head quadrate, mandibles elongate, arcuate, palpi filiform, the maxillary palpi 3-jointed; the labial palpi 2-jointed, very short; thorax divided in two parts; femora and posterior tibiæ dilated; abdomen petiolate, elongate, regularly ovate. Unrepresented.

Genus 8, **MYRMOSA** Latr.

Head subglobose; stemmata placed in a triangle on the vertex; eyes small, round and lateral; antennæ subfiliform, inserted in the female at each side of the base of the clypeus and approximate; in the male they are wider apart; the clypeus triangular and longitudinally carinate in the female; in the male transverse and plane; mandibles unidentate and acuminate in the female; large and tridentate in the male; the thorax longitudinally quadrangular, the anterior angles rounded; the metathorax truncate in the female; the thorax ovate in the male; the collar transverse, curving towards the base of the wings posteriorly, not reaching them; the anterior wings with one marginal and four submarginal cells, the second submarginal triangular, receiving the first recurrent nervure near its centre; the third quadrate, receiving the second recurrent nervure at about one-third of its length, the fourth extending to the apex of the wing; the legs spinose; abdomen of the female ovato-conical, the first segment somewhat narrower than the second; the abdomen of the male oblong, the margins of the segments crenate, the last concave above and tridentate at its apex, which is truncated.

Myrmosa rufiventris Blake.

Male.—Head large, black, quadrate, wider than the thorax, finely punctured, thinly clothed with erect black hairs; eyes ovate, prominent; antennæ black, flagellum pruinose; mandibles stout, thinly clothed with pale hairs; thorax ovate, narrowed posteriorly, mesothorax with two dorsal, longitudinal impressions, scutellum convex, metathorax roundly truncate, closely and minutely punctured; wings hyaline, iridescent, marginal cell large, lanceolate, first submarginal short, second elongate subquadrate, receiving the first recurrent nervure a little before the middle, third quadrate, receiving the second recurrent about the middle; tegulæ black; legs black, slender, slightly pruinose, calcaria pale; abdomen elongate ovate, petiolate, petiole black, remaining segments dark ferruginous, paler at sides. Length 5.5 mm.

Hab.—Nevada. One specimen.

Myrmosa unicolor Say.

Male.—Black; abdomen with cinereous hair; metathorax with an impressed line; head with short cinereous hair, somewhat longer about the mouth; densely punctured; thorax and scutel densely punctured and with scattered, cinereous, short hair, posterior segments of the former with two light, parallel, impressed lines; wings hyaline, nervures fuscous; metathorax with a longitudinal, impressed, very distinct line, and a transverse one at base; hairs more obvious each side; punctures smaller than those of the thorax; abdomen more hairy than any other part of the body. Length three-tenths of an inch (8.5 mm.) (Say.)

Hab.—N. W. Territory.

This insect also occurred on the Missouri at Engineer's cantonment and in Pennsylvania.

Genus 9, **METHOCA** Latr.

Male.—Head transverse, flattened in front, convex behind; eyes ovate, prominent and lateral; the stemmata large, placed in a triangle on the vertex; antennæ filiform, tapering to a point at the apex; the scape very short; the joints of the flagellum beyond the third subarcuate; thorax oblong, the collar extending to the insertion of the wings; the metathorax obtuse; the anterior wings with one elongate marginal cell, which is pointed at its apex and extends nearly to the tip of the wing; three submarginal cells, the first as long as the two following, receiving the first recurrent nervure; the second quadrangular, receiving the second recurrent nervure; the third extending to the apex of the wing; abdomen linear, the segments subcrenate; the hypopygium produced laterally into two vertical plates, arcuate at their extremity, beneath produced into a long, recurved, acute spine.

Female.—Head subglobose; eyes ovate and lateral; the stemmata placed in a triangle on the vertex; antennæ filiform, inserted

at the lateral posterior margins of the clypeus, rather longer than the thorax; the clypeus triangular; the mandibles arcuate; the thorax elongate, doubly strangulated, rounded at the base and apex; legs long and slender, the coxæ very robust; femora subclavate; the tarsi longer than the tibiæ; abdomen ovato-conical, attached to the thorax by a short petiole.

