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female ciliated externally with long bristles. Petiole no longer than the posterior coxae; abdomen convex, the tip pointed in the female.

Both Dahlbom and Smith have described the tarsal claws of *Priononyx* as quadridentate, doubtless overlooking the small basal tooth which is difficult to see unless the claw is detached. This fifth tooth is present in both *thomae* and *atrata*.

In the ♀ of *thomae* the notch in the clypeus is shallow, and above it is a rounded depression. Small specimens of *atrata* approach *thomae* in these respects. In the ♂ of *thomae* the 6th and 7th ventral segments have a deep median sinus on the margin. In *atrata* the margin of these segments is entire.

LIST OF THE NORTH AMERICAN LARRADAE.

BY W. H. PATTON.

SYNOPSIS OF THE GENERA.

- I. Eyes reniform; second submarginal cell petiolate . . . PISON
- II. Eyes entire; second submarginal cell not petiolate.
 - A. Exterior margin of the mandibles scarcely emarginate.
 - a. First submarginal cell shorter than the two following taken together, divided by a spurious nervure. Eyes of the ♂ meeting on the vertex. Two spurs on the intermediate tibiae. ASTATA
 - b. First submarginal cell longer than the two following together, not divided. Eyes not meeting on the vertex. Mandibles not dentate within. LIRIS
 - B. Exterior margin of the mandibles with a broad and deep emargination near the base.
 - a. Three distinct ocelli . . . LYRODA
 - b. Posterior ocelli distorted or obsolete.
 - 1. Metathorax as long as the mesothorax, truncated behind; marginal cell truncate. LARRA
 - 2. Metathorax shorter than the mesothorax, rounded behind; marginal cell narrow and rounded at the apex. Mandibles dentate within. . . . TACHYTES

PISON Spin. (1808).

Syn. *Tachybulus* Latr. (1809); *Nephridia* Brullé (1833).

Type of Spinola: *P. ater* (Spin.).

Pison laevis Sm., Cat. Hym. Brit. Mus., IV, 317, ♀.

Pison conformis Sm., Trans. Ent. Soc. Lond., 1869, 297.

ASTATA Latr. (1796).

Syn. *Dimorpha* Jur. (1807).

Type: *A. boops* (Schrank).

Astata unicolor Say, Narr. Long's Ex., II, 337, ♀; Smith, Cat.

H. B. M., IV, pl. 8, f. 1, ♂.

Astata rufiventris Cress., Tr. Am. Ent. Soc., IV, 218, ♀.

Astata bicolor Say, West. Quart. Rep., II, 78, ♂ ♀. *Astata terminata* Cress., Tr. Am. Ent. Soc., IV, 218, ♂.

Astata nubecula Cress., Proc. E. S. P., IV, 466, ♂.

Astata insularis Cress., Proc. E. S. P., IV, 140, ♀.

LIRIS Fabr. (1804), Dahlb. (1843).

Type of Fabricius: *aurata*. No American species known.

LYRODA Say (1837).

Type: *L. subita* Say.

Mandibles with a deep and broad excavation beneath and in the ♀ with two teeth within, the proximal tooth broad, its apex retuse, separated from the other tooth by a sharp notch; in the ♂ no trace of teeth within. Clypeus of the ♀ with three distinct teeth on each side, the labrum slightly sinuate; clypeus of the ♂ narrowly and slightly produced, concealing the labrum, the apex of the clypeus bisinuate. Eyes parallel, the inner margin slightly sinuate. The three ocelli distinct and round. Prothorax raised, forming a distinct node, obtusely three-angled. Metathorax elongate, truncate. Marginal cell of anterior wings truncate, distinctly appendiculate; first submarginal longer than the two following together; second submarginal narrow and narrowed one-half, or in the ♂ more than one-half, towards the marginal, unequally six-sided, the transverse nervures nearly straight; third submarginal slightly produced at the apex, not lunate, the submarginal vein extending distinctly beyond; the first recurrent nervure received near the base, the second beyond the middle of the second submarginal cell, far apart; submedial cell of

anterior wing extending as far as the medial cell on the externo-medial nervure. Enclosure on the sixth dorsal segment of the abdomen in the ♀ broad, pilose.

