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**CLASSIFICATION OF THE FORAGING AND DRIVER
ANTS, OR FAMILY DORYLIDÆ, WITH A DE-
SCRIPTION OF THE GENUS
CTENOPYGA ASHM.**

By WILLIAM H. ASHMEAD, M.A., D.Sc.

In the Canadian Entomologist for November, 1905, pages 381 to 384, I gave a skeleton of a new arrangement of the families, subfamilies, tribes, and genera of the Ants, or the superfamily Formicoidea in which several new genera were indicated. Among these was the genus *Ctenopyga*, from Mexico, which I now describe and figure, after giving analytical tables for recognizing the three subfamilies, the tribes, and the genera falling in each, according to the three sexes, worker, female, and male, when known, taken from my forthcoming classification of the Ants, or the superfamily Formicoidea.

Family XLIII. DORYLIDÆ.

The ants belonging to this family are held together and easily separated from those of other families by habits and by peculiarities of structure, the females being nearly always wingless, the workers having the antennæ inserted much farther forward on the head, close to the anterior margin, and by the genitalia of the males which differ widely from those of other ants, the terminal ventral plate, or the hypopygium, being broad and deeply semicircularly emarginated, forked or bispined.

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It is this character which induces me to place the *Acanthostichinae* in this family rather than in the family *Poneridae*, although otherwise, especially in the workers, they are apparently just as closely allied to that family, where Forel and Emery now place them.

The first species discovered, however, was a worker and that was originally placed by Frederick Smith, of the British Museum, in the Dorylid genus *Typhlopone* Westwood. Dr. Gustav Mayr made *Typhlopone serratula* Smith the type of his genus *Acanthostichus*, which is now known in all three sexes, the female having been described and figured recently by Professor Emery, who also at one time classified the genus with the subfamily *Dorylinae*.

The three subfamilies may be recognized from the structural characters made use of in the following table:

TABLE OF SUBFAMILIES.

1. Workers	2
Females	5
Males	12
2. Abdominal petiole composed of only <i>one</i> joint	4
Abdominal petiole composed of <i>two</i> joints.....	3
3. Antennæ 9 to 10-jointed.....	Subfamily I. ECITONINÆ
4. Antennæ 9 to 12-jointed.	
Pygidium normal, the apical margin not armed with a row of fine teeth.....	Subfamily II. DORYLINÆ
Pygidium abnormal, the apical margin armed with a row of fine teeth.....	Subfamily III. ACANTHOSTICHINÆ
5. Wingless forms.....	6
Winged forms.....	11
6. Head <i>without</i> either eyes or ocelli.....	7
Head with the eyes present, represented by a single ocellus, at or near the lateral middle.....	8
7. Head <i>not</i> distinctly bilobed; thorax with only the pronotal suture present, the mesonotal suture absent...Subfamily I. ECITONINÆ	
Head distinctly bilobed; thorax with the pro- and meso-notal sutures distinct.....	Subfamily II. DORYLINÆ
8. Pygidium normal, unarmed.....	9
Pygidium abnormal, the apical margin armed with a row of minute teeth	10
9. Meso-metanotal suture absent, the meso- and meta-notum closely united, the pronotal suture indistinct...Subfamily I. ECITONINÆ	
Meso-metanotal suture distinct, the meso- and meta-notum separated, the pronotal suture distinct.....	Subfamily II. DORYLINÆ

- 10. Thorax with only the meta-notal suture present, indicated by a transverse row of punctures; head not bilobed,
 Subfamily III. ACANTHOSTICHINÆ
- 11. Pygidium armed with a row of fine teeth along the apical margin; front wings with *three* cubital cells,
 Subfamily III. ACANTHOSTICHINÆ
- 12. Submedian cell in front wings *shorter* than the median cell, the transverse median nervure uniting with the median vein *before* the basal nervure.....I3
 Submedian cell in front wings distinctly *longer* than the median cell, the transverse median nervure uniting with the median vein *beyond* the basal nervure
 Femora neither flat nor compressed....Subfamily I. ECITONINÆ
 Femora abnormally flat or compressed.Subfamily II. DORYLINÆ
- 13. Femora abnormally flat or compressed; mandibles more or less sickle-shaped or conical, without teeth or a masticatory edge,
 Subfamily II. DORYLINÆ
 Femora normal, neither flat nor compressed; mandibles more or less triangular, and with a broad masticatory edge,
 Subfamily III. ACANTHOSTICHINÆ

Subfamily I. ECITONINÆ.