Methoca bicolor Say.

Female.—Body pale yellowish rufous, polished; head black; antennæ rufous, terminal joints piceous; mandibles and palpi rufous; thorax: segments subequal, anterior and posterior ones convex, subovate, intermediate one with two slightly elevated convexities; abdomen ovate subfusiform; tergum with a transverse, triangular black spot at the tip of the second segment, another on the third, the remaining ones confluent. Length one-fourth of an inch. (7 mm.)

Hab.—Indiana.

The abdomen does not contract abruptly to the petiole, but subsides gradually. Van der Linden says that the species of this genus are the females of species of *Tengyra*.

Methoca californica Westw.

Female.—Entirely castaneous, smooth and shining; head convex, flanks of thorax globose; antennæ straight, scarcely equal in length to the head and thorax, almost filiform, apical joints blackish; base of the collar ovate, truncate; mesonotum narrow, divided into two parts, nearly globose; abdomen gibbous, second and following segments clouded at middle with black markings; sting long and slender, with a small lobe on each side; legs long, unarmed. Length 9 mm.

Hab.—California.

Methoca canadensis Smith.

Male.—Black and shining, slightly villose, the face closely punctured, the vertex sparingly so; the anterior margin of the clypeus produced into an elevated tubercle, the tips of the mandibles ferruginous; thorax coarsely punctured, the metathorax coarsely rugose, having above a central channel, which is transversely ridged; behind, truncate; the truncation obliquely rugose striate on each side, having a slight central channel; the legs have the apical joints of the tarsi obscurely rufo-piceous, the calcaria ferruginous; wings hyaline, faintly colored; abdomen: the basal half of the first segment rugose, the lateral margins elevated and acute; beyond this the entire abdomen is rather finely and distantly punctured, the base of the segments depressed, their margins constricted. Length 10 mm.

Hab.—Canada.

Methoca Poeyi Guér.

Male.—Black, without spots, with some whitish hairs; the metathorax is slightly rugose and truncate; wings hyaline, the nervures black, the two transverso-cubital nervures, which from the second submarginal cell, are not parallel,

as in *M. Sanvitali*; the abdomen is smooth and shining, the segments slightly contracted, with the last segment terminated by a recurved spine. Length 8 mm.

Female.—Red, with the abdomen black, with the exception of the first segment, which is equally red. Length 5 mm.

Hab.—Cuba.

Methoca stygia Say.

Male.—Body entirely black, immaculate, punctured, mandibles piceous at tip; near the tip one toothed; wings hyaline, nervures black, the separating nervure of the first and second cubital cellules wanting; stigma obvious, black; abdomen, segments contracted near the incisures, oviduct not extending beyond the terminal processes and concealed beneath them. Length two-fifths of an inch. (10 mm.)

Hab.—Indiana.

Resembles *Sanvitali* Latr., but is larger, with a much larger stigma and each abdominal segment is much more contracted before its posterior incisure. (Say.)

The following descriptions are too meagre to identify; they will apply to several of our North American species, so I give them in the original:

Mutilla versicolor Fab.

M. abdomine basi apiceque nigro medio rufo: fascia alba; puncto nigro.

Habitat in America. Dom Drury.

Caput cum antennis rufum. Thorax rufous, immaculatus. Abdomen basi nigrum, in medio rufum; fascia alba; puncto nigro. Apex iterum niger. Pedes fuscii.

Mutilla exulans Fab.

M. atra abdomine punctis duobus baseos striga interrupta lineolaque postica flavis.

Habitat in America. Dom Drury.

Statura præcedentis; caput and thorax atra, immaculata. Punctum utrinque flavum ad basin abdominis, striga interrupta in medio aud postice linea dorsalis fere obsoleta e puncto parvo in singulo segmento.

Mutilla vagans Fab.

M. rufa abdomine obscuriore segmentorum marginibus punctisque duobus secundi segmenti albis.

Habitat in America boreali. Dom v. Rohr.