The genus *Morphota* Smith (1856) appears to be synonymous with this, Smith's description applying well in all but the form of the prothorax which is said to be "transverse"; and this difference is probably one of words rather than of structure.

Lyroda subita Say, Bost. Journ., I, 372, ♀. *Tachytes subitus* Sm., Cat. H. B. M., IV, 307; *Larrada subita* Cress., Tr. Am. Ent. Soc., IV, 213.

Lyroda triloba Say, Bost. Journ., I, 372. *Tachytes trilobus* Sm., Cat. H. B. M., IV, 307; *Larrada triloba* Cress., Tr. Am. Ent. Soc., IV, 213.

Lyroda caliptera Say, Bost. Journ., I, 373.

LARRA Latr. (1802), Fabr. (1804, nec 1793).

Syn. *Larrada* Smith (1856).

Type of Latr., Dahlb., and Smith: *anathema*.

The type is said to have no teeth on the inner margin of the mandibles, and it was upon this character that Panzer, Illiger, and Dahlbom based the distinction between this genus and *Tachytes*. In all the American species examined by me the teeth are more or less distinct, sometimes as distinct as in *Tachytes*, and in all cases, even in the males, apparent. This character appears to be liable to the objections which may be raised against all characters derived from the presence or absence of an organ. I have, therefore, employed the characters given by Smith, as they appear also to separate the genera more naturally. But this arrangement has its difficulties, and it may yet be necessary either to subdivide both genera or to throw them into one.

The genus *Scolia* was established by Fabricius in 1775, and no indication of the type was given by him either at that time or subsequently. In the *Entomologia Systematica* (1793) he described a genus *Larra* and, contrary to his custom in that work, gave a full description drawn from *L-pustulatus*. There is nothing in the writings of the early authors to show that they placed first in the genus the species which they regarded as typical, nor indeed, that they had any idea of "types." Smith's statement, in 1856, that *vespiformis* was the type of the Fabrician *Larra* (because, perhaps, it stood first in Fabricius' list) is, therefore, not to be left unchallenged. A

genus, in the conception of Fabricius, contained species which agreed in essential structure. The species, therefore, from which he described that structure, if he indicates it, must be taken as typical of the genus no matter where it stands in the list. The *4-pustulatus* stands next to the last. The *ichneumoniformis* stands third in the list. In the Syst. Piez. (1804) Fabricius decided that *4-pustulatus* belonged to *Scolia*; *vespiformis* and *ichneumoniformis* he still retained in *Larra*. The *Larra* of 1793 becomes, therefore, a synonym of *Scolia* and a new genus *Larra* is made for the non-typical species. But Latreille in 1802, Hist. Nat., vol. III, had described a genus *Larra* with *ichneumoniformis* as its type. The name, therefore, should be quoted from Latreille, and as *vespiformis* is now known to be generically distinct from *ichneumoniformis*, *vespiformis* cannot be its type. In 1802 also Latreille established a genus *Stizus* with *tridentata* (of which *Larra bifasciata* Fabr. is a synonym) as its type; to this species *vespiformis* is allied. Fabricius 1804, therefore, should be quoted as authority for *Larra* in synonymy only, since his genus contained the types of two of Latreille's prior genera.

Even if this reasoning were not convincing we should be obliged to accept Latreille's decision as to which portion of the Fabrician genus should retain the name — and he selected *ichneumoniformis* as typical. *L. ichneumoniformis* Fabr. is a recognized synonym of *L. anathema* (Rossi).

