



<http://www.biodiversitylibrary.org/>

Journal of the Academy of Natural Sciences of Philadelphia.

Philadelphia :Academy of Natural Sciences of Philadelphia,1817-1918.

<http://www.biodiversitylibrary.org/bibliography/34362>

ser. 2:v. 1 (1847): <http://www.biodiversitylibrary.org/item/110628>

Page(s): Page 311, Page 312, Page 313, Page 314, Page 315, Page 316, Page 317, Page 318, Page 319, Page 320, Page 321, Page 322, Page 323, Page 324, Page 325, Page 326, Page 327, Page 328, Page 329, Page 330, Page 331, Page 332, Page 333, Page 334, Page 335, Page 336, Page 337, Page 338, Page 339, Page 340

Contributed by: Natural History Museum Library, London

Sponsored by: Natural History Museum Library, London

This page intentionally left blank.

ART. XXVII.—*An attempt to classify the Longicorn Coleoptera of the part of America North of Mexico.* By JOHN L. LECONTE, M. D.

- Works cited. HALD., Haldeman in Transactions of the American Philosophical Society. Vol. X.
 HARRIS, Transactions of the Hartford Society of N. H.
 SAY, Boston Journal and Journal of the Academy of Natural Sciences, Philadelphia.
 NM. ENT. MAG., Newman in Entomological Magazine.
 FORSTER, Centuria Insectorum.
 DEJ. CAT., Catalogue de la collection de M. LeComte Dejean.
 SERVILLE in Annales de la Societ  Entomologique.
 FABR., Fabricius.
 OL., Olivier.
 KB., N. G. Kirby Fauna Boreali American . Vol. IV.
 RANDALL, Boston Journal of Natural History.
 GERM., Germar Insecta Nova.
 LAP., Laporte et Gory Monographi  du genre Clytus.

PART I. CONTAINING THE CERAMBYCI.

In the present essay I have made many innovations in the former arrangements of these insects. These will be found more obvious in the first group, the *Lepturid *. The indistinct characters of the genera as left by Serville and Mulsant, have long rendered some other classification necessary ; since being founded on very slight and arbitrary differences of form, they unite together many species which, agreeing in certain trivial circumstances, differ widely in general appearance. Such is the genus *Pachyta*, which on account of its heterogeneous nature I have been compelled to suppress altogether. Such again is *Grammoptera*, which was established on *Leptur * with linear elytra. If a comparison of a large number of species be made, this character is found to be entirely fallacious, so that however clear the mathematical distinction may be between lines that are and are not parallel, it will be seen that in nature this distinction cannot obtain. The proportions and form of the elytra vary in *all the genera*, and it would be quite as rational to separate into *distinct genera*, those with incised and those with dehiscent elytra.

Although these characters are thus shown to be mere specific marks, we may derive much aid from them in forming sections in those genera which contain many species ; they may thus be made to alleviate the labor of identifying species : and in

the following pages have been made to contribute greatly to this very desirable object. Indeed, the genera *Leptura* and *Strangalia* might perhaps have been merged together, since they only differ in the degree of prominence of the posterior thoracic angles; this character is found to be variable, so that I have great doubt of its generic value.

Whilst thus exposing the faults of the heretofore arrangements of this group, it is by no means presumed that the present scheme is unobjectionable. All that is claimed for it is, that it is more applicable to American species, as well as those European species which commonly occur in collections.

The large increase of genera may be objected to, no less than eight new ones having been added to the *Lepturæ* alone, but these are recognized at once by certain peculiarities of habitus, and the characters on which they are founded are, so far as I know, invariable. The generic table appended to these remarks will render this sufficiently obvious.

There does not appear to be much accurate parallelism between the European and American species of this family; and most of the genera found in Europe are equally developed on this continent. An exception to this principle is found in *Rhagium*, of which we have but a single species. *Vesperus* and *Rhamnusium* are peculiar to the old continent, but here *Desmocerus* represents the former and *Centroderus* the latter. Peculiar to America are *Piodes*, *Gaurotes*, and *Typocerus*, the five other new genera are distributed over both continents. There are two species of this group which are indigenous to Europe and America, viz: *Acmaeops strigilata* and *Strangalia sexmaculata*: they are confined to the Northern regions neither of them occurring south of Lake Superior.

The genus *Distenia* will be found among the *Cerambycidæ*. I know not why it has been associated with the *Lepturæ*, with which its affinity is very slight: it is much more closely allied to *Eburia* and *Cerasphorus*.

Before passing to the specific details of this tribe, it may be proper to say a few words on the characters which distinguish the *Lepturæ* from other sections of the *Longicornia*, and to ascertain the true value of the division which they form.

Longicornia have been divided by Latreille, Serville, and other authors, into three groups, *Prionidæ*, *Cerambycidæ*, and *Lepturidæ*. The first group distinguished by the deflexed labrum, rudimentary inner-maxillary lobe, and the antennæ inserted in front of the eyes. The second group has the head not narrowed into a neck and the antennæ are placed between the eyes. The third is separated on the single character of the head being narrowed posteriorly into a kind of neck. The second group is again divided into two: *Cerambycini*, with porrected head and dilated palpi, and *Lamiarii*, with deflected head and piliform palpi.

This arrangement is very unsatisfactory, since by following it, we associate with *Prioni*, *Asemum*, *Criocephalus*, and other genera, which in form are true *Callidia*;

while *Distenia*, although strongly resembling *Cerasphorus*, is put among *Lepturæ*. Again, there are many true *Cerambyci*, (e. g. *Itenopterus*,) which have the head elongate and porrected: *Necydalis* likewise has the head suddenly contracted behind precisely like *Toxotus*, while the front is deflected and the palpi filiform; so that it becomes difficult to determine whether the genus belongs to the *Lepturæ*, *Cerambyci* or *Lamiæ*.

So fallacious are the received characters, that a genuine *Saperda*-form with abbreviated elytra, has been described both by Newman and Haldeman as a *Molorchus*, (*Thia*, Nm., *Tessaropa*, Hald.) and another genus (*Encylops*, Nm.) allied to *Necydalis*, has been placed near *Toxotus*. A new genus from Georgia has a remarkable resemblance to *Dorcadion*, whilst the head is prolonged behind the eyes, and its true affinity is with the gibbous *Clyti*. It is thus plainly seen that these divisions so distinct in nature, have not yet any natural distinctions in our systems.

Dr. Zimmerman has recently recognized the importance of a character heretofore neglected, and through his kindness I am enabled to make use of it in the present essay. He finds that in all *Lamia*-forms, the anterior tibiæ have an oblique sulcus internally, which in many cases becomes so deep as to form an emargination, such as is observed in most *Carabica*. This character, with a single exception, is wanting in all other *Longicornia*. Making use of it and at the same time suppressing the primary group *Lepturæ*, as not possessing sufficiently distinct characters, we obtain three great divisions which embrace all *Longicornia*.

1. LAMIÆ.	2. CERAMBYCI.	3. PRIONI.
<i>Tibiæ</i> anticæ intus oblique sulcatæ.	<i>Tibiæ</i> intus non sulcatæ. (<i>Michthysomate excepto</i> .)	<i>Tibiæ</i> intus non sulcatæ.
<i>Palpi</i> semper filiformes.	<i>Palpi</i> sæpissime compressi.	<i>Palpi</i> compressi.
<i>Antennæ</i> verticales.	<i>Thorax</i> immarginatus.	<i>Antennæ</i> frontales.
<i>Thorax</i> immarginatus.		<i>Coxæ</i> anticæ valde transversæ.
<i>Coxæ</i> anticæ globosæ.		

The *Cerambyci* may again be divided into three groups according to the form of the anterior coxæ and tibiæ.

1. LEPTURIDÆ.	2. CERAMBYCIDÆ.	3. SPONDYLIDÆ.
<i>Tibiæ</i> filiformes.	<i>Tibiæ</i> filiformes.	<i>Tibiæ</i> anticæ compressæ.
<i>Coxæ</i> anticæ conicæ.	<i>Coxæ</i> anticæ vel globosæ vel subtransversæ.	<i>Coxæ</i> anticæ subtransversæ.

Having now laid the ground work of a classification, we may proceed to investigate the relations existing between the different groups which have thus been obtained.

