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Descriptions Records and Notes on North American Nyssonidae (Hymenoptera)

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117

117

G. E. Bohart

DESCRIPTIONS RECORDS AND NOTES
ON
NORTH AMERICAN NYSSONIDAE
(HYMENOPTERA)

[Goytes
Nysson
Didineis
Alysson]

by
J. Chester Bradley

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DESCRIPTIONS, RECORDS AND NOTES ON NORTH AMERICAN
NYSSONIDAE
(HYMENOPTERA)

BY J. CHESTER BRADLEY

Cornell University, Ithaca, N. Y.

Gorytes (Hoplisoides) splendidula new species

Pale red (vinaceous rufous); posterior margin of pronotum, tubercles, scutellum, narrow apical margin of first dorsal and second ventral and broad apical band on second dorsal segments, buff (marguerite yellow), the scutellum a little deeper shade of yellow; there is an underlying yellow tone to the postscutellum, and the tibiae are slightly yellowish; the sutures of the apical segments of the male are a little dusky, and in the male paratype the last four abdominal segments are very dark red, almost black; the female lacks the buff on the pronotum, tubercles and second ventral segment, but has a buff spot on the fifth dorsal segment. Clothed with short appressed white pubescence, producing a white bloom, in places silvery sericeous. Wings hyaline, the fore-wing with a sharply defined fuscous spot occupying the marginal, second and third submarginal and apex of the third discoidal cells, another at the apex of the second discoidal, and a small spot at the apical angle of the medial cell. Length, 8 mm.

♂. Form robust, Nysson-like. Head broad, the eyes nearly parallel within; distance from front ocellus to clypeus no longer than the width of the front; front, vertex and clypeus uniformly but not conspicuously punctate; vertex with a slight ridge behind and laterad of the ocelli; antennae slender, the segments long, the third segment considerably longer than the fourth; flagellum slightly uneven, but neither crenulate nor dentate.

Mesonotum with well separated punctures. Mesopleura obscurely punctured, a weak carina separating them from the mesosternum; epicnemial area poorly defined, separated by a weak carina; scutellum and postscutellum with polished surface and few punctures; dorsal enclosure of propodeum striate and sharply marked off.

Abdomen rather closely punctate, especially at apex; second ventral segment slightly convex, not prominent.

♀. The segments of the flagellum more elongate than in the male, the first being longer than the distance between the hind ocelli; tarsal comb present; pygidium margined, forming an almost equilateral triangle, its surface with well separated punctures, in other respects like the male.

Habitat.—CALIFORNIA: Brawley in the Imperial Valley, August 9, 1914, two males, one female, (the author).

Types.—Holotype, ♂, Cornell University, no. 140.1; allotype, ♀, no. 140.2; paratype, ♂, no. 140.3.

This species resembles *dentatus* Fox in color, but is entirely different structurally. In Fox's tables the female would run near *spilopterus*, and the male near *pygidialis*, but it differs from both entirely in color and wing maculation, and by its much more slender antennae and elongate basal segment of the flagellum, as well as by other structural characters.

Gorytes (Hoplisus)¹ angustatus Provancher

CALIFORNIA: Glenwood, May 27, 1908, three males, (the author), [Cornell University]; Claremont, one male, three females, (C. F. Baker), [Cornell University and Pomona College].

One of these females is typical, the other two lack the striae on the enclosure of the propodeum, which would throw them, by Fox's key, into *venustus*; their pygidia are also more sparsely punctured. In other respects and in color pattern they agree precisely with *angustatus*, while the color pattern of *venustus* is quite different, so I am inclined to look upon these as variants of *angustatus*.

Gorytes (Hoplisoides) pogonodes new species

♂. Black, the following parts yellow (pinard yellow): scape beneath, mandibles at base, labrum, clypeus, face below the antennae, broad stripe extending up the margin of the eyes to half-way between the base of the antennae and the ocelli; margin of pronotum, tubercles, spot beneath tegulae, apical half of scutellum, lateral spots on propodeum, broad subapical band on first segment, greatly narrowed medially, legs in front except the front or the front and middle trochanters, and behind in part; the tarsi are somewhat ferruginous especially toward apex, and the apex of the hind pair almost black; flagellum ferruginous beneath. Short silvery pubescence present but noticeable with difficulty. Wings nearly hyaline, a brown spot occupying the marginal and extending vaguely down through the second and upper part of the third submarginal cells. Length, 7.5 to 8.5 mm.

Head not as broad as the thorax; from in front round, with strongly converging, slightly emarginate eye margins; face narrow; clypeus convex, its anterior part deflected but not angled as in *hamatus*, its lateral angles slightly projecting, armed each with a tuft of hairs; clypeus and yellow parts of face

¹ I do not suppose that even a subgeneric distinction can be maintained between *Hoplisus* and *Hoplisoides*. I have not the opportunity at present, however, to review the species in order to reach a more certain conclusion, and therefore have used, as a matter of convenience, the term as defined by Ashmead and others.

almost impunctate; front moderately closely and coarsely punctate, vertex more sparingly punctate.

Mesonotum evenly but sparsely punctured; epinemia and mesosternum separated from mesopleura by a sharp ridge; the latter sparingly punctured, with a nearly obsolete oblique dividing groove; scutellum and postscutellum shining, with a few punctures; dorsal triangular area of propodeum distinct and striate; just above the petiole is a longitudinal carina, on each side of which there are, in the holotype and some specimens, transverse carinulae; rest of posterior lateral surfaces punctate.

First dorsal segment polished and almost impunctate, remaining segments sparsely, toward the apex more closely, the last quite closely, punctate; second segment slightly constricted at base, the first not coarctate; second ventral segment convex but not very prominent.

Habitat.—CALIFORNIA: Lemon Cove, Tulare County, July 9 to 11, 1907, altitude 500 feet, five males, (the author), [Cornell University]. NEVADA: one male, [American Entomological Society].

