

Revision of the Species of **LEBIA** of the United States.

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In the second part of the volume XLIII., and the first part of the volume XLIV., of the Bulletin de la Societe Imperiale des Naturalistes de Moscou, Chaudoir has published a review of the species of Lebiidæ as restricted by him. This tribe contains in our fauna only those species which have heretofore been known under the one generic name *Lebia*. Chaudoir proposes to divide the tribe into two primary portions, as follows :

Lateral lobes of mentum with *epilobes*.....LAMPRIADÆ.
Lateral lobes of mentum without *epilobes*LEBIIDÆ *veræ*.

As no mention has ever been made by any author of the "epilobes of mentum," I translate from Chaudoir's description. "The great majority of Lebiidæ have a mentum of which the lateral lobes are devoid of that appendage which in the greater number of Carabidæ borders the inner margin of the lateral lobes, and which is separated by a very distinct suture ; this appendage, which varies in dimension and form, deserves to receive a name, and I propose that of *epilobe* for the same reason that the side pieces of the sternum are called episterna. Although this epilobe is wanting in many Lebiidæ it also exists in a great number."

The first group, LAMPRIADÆ, contains in our fauna the genus

LOXOPEZA, Chaudoir,

which includes all our large species with metallic green or blue elytra and which may readily be known from all our other species by the greater or less obliquity of the dilated joints of the anterior tarsus of the male. The latter character is well defined in all the species.

As thus defined *Loxopeza* contains the following species :

Fourth joint of hind tarsus deeply emarginate.

Head and thorax rufous.

Elytra deeply striate; antennæ pale.....**grandis.**

Elytra finely striate; three basal joints only pale.....**atriventris.**

Head black, thorax rufous.

Elytra deeply striate; outer joints of antennæ darker.....**tricolor.**

Fourth joint of hind tarsus feebly emarginate.

Head and thorax rufous; elytra deeply striate.....**majuscula.**

Head black, thorax rufous; elytra finely striate.....**atriceps.**

L. grandis, Hentz, Trans. Am. Phil. Soc. iii., p. 58; Chaud. Bull. Mosc. 1870, ii., p. 139.

Our largest species, easily distinguished by the characters of the above table. The head is comparatively smooth, finely wrinkled within the eyes and a few punctures sparsely placed on the front and vertex. The antennæ are slender and pale, although the outer joints are darker than the three basal. Thorax nearly twice as wide as long, with median line distinctly impressed, margin broad and surface finely transversely strigose. The elytra are blue and with moderate lustre, the striæ deep but not punctured. The body beneath and legs are pale yellowish testaceous, abdomen black, the first segment usually paler. Length .38 inch; 9.5 mm.

Occurs in the Gulf States, also Illinois, Nebraska and southward to Texas.

L. atriventris, Say, Trans. Am. Phil. Soc. ii., p. 13; Dej. Species ii., p. 454; Chaud. loc. cit. p. 142.

Resembles the preceding in miniature, but has the antennæ black excepting the three basal joints. The elytra are also finely striate and the intervals flat, the striæ are also finely punctured. Length .24—.28 inch; 6—7 mm.

Occurs everywhere in the United States north of the latitude of Philadelphia and westward to Dacota.

L. tricolor, Say, Trans. Am. Phil. Soc. ii., p. 11; Dej. Spec. ii., p. 453; Chaud. loc. cit. p. 140.

Closely resembles in general appearance the preceding species, but less elongate and with black head and dark epipleuræ. The antennæ are similar to those of *atriventris*. The head is sculptured as in *grandis*, black, with labrum pale; elytra deeply striate, color decidedly green. Color beneath as in *grandis*. Length .28—.34 inch; 7—8.5 mm.

Occurs in the Middle States northward to Canada.

L. majuscula, Chaud. Bull. Mosc. 1870, p. 141.

This species so closely resembles *grandis* that it has, until the essay by Chaudoir, been confounded with it. The very feebly emarginate fourth joint of hind tarsus will, however, at once distinguish it. The form and color of the two species are identical except that the present species is perhaps somewhat narrower and less convex; the color of the elytra is less brilliant and the striæ less deep and the intervals more flattened. The thorax of *majuscula* is more strongly wrinkled

and the basal transverse impression much deeper. Some specimens from the peninsula of California have the epipleuræ brownish becoming testaceous toward their apices, otherwise they are identical with those from Arizona which correspond with the description by Chaudoir. Length .28—.38 inch; 7—9.5 mm.

Occurs in Texas, Arizona and Peninsula California.