Larra argentata Beauv., Ins. Afric. et Amér., 119, t. 3, f. 9. *Lyrops argentata* Say, Bost. Journ., I, 370; *Larrada argentata* Smith, Cat. H. B. M. IV, 292, ♀.

Larra distincta. *Larrada distincta* Smith, Cat. H. B. M., IV, 292, ♀.

Larra acuta n. sp.

Larra arcuata. *Larrada arcuata* Smith, Cat. H. B. M., IV, 293, ♀.

Larra luctuosa. *Larrada luctuosa* Smith, Cat. H. B. M., IV, 289, ♀.

Larra luteipennis. *Larrada luteipennis* Cress., Tr. Am. Ent. Soc., II, 293, ♂.

Larra ignipennis. *Larrada ignipennis* Smith, Cat. H. B. M., IV, 288, ♀ ♂; Cress., Proc. E. S. P., IV, 137.

Larra trifasciata. *Larrada trifasciata* Smith, Cat. H. B. M., IV, 290, ♀.

Larra vinulenta. *Larrada vinulenta* Cress., Proc. E. S. P., IV, 138.

- Larra pensylvanica** Beauv., *Ins. Afric. et Amér.* 118, t. 3, f. 8.
Larrada pensylvanica Smith, *Cat. H. B. M.*, iv, 292.
- Larra fuliginosa** Dahlb., *Hym. Eur.*, i, 138 and 472, ♀ ♂. *Larrada fuliginosa* Smith, *Cat. H. B. M.*, iv, 288. ?*Larrada Dahlbomi* Cress., *Proc. E. S. P.*, iv, 138.
- Larra aethiops** Say, *Bost. Journ.*, i, 372.
- Larra aethiops**. *Larrada aethiops* Cress., *Proc. E. S. P.*, iv, 465, "♀"; *Larra aethiops* Patton, *Bull. U. S. Geol. Surv.*, v, 354 ♂.
- Larra americana**. *Larrada americana* Cress., *Tr. Am. Ent. Soc.*, iv, 214, ♂.
- Larra canescens**. *Larrada canescens* Smith, *Cat. H. B. M.*, iv, 292, ♀.
- Larra tenuicornis**. *Larrada tenuicornis* Smith, *Cat. H. B. M.*, iv, 293, ♀.
- Larra laevifrons**. *Larrada laevifrons* Smith, *Cat. H. B. M.*, iv, 291.
- Larra montana**. *Larrada montana* Cress., *Proc. E. S. P.*, iv, 465, ♀; *Larrada parvula* Cress., *Proc. E. S. P.*, iv, 465, ♂.
- Larra belfragei**. *Larrada Belfragei* Cress., *Tr. Am. Ent. Soc.*, iv, 215, ♀.
- Larra terminata**. *Larrada terminata* Smith, *Cat. H. B. M.*, iv, 291, ♂.
- Larra analis** Fabr., *Syst. Piez.*, 220, 8. *Larrada analis* Smith, *Cat. H. B. M.*, iv, 291.
- Larra divisa** Patton, *Bull. U. S. Geol. Surv.*, v, 368, ♀.
- Larra tarsata** Say, *West. Quart. Rep.*, ii, 78. *Larrada tarsata* Cress., *Proc. E. S. P.*, iv, 464, ♀.
- Larra semirufa**. *Larrada semirufa* Cress., *Proc. E. S. P.*, iv, 464, ♀; *Pack.*, *First Ann. Rep. U. S. Ent. Comm.*, 318, f. 55 and 56.
- Larra texana**. *Larrada texana* Cress., *Tr. Am. Ent. Soc.*, iv, 214, ♀.
- Larra bicolor** Fabr., *Syst. Piez.*, 221, 12. *Tachytes bicolor* Dahlb., *Hym. Eu.*, i, 471, 15; *Tachytes bicolor* Smith, *Cat. H. B. M.*, iv, 303; *Tachytes (Lyrops) pagana* Dahlb., *Hym. Eu.*, i, 132, ♂ ♀. *Larrada pagana* Smith, *Cat. H. B. M.*, iv, 286; *Larrada americana* Sauss., *Novara Hym.*, 74.
- Larra fulviventris**. *Lyrops fulviventris* Guér., *Icon. Règ. Anim.*, iii, 440; *La Sagra's Hist. Cuba*, vii, 320, viii, pl. 18, f. 9 (1857); and "Ins.", 766, pl. 18, f. 9"; *Larrada fulviventris* Smith, *Cat. H. B. M.*, iv, 286.