Types.—Holotype and paratopotypes, males, Cornell University no. 141.1 to 141.5; paratype, ♂, from Nevada, in Coll. Amer. Ent. Soc.

This species is closely allied to *hamatus* and to *microcephalus*. From the former it is easily distinguished by the clypeus, which in *hamatus* is very prominent, and abruptly angled along a transverse line before the apex, while the bunch of curved hair on the angles is more prominent.

Gorytes (Hoplisoides) barbatulus Handlirsch

GEORGIA: Bainbridge, July 15 to 27, 1909, five males, [Georgia State Collection and Cornell University].

Gorytes (Hoplisoides) nebulosus Packard

GEORGIA: Bainbridge, June 2, 1911, one female, (the author), [Cornell University].

Gorytes (Hoplisoides) adornata new species

♀. Black, with yellow markings, red femora and ornate wings; the following parts are yellow (empire yellow): scape beneath, clypeus except basal line and semicircular median spot at apex, inner orbits up to half-way between base of antennae and the ocelli, short narrow line behind the eyes, almost interrupted line bordering pronotum behind, not continuous with yellow tubercles, superior spot on mesopleura, two large apical spots on scutellum, broad apical border of first dorsal segment, contracted medially, sinuate apical band on second, third and fourth dorsal segments, small spot on fifth, small spot at lateral apical angles of second ventral segment, apical spot on front and middle femora in front and on hind femora beneath, spot

at base of anterior tibiae merging into ferruginous at apex, and confluent with spot on outer side basad of the middle, front of middle tibiae, and spot on outside basad of the middle, and spot on outer side of posterior tibiae basad of the middle; the middle and hind femora are red except beneath; flagellum yellowish ferruginous beneath. The wings are hyaline with a fuscous spot occupying the marginal, second submarginal, upper and apical part of third submarginal cells, and extending vaguely down the second current vein, a second spot in the apex of the second discoidal cell, and small spots around the junction of the basal and submedial veins and at the apex of the median cell. Body clothed with short inconspicuous pubescence. Length, 9 mm.

Inner margins of the eyes parallel, farther apart than the distance from the front ocellus to the base of the antennae; clypeus strongly transverse, convex, with a row of setiferous punctures, its edge margined; front polished and impunctate as far up as the yellow intra-orbital lines extend, above which it is suddenly coarsely and closely punctate, with uneven surface; behind the ocelli the vertex is sparsely punctate. Flagellum short, somewhat clavate, the segments short, the first longer than the following.

Mesonotum deeply but not densely punctate, mesopleura sparsely but strongly punctured; epinemia impunctate, at right angles to the plane of the mesopleura, from which they are separated by a sharp carina continuous with that separating the mesosternum from the same; metapleura impunctate, with a conspicuous pocket below; scutellum transverse, flat, sparsely punctured, postscutellum convex and more closely punctate; triangular area of propodeum with about eighteen slightly radiating strong carinae; posterior surface rugose, the angles coarsely reticulate. Tarsal comb present, middle and hind tibiae and tarsi spinose.

First segment sessile, not coarctate, polished and nearly impunctate; second dorsal segment with sparse shallow punctures, other segments less sparsely punctate; pygidium strongly margined, longer than broad, longitudinally striolate, the striolae anastomosing more or less.

The rufous of the femora may give way to fuscous at base, and the apical yellow spot on the hind femora may be in front instead of beneath, and beneath on the middle pair instead of in front, or both beneath and in front on the anterior pair.

Habitat.—CALIFORNIA: Felton, Santa Cruz Mountains, May 20 to 27, 1907, 300 to 500 feet elevation, three females, (the author), [Cornell University, holotype and paratypes]; Giant Forest, Sequoia National Park, Tulare County, July 21 to 26, 1907, 6000 to 7000 feet elevation, one female, (the author), [Cornell University]; Glenwood, May 27, 1908, one female, (the author), [Cornell University]. NEW MEXICO: Jemez Springs, May 27, 1916, one female, (John Woodgate), [Cornell University].

Types.—Holotype, ♀, Cornell University no. 142.1; paratypes, females, no. 142.2-142.6.

Most closely related to *spilopterus* and *nebulosus*, more remotely to *splendidulus*. These four species may be distinguished as follows:

1. Antennae slender, in the female the third segment longer than the distance between the hind ocelli. Color rufous, marked with yellow.

splendidula new species

Antennae short and thickened, the third segment not as long as the distance between the hind ocelli. Color black, with yellow and rufous markings.....(2)

2. Angles of propodeum coarsely rugose; abdomen scarcely punctate at base, shallowly and not coarsely punctate on the fifth dorsal segment; legs black, the femora and tibiae variegated with yellow and red; scutellum with two yellow spots; propodeum and abdomen without rufous.

adornata new species

Angles of propodeum not at all, or but slightly rugose; legs not colored as above; scutellum with an uninterrupted bar of yellow; abdomen punctate basally; the fifth dorsal more deeply and coarsely punctate. .(3)

3. Legs red, the middle and hind tibiae yellowish at base; propodeum and base of first segment of abdomen red.....**spilopterus** Handlirsch

Legs castaneous, the middle and hind tibiae yellowish at base; propodeum and abdomen without red.....**nebulosus** Packard

Probably *spilopterus* should rank as a western race of *nebulosus*.