1893. 2me Tribu: Ecitonii Forel, Ann. Soc. ent. Belgique, xxx, p. 163.
 1895. 2 Tribus: Ecitonii Emery, Zool. Jahrb. Syst., VIII, p. 765.

This subfamily I have divided into two minor groups or tribes, as follows:

TABLE OF TRIBES.

1. Workers	2
Females	3
Males	4
2. Mesonotal suture wanting or never distinctly defined.	
Antennæ 12-jointed; inner tibial spur pectinate. Tribe I. Ecitonini	
Antennæ 10 or 11-jointed; inner tibial spur apparently simple, Tribe II. Ænictini	
3. Wingless; head not distinctly bilobed.	
Eyes represented by a single ocellus a little <i>behind</i> the lateral middle of the head; node of petiole transverse, concave medially and posteriorly, the upper hind angles prominent; antennæ 12-jointed, Tribe I. Ecitonini	
Eyes absent or represented by a single ocellus <i>before</i> the lateral middle of the head; node of petiole a little longer than wide; antennæ 10-jointed, or rarely 11-jointed.....Tribe II. Ænictini	
4. Front wings with <i>three</i> cubital cells.....Tribe I. Ecitonini	
Front wings with <i>two</i> cubital cells.....Tribe II. Ænictini	

Tribe I. ECITONINI.

This tribe seems to be confined to the New World—North, Central, and South America, and the West Indies.

TABLE OF GENERA.

1. Workers	2
Females	3
Males	4
2. Antennæ 12-jointed; workers more or less dimorphic, the soldiers with long, hook-like mandibles, the workers with triangular mandibles; metathorax bicarinate; maxillary palpi 2-jointed, labial palpi 3-jointed.	
Claws <i>with</i> a tooth beneath	<i>Eciton</i> Latreille (Type, <i>Formica hamata</i> Latreille)
Claws <i>without</i> a tooth beneath, simple.....	<i>Acamatus</i> Emery (Type, <i>Eciton schmitti</i> Emery)
3. Wingless; meso- and meta-notum divided, together scarcely longer than wide; abdominal petiole transverse, above triangularly concavely emarginate posteriorly.	
Claws <i>with</i> a tooth beneath.....	<i>Eciton</i> Latreille
Claws <i>without</i> a tooth beneath, simple.....	<i>Acamatus</i> Emery
4. Front wings with <i>three</i> cubital cells.	
Abdominal petiole above <i>subconvex</i> or at least never deeply concave; mandibles narrow, falciform, acute at apex.....	5
Abdominal petiole above deeply <i>concave</i> ; mandibles broadened, not falciform	6
5. Subdiscoidal cell <i>not</i> interstitial with the apex of the submedian vein.	
Claws <i>with</i> a tooth beneath.....	<i>Eciton</i> Latreille
Claws <i>without</i> a tooth beneath, simple.....	<i>Acamatus</i> Emery
6. Subdiscoidal nervure interstitial with the apex of the submedian vein; claws with a small tooth beneath. <i>Mayromyrmex</i> Ashmead (Type, <i>Labidus fargeau</i> Shuckard)	

Tribe II. ÆNICTINI.

This tribe is apparently confined principally to the Asiatic fauna, a few only occurring in Africa.

TABLE OF GENERA.

1. Workers	2
Females	5
Males	6
2. Antennæ 10-jointed.	
Eyes wanting	3
Eyes present	4

3. Ocelli absent; femora clavate; metathorax posteriorly truncate and bounded by an elevated rim at apex; mandibles curved downward; claws simple*Ænictus* Shuckard
(Type, *Æ. ambiguus* Shuckard)
4. Eyes prominent, placed at the lateral middle of the head, the ocelli represented by a single ocellus anteriorly.....*Oöceræa* Roger
(Type, *O. fragosa* Roger)
5. Wingless; head oblong-quadrangular, much wider than the thorax; thorax more than thrice longer than wide, without sutures; abdominal petiole quadrangular, longer than wide; antennæ 10-jointed.
Ænictus Shuckard
6. Front wings with *two* cubital cells, the stigma distinct, the transverse median nervure interstitial with the basal nervure or nearly, the median and submedian cells equal or nearly; pygidium posteriorly rounded; antennæ tapering off at apex, the intermediate joints wider than long*Ænictus* Shuckard

Subfamily II. DORYLINÆ.

This subfamily reaches its greatest development in Africa where the genera and species are numerous, although a few extend into Asia.