LARRA DISTINCTA (Smith).

Both sexes of this species vary in having two or three of the basal segments of the abdomen red; intermediate forms are rare, but both the red-marked and the black varieties are equally common and occur together.

L. distincta is peculiar for having the labrum slightly produced and deeply notched in the middle. The mandibles are distinctly bidentate in both sexes. The clypeus is broadly and abruptly, but slightly produced, and is transversely impressed near the apex; the margin armed with three teeth on each side in the ♀, the lateral teeth being the angles of the process and the inner teeth being the angles of the smooth border, in the male only two teeth are present on each side and the border is more rounded out. The front is prominent, the anterior ocellus in an isolated pit, the area behind it not prominent and not bilobed. The posterior ocelli are obliquely distorted and narrowly drawn out. The eighth ventral segment of the ♂ is broad and entire at the apex. The ciliation of the anterior tarsi of the ♀ is short, the bristles equalling the third tarsal joint in length.

LARRA ACUTA n. sp.

♀. Length 8-9 mm. Black; head, thorax, antennae and legs clothed with a very fine silvery pubescence, the pubescence more distinct on the face and longer on the metathorax; three basal segments of the abdomen when viewed from behind with a broad apical silvery band, in other lights these bands disappearing and the basal portion of the segments having a silvery reflection. Mandibles piceous in the middle, strongly bidentate within like the mandibles of *Tachytes*. Clypeus not dentate, broadly but slightly produced, the sides of the process angular; labrum distinct, entire, medially impressed; head and thorax finely and closely punctured, the anterior portion of the clypeus more coarsely punctured and bordered by a transverse impression. The front and the disk of clypeus swollen, a depression, angulated above, between the eyes and antennae on each side of the face; two slight elevations just above the antennae, between which is an impressed line extending to anterior ocellus and continued above over the prominence and through the depression on vertex; posterior ocelli obliquely distorted into an ellipse, but not drawn out into a linear appendage; eyes approaching on the vertex, their inner border sinuous. Mesonotum abrupt anteriorly, its

anterior portion with a broad median impression on each side of which is an impressed line. Metathorax abruptly truncate, the sides and upper surface uniformly and finely granulated, the posterior face limited above by a transverse ridge beneath which is a deep elongated depression in the median line, on each side of this the posterior face delicately rugose transversely. Anterior tarsi strongly ciliate, the bristles exceeding the second joint of the tarsus in length. Wings subhyaline, tegulae and nervures black or piceous; marginal cell obliquely truncate as in *distincta* (Sm.), indistinctly appendiculate; recurrent nervures distant at their insertion into the second submarginal cell, more distant than in *distincta* and much more so than in *argentata* Beauv. Area on sixth segment of the abdomen narrow and pointed, glabrous, margined, its disk sometimes sparsely punctured.

Waterbury, Conn., Aug. 20th, 21st and 24th.

In size and color *acuta* bears much resemblance to the black males of *distincta*. It is related to *terminata*, *tarsata* and *montana*.

TACHYTES Panz. (1806).

Syn. *Lyrops* Illiger (1807).

Type of Panz. and Ill.: *species with dentate mandibles*.

Type of Westwood (1840): *pompiliiformis* Pz.