Gorytes (Hoplisoides) imperialensis new species

♂. Black, yellow and red; the following parts yellow (baryta yellow): scape and pedicel beneath, face below antennae, clypeus, labrum, mandibles except tips, stripe extending up along eye margins to two-thirds of the distance from the insertion of the antennae to the front ocellus, fine line on side of collar, broad posterior border of pronotum, continuous with tubercles, vertical stripe on mesopleura above, scutellum, spot on postscutellum, large lateral spots on propodeum, apical half of first dorsal segment, incised medially, sinuate apical bands on second to fifth dorsal segments, widened laterally, spot on ultimate segment, subapical band narrowed medially on the second and lateral spots on the third and fourth ventral segments, spot on all coxae in front, apical part of all tibiae beneath or behind, front and middle tibiae except beneath, and hind tibiae beneath only, front and middle tarsi entirely, and hind metatarsi except line beneath; the following parts are rufous, flagellum at base beneath slightly reddish, lateral surface of pronotum, sides of propodeum in front of and below yellow spots, shading into black anteriorly, sternum from in front of middle coxae to petiole, first and second ventral and extreme sides of first and second dorsal segments except where yellow, and legs entirely except where described as yellow. Body covered with short white pubescence, giving it a conspicuous grayish bloom. Wings stained slightly yellowish brown, and with a distinct golden reflection; a

brown spot occupies the marginal, second submarginal and most of the third submarginal cells and extends vaguely toward the wing apex. Length, 8 mm.

Eyes strongly converging, the width of the face about equal to the length of the scape; clypeus swollen, it and the yellow portions of the face and front scarcely punctate; the rest of front and vertex strongly but sparsely punctate; third segment of antennae little longer than the fourth, fourth to twelfth with more or less carinate lobes beneath, the ninth with a spine-like process, the tenth widened, the eleventh and twelfth with cicatrices beneath.

Mesonotum strongly and evenly but sparsely punctate; scutellum and postscutellum polished, with sparse punctures; mesopleura polished and shining, evenly but sparsely punctured, epicnemial area pronounced and forming almost a right angle with the mesopleura and mesosternum from both of which it is separated by a strong carina, as also the two latter from each other; basal triangular area of propodeum ill-defined and much obscured by vestiture, but striate; posterior surface closely, towards the sides more sparsely, coarsely punctate; lateral surfaces polished, sparsely punctate.

Dorsal and second ventral segments rather coarsely punctured; the second ventral not produced; the fifth with a lateral oblique process, as in *confertus*, but the inner edge thereof sloping and not hooked as in that species; third to sixth ventral segments inclusive with conspicuous silky pile.

Habitat.—CALIFORNIA: Brawley, Imperial County, August 9, 1914, two males, (the author).

Types.—Holotype, ♂, Cornell University no. 143.1; paratype, ♂, no. 143.2.

This species may be distinguished from all others except *confertus* by the presence of laminae on the fifth ventral segment. From *confertus* it may be distinguished as follows:

Twelfth segment of the antennae with a carinate tubercle beneath; lamina of fifth ventral segment not so high and rounded, not hamate behind; abdomen closely and coarsely punctate, prothorax except dorsally, hind and middle coxae and first and second ventral segments, rufous.

imperialensis new species

Twelfth antennal segment simple; lamina of fifth ventral segment hamate behind; abdomen more sparsely punctate; prothorax, coxae and venter, entirely black.....**confertus** Fox

Gorytes (Hoplisoides) insolitus Fox

CALIFORNIA: Claremont, two males, (C. F. Baker), [Pomona College and Cornell University].

These differ in color from the types as follows: first dorsal, first and second ventral, second and third dorsal laterally rufous except where marked with yellow; third ventral also somewhat reddish; hind femora rufous except at base.

Fox is incorrect in stating that the mesosternum is ridged anteriorly; it and the mesopleura round gradually into the ill-defined epicnemial areas, without any carina except a weak one between the mesopleura and these areas; the groove between the mesopleura and mesosternum is almost obsolete. Despite this fact, the species can hardly belong in the subgenus *Arpactus*, as Ashmead has tentatively placed it.

Gorytes (Hoplisoides) denticulatus Packard

GEORGIA: Spring Creek, Decatur County, July 16 to 29, 1912, one female, (Cornell Univ. Expedition), [Cornell University].

Gorytes (Hoplisoides) tricolor Cresson

CALIFORNIA: Lemon Cove, Tulare County, July 9 to 11, 1907, 500 feet elevation, one male, one female, (the author), [Cornell University].

The male lacks the typical red of the propodeum, agreeing in this respect with a specimen from Montana in the collection of the American Entomological Society.

The species is allied to *pygidialis*, from which it can be better separated by the following characters, than by those given in Fox's tables:

Males

Sixth dorsal segment acute, coarsely rugose-punctate, not exposing the seventh; antennae serrate beneath..... **pygidialis** Fox
 Sixth dorsal short and broad, very obtusely rounded at apex, exposing the seventh segment, with few punctures; antennae scarcely serrate beneath. **tricolor** Cresson

Females

Pygidium strongly margined, acute and coarsely punctured. **pygidialis** Fox
 Pygidium scarcely margined, broad, obtuse, polished and almost impunctate. **tricolor** Cresson

The enclosed area of the propodeum of *tricolor* appears normally to be striate, although it is nearly smooth in the type.

Gorytes (Hoplisoides) femoratus new species

♂. Slender; black, the following parts yellow (empire yellow): scape beneath, face, spot above antennae, clypeus, mandibles at base, palpi, inner orbits except above, broad margin of pronotum, not connected with small spot on tubercles, line within tegulae, spot on them and one below, vertical bar on mesopleura, scutellum, spot on postscutellum, large lateral spots on propodeum, apical half of first and second dorsal and second ventral segments, narrowed medially, broad apical bands on third ventral and third, fourth,

fifth and sixth dorsal segments, four anterior coxae in front, hind coxae except at base, four anterior trochanters except behind, hind trochanters at tip in front, four anterior femora except basal line above, hind femora except line above, four anterior tibiae except apical spot behind, hind tibiae except line behind, narrowed basally, front tarsi, middle metatarsi and hind metatarsi beneath; the following are ferruginous, flagellum beneath, apical segments of middle tarsi, and posterior tarsi except basal segment beneath. More or less shining, slightly punctate species, with inconspicuous pile. Wings stained brown, most deeply so in the region of the marginal cell; stigma and costa ferruginous. Length, 9 mm.