L. atriceps. Lec. New Species, p. 5.

This species agrees with *majuscula* in having the fourth joint of the hind tarsi very feebly emarginate. Head black, punctured and feebly wrinkled. Antennæ black, three basal joints and base of fourth pale yellow testaceous. Thorax and elytra resemble those of *atriven-tris*. The body beneath is entirely black except the side pieces of the metasternum, the mesosternum and thorax which are rufo-testaceous. The femora are rufo-testaceous tipped with black at the knees, the tibiæ and tarsi entirely black. Varieties occur with the tibiæ brownish-testaceous. Length .26—.30 inch; 6.5—7.5 mm.

Occurs in Kansas and Nebraska.

LEBIIDÆ VERÆ.

This group contains those species in which the epilobes of the mentum are not distinct. The group is divided by Chaudoir into many genera founded on characters which appear to be of a nature too feeble to be used for generic distinction. Our genera have the tarsal claws pectinate or serrate, with teeth not exceeding in number *five*, other genera have teeth to the number of *six* or over.

The following genera occur in our fauna:

Mentum with a distinct tooth.....	Lebia.
Mentum not toothed.	
Head behind the eyes constricted.....	Dianchomena.
Head behind the eyes not constricted.....	Aphelogenia.

LEBIA, Latr.

This genus contains by far the larger number of our species separable in our fauna by well defined characters. The following dichotomous table will enable the student to recognize our species, it being nearly a copy of that of Chaudoir in order that foreign students may the better trace the resemblances between any of our species and those which are exotic and also to exhibit the positions therein of species not known to Chaudoir.

Elytra with fine or very shallow striæ.....	1
Elytra deeply striate, striæ smooth.....	12
1. Tarsal claws serrate rather than pectinate.....	2*
Tarsal claws pectinate.....	4
2. Palpi stout; fourth hind tarsal joint emarginate....	pulchella.
Palpi slender; fourth hind tarsal joint emarginate.....	3
3. Head and thorax black.....	cyanipennis.
Head black, thorax red.....	ruficollis.
4. Head more or less striolate or coarsely punctured.....	5
Head smooth or very feebly punctured.....	6
5. Head striolate; elytra green.....	marginicollis.
Head coarsely punctured; elytra ornate.....	lobulata.
6. Elytra unicolored, green or olivaceous.....	7
Elytra blackish or piceous sometimes with basal spot.....	8
7. Body above unicolored.....	9
Body above bicolored.....	10
9. Color greenish or bluish; legs black.....	viridis.
Color olivaceous; legs piceo-testaceous or paler..	pumila.
10. Head and thorax rufous; abdomen black.....	pleuritica.
Head black, thorax rufous; abdomen pale.....	viridipennis.
8. Elytra ornate with pale spots.....	ornata.
Elytra piceous.....	collaris.
12. Head longitudinally rugoso-striolate.....	analisis.
Head nearly smooth or very slightly rugulose.....	13
13. Elytra sub-ovate broader behind.....	fuscata.
Elytra elongate parallel.....	frigida.

L. pulchella, Dej. Spec. ii., p. 457; Chaud. Bull. Mosc. 1870, ii., p. 172.—Head black, sparsely punctured. Antennæ with three basal joints rufous, outer joints nearly black. Thorax yellowish testaceous. Elytra yellowish testaceous, usually paler than the thorax, finely striate and with a narrow basal bluish band extending slightly on the humeri and somewhat broader at the scutellum, a broad bluish band at two-thirds from the base, usually attaining the margin, with its anterior and posterior margins triundulate and occasionally with a sutural extension uniting it with the basal band. Under surface and legs pale yellowish testaceous, tarsi often piceous. Length .24—.28 inch; 6—7 mm.

The stout palpi and style of ornamentation will at once distinguish this pretty species.

Occurs from Canada to Texas.

L. cyanipennis, Dej. Spec. v., p. 385; Chaud. loc. cit., p. 174.—Head and thorax black. Antennæ black, frequently with the basal joint somewhat paler. Elytra blue, with a tinge of violet, surface finely striate, but more deeply than *pulchella*. Body beneath and legs black. Length .24 inch; 6 mm.

* On an examination of the first three species the unguis will be found to have the teeth directed very obliquely outward and short, so that the unguis appear to be rather serrate than pectinate as in the other species.

Occurs in California from San Diego northward, but rarely as far as San Francisco.

L. ruficollis, Lec. Ann. Lyc. v., 178; Chaud. loc. cit., p. 175.

Bears a close resemblance to the preceding species, but the thorax is rufous. Length .24 inch; 6 mm.

Occurs also in the region of San Diego, California.

L. marginicollis, Dej. Spec. ii., p. 271; *var. affinis* Dej. Spec. v., p. 387; *limbicollis* Motsch. Bull. Mosc. 1859, ii., p. 145; *var. cupripennis* Chaud. Bull. Mosc. 1850, i., p. 75.