The type *pompiliiformis* has a distinct appendiculation to the marginal cell. Other species having no appendiculation to the marginal cell may require to be set apart, and as *etrusca*, the type of *Lyrops* Ill., is one of these, the name *Lyrops* might be adopted for the new genus. But as the name *Lyrops* of Illiger has properly passed into synonymy, the present date and not Illiger's should be quoted. Dahlbom in 1843, however, established a new group *Lyrops* with *pagana* as type (the *Lyrops* of Illiger being at that time obsolete) and proposed the name *Tachyptera* for the species without appendiculation, with *obsoleta* as type. It may be well, therefore, to let *Lyrops* share the fate of *pagana* and adopt *Tachyptera* with *obsoleta* as the type, notwithstanding that *obsoleta* is strictly congeneric with *etrusca*, the type of Illiger's *Lyrops*.

Some of the species here referred to *Tachytes* may need, therefore, to be called *Tachyptera* or *Lyrops*, and most of those referred to *Larra* may require the formation of a new genus (and for this new genus the name *Larrada*, n. g. nec. Smith, would be convenient); but I do not at present find sufficient characters for

separating *Tachyptera* from *Tachytes* or such new genus from *Larra*. As a number of the species, both of *Tachytes* and *Larra*, given in this list are at present unknown to me I do not vouch for their validity, but in a subsequent paper hope to discuss both the generic and specific structural characters more fully.

Tachytes labiatus. *Sphex labiata* Fabr., Ent. Syst., II, 211, 52; *Pompilus labiatus* Fabr., Ent. Syst., Supp., 247, 9; Syst. Piez., 191, 16; *Tachytes labiatus* Smith, Cat. H. B. M., IV, 306; *Tachytes murina* Dahlb., Hym. Eur., I, 132, ♂ ♀.

Tachytes pepticus. *Lyrops peptica* Say, Bost. Journ., I, 371, ♂ ♀; *Tachytes pepticus* Smith, Cat. H. B. M., IV, 308.

Tachytes argentipes Smith, Cat. H. B. M., IV, 306, ♀.

Tachytes insularis Cress., Proc. E. S. P., IV, 140, ♂ ♀.

Tachytes obscurus Cress., Tr. Am. Ent. Soc., IV, 217, ♀.

Tachytes texanus Cress., Tr. Am. Ent. Soc., IV, 217, ♂; *Tachytes texanus* Patton, Bull. U. S. Geol. Surv., V, 368, ♂.

Tachytes repandus. *Liris repanda* Fabr., Syst. Piez., 231; *Tachytes 3-cincta* Dahlb., Hym. Eur., I, 125; *Tachytes repanda* Dahlb., Hym. Eur., I, 470 and xxiii; *Tachytes 3-cinctus* Smith, Cat. H. B. M., IV, 306.

Tachytes sericatus Cress., Tr. Am. Ent. Soc., IV, 216, ♂ ♀.

Tachytes fulvipes. *Larrada fulvipes* Smith, Cat. H. B. M., IV, 288.

Tachytes distinctus Smith, Cat. H. B. M., IV, 307, ♀. *Tachytes distinctus* Cress., Tr. Am. Ent. Soc., IV, 215; ?*Tachytes aurulenta* Lepel., Hym., III, 247.

Tachytes cubensis Cress., Proc. E. S. P., IV, 139, ♂ ♀.

Tachytes elongatus Cress., Tr. Am. Ent. Soc., IV, 215, ♂.

Tachytes validus Cress., Tr. Am. Ent. Soc., IV, 216, ♂ ♀; *Tachytes breviventris* Cress., Tr. Am. Ent. Soc., IV, 216, ♂.

Tachytes crassus n. sp.

Tachytes mandibularis n. sp.

Tachytes harpax n. sp.

Tachytes 3-cinctus. *Liris 3-cincta* Fabr., Syst. Piez., 229, 5.