Eyes not emarginate, convergent below but the face not strongly narrowed; clypeus broad, convex, its margin broadly and shallowly emarginate, its surface and that of front with minute punctulation and sparse larger but small and inconspicuous punctures. Antennae long and slender, the third segment as long as the distance between the ocelli, the ninth widened beneath at apex, the tenth, eleventh, twelfth and thirteenth with inferior cicatrices, the twelfth with an acute inferior tooth.

Mesonotum with sparse inconspicuous punctures, scutellum and mesopleura polished and with few punctures; epinemial areas rounding into the mesopleura and mesosternum, separated from the former by a carina which curves backward separating the mesopleura from the mesosternum. Triangular area of propodeum striate, posterior surface with a median longitudinal rugulose sulcus, area covered by yellow spots smooth and almost impunctate, cephalad of this, on sides, an oblique rugulose furrow, cephalad of which the surface is polished and impunctate.

Anterior femora widened medially.

First segment of the abdomen, while not petiolate, is slender, only slightly widened posteriorly; sixth dorsal segment short, broadly and obtusely rounded at apex, exposing the seventh, not at all coarsely punctate; the second ventral not prominent, the seventh ventral projecting as a deeply bifid process, the tynes acute; surface of the basal dorsal segments polished and impunctate, the apical segments and the ventral sparsely and shallowly punctate.

Habitat.—CALIFORNIA: Claremont, one male, (C. F. Baker).

Type.—Cornell University no. 144.1.

This species is closely related only to *mirandus* and to *laminiferus*. The anterior femora of *laminiferus* have an enormous lamina beneath, in *mirandus* a deep fossa filled with white hairs; while the front femora of *femoratus* are swollen, they are much less so, and without a fossa beneath. In color, shape and sculpture *femoratus* resembles *mirandus*.

Gorytes (Arpactus) mendicus Handlirsch

1893. *Dienoplus pictifrons* Fox.

CALIFORNIA: Felton, Santa Cruz Mountains, May 20 to 25, 1907, 300 to 500 feet elevation, one male, (the author), [Cornell University].

This male has the abdomen entirely red, and is only 5.5 mm. long. In other respects it agrees with *mendicus*, and with the type of *pictifrons* Fox. It lacks the basal striae in the enclosed area of the propodeum.

Gorytes (Arpactus) albitomentosus new species

♀. Black and rufous species, conspicuously and magnificently ornate with white tomentose pubescence. The following parts are black: head, mesonotum except lateral angles, fourth and fifth dorsal, fourth, fifth and sixth ventral segments, tip of posterior tibiae and their tarsi; the following are pale yellow: scape, except above, base of mandibles, clypeus except median basal spot, and short stripe along eyes below; the flagellum is brown above, ferruginous beneath, the rest is rufous (Brazil red). Except on the mesonotum, and in part on last three abdominal segments, strongly white pruinous to tomentose, a strong dense tomentose band on the posterior margin of pronotum and of the first three dorsal segment, and a patch occupying the disc of the fifth dorsal segment, pile also especially conspicuous on the mesopleura, sternum, coxae and basal ventral segments; except for the patch noted above, the fourth and fifth dorsal segments are covered with short, appressed, black pubescence. Wings weakly infuscated, without spots. Length, 8.5 mm.

Slender; face much narrowed below; a few small punctures on lower part of front and between the ocelli; antennae slender but not long.

Mesonotum impunctate, polished, as are the mesopleura wherever the pile is rubbed off; scutellum obscured by vestiture; epinemia rounded into the mesopleura and mesosternum, separated from the former but not from the latter by a groove, largely obscured by vestiture, which is continuous with the groove separating the mesopleura from the sternum; enclosure of propodeum polished, shining, not striate, with a deep median groove.

Tarsal comb long. Second submarginal cell receiving both recurrent veins comparatively close to one another; in the hind wings the cubitus arises beyond, but not far distant from, the apex of the submedian cell.

The first segment of the abdomen is subpetiolate; the fifth segment almost covers the pygidium, which is scarcely margined and smooth; the abdomen is not punctate.

♂. The male sex has much more black or dark rufous on the thorax, and the third abdominal segment black; the fourth dorsal segment has a white tomentose apical band, like the others, and the fifth has a band rather than a spot; the scape is black beneath, and also the face and clypeus, except for obscure lines along the eyes; there are some yellow markings on the forelegs.

The seventh antennal segment is nodose beneath, and the tenth distinctly notched, the ultimate is simple. The fifth dorsal segment is hood-like and almost covers the sixth, which is in turn rounded or hood-shaped at apex and exposes only a mere tip of the seventh.

Habitat.—CALIFORNIA: Brawley, Imperial County, August 9, 1914, two males, two females, (the author), [Cornell University];

Claremont, two males, (C. F. Baker), [Pomona College and Cornell University]; "Cala." and "So. Cal.," two females, [American Entomological Society].

Types.—Holotype, ♀, Brawley, California, August, 9, 1914, Cornell University no. 146.1; allotype, ♂, Brawley, California, August 9, 1914, no. 146.2; paratopotypes, no. 146.3, 146.4, Brawley, California, August 9, 1914; paratypes, no. 146.5, Claremont, California, (Baker), one in collection of Pomona College and two females in collection of The American Entomological Society.

The two last mentioned females are darker, more like the males.