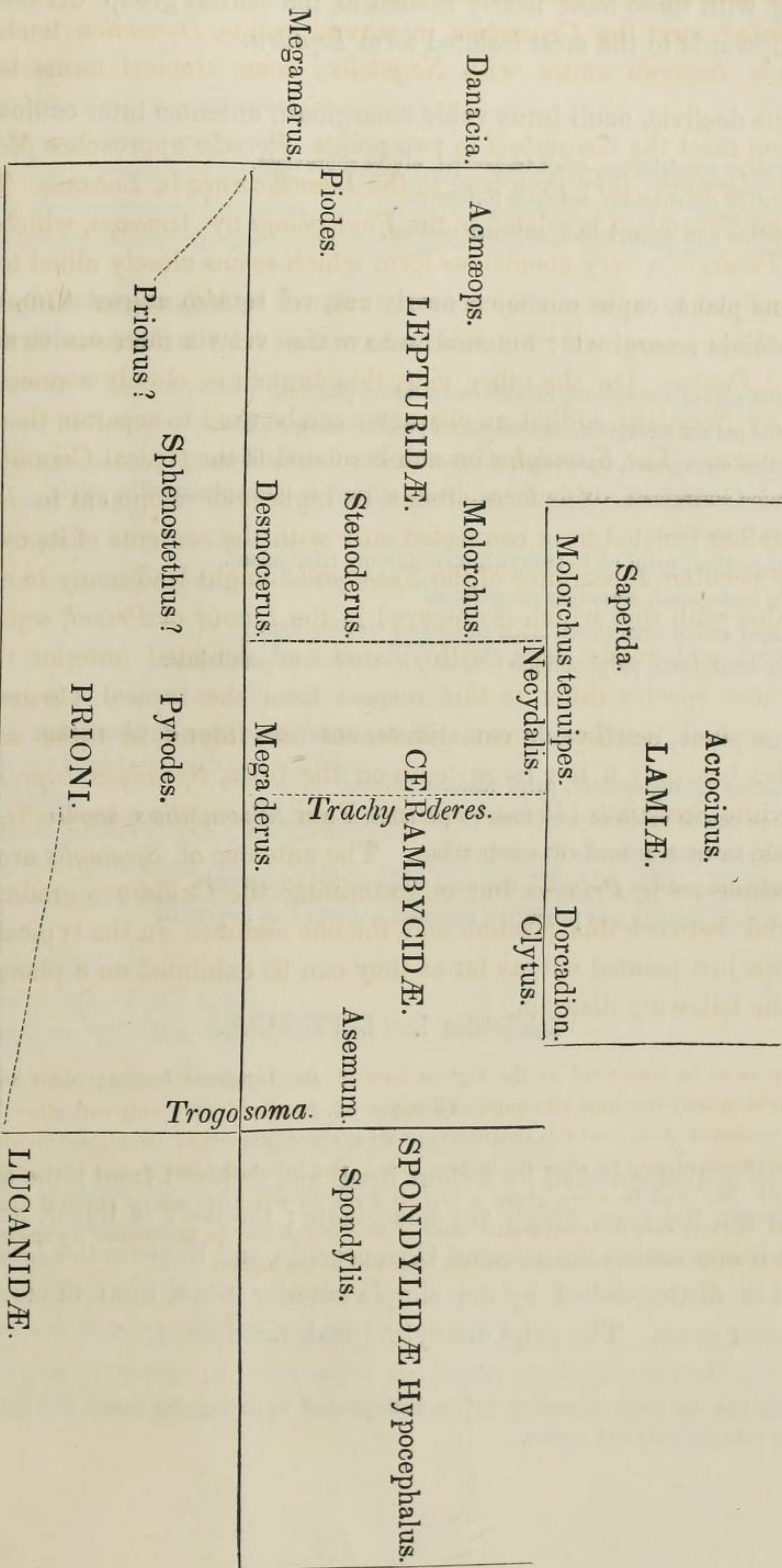
The *Lamiæ** meet the *Cerambyci* in several points, *Dorcadion* tending towards *Clytus*, while *Saperda* unites with *Necydalis*; some tropical forms tend towards *Dorcacerus*.

The *Prioni* meet the *Cerambyci* in two points. *Pyrodes* approaches *Megaderus* and *Tragosoma*, *Asemum*: they then lead to the *Lamellicornia* in *Lucanus*. The *Leptura* branch of the *Cerambyci* is related to the *Phytophaga* by *Acmæops*, which approaches *Donacia*. *Piodes* is a very anomalous form which seems closely allied to the *Prioni*, but I am inclined to believe it more nearly related to *Megamerus Kingii*, (McLeay) among the *Phytophaga*, which is said to have the same coriaceous structure as the *Prionus* and *Piodes*. On the other side, this branch is closely connected with the *Cerambyci* by *Necydalis*, so that no character can be used to separate them, excepting the conical coxæ. The *Spondylus* branch is related to the typical *Cerambyci*, through *Asemum* and *Callidium*: this form attains its highest development in *Hypocephalus*, which is another isolated form connected only with the contents of its own group.

The very peculiar appearance of the *Spondylidæ* might lead many to consider it as of equal value with that which is observed in the *Lamiæ* or *Prioni*, separating them by their short and robust legs, with dilated and dentated anterior tibiæ. Now, although these species differ in this respect from the typical *Cerambyci*, yet on comparing several together, great differences are found in these same organs. *Hypocephalus* has only a few large teeth on the tibiæ, *Spondylis buprestoides* a fine serration, while *Scaphinus* (*Prionus muticus*, Fabr., *Spondylis sphericollis*, Lec.) has a large expansion at the end of each tibia. The antennæ of *Spondylis* are at the base of the mandibles as in *Prionus*, but on examining the *Callidia* a gradual transition will be found between this position and the one assumed in the typical *Cerambyci*. The relations just pointed out, as far as they can be exhibited on a plane surface, are shown in the following diagram.

* This group is to be considered as the highest form of the Longicorn beetles; since with perfection of organisation, it is entirely free from all complicated relations. Its affinities are only with other Longicornia, and with only one section of them; and this isolation must always be a property of the highest division of any group, no matter what its extent may be, since the highest form is that in which some typical idea attains its maximum of development. We find in every group a highest form, in which, to use a physical symbol, the branch terminates, and in every case the comparative value of this branch may be ascertained by tracing its connection with others; that which soonest assumes a distinct form will be the highest.

PHYTOPHAGA.



We may now proceed to divide the *Lepturidæ* according to the following scheme commencing with those most nearly related to the central group *Cerambycidæ*, and proceeding upwards to the most isolated form *Leptura*.

A. Frons declivis, oculi intus valde emarginati, antennæ inter oculos sitæ.

- | | |
|--|-------------|
| 1. Caput postice constrictum, oculi transversi, elytra abbreviata. | NECYDALIS. |
| 2. Caput postice constrictum, antennæ filiformes. | ENCYCLOPS. |
| 3. Caput postice non constrictum, antennæ nodosæ. | DESMOCERUS. |

B. Frons plana, caput modice constrictum, vel sensim angustatum, oculi minus profunde emarginati; antennæ ante oculos vel vix inter oculos sitæ.

- | | |
|--|-------------|
| 4. Oculi intus parum emarginati, mesosternum latum planum. | PIODES. |
| 5. Oculi intus parum emarginati mesosternum prosternumque gibba. | RHAGIUM. |
| 6. Oculi antice emarginati, transversi, tibiæ calcaribus terminalibus. | ARGALEUS.* |
| 7. Oculi antice emarginati, vix transversi, tibiæ calcaribus ante apicem sitis, palpis apice rotundatim truncatis. | TOXOTUS. |
| 8. Oculi integerrimi, palpi recte truncati, mesosternum triangulare. | ACMÆOPS. |
| 9. Oculi vix emarginati, mesosternum gibbum. | GAUROTUS. |
| 10. Oculi magni antice emarginati, tibiæ calcaribus terminalibus. | CENTRODERA. |
| 11. Oculi vix emarginati, palpi oblique truncati, mesosternum parallelum. | EVODINUS. |

C. Frons plana, oculi valde emarginati, antennæ inter oculos sitæ.

- | | |
|---|--------------|
| 12. Caput postice subangustatum, palpi labiales latiores. | ANTHOPHYLAX. |
| 13. Caput pone oculos valde constrictum, palpi labiales non latiores, thorax angulis posticis productis, antennæ articulis non impressis. | STRANGALIA. |
| 14. Thorax angulis posticis productis, antennæ articulis 5-11 impressis. | TYPOCERUS |
| 15. Thorax angulis posticis non productis, antennæ articulis non impressis. | LEPTURA |

Subdivision I. LEPTURIDÆ.

GROUP 1.

This group is distinguished by a short head and deflexed front; the antennæ are situated between the eyes, which are emarginate: the body is linear, not narrowed posteriorly: it approaches the genuine *Cerambycidæ*, and likewise the *Lamiariæ*, from the latter it is distinguished by the simple anterior tibiæ, from the former by the conical anterior coxæ. The palpi are cylindrical, not dilated.

* *Rhamnusium* has the same characters, but is distinguished by having the mouth not prolonged, and the antennæ shorter than the body and serrate.

NECYDALIS, *Lin.*

caput thorace latius, quadratum, basi subito constrictum.

Oculi transversi.

Antennæ filiformes.

Elytra valde abbreviata, apice rotundata; alæ rectæ.

Corpus filiforme, pedibus tenuibus, posticis elongatis.

N. MELLITUS.—Niger, tenuiter pubescens, thorace punctulato, latitudine longiore, utrinque profunde constricto, medio canaliculato, elytris alutaceis, parum punctatis, testaceis margine infuscato, medio oblique impressis, abdomine pedibus, antennarumque articulo 1^{mo} rufo testaceis. Long. .48—.80.

♂ Hald. 44.

♀ *Necydalis americanus*, Hald. 44.

Molorchus mellitus, Say. B. J. L. 194; Harris Hartford Tr., 89.

New York to Georgia and Missouri, rare. Although Mr. Say observed what he has considered as both sexes of this species, I prefer citing *N. americanus* as the true female. My specimen (taken in coïtu with *N. mellitus* by Mr. Brevoort,) is much larger than the male, but only differs by its black abdomen and shorter antennæ. The under surface of the abdomen is rufo-testaceous, as in the male. The abdomen is more acute and less dilated towards the tip.

ENCYCLOPS, *Newman.*

Caput thorace latius, quadratum, basi subito constrictum.

Oculi globosi, prominuli, superne subito emarginati.

Elytra abdomine haud breviora, apice rotundata.

Antennæ filiformes.

Corpus filiforme, pedibus tenuibus, posticis elongatis.

E. CÆRULEUS.—læte viridi-æneus, opacus, thorace reticulato-punctato, antrorsum angustato constrictoque, lateribus tuberculato, elytris confertim punctatis, subtus cinereo-pubescens pedibus flavis, antennis nigris. Long. .3.

Hald. l. c. Ap. 375.

Leptura cærulea, Say. J. Ac. 5, 280.

Encyclops pallipes, Nm. Ent. Mag. 5, 392.

Middle and Northern States, rare.

DESMOCERUS, *Serv.*

Caput thorace angustius, postice non constrictum.

Oculi intus valde emarginati.

Antennæ nodosæ.

Elytra abdomine haud breviora, apice rotundata.

Corpus parallelum, antrorsum angustatum, pedibus mediocribus.

The thorax is narrowed in front, with the posterior angles acutely produced. The mesosternum is plane, and triangular, and the tibial spurs are placed at the apex.

1. *D. PALLIATUS*,—Cyaneus, thorace rugose-punctato, elytris dense punctatis, ante medium flavis, puncto utrinque basali, scutelloque nigris. Long. .92.