Statura et magnitudo *M. nigripes*. Caput rufum antennis nigris obscurum segmentis omnibus margine albis sendundoque maiori punctis duobus dorsalibus albis. Pedes rufi tibiis obscurioribus.

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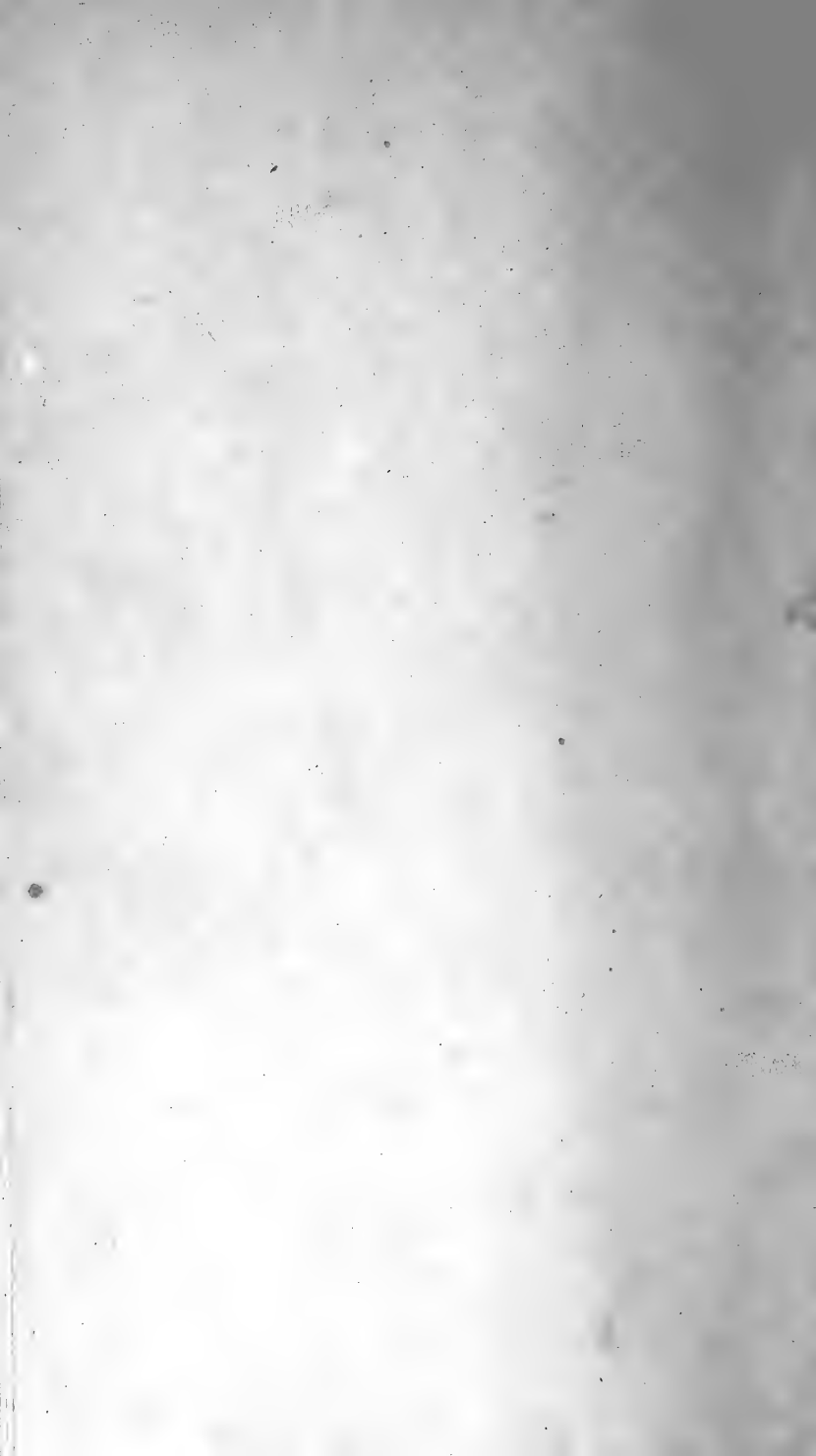
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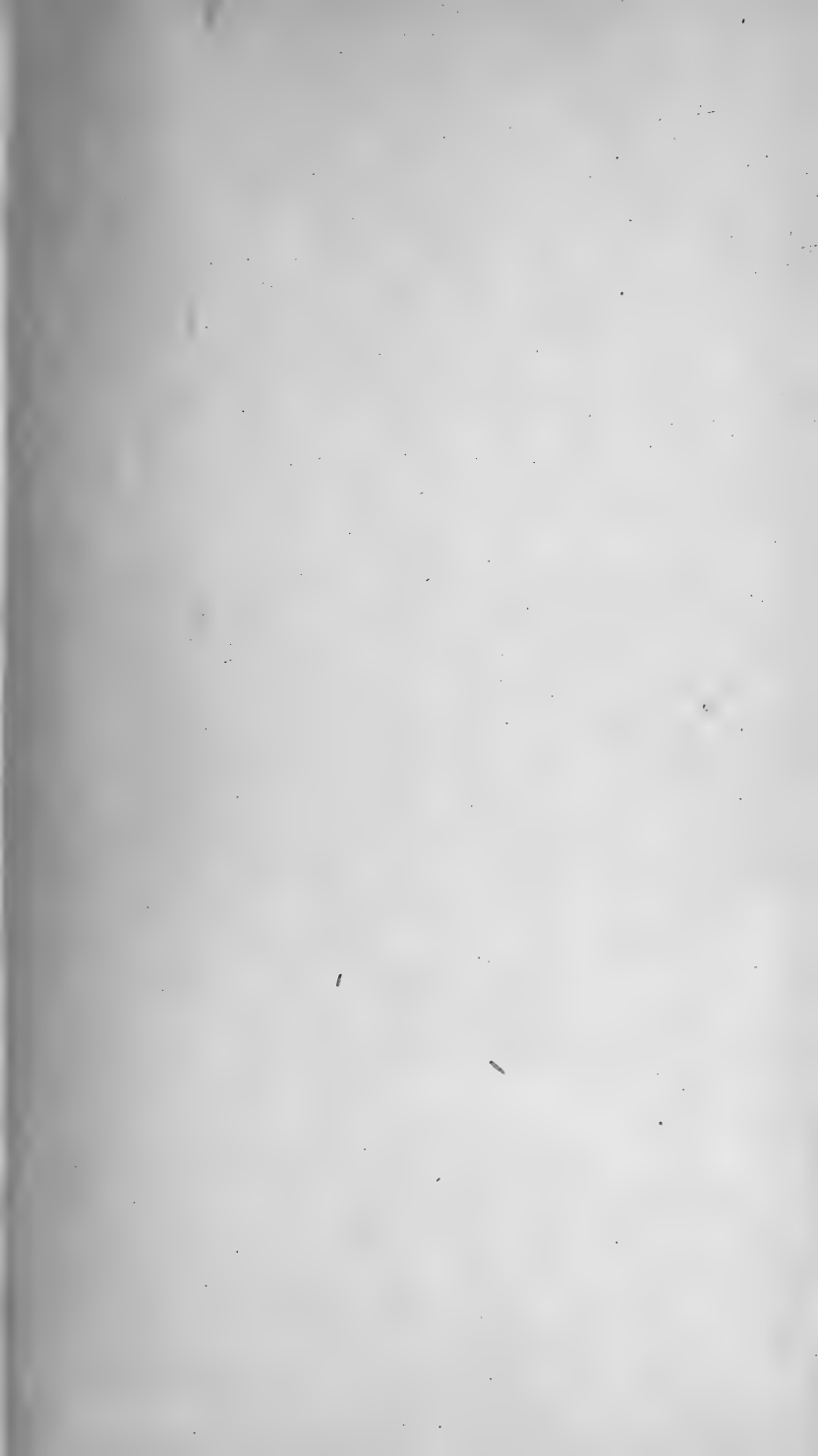
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ERRATA.