I think that there is little doubt but that this species is *Gorytes eximius* of Provancher (*nec* Smith 1862). Fox includes *eximius* in his key but does not mention it further. Handlirsch calls it unrecognizable even to genus. As the name *eximius* is pre-occupied and would have to be changed anyhow, I have thought it better to redescribe the specimens before me as new, with the types more accessible, and *eximius* can take its place as a synonym, unless an examination of the type proves it different.

NYSSON

*Key to the North American Species of the Subgenus Brachystegus*²

1. Scutellum with a prominent reflexed margin.....(7)
Scutellum not margined, or at least the margin not reflexed.....(2)
2. Posterior surface of propodeum with strongly developed carinae and usually more or less coarsely areolated; abdomen black, or at most with a red spot at base.....(3)
Posterior surface of propodeum with two very feeble carinae or none at all, surface not areolated; abdomen mostly red, the apex black.....(6)
3. Base of propodeum with a series of slightly radiating carinae.....(4)
Base of propodeum with a network of coarse meshes, of which the two or three in the middle are the largest, the lateral ones irregular.....(5)
4. Scutellum polished and shining, beset with coarse punctures; disc of first dorsal segment with moderately deep and conspicuous punctures; last segment of the male antennae obliquely truncate.

albomarginatus Cresson

Scutellum longitudinally rugulose; disc of first segment with small, shallow and inconspicuous punctures; last segment of male antennae acute.

gagates new species

² *Clarconis* Viereck is omitted from this table. Two species of *Nysson*, *intermedius* Viereck and *aureobalteatus* Cameron, may also belong in this subgenus, but are omitted from the table as their subgeneric position is not evident.

5. Punctuation of dorsal surface of abdomen and of head fine, even and close, without minute interpunctulation; dorsal abdominal segments not fimbriate. **maculipes** Mickel
Punctuation of dorsal surface of abdomen coarse, sparser, and with minute interpunctulation; first four dorsal segments albo-fimbriate. **moestus** Cresson
6. Dorsal surface of propodeum uniformly reticulate. . . **trichrus** (Mickel)
Dorsal surface of propodeum with a basal series of parallel longitudinal areas. **pumilus** Cresson
7. Abdomen black, or with only the first segment wholly or in part red. . (8)
Abdomen, except for lateral whitish spots on segments one to five, entirely red. **metathoracicus** Smith
8. Upper lateral angles of pronotum rounded. (9)
Upper lateral angles of pronotum rectangular or with an acute tooth. . (11)
9. Scutellum with slightly radiating carinae. **seminole** new species
Scutellum coarsely punctured, or somewhat rugose. (10)
10. Basal abdominal segment red; tubercle between the ocelli only slightly divided and not prominent. **bellus** Cresson
Basal abdominal segment black; tubercle between the ocelli prominent, deeply divided. **mellipes** Cresson and **submellipes** Viereck
11. Upper lateral angles of pronotum rectangular; legs black, the hind knees reddish; scutellum coarsely punctate; first abdominal segment black. **tramosericus** Viereck
Upper lateral angles of pronotum acute; legs red, or middle and hind tibiae and tarsi black. (12)
12. First abdominal segment red (or blackish medially at base), with interrupted yellow apical band. **opulentus** Gerstaecker variety **basilaris** Cresson
First abdominal segment black, with interrupted white apical band. **opulentus** Gerstaecker

Nysson (Brachystegus) gagates new species

♂. Black, except for a whitish fleck on each side of the first three dorsal segments. Except on the face, the silvery pubescence is inconspicuous. Wings hyaline or nearly so. Length, 5.5 mm.

Front and vertex closely, somewhat confluent punctate; vertex without a tubercle between the ocelli; first segment of the flagellum longer than the following, last segment acute.

Pronotum irregularly and rather roughly punctate; mesonotum with a deep median groove, its surface uniformly beset with moderately deep round punctures, the interstices polished and lacking interpunctulation; scutellum and postscutellum finely longitudinally rugulose, flat and not margined; mesopleura with large but shallow and inconspicuous punctures, without a clearly defined epicnemial area, with a short curved carina on its upper posterior surface. Dorsal surface of propodeum merging gradually without an angle into the posterior, bearing at base a transverse row of shallow, longitudinal, slightly radiating cellules, somewhat irregular and rather small, the

median ones no larger than the others; from these to the petiole a long and narrow area is set off, which is divided by smaller carinae into a row of shallow transverse cellules.

Punctuation of the abdomen small, shallow and inconspicuous, though rather close-set; it becomes coarser toward the apex of each segment; second ventral segment evenly convex, but not prominent at base; last dorsal segment with a pronounced median apical lobe between the two lateral teeth.

Habitat.—BRITISH COLUMBIA: Downie Creek in the Northern Selkirk Mountains, August 9, 1905, one male, (the author).

Type.—Cornell University no. 135.1.

Nysson (*Brachystegus*) *moestus* Cresson

♀. Black; apex of middle femora, and vague stripe in front and behind on middle tibiae, hind femora except extreme base, and sides of first abdominal segment, rufous (Morocco red); apical stripe on each side of apex of first four dorsal segments, buff (cartridge buff), those of the first almost continuous, of the fourth very short; also an indistinct buff median line on the posterior margin of the pronotum. Most of the body with short appressed silvery pubescence; each dorsal segment argenteo-fimbriate.

Sculpture of head and thorax like that of the male; scutellum not margined, coarsely punctate; dorsal surface of propodeum meeting the posterior medially at quite an angle, irregularly very coarsely reticulate, the two median meshes larger and deeper than the rest; posterior surface with four prominent oblique carinae.

Second ventral segment prominently convex at base, but not angulate; pygidium long and narrow, distinctly margined, its surface longitudinally rugulose.

CALIFORNIA: Felton, Santa Cruz Mountains, May 20 to 25, 1907, one male, one female, (the author), [Cornell University].

Allotype.—Cornell University no. 132.1.