Hald. 58.

Cerambyx palliatus, Forster.

Desmocerus cyaneus, Dej. Cat. : Serv. Am. Ent. 4, 202.

Stenocerus cyaneus, Fabr. El. 2, 305. Ol. 69, 3, 26.

Massachusetts to Georgia : on *Sambucus niger*. In the male the antennæ are more nodose, the yellow portion of the elytra is smaller, and the blue extends farther upon the suture.

GROUP 2.

In this group the front is not suddenly deflexed : the head is sometimes elongate, with the mouth produced ; it is never very deeply constricted behind, and is often but very slightly narrowed behind the eyes, which are not deeply emarginate. It differs from the next group by the position of the antennæ, which are either in front of the eyes or on a line with the anterior margin. The palpi are compressed and more or less dilated. This group seems to verge towards the *Prionidæ* (in *Piodes*) and to be closely related to *Donacia* in some other genera.

PIODES.

Oculi vix prominuli, intus paulo emarginati.

Mesosternum subtriangulare postice truncatum.

Labrum brevissimum deflexum.

Corpus crassum obesum, supra glabrum, coriaceum.

Caput basi non constrictum, mandibulæ edentatæ : mentum transversum trapezoidale, ligula antice paulo emarginata, lobis apice rotundatis. Palpi desunt. Antennæ ante oculos sitæ, breviusculæ, articulis 5-11 æqualibus, 4^{to} paulo brevior, 3 iterum longior. Thorax brevis utrinque modice constrictus, lateribus acute tuberculatus. Elytra postice non attenuata, apice rotundata. Tibiæ apice intus oblique truncatæ, calcaribus paulo ante apicem sitis.

1. *P. CORIACEA*.—Nigro-picea, parum nitida, capite thoraceque confertissime rugose-punctatis, elytris rugosis. Long. .75.

Oregon. Mr. Wilcox. One specimen with the palpi wanting. The whole appearance of this insect is that of a *Prionide* ; it differs, however, essentially by its immarginate thorax, and conical anterior coxæ.

Head quadrate, very densely rugosely punctured, eyes scarcely prominent. Mandibles rather long, edentate. Antennæ scarcely longer than the head and thorax, thorax wider than long, very densely rugosely punctured, dorsal line finely impressed. Elytra twice as wide as the thorax, one-half longer than wide, truncate at base, dilated a little behind the middle, rounded at apex, densely rugous, with a few scattered punctures.

RHAGIUM, *Fabr.*

Oculi parum prominuli, oblongi, intus paulo emarginati.

Prosternum inter coxas prominulum gibbum, pone coxas vix deficiens.

Mesosternum breve, gibbum, postice emarginatum.

Palpi dilatati.

Corpus depressiusculum; caput longe pone oculos modice constrictum; antennæ ante oculos insertæ, breves; mandibulæ unidentatæ. Mentum trapezoideum vix transversum. Thorax acute spinosus, utrinque modice constrictus. Tibiæ apice recte truncatæ, calcaribus ad apicem sitis.

R. LINEATUM.—Nigrum punctatum, griseo-pubescens, thorace linea dorsali lævi, elytris tricostatis, testaceo marmoratis, obsolete nigro-bifasciatis, antennarum articulo 5^{to} elongato, 4 præcedente paulo brevior.
Long. .31.—.72.

Sch. Syn. 3, 414. Kb. N. Z. 178: Hald. 58.

Stenocorus lineatus, Ol. 4, 69, 22.

Maine to Chihuahua. Under pine bark. Abundant.

ARGALEUS.

Oculi majusculi, parum prominuli, sub-transversi, antice emarginati, postice oblique truncati.

Mesosternum angustum acutum.

Caput elongatum, ore attenuato, postice vix constrictum.

Tibiæ apice recte truncatæ, calcaribus ad apicem sitis.

Corpus utrinque angustatum, maris gracilius. Mandibulæ edentatæ, antennæ ante oculos insertæ, longæ, articulo 4^{to} breviusculo, 5^{to} elongato. Mentum vix transversum, lateribus rotundatum, antice truncatum.

Thorax utrinque constrictus, acute tuberculatus: elytra postice angustata, apice subtruncata.

This genus is very near to *Rhamnusium*, but the head is not blunt; the form is similar to *Rhagium*. *Toxotus cursor* of Europe must be referred here.

§1. Palpi labiales articulo ultimo subtransverso, securiformi.

1. A. NITENS.—Niger, punctatus, pube longa tenui albida vestitus, capite parvo, canaliculato, tuberculo laterali apice obtuso, elytris testaceis, glabris, disco sæpius infuscato, apice oblique truncatis.
Long. .63.

Lec. Agass. Exp.

Found at the mouth of Pic River, Lake Superior. If Kirby had not compared his *Pachyta liturata* with the European *P. 4-maculata*, (which belongs to the third group of this family,) I should have referred my specimens to his species.

§2. Palpi labiales articulo ultimo longiusculo, triangulari.

2. A. ATTENUATUS.—Niger, punctatus densius griseo-pubescens, capite magno subtiliter canaliculato, thorace paulo latiore canaliculato, disco utrinque longitudinaliter elevato, tuberculo laterali acuto elytris testaceo marmoratis, inequaliter pubescentibus, apice recte truncatis. Long. .60.

Lec. Ag. Exp.

Pachyta attenuata, Hald. l. c.

The male is much more slender than the female, and the lateral outline of the elytra is concave. I found a considerable number of this species at Eagle Harbor, on Lake Superior.

TOXOTUS, *Serv. Meg.*

Oculi paulo prominuli, antice emarginati postice vix truncati.

Mesosternum angustum subparallelum, truncatum.

Palpi paulo dilatati apice subrotundatim truncati.

Tibiæ intus ad apicem oblique truncatæ, calcaribus ante apicem sitis.

Corpus gracile, utrinque angustatum, vel subangustatum. Antennæ ante oculos sitæ, longiusculæ, minus tenues, articulo 4^{to} brevi. Mentum transversum antrorsum subangustatum, truncatum. Thorax utrinque constrictus, lateribus vel tuberculatus vel spinosus.

The form of the head varies in this genus. In some species the sides are parallel as in *Rhagium*, (*T. cylindricollis*), in others where the eyes are more prominent, the head appears narrowed behind those organs, (*T. cinnamopterus*.) The character that especially distinguishes this genus, is the position of the terminal spurs of the tibiæ, which, instead of being apical, are situated at the upper end of a deep oblique incisure.

1. *T. SCHAUMII*.—Niger thorace acute spinoso, utrinque valde constricto, elytris rugulosis, albido-pruinosis subparallelis apice oblique truncatis, femoribus medio late flavis. Long. .97.

This fine species is found in Ohio. I have dedicated it to my friend Dr. Schaum, by whom it was presented to me.

Black, finely pubescent. Head finely punctured, with an impressed line between the eyes; labrum rounded, emarginate. Antennæ with the third joint elongate, the fourth shorter than the fifth, which is equal to the following. Thorax narrowed in front, shining, finely and sparsely punctured, lateral tubercle acute, dorsal line deep. Elytra scarcely narrowed behind, finely rugous, pruinose with very short hair, tip obliquely truncate inwards. Legs black, femora yellow, base and tip black.

2. *T. CYLINDRICOLLIS*.—Rufus, supra fuscus, vel niger, subtiliter punctulatus, sericeo-pubescent, capite profunde canaliculato, thorace canaliculato, tuberculo obtuso, elytris postice angustatis, apice intus profunde incisus. Long. .8.

Say. Journ. A. N. S., 3, 417.

T. dentipennis, Hald. 58

T. dives, Nm. Entom.

Var. *T. atratus*, Hd. 58.

Varies much in color: but the base of the femora, the under surface of the body, and the tip of the antennæ are always rufous. The male is more slender, and the antennæ are as long as the body. Pennsylvania, Alabama, Missouri.

3. *T. TRIVITTATUS*.—Niger parcius pubescens, subtiliter punctatus, thorace canaliculato, tuberculo laterali obtuso, elytris postice attenuatis, nigris vitta discoidali lata, margineque flavis, margine extimo nigricante, abdomine flavo. Long. .65.

Hald. b. c. 58: Say? Journ. A. N. S. 3, 422.

Leptura vittigera! Randall. R. I. 1, 29.

Maine to Pennsylvania. Professor Baird. Say's specimen was from Mississippi, and is described with yellow legs: it may be a distinct species.

4. *T. VESTITUS*.—Niger capite thoraceque punctatis, longius pubescentibus, hoc canaliculato, longiusculo, tuberculo laterali valde obtuso, elytris sericeis postice angustatis, apice intus truncatis. Long. .5.

Hald. 59.

Oregon and California. Messrs. Wilcox and Pease. The elytra and feet are sometimes reddish, the male has long and thick antennæ, like the preceding.

5. *T. CINNAMOPTERUS*.—Fusco testaceus, densius flavo pubescens, capite punctato, oculis prominulis, vix emarginatis, thorace punctato, obsolete canaliculato, longiusculo, tuberculo laterali subacuto, elytris postice angustatis, apice intus truncatis. Long. .5.

Hald. Ap. 374.

T. asculi, Hald. 59.

Leptura cinnamoptera! Randall. B. I. 2, 45.

Massachusetts, Pennsylvania, Carolina: very rare.

ACMÆOPS.

Oculi integerrimi subprominuli.

Mesosternum triangulare.

Palpi paulo dilatati, apice recte truncati.

Antennæ articulo 4^{to} haud brevior.

Tibiæ apice recte truncatæ, calcaribus terminaliter sitis.

Corpus varium, aliis crassum, aliis postice angustatum. Antennæ ante oculos sitæ, gracillimæ, articulis 3—5 subæqualibus. Mandibulæ edentatæ, labrum breve: caput pone oculos modice constrictum, vel vix constrictum. Thorax antrorsum angustatus, angulis posticis non productis.