On page 201 for **dubiatta** read **dubitata**.

By an error of the printer **maccer**, on page 227, should read **macerata**.

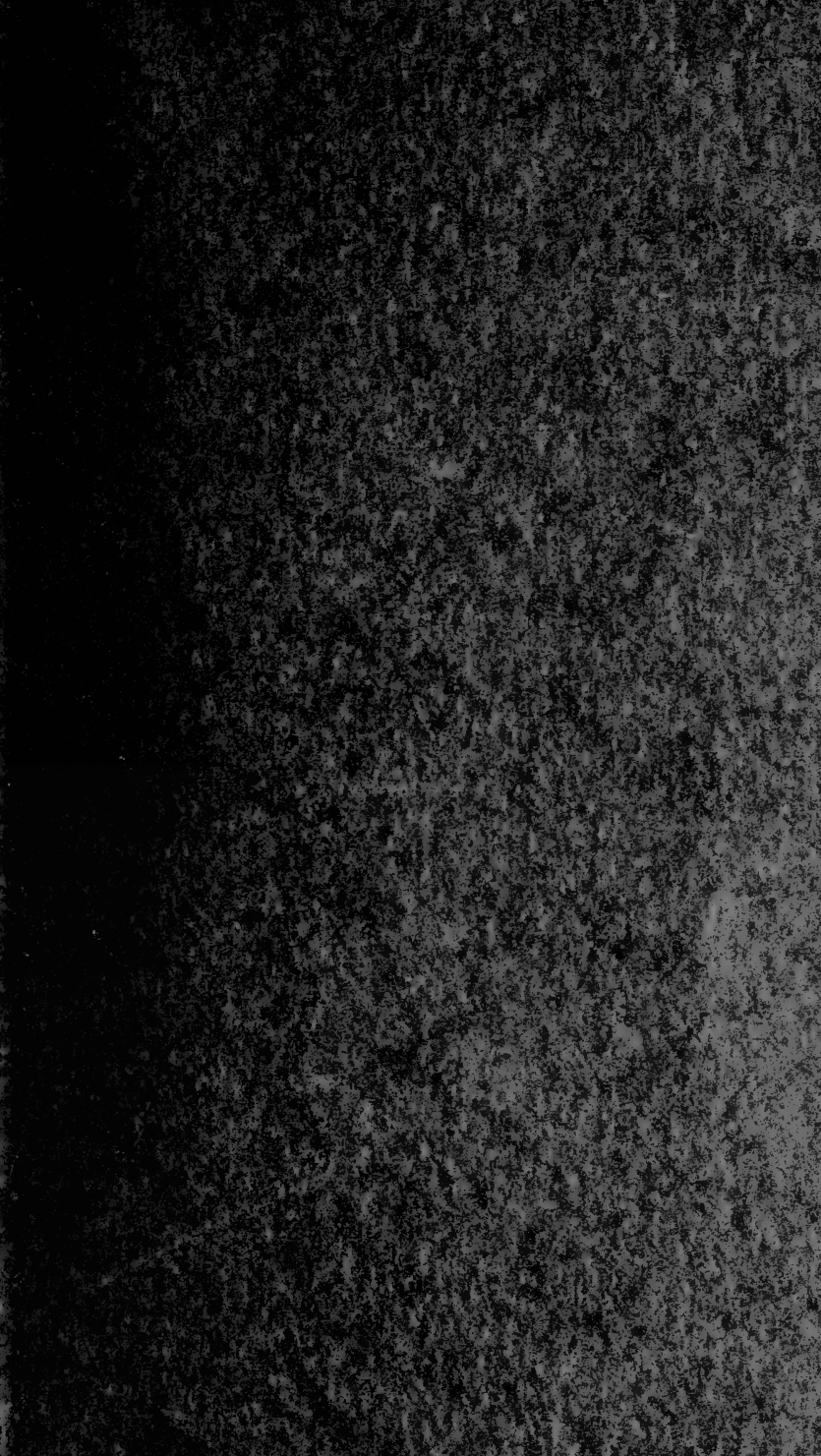


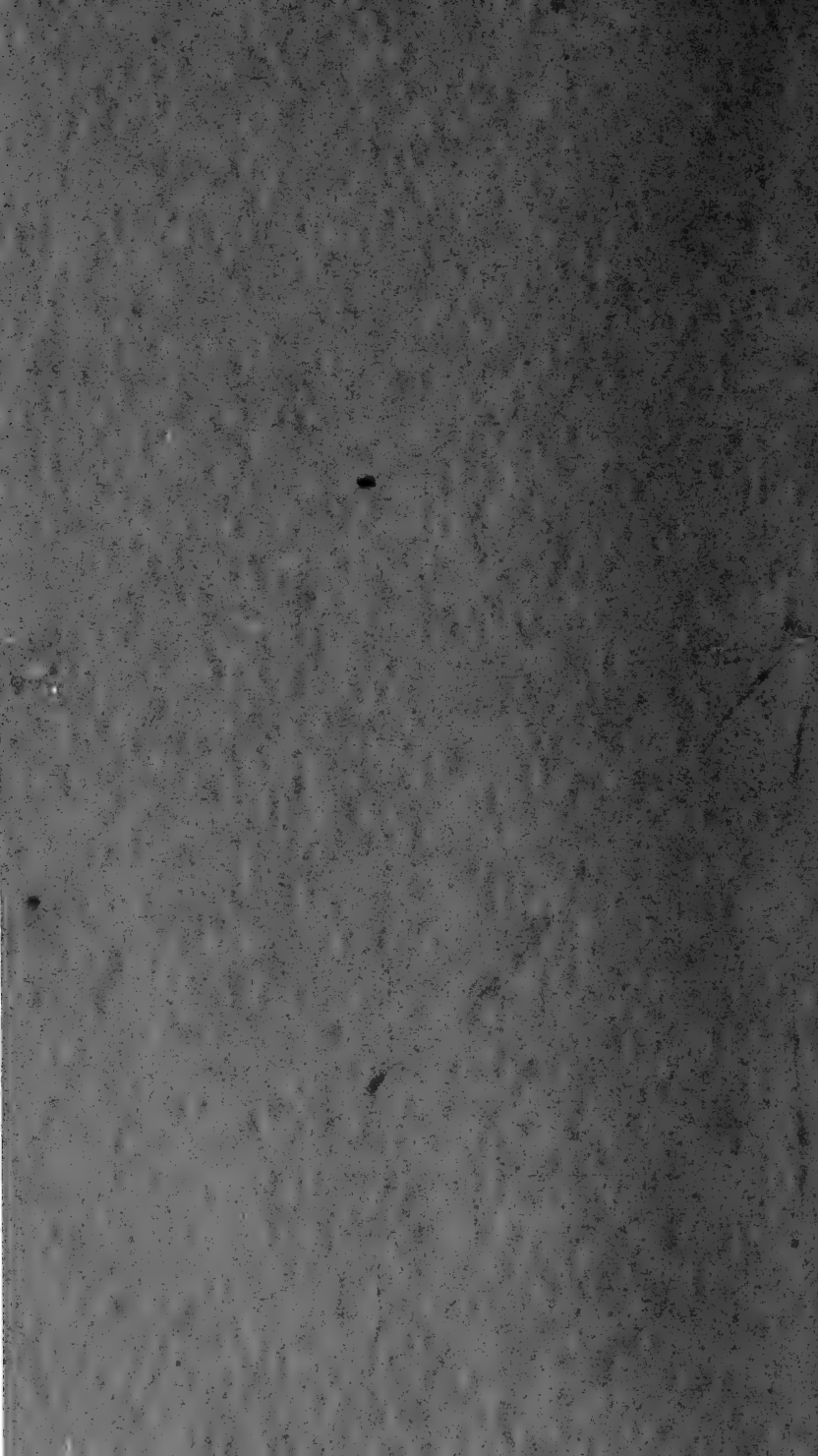






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