As may be noted from the above description, this female differs from the male in bearing some red on its legs and abdomen. As it was captured at the same place (not necessarily on the same day) and agrees in sculpture, I do not hesitate to describe it as the female of *moestus*. The male agrees quite closely with the unique type specimen.

For some reason this species has been omitted from Fox's tables to our species.

Nysson (*Brachystegus*) *maculipes* (Mickel)

This species, a paratype of which is before me, is closely allied to *moestus*. Besides the characters mentioned in the key, which presumably will be true for either sex, although the male of *maculipes* is as yet unknown, the females differ as follows:

Pygidium broad, margined apically, only its surface with coarse regular and non-confluent punctures; legs and abdomen without red markings.

maculipes (Mickel)

Pygidium long and narrow, margined throughout, its surface longitudinally rugose; legs and abdomen partly red. **moestus** Cresson

Nysson (Brachystegus) pumilis Cresson

♀. Black, the femora brownish black, the tibiae and tarsi ferruginous; spot beneath fore femora, posterior line and tubercles of pronotum, buff (marguerite yellow); apical margin of first five dorsal segments narrowly white (pale olive buff); abdomen with two basal segments, red (burnt sienna), and sides of two or three following. Surface of body covered with considerable fine white pubescence, giving it a silvery bloom, or in places it is distinctly sericeous.

Sculpture like that of the male; clypeus with close minute punctulation and scattered slightly larger punctures, front, vertex and dorsum closely and finely punctate; scutellum somewhat rugulose, flat and not margined; base of second ventral segment not prominent nor angled; pygidium margined, finely punctate.

CALIFORNIA: Felton, Santa Cruz Mountains, May 15 to 19, 1907, 300 to 500 feet altitude, one female (*allotype*), two males, (the author), [Cornell University]; Harris, Humboldt County, June 29, 1907, one female, (the author), [Cornell University]; Claremont, one male, (C. F. Baker), [Pomona College].

Allotype.—Cornell University no. 133.1. The holotype of this species is in very bad shape, the head being gone and it is very mouldy. The males recorded above agree precisely with the type, as far as it is possible to observe.

Nysson (Brachystegus) seminole new species

♂. Black; broad posterior border of pronotum, with tubercles, base of scutellum, spot on outer side of posterior tibiae at apex, broad apical band on first dorsal segment, interrupted band on second, and lateral spots on third, fourth and fifth segments, yellow (maize-yellow); mandibles at base, first three segments of antennae beneath, and legs beyond the trochanters, rufous (mahogany red). Entire body covered with a short white pubescence, which gives it, in proper light, a strong white bloom; front and face strongly silvery-sericeous; wings weakly clouded around their margins. Length, 8 mm.

Front and vertex with strong separated punctures; a weak tubercle between the ocelli, divided by a shallow depression; last segment of antennae curved, obliquely truncate.

Lateral border of superior surface of pronotum entirely rounded, without angles; mesonotum strongly but not confluent punctate; scutellum with pronounced reflexed lateral margins, longitudinally canaliculate; mesopleura

prominent, with deep, well separated punctures, and a sharply differentiated epicnemial area, separated below and on the sternum by a carina. Propodeum irregularly sculptured, the upper surface with several small basal areas, the middle two of which are larger than the others and prominent posteriorly.

Dorsal surface of abdomen evenly covered with moderately coarse, not dense, punctures, these becoming closer toward the apex; second ventral segment strongly convex at base, but by no means truncate.

Habitat.—GEORGIA: Bainbridge, Decatur County, July 15 to 27, 1909, three males, (the author).

Types.—Holotype, ♂, Cornell Univ. no. 136.1; paratypes, two males, nos. 136.2, 136.3.

A male from Albany, Georgia (Georgia State Accessions, no. 1300) has the scutellum punctured posteriorly, weakly canaliculate in front.

This species is nearest *mellipes* and *submellipes*. From both it differs by the absence of two prominent ridges between the ocelli, by having the last segment of the antennae more deeply excised behind, as well as by the canaliculate scutellum.

Nysson (Brachystegus) opulentus subspecies **basilaris** Cresson

♂. The first abdominal segment black at base and medially; the hind tibiae and tarsi black. The scutellum is coarsely punctured except at base which is smooth.

GEORGIA: St. Simon Island, April 22 to May 12, 1911, one male, (the author).

Allotype.—Cornell University no. 137.1.

A close examination of the type of *basilaris* Cresson shows that the scutellum is really confluent punctured on the apical two-thirds, the walls of the punctures giving somewhat the appearance of longitudinal folds, as mentioned in Fox's key. I believe that this is really a southern form of *opulentus*, as it differs in no essential respect from a New York specimen assigned to that species by Fox.

Nysson (Nysson) sphecodoides new species

♂. Black; abdomen except last three segments and middle of fourth dorsal segment, red (morocco red); hind tarsi reddish; clypeus, scape beneath, obscure interrupted posterior border of pronotum, tubercles and front side of anterior tibiae, buff. Covered with a short silvery pubescence which gives the body everywhere a white silky bloom, on the front tinged golden. Wings slightly infuscated, more deeply around the margins. Length, 7.5 mm.

Robust; clypeus broadly rounded; front and vertex closely granular-punctate; ocelli facing dorsad, no prominence between them; first flagellar segment longer than the second, this shorter than the third, but both the second and third very short; penultimate swollen, last deeply incised behind and obliquely truncate.

Upper lateral angles of pronotum rounded; mesonotum very densely granular punctate; scutellum not margined, shallowly but more coarsely, somewhat confluent punctate; sculpture of postscutellum obscured by hairs; mesopleura prominent, with differentiated impunctate epicnemial area, rather obscurely and shallowly punctate; posterior surface of propodeum with rather numerous longitudinal wrinkles, converging toward the petiole, dorsal surface with a transverse row of small inconspicuous and irregular shallow meshes.