Has the appearance of *Leptura*, but differs in the form of the head and eyes, as well as in the situation of the antennæ. The ligula instead of being divided into long diverging lobes, is formed as in *Toxotus*. This genus contains a large portion of the old genus *Pachyta*, with some of Mulsant's *Anoplodon*.

§1. Corpus gracile, postice attenuatum, ore brevi.

1. *A. LONGICORNIS*.—Niger thorace utrinque constricto, canaliculato, punctato, elytris punctatis, subtilius versus apicem, testaceis apice subtruncatis, femoribus basi rufis. Long. .47.

Leptura longicornis, Kirby N. Z. 185.

Mas. antennis corpore haud brevioribus: variat elytris nigris, vitta dorsali pone medium extendente, alteraque submarginali antice obsoleta testaceis.

Black, head and thorax thickly punctured, frontal line obsolete. Thorax thickly punctured, slightly pubescent, narrowed in front, constricted at each end, obtusely angulated in the middle, convex with a deep dorsal channel. Elytra at base one-half wider than the thorax, subparallel (♀), or gradually narrowed behind (♂); apex subtruncate: testaceous, suture black; punctures larger at the base than at the tip. Femora with a rufous basal ring: anterior legs entirely rufous.

2. *A. SUBPILOSUS*.—Niger, thorace breviusculo, densius punctato, longius villosus, utrinque subconstricto, elytris punctatis, subtilius versus apicem, apice rotundatis. Long. .45.

Oregon. Mr. Wilcox. Varies with the elytra, antennæ and feet testaceous. The antennæ of the male are shorter than the body.

Black, head and thorax very thickly punctured, almost scabrous, pubescent with long yellow hair. Thorax wider than long, narrowed in front, rounded on the sides, and slightly constricted at each end: dorsal line deep: scutellum pubescent: elytra wider than the thorax, slightly attenuated towards the tip, which is rounded, slightly pubescent, punctures at the base large and distant. Anterior tibiæ curved.

3. *A. MILITARIS*.—Niger pubescens, thorace confertissime punctato, lateribus rotundato, canaliculato, elytris densius punctatis, apice rotundatis, macula parva humerali flava. Long. .35.

Oregon. Mr. Wilcox. Black, with rather long ashy pubescence. Antennæ shorter than the body; head and thorax very densely punctured, the latter not longer than wide, narrowed in front, rounded on the sides, convex, not at all constricted, dorsal line distinct. Elytra at base wider than the thorax, gradually slightly narrowed toward the tip which is rounded: coarsely and thickly punctured, punctures a little smaller towards the apex: marked with a small yellow humeral spot.

§2. Corpus minus gracile, elytris parallelis, ore elongato.

4. *A. QUADRIVITTATUS*.—Testaceus, thorace convexo, antrorsum angustato, impresso, elytris grossius punctatis, sutura, vitta dorsali alteraque ad marginem subinterrupta nigris, antennis tenuibus, articulis apice nigris. Long. .23—3.

Leptura quadrivittata, Lin. teste Hald. 65.

L. vittata, Say.

L. directa, Nm. Entom.

Anoplodera 4-vittata, Hald. 65.

Common in Pennsylvania, Ohio, and Alabama. The male has the antennæ as long as the body, and the anterior tibiæ are armed with an obtuse tooth on their inner margin.

5. *A. STRIGILATUS*.—Niger parcius pubescens, capite valde punctato, thorace minus dense punctato, antice angustato, utrinque constricto, convexo, vix canaliculato, elytris densius punctatis, testaceis, vitta humerali, apiceque truncata nigricantibus. Long. .3.

Lec. Ag. Exp.

Leptura strigilata, Fabr. El.

L. semimarginata, Rand. B. J. 2, 20.

Maine and Lake Superior. Varies with the elytra entirely fuscous.

6. *A. DISCOIDEUS*.—Niger, opacus, parce pubescens, capite linea frontali lævi, thorace parcius punctato, antrorsum angustato, apice constricto, disco triangulariter valde depresso, ante basin utrinque tuberculatim prominulo, elytris sat grosse punctatis, apice truncatis, sutura margineque toto aurantiacis. Long. .3.

Lec. Agassiz Exp.

Pachyta discoidea, Hald. 60.

Lake Superior, Massachusetts, and Pennsylvania.

7. *A. PROTEUS*.—Niger pubescens, thorace punctato, antrorsum angustato, apice constricto, disco triangulariter modice depresso, canaliculato, ante basin utrinque prominulo, elytris punctatis, postice paulo angustatis, apice truncatis, rufis, vel nigris, vel sutura vittisque lata fuscescentibus. Long. .4.

Lec. Agass. Exp.

Leptura Proteus, Kb. N. Z. 186.

Pachyta sublineata, Hald. 60.

Lake Superior and Pennsylvania. The feet vary from black to rufous, the base of the femora is always rufous.

§3. Corpus crassum, elytris parallelis, ore non attenuato.

8. *A. ATER*.—Violaceo-niger, capite thoraceque dense punctatis, hoc antrorsum angustato lateribus medio obtuse angulatis, elytris grossius punctatis. Long. .35.

Oregon. Mr. Wilcox. Differs from the following in the thorax which is not at all constricted or channeled.

9. *A. NIGRIPENNIS*.—Flavo-testaceus vix pubescens, capite fusco, thorace convexo, disco parce punctato antrorsum angustato, profundius constricto, basi modice constricto, lateribus subangulato, elytris punctatis, nigris. Long. .4.

Missouri. Dr. Engleman. Body short and thick, testaceous, scarcely pubescent, head densely punctured, fuscous, mouth pale, antennæ half as long as the body, fourth joint a little shorter than the fifth, first joint pale. Thorax shining, with a few scattered punctures, transverse, narrowed and deeply constricted in front, posterior constriction fainter, sides obtusely angulated. Elytra twice as wide as the thorax, scarcely twice as long as wide; punctures less deep than in the following species, a little smaller towards the apex, which is rounded.

10. *A. VARIANS*.—Niger vix pubescens, capite scabro, thorace disco parce punctato, antrorsum angustato, utrinque constricto, canaliculato, lateribus rotundatim angulatis, elytris valde punctatis, subtilius versus apicem. Long. .4.

Missouri, Wisconsin. Dr. Engleman. Varies with the thorax rufo-testaceous, the pleuræ of the thorax are thickly punctured.

11. *A. THORACICUS*.

Pachyta thoracica, Hald. 60.

Differs from *A. varians* by its densely pubescent thorax. Not having a specimen I am unable to point out any other character. It was found in Pennsylvania, and is in Dr. Melsheimer's Cabinet.

12. *A. FUSCICEPS*.—Pallida paulo pubescens, thorace parce punctato, canaliculato, antrorsum angustato, utrinque constricto, lateribus obtuse angulatis, elytris valde punctatis latius marginatis; pectore, capite scabro, antennisque extrorsum fuscis. Long. .27.

Cattaraugus County, New York. Mr. Haldeman.

This species has the same form as *A. varians*, but is smaller, with a less convex thorax, the lateral angles are obtuse, but not rounded, and the margin of the elytra is much wider.

Species mihi ignota.

13. *A. LONGICEPS*.—Niger punctatus, ex pube alba subincanus, capite elongato, prothorace canaliculato, elytris luridis, litura antica, sutura apiceque nigris. Long. 4 lin.

Leptura longiceps, Kb. N. Z. 187.

Found in Lat. 54°. Similar to *A. Proteus*, but the posterior angles of the thorax are not diverging.

GAUROTUS.

Oculi integerrimi, prominuli.

Mesosternum antice subito deflexum, postice truncatum.

Palpi parum dilatati, apice recte truncati.

Tibiæ apice recte truncatæ.

Habitus omnino *Acmaëpis* §3, at mesoterno lato gibbo *Rhagio* similis. Corpus obesum; caput pone oculos sensim paulo angustatum, ore vix attenuato. Antennæ tenues elongatæ, articulo 4^{to} paulo brevioribus. Mentum transversum antrorsum vix angustatum. Thorax antrorsum angustatus, apice constrictus. Elytra thorace multo latiora postice paulo angustata, apice truncata.

1. *G. CYANIPENNIS*.—Niger brevissime pubescens, capite punctato, thorace lateribus subangulato, convexo, obsolete punctato, elytris glabris, viridicyaneis, nitidissimis, parce punctatis, punctis postice fere obsolete, antennis pedibusque flavis. Long. .35.—.46.

Leptura cyanipennis, Say. J. Ac. 3, 423.

Pachyta cyanipennis, Hald. 60.

P. Leonardii, † Hald. 60.

P. Servillei, Serv. Am. Ent. 4, 214.

P. Ione, Newman Entom.

Massachusetts to Carolina.

CENTRODERA.

Oculi magni globosi, antice emarginati, (minus profunde in ♂.)

Mesosternum planum subtriangulare, apice truncatum.

Palpi parum dilatati (♀) vel dilatati (♂) apice oblique truncati.

Antennæ ante oculares, elongatæ, tenues, articulo 4^{to} paulo breviores.

Tibiæ apice recte truncatæ.

Habitus *Rhamnusii*, at capitis forma oculisque magnis differt. Corpus lineare, cylindricum. Caput mox pone oculos paulo angustatum, ore non attenuato. Mentum transversum, antice non angustatum. Thorax elongatus, cylindricus, utrinque constrictus, lateribus acute spinosus.

1. *C. DECOLORATA*.—Rufo-testacea, capite punctato, canaliculato, thorace parce punctato, disco utrinque gibboso, medio canaliculato, elytris valde punctatis, apice subtruncatis. Long. 1.0.

Rhamnusium ? decoloratum ! Harris Ins.

Toxotus rubidus, Dej. Cat.

T. rubidus, Hald. 58.

Niagara and Massachusetts. The male has the palpi moderately dilated, the antennæ almost as long as the body, and the unguicular joint of the anterior tarsi depressed and dilated.

2. *C. PICTA*.—Fusca, pubescens, capite thoraceque confertissime subtiliter punctatis, subcanaliculatis elytris fere glabris, grossius punctatis, testaceis lineis pluribus confluentibus fuscis. Long. .55.