It may not occur in America, as the two American genera placed here, namely *Typhlopone* Westwood and *Cheliomyrmex* Mayr are unknown to me in nature and are placed here from the description alone. I suspect that both may belong to the Ecitoninæ. *Sphinctomyrmex* Mayr is also another doubtful Doryline which I have not been able to see.

Two distinct tribes have been recognized from the males.

TABLE OF TRIBES.

Front wings with <i>three</i> cubital cells, the second receiving only one recurrent nervure	Tribe I. <i>Ænictogitonini</i>
Front wings with <i>two</i> cubital cells, the first receiving the single recurrent nervure	Tribe II. <i>Dorylini</i>

Tribe I. *ÆNICTOGITONINI*.

This tribe is based upon the genus *Ænictogiton* Emery, known only in the male sex, the type being *A. fossicans* Emery. The worker and female will probably resemble some of those in the tribe *Dorylini*.

Tribe II. *DORYLINI*.

Africa is evidently the original home of this tribe, where the genera and species are abundantly represented. Prof. C. Emery, the eminent Italian myrmecologist, in his paper "Die

Gattung *Dorylus* Fabr., und systematische Eintheilung der Formiciden,"^a has done a great work in unraveling the confusion that existed in regard to the genera and species, and has formed the basis of this table:

TABLE OF GENERA.

- | | |
|--|------------------------------|
| 1. Workers | 2 |
| Females | 14 |
| Males | 17 |
| 2. Pro-mesonotal suture always more or less distinct; mesonotal suture dorsally wanting or obsolete; pygidium usually tridentate; metathoracic spiracles alone distinct..... | 3 |
| Pro-mesonotal suture obsolete; if the mesonotal suture is distinct it is due to remarkable polymorphism..... | 9 |
| 3. Head in large individuals longer than wide..... | 4 |
| Head, in large individuals, wider than long; mandibles long sickle-shaped, with a large tooth within at the middle; in small individuals with a prominent clypeus; antennæ 11-jointed, | |
| <i>Anomma</i> Shuckard | |
| (Type, <i>A. burmeisteri</i> Shuckard) | |
| 4. Antennæ 9-jointed | 5 |
| Antennæ 10-12-jointed | 7 |
| 5. Head in large individuals with the margins parallel or wider before than behind; clypeus in small specimens not prominent.... | 6 |
| Head narrowed anteriorly; clypeus prominent.... | <i>Alaopone</i> Emery |
| (Type, <i>Typhlopone carteri</i> Shuckard) | |
| 6. Head a little longer than wide; abdominal petiole in large and medium sized individuals with a thorn beneath towards apex; pygidium tridentate | <i>Alaopone</i> Emery |
| Head in large individuals much longer than wide; abdominal petiole with only a prominent angle beneath; pygidium simple, | |
| <i>Rhogmus</i> Shuckard | |
| (Type, <i>R. fimbriatus</i> Shuckard) | |
| 7. Mandibles at apex <i>with</i> a short, bidentate cutting margin; antennæ 11-jointed | 8 |
| Mandibles in large individuals <i>without</i> a cutting margin, sabre-shaped; in smaller forms with a tooth at the apical third; antennæ in large and medium sized forms 12-jointed, in small and the smallest forms 10 or 11-jointed..... | <i>Dichthadia</i> Gerstäcker |
| (Type, <i>D. furcata</i> Gerstäcker) | |
| 8. Abdominal petiole always distinctly longer than wide, | |
| <i>Typhlopone</i> Westwood | |
| (Type, <i>T. fulva</i> Westwood) | |

^a Zool. Jahrb. Syst., VIII, 1895.