Dorsal surface of abdomen with small, sparse and shallow punctures; the last segment with two prominent teeth, the margin between which is straight; second ventral segment moderately convex at base.

Habitat.—CALIFORNIA: Claremont, one male, (C. F. Baker).

Type.—Cornell University no. 1381.

This species is allied to *rusticus* Cresson, but differs as follows:

Clypeus with margin rounded; ocelli large; wings margined with fuscous; second, third and sides of fourth abdominal segments red; yellow marks on abdomen very indistinct.....**sphecodoides** new species
 Clypeus with its median portion broadly produced, squarely truncate, rectangular; ocelli small; wings not margined with fuscous; second, except base, third and fourth abdominal segments black; abdomen with yellow bars.....**rusticus** Cresson

Proportions of ocelli

	Transverse diameter of hind ocelli	Their distance from the eyes	Their distance from one another
<i>rusticus</i>	6.....	.16.....	.13
<i>sphecodoides</i>	8.....	.14.....	.13

Nysson (Nysson) tristis Cresson

CALIFORNIA: Between Kern Lake and Rock Creek, Tulare County, altitude between 6250 and 7000 feet, July 27 to August 1, 1915, one male, (the author), [Cornell University].

Nysson (Nysson) recticornis new species

♂. Black; mandibles at base, obscure spot on each side of clypeus, scape beneath, pronotal tubercles, front and middle tibiae externally, line on posterior tibiae externally, and transverse spots on first three dorsal segments, buff; rest of tibiae and tarsi somewhat ferruginous. Body with short white silky pubescence. Wings nearly hyaline. Length, 3.7 mm.

Area bearing ocelli slightly elevated, but no distinct tubercle between them; vertex rather sparsely, front densely punctate; clypeus with rounded

margin; antennae thickened apically, the last segment elongate, straight, acute, not excised behind, the penultimate segment long but not swollen, the third segment longer than the short and subequal fourth or fifth.

Pronotum with upper lateral angles entirely rounded. In most species the part of the pronotum bordering the mesonotum forms a transverse narrow dorsal piece, rather sharply differentiated from the forward sloping portion, but in this species this area merges gradually into the latter and is scarcely distinct; mesonotum polished, with separated, round punctures; scutellum margined, but not prominently so, flat and punctate, its surface polished; mesopleura with sculpture largely obscured by vestiture, the epicnemial areas not separated below and on the mesosternum by a carina; propodeum rugose posteriorly, the dorsal surface with a row of elongate meshes.

Dorsal surface of abdomen with shallow scattered punctures and obscure interpunctulation, second ventral segment slightly produced medially at base, but not truncate.

Habitat.—CALIFORNIA: Felton, Santa Cruz Mountains, May 20 to 25, 1907, 300 to 500 feet elevation, two males, (the author).

Types.—Holotype, ♂, Cornell University no. 139.1; paratype, ♂, no. 139.2.

This species comes nearest to *simplicicornis* of Fox, in which species the scutellum is not margined, nor flat, the mesonotum densely and coarsely punctate, and the size larger. Cameron's *ressoni* known only from the female sex, also appears to be allied.

Nysson (Paranysson) texanus Cresson

GEORGIA: Spring Creek, Decatur County, July 16 to 29, 1912, one male, (Cornell Univ. Expedition), [Cornell Univ.]; Waynesville, September 10, 1909, one female, (the author), [Georgia State Collection]. ILLINOIS: Virginia, September 13, 1904, one female, (J. G. Needham), [Cornell Univ.].

DIDINEIS

Didineis nodosa Fox and *peculiaris* Fox together form a group entirely distinct from the other known species of the genus, by reason of certain peculiarities of the males. These comprise not only the curious structure of the antennae described and figured by Fox, but, of greater importance, the structure of the fore-legs. The front femora are greatly widened, lamelliform, subtriangular, concave beneath, so as to form a shield-like cover for the tibiae, suggestive of the shield on the tibiae of certain Crabronidae; the front tarsi are greatly widened and completely flattened.

In the other species the femora are cylindrical or tapered, and the tarsi cylindrical and slender.

Didineis nodosa Fox

CALIFORNIA: Mountains near Claremont, one male, (C. F. Baker), [Cornell Univ.].

So far as I am aware this is the second recorded specimen of this species.

Didineis texana (Cresson)

GEORGIA: Billy's Island, Okefenokee Swamp, June, 1912; one female, (Cornell Univ. Expedition), [Cornell University]; Tybee Island, July 26, 1913, one female, (J. C. Bradley), [Cornell Univ.].

Didineis sanctacrucae new species

♀. Black; first three segments of abdomen rufous (mahogany red); tibiae and tarsi brownish, the former with a pale streak in front; clypeus and basal half of mandibles yellow (chamois); scape beneath whitish (pale olive buff). Wings stained slightly fuscous, especially in the region just apical of the stigma. Head and thorax clothed with a noticeable short white pubescence. Length, 7 mm.

From a lateral view the front is prominently convex, the dorsal surface of the head and the cephalic surface being in planes almost at right angles to one another, which merge comparatively abruptly. Seen from above the front is filled out to the level of the eyes, these not being prominently raised above the surface of the head as in *texana*. The front and vertex are more closely punctate than in *texana*, evenly throughout; there is no median groove, but a slightly raised median area just above the antennae; the margins of the antennal sockets are nearer to one another than to the eyes; the margin of the clypeus bears three rounded teeth, less prominent than in *texana*.

The thorax is sculptured almost as in *texana*, but the dorsum more closely and coarsely punctate, opaque and not shining as in *texana*. Scutellum sparsely punctate, smooth and polished medially; propodeum rugulose, its dorsal surface with three longitudinal or oblique lines meeting in a rounded point behind.