Resembles our more common *viridis*, but may be known from it and all our other green *Lebiæ* by the rather deeply striolate head. In color it more nearly resembles *cyanipennis* and in fact small specimens of the latter so closely resembles the present that they may readily be mistaken in a series without close observation. The margin of the thorax is pale, while the disc is black and but rarely with even the faintest bluish tinge. The variety *affinis* has the elytral intervals slightly more convex than in the typical form; *var. cupripennis*, Ch., occurs in Peru, and, as the name indicates, has the elytra cupreous. Length .17—.20 inch; 4.5—5 mm.

This species has a wide distribution occurring all over the northern portion of our continent and at Ega. Brazil and in Peru.

L. viridis, Say, Trans. Am. Phil. Soc. ii., p. 14; Dej. Spec. i., p. 271; Chaud. Bull. Mosc. 1870, ii., p. 192; *var. cyanea* Dej. Spec. v., p. 386; *var. smaragdula* Dej. Spec. v., p. 387; *var. mæsta* Lec. Agass. Lake Sup., p. 203; *Lamprias cyanellus* Motsch. Kaef. Russl., p. 42, note; Bull. Mosc. 1859, iii., p. 144.

This species is too well known to need any comment. Its color is green in all its parts above, or bluish and more rarely dark violet. These variations in color have given rise to the various synonyms above noted. The *cyanellus*, Motsch., is undoubtedly a Californian specimen of this species, for the author compares it with his own *limbicollis*, while in the comparison between it and *cyanipennis* he mentions the same points which really serve to distinguish *viridis* from *cyanipennis*, viz., "Mais elle est plus petite et la tête et le corselet sont d'une couleur bleuâtre et non noire." I have, therefore, no hesitation in striking this from our list of unknown species. Length .18—.22 inch; 4.5—5.5 mm.

Occurs from Maine to Oregon and as far south as Guatemala. /e

L. pumila, Dej. Spec. v., p. 388; *floricola* Harris, N. E. Farmer, 1828; *var. maculicornis* Lec. Ann. Lyc. iv., p. 195.

Our smallest species and one of the smallest in the entire genus. Its color is olivaceous above and nearly black beneath. The legs are brownish or testaceous. The antennæ are very dark and the third joint pale testaceous in the great majority of specimens. Length .12—.14 inch; 3—3.5 mm.

This species cannot be confounded with any other in our fauna excepting possibly the small forms of the variety of *viridis* known as *mæsta*, but its smaller thorax, paler legs and the pale third joint of antennæ at once distinguish it.

Occurs from Maine to Kansas and south to Georgia.

L. pleuritica, Lec. Ann. Lyc. iv., p. 193.—Head and thorax rufo-testaceous, elytra blue with a distinct tinge of green. Antennæ entirely pale rufous. Head nearly smooth, thorax finely transversely wrinkled, elytra moderately elongate, striate, intervals slightly convex, lateral margin very narrowly bordered with rufous, epipleuræ rufo-testaceous. Body beneath and legs rufous, abdomen black. Fourth joint of hind tarsi deeply emarginate. Length .26—.30 inch; 6.5—7.5 mm.

This species bears so close a resemblance to the preceding group, *Loxopeza*, that I was persuaded to refer it there until after a closer examination of the mentum. The anterior male tarsi are normally dilated as in the other *Lebiæ* and not obliquely.

Occurs from Canada to Texas, but not common.

L. viridipennis, Dej. Spec. ii., p. 452; Chaud. Bull. Mosc. 1870, ii., p. 194; *borea* Hentz. Trans. Am. Phil. Soc. iii., p. 256.—Head black with greenish lustre, and with few punctures. Antennæ black, three basal joints testaceous. Thorax rufous, very finely wrinkled. Elytra green, finely striato-punctate. Body beneath rufo-testaceous. Legs pale testaceous with the tips of the femora and tibiæ and the entire tarsi piceous. Length .20—.24 inch; 5—6 mm.

Occurs from Canada to Texas and not rare.

L. lobulata, Lec. New Species, p. 5.—Head piceous, nearly black, coarsely punctured between the eyes, occiput smooth. Antennæ pale, gradually thicker to the tip. Thorax piceous, margin pale. Elytra piceous, finely striate, striæ obsolete at tip and sides, and with a pale testaceous apical margin and a subterminal spot occupying a short space of the intervals 5, 6, 7, not attaining the base, and with a small lobe from its inner apical angle. Thorax beneath piceous, body and legs pale testaceous, abdomen darker especially at the sides. Epipleuræ and a narrow margin of the elytra testaceous. Length .12—.15 inch; 3—3.75 mm.

Resembles *ornata*, but has more deeply striate elytra than is usual in that species. The punctured head at once distinguishes it.