Toxotus pictus, Hald. 58.

Pennsylvania, Rev. D. Ziegler: South Carolina. The male has the palpi very much dilated, the antennæ longer than the body, and the last joint of the anterior tarsi depressed and dilated.

EVODINUS.

Oculi oblongi, intus parum emarginati.

Mesosternum planum, parallelum, truncatum, coxis magnis.

Palpi dilatati, oblique truncati.

Tibiæ apice recte truncatæ.

Corpus gracile utrinque angustatum. Caput mox pone oculos modice angustatum, ore attenuato. Antennæ ante oculos sitæ, longæ tenues. Mentum latitudine non brevius, antice subangustatum. Thorax elongatus, antrorsum angustatus, utrinque constrictus, lateribus angulatus. Elytra postice angustata, apice subtruncata.

This genus by its characters is very closely allied to the preceding, but it has the form of *Strangalia*, with which genus the structure of its mouth entirely agrees.

1. *E. MONTICOLA*.—Niger subtilissime punctatus, dense albido-pubescentis, thorace canaliculato, elytris flavis utrinque maculis 2 parvis ante medium transversim sitis, 2 majoribus ad marginem conjunctis, apiceque nigris, antennis extrorsum rufescentibus. Long. .4.

Lec. Agassiz Exp.

Leptura monticola, Rand. B. J. 2, 27.

Lake Superior on Cornus flowers; also on roses.

GROUP 3.

From the preceding group this is distinguished by the antennæ being inserted between the eyes, immediately at the emargination, which is deep. In most of them the head is strongly constricted behind.

ANTHOPHYLAX, Lec.

Caput pone oculos parum constrictum ore subattenuato.

Palpi modice dilatati, labiales multo latiores.

Antennæ 11-articulatæ, elongatæ, filiformes.

Habitus quamadmodum Argaleo similis. Corpus utrinque subangustatum. Mentum quadratum antice subangustatum. Thorax antrorsum angustatus, utrinque constrictus, angulis posticis non productis, lateribus acute tuberculatus. Elytra apice integra.

To this genus belongs *Pachyta 4-maculata* of Europe.

1. *A. VIRIDIS*.—Niger albido-pubescentis, thorace dense subtilius punctato, obsolete canaliculato, elytris viridi æneis, confertim cribrato punctatis, obsolete striatis, antennis articulis basi rufescentibus. Long. .7.

Lec. Agass. Exp.

Eagle Harbour, Lake Superior.

2. *A. MALACHITICUS*.—Violaceus, vel cyaneus, nitidus, thorace dense minus subtiliter punctato, subcanaliculato, elytris confertim cribrato-punctatis, tibiis tarsis, genibusque nigris, femoribus læte flavis. Long. .52.

Lec. Agass. Exp.

Leptura malachitica, Hald. 64.

Stenura cyanea, Hald. Pr. A. N. S., 3, 151.

Pachyta Leonardii! Harris Ms.

Lake Superior, Massachusetts, Pennsylvania.

STRANGALIA, *Serv.*

Caput pone oculos subito valde constrictum.

Palpi parum dilatati, recte truncati, labiales non latiores.

Antennæ 11-articulato, vel filiformes, vel vix serratæ.

Thorax angulis posticis productis.

As thus defined, this group will contain many *Pachyta* of authors, and the greater part of Serville's genus *Grammoptera*. That the labor of determining the species might be lessened, I have endeavored to arrange them according to their affinities into the following sections.

A. Thoracis angulis posticis acutis.

1. Corpus attenuatum, thorace apice tubulato, constrictoque, basi impresso. Sp. 1—3.
2. Thorace postice impresso, angulis non deflexis, elytris triangularibus, apice emarginatis fronte triangulariter impressa. Sp. 4—7.
3. Corpus valde attenuatum, thorace haud impresso, angulis non deflexis, elytris dehiscentibus, apice excisis. Sp. 8—15.
4. Corpus angustum lineare, elytris lineolatis, truncatis, grosse punctatis. Sp. 16—17.
5. Elytris parallelis, concoloribus, grosse punctatis, thorace haud impresso: corpus minus angustatum. Sp. 18—24.
6. Elytris dehiscentibus, grosse punctatis thorace postice profunde impresso. Sp. 25.
7. Thorace convexo, elytris triangularibus, maculatis, fronte ad apicem haud impressa. Sp. 26—30.

B. Thoracis angulis posticis laminatim productis. Sp. 31—32.

A.—1.

1. *S. SCALARIS*.—Valde elongata, picea, dense subtiliter rugose-punctata, pubescens, thorace longiusculo, antrosum angustato, utrinque constricto, canaliculato, lateribus subsinuatis, elytris medio coarctatis, apice dehiscentibus, rotundatisque, macula communi subsellata, ad medium flavo-pubescente, palpis antennisque rufis. Long. .95.

Leptura scalaris, Say. J. A. N. S. 5, 278.

Found at Saratoga, and given to me by Mr. James Thomson.

2. *S. COARCTATA*.—Valde elongata, picea, dense subtiliter rugose-punctata, pubescens, thorace campanulato, utrinque subconstricto, elytris medio coarctatis, basi rufescentibus, apice dehiscentibus, rotundatisque, abdomine rufescente. Long. 8 lin. lat. 2.

Toxotus coarctatus, Hald. 59: Dej. Cat.

Pennsylvania. Mus. Mels. Very similar to the preceding, but the thorax is bell-shaped and rounded on the sides.

3. *S. EMARGINATA*.—Elongata, nigra nitida, parcius pubescens, thorace antrorsum angustato, postice impresso, lateribus subangulatis, elytris triangularibus, aurantiacis, dense pubescentibus, punctatisque, apice emarginata, late nigra. Long. 1.0.

Leptura emarginata, Fabr. El. 2, 356. Ol. 73, 3, 6.

Stenura emarginata, Dej. Cat. : Hd. 62.

The male has a narrower body, and the last joint of the abdomen is deeply and widely emarginate.

A.—2.

4. *S. OBLITERATA*.—Elongata, pubescens, capite rufo, valde canaliculato, fronte, oculorum marginibus, maxillis, gulaque nigris, thorace valde punctato, campanulato, subcanaliculato, lateribus subangulatis, elytris confertim punctatis, flavis, maculis utrinque 2 ante medium, altera magna ad medium alteraque ante apicem nigricantibus apice rufa intus emarginata, pedibus rufis genubus posticis, tarsisque nigris. Long. .65.

Stenura obliterata, Hald. 62.

Oregon. Mr. Wilcox.

5. *S. DELETA*.—Testacea capite profunde canaliculato, supra nigricante, thorace campanulato, antrorsum parum angustato, valde punctato, disco late nigricante, elytris maculis utrinque 3 (anteriore parva) nigricantibus, apice rufa intus emarginata, antennis pectore, genubus posticis, tarsisque nigris. Long. .48.

Massachusetts. Dr. Zimmerman.

Testaceous yellow, pubescent. Head deeply channeled, black above with the antennal protuberances pale. Antennæ elongate, black, indistinctly annulate. Thorax bell-shaped, a little wider than the head, longer than wide, scarcely narrowed in front, where it is rounded and constricted, base slightly impressed; disc densely punctured, obsoletely channeled, blackish. The margins broadly testaceous. Elytra at base wider than the thorax, slightly dehiscent at the tip, which is emarginate inwards: they are testaceous, thickly punctured, each marked with a small lateral blackish spot behind the humerus, and two other large ones extending almost to the suture: tip rufous as far as the posterior spot. Beneath testaceous, prosternum, pectus, tarsi, and tip of the posterior femora and tibiæ black.

6. *S. SUBHAMATA*.—Elongata, nigra pubescens, capite canaliculato, thorace elongato, campanulato subtilius dense punctato, postice profundius impresso, elytris grossius punctatis, macula hamata basali, alteraque elongata pone medium flavis, apice intus emarginata, antennis annulatis, femorum basi, coxisque flavis. Long. .5.

Hald. 61.

Leptura subhamata, Rand. B. I. 2, 44.

Stenura armata! Hald. 63.

Leptura interrupta? Nm. Entom.

Massachusetts to Pennsylvania. Rare.

7. *S. ELEGANS*.—Elongata, flavo testacea, pubescens, capite valde canaliculato, vertice fusco, thorace subtilius punctato, antrorsum angustato, lateribus parum sinuato, postice impresso, linea longitudinali nigra, elytris grossius punctatis, apice intus emarginatis, margine sutura, fascia ad medium, maculaque marginali pone humeros nigris : pedibus posticis nigris basi flavis, antennis annulatis articulo 1^{mo} antice flavo. Long. .6.

Stenura elegans, Dej. and Hald. ined.

Saratoga. Mr. James Thomson. Found also in Pennsylvania. The intermediate femora have a black spot on the inner surface.

A.—3.

8. *S. SEX-NOTATA*.—Valde elongata, rufo-testacea, thorace campanulato, antrorsum angustato, valde punctato, lateribus rotundato, elytris apice acutis, grossius punctatis, sutura maculisque utrinque tribus nigris : antennis pectore pedibusque nigris, his basi flavis. Long. .42.

Hald. 61. Dej. Cat.

Georgia. Rare.

9. *S. STRIGOSA*.—Valde elongata, rufa, punctata, flavo-pubescens, thorace elongato, antrorsum angustato, lateribus subsinuato, utrinque testaceo, margine basali apicalique nigris, disco lineis duabus obsolete nigricantibus, elytris apice acutis, divaricatis, basi, faciisque 2 nigro cinctis flavis ad medium, coxis femoribusque versus apicem fuscis. Long. .55.

Newman Entomologist.

Inhabits East Florida. Dr. Zimmerman. The male of this and the other species of this group have long antennæ, and the last joint of the abdomen is deeply excavated.

10. *S. BICOLOR*.—Valde elongata rufa pubescens, thorace elongato, antrorsum angustato, lateribus vix sinuato subtilius dense punctato, disco utrinque obscuriore, elytris nigris, apice acutis divaricatis. Long. .55.