- Abdominal petiole wider than long, or at the most not longer than wide*Dorylus* Fabricius
(Type, *Vespa helvolus* Linné)
9. Mesonotal suture obsolete or very indistinct.....10
Mesonotal suture very distinct or indicated by a constriction.....13
10. Abdomen normal, not constricted between each segment.....11
Abdomen abnormal, constricted between each segment; pygidium impressed or forked; antennæ 11-jointed (rarely 12-jointed),
Sphinctomyrmex Mayr
(Type, *Typhlopone stollii* Mayr)
11. Antennæ 11 or 12-jointed.....12
Antennæ 10-jointed.
Head very large, the clypeus prominent.....*Shuckardia* Emery
(Type, *Alaopone abeillei* André)
12. Antennæ 12-jointed, gradually thickened towards apex; head not much longer than wide; maxillary palpi 2-, labial palpi 3-jointed; mandibles curved, with a strong triangular tooth near base within*Cheliomyrmex* Mayr
(Type, *C. Nortoni* Mayr)
Antennæ 12-jointed; head about twice as long as wide,
Probolomyrmex Mayr
(Type, *P. filiformis* Mayr)
13. Antennæ 12-jointed, gradually thickened towards apex; clypeus very narrow, transverse; maxillary palpi 2-, labial palpi 3-jointed,
Cheliomyrmex Mayr
(Type, *C. nortoni* Mayr)
14. Head bilobed; petiole transverse, obtuse above and produced into acute angles behind.
Thorax trilobed15
Thorax *not* trilobed16
15. Thorax trilobed with a distinct constriction between the lobes, the metathoracic lobe the narrowest; mandibles long acute; abdomen terminating in a peculiar plate which has a deep, narrow, median emargination at apical half.....*Anomma* Shuckard
Thorax trilobed but without a distinct constriction between the lobes, although the lobes are distinctly separated or indicated by faint sutures above; hypopygium not narrow, broadly emarginate at apex*Dorylus* Fabricius
16. Thorax a parallelogram, a little more than twice as long as wide, with a slight lateral constriction at the middle, the lobes closely united, not indicated by sutures above; hypopygium narrow, the sides parallel, deeply forked at apex.....*Dichthadia* Gerstäcker
17. Front wings with *two* cubital cells, the stigma narrow, lanceolate. Abdominal petioles wider than long, convex anteriorly, but truncate or emarginate posteriorly; first two joints of flagellum nearly equal18

- Abdominal petiole quadrate or rounded; first two joints of flagellum unequal19
18. Mandibles about *four* times as long as wide at base; submedian cell shorter than the median *Anomma* Shuckard
Mandibles much broader, at the most only three times as long as wide at base.
Submedian cell *shorter* than the median.....*Dorylus* Fabricius
Submedian cell *longer* than the median.....*Rhogmus* Shuckard
19. Mandibles broad, at the most not twice as long as wide at the base,
20
Mandibles narrow, about *three* times as long as wide at base.
Thorax with appressed pubescence above....*Typhlopone* Emery?
20. Thorax dorsally *with* an oblique, erect pubescence.
Mandibles much narrowed towards apex and produced into a long point*Dichthadia* Gerstäcker
Mandibles not especially narrowed towards apex.*Alaopone* Emery
Thorax dorsally *without* an erect pubescence, but with only a fine quite appressed pubescence.....*Shuckardia* Emery

Subfamily III. ACANTHOSTICHINÆ.

1893. 2me Tribu: Cerapachysii Forel (partim), Ann. Soc. ent. Belgique, xxxvii, p. 162.
1895. 3 Tribus: Cerapachyi Emery (partim), Zool. Jahrb. Syst., viii, p. 765.
1901. 1 Tribu: Acanthostichii Emery, Bull. Soc. ent. Belgique, xlv, p. 34 (Poneridæ).

This subfamily is undoubtedly closely allied to the next family, or the Poneridæ; but on account of the male genitalia being similar to the dorylid type I prefer to retain it in this group.

Representatives are known in North America, *i. e.* Texas, Mexico, and Central America and in South America. The first specimen I had seen of this curious group, *Acanthostichus kirbyi* Emery, was kindly given to me by my friend, the eminent French hymenopterologist, Mr. Ernest André, of Gray, France. This has aided me very materially in working out the new genus characterized below:

TABLE OF GENERA.

1. Workers2
Females3
Males6
2. Mesonotal suture obsolete or very indistinct; head oblong, smooth, the sides nearly parallel; frontal carinæ with lobes that cover the

articulation of the antennæ, the latter 12-jointed; thorax flattened above, with some elongate punctures; abdominal petiole quadrate, with a number of irregular depressions above,

Acanthostichus Mayr

(Type, *Typhlopone serratula* Smith)

- Unknown (see ♀ and ♂).....*Ctenopyga* Ashmead
3. Wingless4
 Winged5
4. Head oblong, not bilobed, *without* ocelli, the eyes minute; thorax with the meso- and meta-notum not divided by a distinct suture, together a little wider than long; abdominal petiole wider than long, trapezoidal, subconvex above.....*Acanthostichus* Mayr
5. Front wings with *three* cubital cells, a distinct stigma, and with the marginal cell more or less open at apex; submedian cell shorter than the median; pygidium with the apical margin armed with a row of spines; head oblong, the eyes and ocelli present; claws simple*Ctenopyga* Ashmead
 (Type, *C. townsendi* Ashmead)
6. Marginal cell open at apex; flagellum rather stout, subclavate, the joints after the first a little wider than long; disk of mesonotum posteriorly flattened, the parapsidal furrows not distinct,
Acanthostichus Mayr
 Marginal cell usually closed at apex; flagellum subfiliform, the joints a little longer than wide; disk of mesonotum subconvex, the parapsidal furrows and the humeral furrows present,
Ctenopyga Ashmead