This species is quite close to *texana*. In that species, besides the points of difference noted above, the eyes are prominent, the dorsal surface of the head more gradually rounded into the cephalic; the antennal orifices are farther apart than their distance from the eyes; there is a slight median depression on the front; the front and vertex are polished and more finely punctured, and the abdomen is red throughout.

Perhaps this species is really the female of *D. nodosa* Fox.

Habitat.—Santa Cruz Beach, California, two females, May 14 or 18, 1907, collected by the author.

Types.—In Cornell University, ♀, Holotype no. 520.1; paratype ♀, no. 520.2.

ALYSSON

***Alysson melleus* Say**

QUEBEC: Montreal, July 10, 1902, one male, [Cornell University]. NEW YORK: Ithaca, August 7, 9, 10, 13, 31, 1916, seventeen females, twenty-four males. GEORGIA: Spring Creek, Decatur County, July 16 to 29, 1912, two males, (Cornell Univ. Expedition); May 18 to 21, 1916, three females, (J. C. Bradley), [Cornell University]. Thomasville, April 27, 1915, one female, (C. S. Spooner). Bainbridge, July 15 to 27, 1909, one female, (J. C. Bradley). Tallulah Falls, July 19 to 25, 1909, one female, (J. C. Bradley). FLORIDA: Dunedin, March 16, 1914, one male, (W. S. Blatchley), [Cornell University]. TENNESSEE: Memphis, July 16, 1914, one female, (J. C. Bradley), [Cornell University]. TEXAS: El Paso, July 24, 1914, two females, (J. C. Bradley), [Cornell University].

***Alysson oppositus* Say**

QUEBEC: Montreal, September 10, one female, August 17, 1901, one female. Joliette, July 19, one male. NEW YORK: Wilmington, Essex County, August 20 to 25, 1916, 1000 to 2200 feet, one female. Adirondack Mountains, August 8, one female. Ithaca, August 10 and 13, eight females. [All in Cornell University].

***Alysson trianguliferus* Provancher**

NEW YORK: Ithaca, one female; June 23, 1908, one female; August 14, 1894, one male. Mud Creek, Tompkins County, June 17 to 20, 1904, two males, (A. D. MacGillivray and J. C. Bradley). [All in Cornell University].

***Alysson conicus* Provancher**

ONTARIO: Waubamic, August 6, 1915, one female, (H. S. Parish). NEW YORK: Wilmington, Essex County, August 20 to 25, 1916, one female. Rhinebeck, July 27, 1907, one male, (C. R. Crosby). Middletown, July 2 to 20, 1910, one male, (C. S. Spooner). Van Cortland Park, July 20, 1916, one male. [All in Cornell University].

***Alysson shawi* new species**

♂. Black; the front and middle femora and tibiae and more or less of trochanters and hind tibiae ferruginous; the hind tarsi ferruginous but somewhat infuscated; the front and middle tarsi jet black, as also the hind femora, and the hind and middle coxae; the front coxae with a yellow apical spot in front; face, extended upward along the eyes, mandibles except tips, clypeus, scape beneath, posterior extensions of pronotum and lateral spots on second dorsal segment, yellow (colonial buff); antennae pale in front except at tip. Wings hyaline. Length, 6 mm.

Dorsum shallowly and sparsely punctured; mesopleura not striate, scarcely punctate. Area on propodeum sharply triangular, nearly as broad at base as long, filled with numerous radiating carinae. Second recurrent vein opposite the second transverse cubitus.

♀. Black; the legs except coxae, the first dorsal abdominal segment except narrow apical band, and base of second dorsal and ventral segments ferruginous; front coxae with a pale but not yellow apical spot in front; short line within the eyes by the bases of the antennae, scape beneath, and spots on second segment, yellow (colonial buff), the edge of clypeus and mandibles a more obscure reddish yellow, the latter darker toward apex. Wings slightly infuscated. Length, 6.5 mm.; of paratype, 8 mm.

Sculptured as in the male, except that the areola on the propodeum is a little less triangular, the sides slightly convex.

Habitat.—BRITISH COLUMBIA: Carbonate, on the Columbia River, July 7 to 12, 1908, altitude 2600 feet, three males, two females, (collected by the author). NEVADA: one male, [American Entomological Society].

Types.—In Cornell University. Holotype, ♂, no. 131.1; allotype, ♀, no. 131.2; paratype, ♀, no. 131.3.

Another female from the same place and collected at the same time as the type seems to belong to this species, but several of the radiating carinae of the propodeum are suppressed. The first dorsal segment is entirely ferruginous in this specimen. A second male collected at the same time and place, unfortunately has been pinned directly through the areola of the propodeum, but looks as though the condition of the areola had been almost in the female just mentioned. In other respects the male is typical. Another male taken, at the same time and place, agrees entirely with these in color, but the propodeal areola is precisely as in *trianguliferus*. I can not at present look upon it other than as a variant of *shawi*, but it raises the question as to whether the precise conformation of this areola is as significant in some of the species of *Alysson* as has heretofore been supposed. The female paratype is larger than the allotype, and the areola of the propodeum less triangular.

The transition from the *radiatus* type of *areola* to that of *trianguliferus* could very easily be affected by the suppression of all but two of the radiating carinae.

The type of this species gives the impression of being most closely related to *A. radiatus* Fox. If, however, the several other specimens mentioned above really belong to it, representing slight variations in the propodeal areola, I am inclined to believe that its closest relative is *A. trianguliferus*. In fact it may very well represent a northwestern race of that species. It also is

undoubtedly related to *conicus*, or at least to the male described by Fox as belonging to that species.

I take pleasure in dedicating this species to the late Dr. Charles H. Shaw, leader of several parties of botanists and others into the Rocky and Selkirk Mountains of British Columbia, with whom the author spent parts of two very pleasant summers, during one of which he captured the types of the species.