Tachytes aurulentus. *Larra aurulenta* Fabr., Syst. Piez., 220, 7; *Lyrops aurulenta* Say, Bost. Journ., I, 371, 3; ?*Tachytes aurulenta* Lepel., Hym., III, 247; ?*Tachytes aurulentus* Smith, Cat. H. B. M., IV, 306 and 307.

Tachytes dives Lepel., Hym., III, 247, 8, ♀.

Tachytes abdominalis. *Larra abdominalis* Say, West Quart.

Rep., II, 77, ♀; *Larrada abdominalis* Cress., Tr. Am. Ent. Soc., I, 379; *Tachytes abdominalis* Cress., Tr. Am. Ent. Soc., IV, 217.

Tachytes caelebs Patton, Bull. U. S. Geol. Surv., v, 355 ♂.

Tachytes rufofasciata Cress., Tr. Am. Ent. Soc., IV, 217, ♂.

Tachytes fulviventris Cress., Proc. E. S. P., IV, 466, ♀.

TACHYTES CRASSUS n. sp.

♀. Length 15-16 mm. Robust; black; head, scape, thorax, femora and basal segment of the abdomen clothed with golden pubescence, the pubescence on collar and postscutellum somewhat silvery and that on disk of mesothorax and on metathorax and base of abdomen somewhat griseous; the pubescence more brilliant on the face and, in certain lights, upon the usual parts of the thorax; the ventral segments clothed with an appressed brown pubescence; first, second and third dorsal segments with a narrow silvery margin, extending beneath upon the second and third segments; dorsal area of the sixth segment black, clothed with appressed piceous bristles, the sixth segment margined with shorter bristles. Middle of the mandibles, the labrum, the palpi, the knees, tibiae and tarsi, the tegulae and nervures, ferruginous; wings yellowish subhyaline, the apical margin paler. Body very finely punctured. Clypeus broadly and abruptly produced, the process glabrous, margined, the middle of the margin forming a broad rounded tooth or short lobe, the margin at each side having three crenulations or slight teeth. Labrum with a slight sinuation in the narrow anterior border, fringed with stout spinules. Tubercle of the ocelli clothed with silvery pubescence; the posterior ocelli much drawn out, extending downwards on the sides of the tubercle; behind the ocelli a transverse arcuate or triangular depression from which an impressed line extends upon the vertex. Anterior portion of the mesonotum depressed in the middle, the lateral impressed lines being placed on the elevations at each side. Scutellum with a slight median impression, extreme base of the metathorax with two or three transverse grooves; metathorax subtruncate, its upper face with a distinct median impressed line, this line widening or forking posteriorly to enclose a smooth spot upon the verge of the truncation; posterior face of the truncation medially impressed. Tarsi sparsely fringed with short spines, first joint of anterior tarsi with six spines exteriorly, the spines shorter than the third tarsal joint, the fourth joint of all the tarsi unarmed, the posterior tarsi with short spines at

the tip of first and second joints internally but none at the tip of the third joint internally.

Waterbury, Conn., July 21st and August 5th, on the flowers of *Asclepias incarnata*. The specimens slightly worn. In unrubbed specimens it is probable that the armature of the tarsi and of the clypeus would be the same as in the following species. The females of the three species here described are closely related, the principal differences being found in the color of mandibles, scape, tibiae and dorsal area, in the number of silvery bands and in the impression on scutellum and groove on metathorax.

This appears to be the species which has been mistaken by Massachusetts Entomologists for the *aurulenta* of Fabricius, but Fabricius described the wings of his species as "obscura." From *aurulenta* Smith this species differs in having no "notch in the middle of the anterior margin of the clypeus." The *aurulenta* of Lepeletier appears to be different from that of Fabricius, but differs also from *distinctus* Smith.

TACHYTES MANDIBULARIS n. sp.