Dej. Cat. : Hald. 61.

Leptura bicolor, Swed. Act. Holm. 3, 197 : Say. J. Ac. 3, 418.

New York to Alabama.

11. *S. LUTEICORNIS*.—Valde elongata, testacea pubescens, dense punctata, thorace elongato, antrorsum angustato nigro bivittato, elytris apice acutis, puncto humerali, fasciisque 3 nigris, femoribus posticis apice nigris. Long. .5.

Dej. Cat. : Hald. 61.

Leptura luteicornis, Fabr. El. 2, 361. Ol. 73, 3, 4.

New York, Maryland, Georgia.

12. *S. OBSOLETA*.—Valde elongata, subtus nigra, abdomine testacea, supra flavo-testacea, dense punctata pubescens, thorace elongato, antrorsum angustato, lateribus vix sinuatis, angulis posticis parum divergentibus, nigro bivittato, elytris apice acutis, maculis utrinque duabus posteriore fere ad suturam extendente, antennis, tibiis femoribus posticis ad apicem, tarsisque nigris. Long. .47.

Hald. l. c. 61.

Pennsylvania: Haldeman. Very similar to certain varieties of the next species, but the angles of the thorax are less divergent, and the abdomen is testaceous.

13. *S. FAMELICA*.—Valde elongata, subtus nigra, supra flavo-testacea, dense punctata, capite fusco, thorace antrosum angustato, lateribus subsinuatis, angulis posticis nigris, divergentibus, nigro bivittato, elytris apice acutis, macula parva laterali ad medium, alteraque pone medium nigricantibus, antennis nigris pedibus posticis (femorum basi excepta) fuscis. Long. .5.

Nm. Entomol.

Maryland, Alabama, Missouri. Varies with a yellow head and obsolete elytral spots.

14. *S. ACUMINATA*.—Valde elongata, nigra, cinero-pubescens, thorace elongato, antrosum angustato, lateribus subrectis, confertim punctato, linea postica dorsali lævi, elytris testaceis, sutura margine, apiceque acuta nigricantibus. Long. .37.

Leptura acuminata, Ol. 73, 3, 35.

Strangalia emaciata, Nm. Ent. : Hald. 61.

The abdomen is sometimes testaceous. New York and Pennsylvania.

15. *S. UNICOLOR*.—Valde elongata, nigra punctata, thorace elongato, antrosum angustato, linea postica dorsali lævi, in fovea parva desinente. Long. 5 lin.

Hald. l. c. 62.

Pennsylvania, Mus. Mels.

A.—4.

16. *S. LINEOLA*.—Valde elongata, nigra cinero-pubescens, thorace converso, latitudine sesqui longiore, lateribus modice rotundatis, confertissime punctato, elytris grossius punctatis, postice parum angustatis apice truncatis, testaceis, sutura linea dorsali fere integra, margine subinterrupta, apiceque nigris, antennis annulatis, pedibus testaceis tarsis fuscis. Long. .4.

Leptura lineola, Say. J, Ac. 3, 421.

Stenura lineola, Hald. 63.

Pennsylvania, Massachusetts, Carolina.

17. *S. LATERALIS*.—Elongata, nigra pubescens, thorace valde convexo, latitudine vix longiore, lateribus rotundato, confertissime punctato, elytris postice subangustatis, apice truncatis, grossius punctatis testaceis sutura linea dorsali subintegra, marginali subinterrupta, apiceque nigris, antennis annulatis, pedibus testaceis, tarsis fuscis. Long. .35—45.

Leptura lateralis, Mels. Cat.

L. indirecta? Nm. Entom.

Stenura cincta, Hald. 63.

S. lineolata, Dej. Cat.

Pennsylvania, Maryland, New York. Very similar to the preceding but a little broader, and with a less elongate thorax. It may prove to be a variety, as I have but a single specimen with an elongate thorax. I have changed the name given by Mr. Haldeman, as there is already a *Leptura cincta* in Europe.

A.—5.

18. *S. AMERICANA*.—Elongata, parallela, nigra pubescens, capite thoracique læte rufis, subtiliter punctatis, hoc antrorsum subangustato, lateribus sinuatis, utrinque ad basin impresso, elytris confertim punctatis, apice vix truncatis. Long. .5.

Stenura americana, Hald. 63.

S. fulvicollis, Dej. Cat.

Georgia and Ohio. Very rare. Drs. LeConte and Schaum.

19. *S. CAPITATA*.—Elongata, parallela, nigra pubescens, capite thoraceque læte rufis, minus subtiliter punctatis, hoc convexo, antrorsum angustato lateribus rotundato, medio versus basin transversim impresso, elytris grossius minus confertim punctatis. Long. .3.

Leptura capitata, Nm. Ent.

Grammoptera capitata, Hald. 65.

Georgia. Missouri, Michigan. Rare.

20. *S. RUFICOLLIS*.—Elongata, parallela, nigra pubescens, thorace rufo convexo, antrorsum angustato, lateribus rotundato, confertim subtilius punctato, elytris dense minus subtiliter punctatis, apice rotundatis, pedibus anticis rufescentibus. Long. .24.

Leptura ruficollis, Say. J. Ac. 3, 421.

L. hæmatites, Nm. Entom.

Grammoptera ruficollis, Hald. 66.

Massachusetts to Carolina.

21. *S. SUBARGENTATA*.—Elongata parallela, nigra, pube albida sparsim vestita, capite thoraceque subtiliter confertissime punctatis, hoc longiusculo, antrorsum subangustato, lateribus ante medium rotundatus linea dorsali postica lævi, elytris minus subtiliter punctatis, apice rotundatis. Long. .27.

Leptura subargentata, Kb. N. Z. 184 .

North side of Lake Superior.

22. *S. CHALYBEA*.—Subelongata, parallela, parum pubescens, capite thoraceque dense subtiliter punctatis, nigris, hoc quadrato, lateribus parallelis, capite non latiore, elytris cyaneis, parcius grosse punctatis, apice rotundatis, antennis pedibusque flavis. Long. .18.

Pachyta chalybea, Hald. 60.

Pennsylvania. Rare. Dr. Melsheimer. The sides of the thorax are parallel almost to the apex, where they are suddenly rounded.

23. *S. SIMILIS*.—Caput nigrum, antennæ fusæ, articulo basali flavido; thorax niger, lanugine aurea obsitus, elytra punctata, nigra, propedes flavidi, meso et metapedes femoribus basi flavidis apice nigris, tibiis tarsisque fuscis. Long. .225. (Nm.)

Leptura similis, Kb. N. Z. 185.

Leptura exigua, Nm. Ent.

I have not met with this species.

24. *S. NANA*.—Nigra puncta, ore ferrugineo, propedes pallidi, femorum macula elongata nigra meso et meta-pedes nigri femoribus basi pallidis. Long. ·175.

Leptura nana, Newman Ent.

Nor with this.

A.—6.

25. *S. CRUENTATA*.—Minus elongata, nigra nitida parum pubescens, capite thoraceque parce subtiliter punctatis, hoc antrorsum magis angustato, lateribus subsinuato, postice depresso, profundeque impresso, angulis posticis magis productis, elytris apice valde dehiscentibus, subtruncatis, grossius punctatis lateribus cruentatis, abdomine femoribusque posticis basi sanguineis. Long. ·4.

Stenura cruentata, Hald. 64.

Pennsylvania. Rare. Dr. Melsheimer.

A.—7.

26. *S. QUAGGA*.—Modice elongata, nigra subtiliter confertim punctata, valde aureo-pubescens, fronte flava, thorace convexo, campanulato, lateribus subangulato, disco transversim nigro, elytris thorace duplo latioribus, postice angustatis, apice truncatis, nigris fasciis 4 læte flavis, 1^{mo} ad suturam latiore, pedibus rufo-testaceis, antennis fuscis. Long. ·4—·52.

Leptura quagga, Germ. Ins. Nov. 521.

Leptura aurigera, Nm. Ent.

Stenura Zebrata † Hald. 62.

Pennsylvania, Georgia, New York.

27. *S. CORDIFERA*.—Breviuscula, utrinque angustata, valde tomentosa nigra subtiliter punctata thorace convexo, antrorsum valde angustato, lateribus rotundatis subsinuatis, elytris apice dehiscentibus, subacutis flavis, maculis duabus lateralibus apiceque nigris. Long. ·42.

Leptura cordifera, Ol. 73, 41.

Pachyta cordifera, Dej. Cat.: Hald. 59.

New York, Pennsylvania, Maryland. Varies with the suture and anterior subsutural spot black.

28. *S. INSTABILIS*.—Breviuscula, utrinque angustata, valde tomentosa, nigra confertim minus subtiliter punctata, thorace convexo, antrorsum valde angustato, lateribus modice rotundatis subsinuatis, elytris apice dehiscentibus subacutis flavis, sutura macula magna cordata communi ante medium, duabusque magnis sublateralibus apiceque nigris, his vitta parva conjunctis. Long. ·46.

Pachyta instabilis, Hald. 59.

Oregon. Mr. Wilcox. Very similar to the preceding but the punctures are larger, and the black spots are longitudinally confluent.

29. *S. CONVEXA*.—Breviuscula utrinque angustata, nigra pubescens, confertim punctata thorace campanulato, lateribus antice rotundatis, subtiliter canaliculato, elytris dehiscentibus flavis, margine basali sutura fasciis 2 interruptis apiceque nigris, hac rotundata. Long. ·4.

Oregon. Wilcox. Resembles the next species, but is broader and the thorax is very differently formed.

30. *S. SEX-MACULATA*.—Minus elongata, nigra dense punctata pubescens, thorace convexo, campanulato, lateribus ad medium subangulatis, antice valde obliquis non rotundatis, elytris flavis, lateribus subsinuatis, apice subtruncatis, paulo dehiscentibus, margine basali, sutura fasciis 2 interruptis apiceque nigris; antennis tibiis tarsisque rufescentibus. Long. .4.