***Ctenopyga townsendi* n. sp. (fig. 4).**

♀.—Length 5 mm. Castaneous, the head piceous-black, smooth and shining, the eyes well developed, oval, faceted, placed slightly beyond the lateral middle, the scape of the antennæ and the legs rufo-testaceous, the flagellum clavate, brownish, becoming yellowish at apex, the club distinctly yellowish. The oblong head is slightly wider than the thorax and about twice as long as wide, the hind margin only slightly and broadly emarginate, ocelli small, arranged in a triangle; the face has a median grooved line anteriorly between the antennæ; the antennal scape is depressed, somewhat broadened, and reaches to the base of the eyes, while the flagellum is clavate, thickened towards apex, the funicle joints being wider than long; the mandibles are large, triangular, with a broad, sharp, but edentate masticatory edge, the edge bordered with a few punctures; the thorax is a little more than four times as long as wide, slightly narrowed posteriorly, the anterior margin rounded, the posterior margin sharply but slightly obliquely truncate, the pro-, meso-, and meta-notal sutures distinct, the mesonotum a little longer than the pronotum, the scutellum well differentiated, with a crenate furrow across the base, the metanotum obtrapezoidal; the mesosternal

suture is distinct. Wings clear hyaline, the stigma brown, the veins pale, the cells as in figure 4. The abdomen is longer than the head and thorax united, cylindrical and very similar to the worker in *Acanthostichus* Mayr, the petiole being longer than thick, with a tubercle beneath at base, the pygidium at apex hairy and armed with a row of comb-like teeth.

♂.—Length about 4 mm. Highly polished black; the mandibles, the scape and pedicel of the antennæ, and the legs, except knees, tips of front tibiæ and all tarsi which are more or less yellowish, rufous or

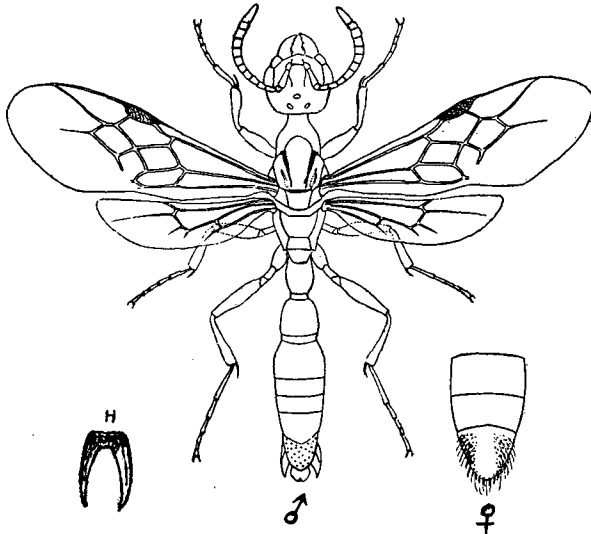


FIG. 4.—*Ctenopyga townsendi*: Male in center, tip of female abdomen at right, male hypopygium (*H*) at left.

rufo-piceous, the coxæ and femora dark; the flagellum is brownish yellow, subclavate, the last joint conical, a little longer than the two preceding joints united, the joints 1 to 6 longer than thick; wings much as in female. The parapsidal furrows are complete and the lateral lobes have the humeral furrow well developed; the hypopygium (fig. 5), which is strongly forked, and the genitalia are testaceous.

Type.—No. 7818, U. S. National Museum.

La Puerta, Mexico. One female and two male specimens taken May 6, 1895, by Professor C. H. Tyler Townsend.

NEW GENERIC NAMES.

Prof. T. D. A. Cockerell has kindly called my attention to the fact that three genera recently established by me are pre-

occupied in other departments of zoölogy and must be changed. I suggest the following new names:

Eiseniella n. n.

Eisenia Ashmead (not Malm, 1877), Mem. Carnegie Museum, 1, No. 4, p. 232, 1904.

Elasmognathias n. n.

Elasmognathus Ashmead (not Gray, 1867), Proc. U. S. Nat. Mus., XXIX, No. 1424, p. 405, 1905.

Orthonotomyrmex n. n.

Orthonotus Ashmead (not Westwood, 1829), Can. Ent. xxxvii, No. 11, p. 384, November, 1905.