♀. Length 13 mm. Black, the head, scape beneath, thorax and femora clothed with golden pubescence, the pubescence more dense and brilliant in the usual positions, the pubescence long on the thorax beneath; basal segment of the abdomen with a thin silvery pubescence, apical margins of the four basal segments of the abdomen silvery; second ventral and the margins of the other ventral segments clothed with an appressed brown pubescence which in certain lights appears silvery; dorsal area black, coarsely punctured, the appressed bristles piceous; abdomen with the usual rows of erect bristles. Base and middle of the mandibles, the palpi and labrum, the scape beneath, the knees, tibiae and tarsi, the tegulae and nervures, ferruginous. The wings yellowish subhyaline, the apical margin clearer. Body very finely punctured. Clypeus broadly and abruptly produced, margined, all but the margin pubescent; the middle of the margin produced into a quadrate tooth, the tooth bituberculate or medially impressed, the margin on each side having three teeth, the outer tooth most distinct and somewhat oblique. Labrum with a slight median impression in the narrow anterior border, fringed with stout spinules. Posterior ocelli drawn out as usual upon the sides of the tubercle, the tubercle divided by a median impression which extends upon the vertex, and encircled by

an impressed line which expands into a pit behind. The four impressed lines on the mesothorax anteriorly distinct, the lateral ones placed on elevations. Scutellum not distinctly impressed medially; extreme base of the metathorax with two or three transverse grooves, metathorax rounded, its upper face with a median groove, the groove delicately striate transversely in the middle, ending in a fovea posteriorly; posterior face of the metathorax medially impressed, the impression broader and deeper above. Spines of the anterior tarsi equalling the second joint of the tarsus in length, the first joint with six or seven spines externally, fourth joint of all the tarsi armed with slender spines, all the joints of the posterior tarsi armed both externally and internally, the spines within being longer than those without. New Haven, Ct., July 12th; Southington, Ct., July.

♂. Length 11 mm. The dorsal area silvery, defined posteriorly by the lateral truncations, the apex truncate. The eighth ventral segment broadly excavated at the apex so as to form two remote teeth. Joints 3-7 of the antennæ crenulated beneath. The anterior margin of the clypeus slightly rounded out, entire, only the tooth at the extreme side being distinct. Labrum not seen. The median impression on the upper face of metathorax distinct only at the base and apex. All the tarsi, excepting the basal joint of the anterior pair, without armature, the spines probably being worn off. New Haven, Ct., July 12th, on the flowers of sumach (*Rhus*).

Smaller male specimens, (which may be a seasonal-dimorph or belong to a distinct species) have the femora more broadly ferruginous. The median tooth and the three lateral teeth of the ♀ clypeus are present as rudiments, the labrum is like that of the ♀, the groove on metathorax is distinct, and the tarsi are armed with spines arranged like those of the ♀ but more slender. Waterbury, Conn., Aug. 16th and 27th, on flowers of golden-rod (*Solidago*).

The smaller size, the unimpressed scutellum and the presence of a fourth silvery band distinguishes the ♀ of this species from *T. crassus*.

TACHYTES HARPAX n. sp.

♀. Length 11-13 mm. Agrees with the description of *mandibularis*, in all but the following points. Dorsal area golden. The labrum, the middle and extreme apex of the mandibles, and the scape of the antennæ beneath dark piceous. All the tibiae with a black stripe beneath. The three lateral teeth of the clypeus equally

distinct. Scutellum with a distinct median impression; the groove on upper face of metathorax represented by the fovea only. Waterbury, Ct., Aug. 18, 28, and 21.

♂. Length 12 mm. Resembles the ♀, but the spines of the tarsi are more slender, and an impressed line is apparent upon the disk of the metathorax. The antennæ are more strongly crenulated beneath than in *mandibularis* ♂. The middle of the anterior margin of the clypeus is thickened, and forms a broad angle beyond which extends the angulated labrum; on each side of the anterior margin of the clypeus are three distinct teeth. The sixth ventral and seventh dorsal segments are tufted with fuscous pubescence; the seventh dorsal is silvery, the area not so distinctly defined laterally as in *mandibularis*. The eighth ventral forms two broad lobes at the tip, separated by a deep and narrow notch. Waterbury, Ct., Aug. 5th.