Leptura 6-maculata, Lin.: Kb. N. Z. 182 .

The anterior fascia is composed on each side of 3 confluent spots. I have a variety in which the second fascia is entire and much dilated in front. The antennæ are nearly as long as the body, with the fourth joint short.

B.

31. *S. NIGRELLA*.—Longiuscula nigra confertim punctata, nigro-pubescens, thorace pube nigra erecta densius vestito, antrorsum angustato, utrinque constricto, linea dorsali tenui lævi, elytris apice oblique emarginatis, punctis postice subtilioribus. Long. .65.

Leptura nigrella, Say. J. A. N. S. 5, 279.

Stenura nigrella, Hald. 63.

Lake Superior to Georgia.

32. *S. PLEBEJA*.—Longiuscula, nigra confertim punctata, thorace longiusculo, pube longa tenui flava densius piloso, antrorsum parum angustato, linea tenui dorsali lævi, elytris apice oblique emarginatis, testaceis punctis postice subtilioribus. Long. .52.

Leptura plebeja! Rand. B. Jr. 2, 28.

Maine and Lake Superior. Very similar to the preceding, but the thorax is rather more elongate, and the hair with which it is covered is yellow, and not erect.

Species mihi ignota, sectionis incertæ.

33. *S. TENUIOR*.—Nigra pube flava, elytris flavo 4-fasciatis, pedibus abdomineque testaceis. Long. 5½ lin.

Leptura tenuior, Kb. N. Z. 181.

Canada. Resembles *Leptura 4-fasciata* of Europe. Probably belongs to A.—3.

TYPOCERUS.

Caput pone oculos subito valde constrictum.

Palpi vix dilatati, labiales non latiores.

Antennæ sub-12-articulatæ, articulis 6-11 compressis utrinque impressis.

Thorax angulis posticis productis.

This genus is very close to the preceding, and only differs in the structure of the antennæ. These organs in the male are rather thick, with the sixth and following joints compressed. Carinated on the edge, with a denuded granulated elliptical impression of each side; the eleventh joint is constricted in the middle and furnished with two pairs of impressions. In the female the antennæ are less compressed, the side not carinated, the impressions are smaller than in the male, those on the external surface being sometimes scarcely visible. The body is arched, and narrowed at each end.

A. Antennarum articulo 6^{to} impresso.

1. *T. ZEBRATUS*.—Niger, fulvo pubescens, thorace grosse confertim punctato, margine utrinque aureo villosa, lateribus vix rotundatis, elytris sat dense punctatis, apice dehiscentibus intus emarginatis, fasciis 4 flavis, basali arcuata; pedibus rufis, tarsiis nigris. Long. .4—55.

Leptura zebrata, Fabr. El. 2, 364.

L. zebra, Ol. 73, 3, 33.

L. nitens? Forster Cent. Ins. 45.

Stenura zebra, Hald. 62.

New York to Georgia. Common.

2. *T. FUGAX*.—Niger, dense fulvo-pubescens, thorace confertim subtilius punctato, lateribus parum rotundatis, elytris rufis sat dense punctatis apice dehiscentibus, intus emarginatis, rufis fasciis 4 flavis plus minusve obsoletis, margine basali nigro, ano pedibusque rufis, tarsiis fuscis. Long. .46.

Leptura fugax, Fabr. El. 2, 359.

L. velutina, Ol. 73, 3, 32.

In the male the abdomen is frequently entirely rufous. Found everywhere.

3. *T. LUNATUS*.—Niger pubescens, thorace convexo, grossius foveatim punctato, margine postico aureo-piloso, elytris sat dense punctatis, apice paulo dehiscentibus, intus emarginatis, macula utrinque arcuata basali fulva, humeris relictis nigris. Long. .36.

Leptura lunata, Fabr. 2, 360.

Stenura lunata, Dej. Hald. 63.

Leptura arcuata, Ol. 73, po. 46: tab. 4, 47.

Pennsylvania to Georgia.

4. *T. LUGUBRIS*.—Niger pubescens, thorace convexo, subtilius punctato, lateribus modice rotundatis, scutello argenteo-piloso, elytris confertim subtilius punctatis, apice dehiscentibus intus emarginatis. Long. .4.

Leptura lugubris, Say. J. Ac. 3, 419.

Stenura lugubris, Hald. 63.

New York, Pennsylvania.

B. Antennarum articulo 6^{to} haud impresso.

5. *T. SINUATUS*.—Niger dense fulvo-pubescent, confertim punctatus, thorace convexo, subcanaliculato, lateribus rotundato, margine antico posticoque aureo-villoso, elytris flavis, sutura fascia ante medium, alteraque extrorsum latiore pone medium, macula laterali ad medium, apiceque nigris, pedibus rufis. Long. .5.

Leptura sinuata, Nm. Entom.

Var. *Stenura 8-notata*, Hald. 62.

Pennsylvania, Maryland, and Missouri Territory. The bands of the elytra are sometimes rufous: sometimes too they are reduced to submarginal spots: the latter is the variety described by Haldeman. For a very complete series of this species I am indebted to my friend Professor Agassiz.

Species forte hujus generis, mihi ignotæ.

6. *T. DISTANS*.—Thorace conico, punctatus, ater, fascia inter oculos thoracisque lateribus fulvis, elytris apice latioribus, subtruncatis.

Leptura distans, Germ. Ins. Nov. 524.

Kentucky. On account of the peculiar form of the elytra, this species may belong to *Euryptera*, Serv.

7. *T. LATERALIS*.—Ater thoracis lateribus humerisque elytrorum rufis.

Leptura lateralis, Ol. 73, 3, 37.

The figure represents it as being of the size and form of *T. lunatus*.

8. *T. BADIUS*.—Niger aureo-lanuginosus, elytris badiis, vestigiis incertis flavis, pedes badii, thorax crebro punctis punctatus puncti magnis profundis. Long. .65.

Leptura badius, Nm. Entom.

Seems to be similar to *T. fugax*, but much larger.

9. *T. NOBILIS*.—Aureo lanuginosus, caput et thorax fusca, antennæ nigræ, elytra flava, apicibus humerisque ferrugineis, fasciis 3 nigris ornata, thorax subtiliter punctatus, pedes et abdomen lutea. Long. .5.

Leptura nobilis, Nm. Entom.

He says it is similar to *T. fugax*, and *zebratus*.

10. *T. ABDOMINALIS*.—Niger abdomine sanguineo, ano nigro. Long. 8 lin.

Stenura abdominalis, Dej. Cat. Hald. 63.

Georgia.

LEPTURA, *Lin.**Leptura*, Dej. *Trigonarthis*, Dej. *Grammoptera*, Serv.

Caput pone oculos subito valde constrictum.

Palpi vix dilatati, labiales vix latiores.

Antennæ 11-articulatæ, articulis haud impressis.

Thorax angulis posticis haud productis.

Differs from *Strangalia* in the form of the thorax alone. Our species may be arranged into seven groups, as follows :

- A. Thorace postice modice constricto, elytris triangularibus fere glabris, grossius punctatis.
 - a. Elytris apice incis. Sp. 1—3.
 - b. Elytris divaricatis, fere integris. Sp. 4—5.
- B. Thorace longiusculo, utrinque subconstricto, elytris parallelis, truncatis fere glabris. Sp. 6—8.
- C. Thorace globoso, utrinque constricto, elytris parallelis integris. Sp. 9.
- D. Thorace convexo, canaliculato, lateribus subangulato.
 - a. Elytris parallelis parum pubescentibus. Sp. 10—11.
 - b. Elytris triangularibus truncatis, valde pubescentibus. Sp. 12—14.
- E. Thorace lateribus parum rotundato, elytris elongatis, vix triangularibus. Sp. 15—18.

A.—a.

1. *L. CANADENSIS*.—Nigra parum pubescens, thorace elongatulo, antrorsum angustato, cribratim punctato, elytris dense grosseque punctatis, punctis versus apicem subtilioribus, basi sanguineis. Long. .47—65.
♂ antennis elongatis serratis concoloribus. *L. tenuicornis*, Hald. 64.
♀ antennis articulis 3, 4, 5, 7 et 9 basi pallidis, 6 et 8 pallidis apice nigris.
L. canadensis, Fabr. El. 2, 357 : Ol. 73, 27.

Georgia, New York, Canada.

2. *C. ERYTHROPTERA*.—Nigra parum pubescens, thorace latitudine non longiore, antrorsum angustato, lateribus rotundatis, cribroso ; elytris sanguineis dense grossius punctatis, subtilius versus apicem. Long. .7.
Kirby N. Z. 180.
Leptura cinnamoptera, Hald. 64.

New York and Missouri Territory. I have never seen a male : the female has antennæ like the preceding. Mr. Haldeman changed the name of this species, believing Kirby's to be preoccupied by Germar : but Say's *Leptura rubrica* having priority by one year, this necessity is obviated.

3. *L. RUBRICA*.—Nigra, thorace flavo pubescente, longiusculo, antrorsum angustato, lateribus rotundatis, cribroso, elytris sanguineis, minus dense grosse punctatis, subtilius versus apicem, antennis articulis 6—10 pallidis apice nigris. Long. .45—6.
Say J. A. N. S. 3, 418, (1824.)
Leptura erythroptera, Germ. Ins. Nov. 522, (1825.)

New York to Georgia. The male has the abdomen sanguineous.

A.—b.

4. *L. CIRCUMDATA*.—Nigra, breviter parce pubescens, thorace elongatulo, subcampanulato, cribroso, elytris grosse punctatis, pallidis margine apiceque nigris. Long. .27.

Ol. 73, 4, 48. : Hald. 65.

Pennsylvania ; rare.

5. *L. VAGANS*.—Nigra thorace pubescente, globoso, antrorsum angustato, cribroso, elytris grosse punctatis, apice valde dehiscentibus, antennis articulis 6—10 basi pallidis. Long. .42.

Variat. α . humeris sanguineo rufis : Ol. 73, 46.

β . macula humerali, alteraque magna apicali rufis.

γ . elytris fulvo-rufis, sutura maculaque discoidali communi nigris.

δ . elytris fulvo-testaceis.

L. brevis, Kb. N. Z. 182.

Pennsylvania and New York.

B.

6. *L. 8-NOTATA*.—Valde elongata, nigra nitida pube flava erecta parce vestita, thorace elongato, utrinque impresso, subtilius punctato, elytris thorace plus sesqui latioribus subparallelis minus dense punctatis, maculis utrinque 4 seriatim posticis flavis, pedibus posticis basi cum tarsis flavis. Long. .45.

Say J. A. N. S. 3, 419.

Leptura stictica, Nm. Entom.

Var. *L. 4-punctata*, Hald. 64.

New York, Pennsylvania and Mississippi. The variety is in Dr. Melsheimer's collection : in it the two anterior pairs of spots are obsolete.

7. *L. VITTATA*.—Elongata nigra nitida parce pubescens, capite dense punctato, plaga pone oculos lævi, thorace elongata, postice impresso, parce punctato, densius ad latera, elytris parallelis, apice subtruncatis, thorace latioribus, versus scutellum impressis, minus dense grossius punctatis, subtilius ad apicem, vitta lutea a basi ultra medium extendente. Long. .45.

Ol. 73, 45.

Leptura abbreviata, Germ. Ins. Nov.

L. semivittata, Kirby N. Z. 183.

New York, Alabama. The third, fourth, and fifth joints of the antennæ are equal. The outline of the vitta is sinuous externally. The luteous color sometimes extends to the margin. The female has a shorter and more inflated thorax.

8. *L. PUBERA*.—Nigra nitida cinereo-pubescens, thorace convexo, latitudine non longiore, subcampanulato, lateribus rotundato, dense punctato, parcius in disco, elytris subparallelis apice truncato-emarginatis, grossius minus dense punctatis, subtilius versus apicem. Long. .3—37.

Say J. A. N. S. 5, 279.

New York, Georgia, Lake Superior. The male has the thorax elongate and scarcely rounded on the sides.

C.

9. *L. SPHERICOLLIS*.—Nigra nitida, capite thoraceque impunctatis, hoc glabro, utrinque valde constricto, elytris parallelis, apice rotundatis, sat dense punctatis, breviter cinereo-pubescentibus, pedibus plus minusve testaceis. Long. .32.

Say J. A. N. S. 5, 280.

Leptura paupercula, Nm. Entom.

Varies with the thorax rufo-piceous. *Leptura allecta*? Nm. Ent.

Lake Superior, New York, Ohio.

D.—a.

10. *L. RUFULA*.—Nigro-picea, subnitida, capite thoraceque confertissime punctatis hoc campanulato, lateribus angulato, disco longitudinaliter late impresso, elytris parallelis testaceo-rufis, sat dense punctatis, breviter pubescentibus, apice oblique subtruncatis, pedibus rufis, genubus tarsisque nigris. Long. .37.

Pachyta rufula, Hald. 60.

Lake Superior. The fourth joint of the antennæ is shorter than the fifth.

11. *L. BIFORIS*.—Testacea, parce pubescens, capite thoraceque fuscis, confertim punctatis, hoc convexo, antrorsum angustato, utrinque valde constricto, profunde canaliculato, elytris postice subangustatis, apice oblique truncatis, densius punctatis, subtilius versus apicem macula laterali ad medium fusca. Long. .45—6.

Newman Ent. : Hald. 64.

New York and Pennsylvania. June: rare. The fourth joint of the antennæ is shorter than the fifth.

D.—b.

12. *L. PROXIMA*.—Latiuscula, nigra, capite thoraceque pube erecta flava dense vestitis, confertissime punctatis, hoc brevi, convexo, antrorsum valde angustato, lateribus subangulatis, basi profunde constricto, disco late canaliculato, elytris luteo-testaceis, confertim punctatis, apice truncata late nigra. Long. .55—7.

Say J. A. N. S. 3, 420.

Leptura subpubescens, Kb. N. Z. 180.

Trigonarthris proxima, Hald. 65.

T. terminata, Dej. Cat.

Lake Superior, Missouri Territory, Maine, and Pennsylvania: rare.

The male is narrower and shaped like *L. chrysocoma*. This species with the next constitutes Dejean's genus *Trigonarthris*. They only differ from other *Lepturæ* in having the intermediate tarsi as broad and as short as the anterior pair. They are, however, more dilated in the males, and, moreover, are not alike in all *Lepturæ*: for these reasons I have thought it more natural to replace these species among the genuine *Lepturæ*.

13. *L. ATRATA*.—Brevis nigra, capite thoraceque pube erecta flava dense vestitis, confertim punctatis, hoc convexo, antrorsum valde angustato, basi constricto, lateribus subangulatis disco subcanaliculato, elytris postice angustatis confertim punctatis, subtilius versus apicem, hoc late truncato. Long. .56.

Trigonarthris atrata, Dej. Cat.

Georgia : very rare.

- 14.—*L. CHRYSOCOMA*.—Niger dense aureo-pubescens, thorace cribroso, convexo, antrorsum valde angustato lateribus valde rotundatis, postice modice constricto subcanaliculato, elytris postice angustatis, apice truncatis, rufo-testaceis, margine postice infuscato, confertissime subtiliter rugose punctatis. Long. .6.

Kirby N. Z. 179 : tab. 5, fig. 2.

Leptura iridis, Dej. Cat.

Found in the Northern part of New York, and at Lake Superior on roses and iris. The male is narrower than the female, and has longer antennæ.

E.

15. *L. AURIPILIS*.—Nigra dense aureo-pubescens, thorace confertissime punctato, convexo, antrorsum modice angustato, lateribus paulo rotundatis, canaliculato, elytris postice angustatis, apice truncatis, rufo-testaceis, confertissime subtiliter punctato rugosis, ano, tibiis tarsisque rufis. Long. .6.

Santa Fé, New Mexico. This species is very similar to the preceding, but the form of the thorax at once distinguishes it.

Subelongate, black, densely covered with golden hair, head and thorax densely punctured, the latter scarcely as wide as long, somewhat narrowed in front, slightly constricted behind, disc convex finely canaliculate, sides slightly rounded. Elytra one-half wider than the thorax, narrowed behind, where they are slightly divergent and truncate, rufo-testaceous, covered with very fine punctures. Beneath black, covered with golden hair, margin of the abdominal segments and anus testaceous. Feet black, tibiæ and tarsi rufous.

16. *L. TIBIALIS*.—Nigra, breviter flavo-pubescens, capite thoraceque confertissime punctatis, hoc convexo antice parum angustato, apice basique constricto, lateribus vix rotundato, elytris confertim punctatis, subparallelis, apice paulo dehiscentibus, introrsum oblique leviter truncatis, macula laterali ad medium, altera majore pone medium apiceque nigris, tibiis tarsisque flavis, illis apice fuscis. Long. .43.

Lec. in Agass. Exp.

One specimen. St. Ignace, Lake Superior.

17. *L. QUADRICOLLIS*.—Elongata, nigra capite thoraceque confertissime punctatis, dense flavo-pilosis, hoc quadrato, convexo, antrorsum non angustato, elytris postice subangustatis, grossius sat dense punctatis. Long. .41.

Vermont. Professor C. B. Adams. Elongate black, beneath covered with thick yellow pubescence, head and thorax very thickly punctured, almost granulate, the

latter square, not narrowed in front, apex very slightly constricted, disc convex, covered with long erect yellow hair. Elytra a little wider than the thorax, slightly narrowed behind; disc depressed, tip scarcely truncate; tolerably thickly covered with large punctures, which become smaller behind. Antennæ nearly as long as the body, third and fourth joints shorter than the fifth.

18. *L. MUTABILIS*.—Elongata depressa, nigra breviter cinereo-pubescent, capite thoraceque confertissime punctatis, hoc quadrato, antrosum parum angustato, utrinque leviter impresso, elytris postice vix angustatus, apice subtruncatis, dense punctatis, nunc nigris, nunc testaceis apice nigris. Long. .4.—.52. Newman Entom.

Leptura luridipennis, Hald. 65.

Found from Lake Superior to Alabama.

Species hujus generis mihi ignotæ.

19. *L. INTERRUPTA*.—‘Hirta parallela, nigra utriusque elytri vitta ante medium interrupta testacea, caput et thorax hirta nullo modo nitida; elytra crebre punctata, sternum et abdomen lanugine argentea obsita. Long. .425.’

Newman Ent.

20. *L. VIBEX*.—Caput nigrum ore flavido, antennis fuscis, thorax convexus, nitidus niger; elytra nigra, utriusque vitta albida e basi ultra medium extendente, pedes pallidi, profemoribus macula minuta, meso- et meta-femoribus apice late nigris. Long. .325.

Newman Ent.

“Allied to *Leptura longicornis*, Kirby.” The shape of the head and eyes is not mentioned. This species may be an *Acmæops*.

21. *L. GULOSA*.—‘Linearis, nigra supra nitida, subtus argenteo-sericea, gula rufescente, elytris vitta postice abbreviata lutea, apice truncatis. Long. 5 lin.’

Kirby N. Z. 184.

Nova Scotia. Very near to *L. vittata*, but the throat is red, and the fifth joint of the antennæ is longer than the fourth.

Species ignotæ, generis incerti.

‘*PACHYTA LITURATA*.—Atra villosa-incana, elytris nudis, luridis, lituris tribus nigris, anticis duabus subparallelis. Long. 7—9 lin.’

Kirby N. Z. 178.

Vide note to *Argaleus nitens*.

LEPTURA BIVITTATA.—Elytra pale yellowish white, with two black vittæ on each. Long. 2.5 inch. Inhabits Missouri.

Say J. A. N. S. 3, 416.

The thorax is obtusely tuberculate on the sides, the elytra rounded at the tip. It seems to be a *Toxotus*.

(To be continued.)