I have observed the female of *Tachytes harpax* carrying her prey, a female specimen of *Xiphidium brevipenne* Scudd. Capturing both together in a cyanide bottle, when the wasp alit on a leaf to get a new hold on her burden, I removed them from the bottle in a few minutes, after the wasp was dead, and it is worthy of note that two days after its removal from the bottle the *Xiphidium* was sensitive to touch and capable of slightly moving its limbs. Can this have been due to a neutralization of the cyanide by the paralyzing effect of the wasp's sting, or was it owing to the *Xiphidium* having greater natural power to withstand the cyanide?

The European *T. obsoletus* was observed by Fabre (Ann. Sci. Nat., IV ser., Zool. VI, p. 147, 1856), to provision its nest with the larvæ of *Oedipoda*, and he observed *T. tarsina* capture a larval Acridian. The European *T. pompiliformis* was "frequently" captured by Shuckard with a "small sandy-coloured caterpillar." Dahlbom saw it capture and drag to its nest the larva of *Gryllus rufus*; Smith took it with the pupae of grasshoppers, and Lichtenstein (Bull. Soc. Ent. Fr., (5) iii, p. cxxii) observed it store its galleries with grasshoppers, (*Chortipus*). No observations had previously been made upon the American species.

In noting the nesting habits of a Brazilian species of *Larra*, Frederick Smith has stated incorrectly, (Proc. Ent. Soc. Lond., 1859, p. 55), that the tarsal claws of *Tachytes* are "bifid"; they are simple, as in the other genera of the family, but stouter and with a more decided curve. The species of *Tachytes* are very partial to the

flowers of *Asclepias*. But the insect observed by Mr. V. T. Chambers, and a figure of the tarsus of which, with the attached pollinia of *Asclepias*, was published in the American Naturalist, vol. i, p. 105, and in the Guide to the Study of Insects, p. 165, was incorrectly referred to *Tachytes* by Dr. A. S. Packard, Jr. Indeed, that figure bears no resemblance to the tarsus of *Tachytes*, but represents tolerably well the tarsus of a *Spheg*, an insect of a different family.

So quick are these insects in their motions, and so watchful are they that their capture is difficult. However stealthily they are approached while resting on the flowers, their green eyes are sure to face the intruder, and the least suspicious act sends them circling in the air, or off in an exceedingly rapid flight.

NOTES ON THE PHILANTHINAE. BY W. H. PATTON.

Male Philanthinae are peculiar for having upon the apical margin of the lateral lobes of the clypeus, a fringe of hairs which may be known as the "moustache." In *Philanthus* the outer hairs of the fringe are long and silky, and are appressed to the clypeus, being directed towards the median line, or, so to speak, combed towards the parting. It may be that these hairs can be raised at the will of the insect. In *Aphilanthops*, *Eucerceris* and *Cerceris* this fringe is shorter and erect, and in many specimens of the last named genus, the hairs are so closely set that they form what appears to be a chitinous lobe slightly narrowed towards the end, and with its apical border emarginate. This appearance may be due to some operation performed by the insect, and it may be that these dandies "wax" their moustache. In none of the *Aphilanthops* or *Eucerceris* examined have I seen this waxed appearance. In some species the fringe is not so well developed as in others, but in all it is a prominent character, although in a few, as for instance the species of *Aphilanthops*, it is not very distinct because of the presence of other pubescence upon the face. When the moustache is moistened with honey it becomes darker in color. Although the moustache of *Philanthus* is figured by Savigny in Napoleon's *Egypt*, it does not appear to have been described by any author. The fringe on the clypeus of *Cerceris* has been noticed before, but by Saussure it has sometimes been described as a "lobe" of the clypeus.