Occurs in Ohio, Virginia and Louisiana, but rare.

L. ornata, Say, Trans. Am. Phil. Soc. ii., p. 13; *axillaris* Dej. Spec. v., p. 372; *var. marginella* Dej. Spec., p. 373; *apicalis* Hald., *brunnea* Hald. Proc. Am. Phil. Soc. 1842, p. 298.—Head piceous, smooth. Antennæ with three basal joints pale, outer joints somewhat darker and slightly thicker. Thorax piceous varying to testaceous, margin paler. Elytra parallel, flat, feebly striate, piceous, lateral margin and apical spot testaceous, and a subhumeral spot of oval form, narrow the base, of the same color. Body beneath and legs testaceous. Length .18—.20 inch; 4.5—5 mm.

There appears to be some difference of opinion regarding the synonymy of the species of Say and Dejean. The former author has undoubtedly mixed two species, but refers to two varieties of his typical form which appear to be identical with varieties of Dejean's *analisis*. The typical form of Say is without doubt that briefly described. As is seen above Chaudoir refers *marginella*, Dej., to this species as a variety although it would seem rather to be a variety of *analisis* and did not Chaudoir have in his cabinet the types of Dejean I should doubt the validity of his determination, but with the type before him his view must be accepted as final. A variety is before me with the thorax pale yellowish testaceous.

Occurs everywhere in our country.

L. collaris, Dej. Spec. ii., p. 456; Chaud. Bull. Mosc. 1870, ii., p. 199; *nigripennis* Dej. Spec. v., p. 373; Chaud. loc. cit., p. 200.

Dejean's description, as also those of Chaudoir, do not seem to indicate any difference between *nigripennis* and *collaris* except in size and the color of the head and thorax. These characters are ordinarily good, but in the present instance the color of the head and thorax is seen to vary in our series. The elytra are rather more parallel than in *ornata* and almost totally black in color, the lateral and apical margins being narrowly bordered with pale brown. The under surface and legs are pale testaceous or sometimes a little darker. Antennæ rather short, basal joints pale, outer joints brownish. Length .20 inch; 5 mm.

Occurs in the Middle and Southern States, but rare.

L. analis, Dej. Spec. i., p. 265; Chaud. Bull. Mosc. 1870, ii., p. 211; *ornata* ‡ Say, *var.*, Trans. Am. Phil. Soc. ii., p. 14; *ornata* ‡ Lec. Ann. Lyc. iv., p. 22; *var. appendiculata* Chaud. loc. cit., p. 212; *marginella* ‡ Lec. List, p. 5.

Chaudoir is in error in supposing that Dr. LeConte has confounded the *analisis* and *axillaris*. The form which has served as the type of the latter species is identical with that of Dejean. The *ornata* of LeConte is the present species. This species and its varieties may be readily known from all the others with ornate elytra, and which be-

long to *Lebia* as at present restricted, by the deeply striolate head. Head black, antennæ dark, four basal joints paler. Thorax rufo-testaceous, intricately rugulose. Elytra deeply striate, intervals more or less convex, black and ornamented as follows with pale testaceous spaces: *appendiculata*, Chaud., a humeral sub-quadrate space extending inward to the fourth stria and with a small spot appended to the inner angle of the larger one on the third and fourth intervals. The point of humerus is frequently tipped with black; lateral margin narrowly, apical margin broadly testaceous; *analis*, Dej., basal and lateral margins narrowly, apical broadly testaceous; humeral stripe short, occupying the basal portion of the intervals between the fourth and sixth striæ; *marginella* ‡ Lec. similar to *analis*, but with the markings reduced to a mere trace of each. This variety resembles *collaris*. Under surface and legs pale testaceous, abdomen darker. Epipleuræ pale.

L. fuscata, Dej. Spec. i., p. 270; Chaud. Bull. Mosc. 1870, ii., p. 230.—Head piceous, smooth. Antennæ with basal joints pale, outer joints somewhat darker. Thorax finely wrinkled, disc piceous, paler than the head, margin broad testaceous. Elytra moderately elongate, sides arcuate and broader behind the middle, surface deeply striate, color pale testaceous with the anterior three-fourths of margin narrowly bordered with black, a scutellar black space occupying the bases of the four inner interspaces, broader than long which rapidly narrows to two interspaces, and at the middle of the elytra again widens to three interspaces, and at the apex again narrows. In many specimens a narrow band connects the middle of the hinder dilation with the margin, but this varies in width and is at times absent. Body beneath and legs testaceous. Fourth tarsal joint deeply bilobed. Length .20—.30 inch; 5—7.5 mm.

The smaller variety has the transverse band broad and it resembles some of the more fully ornate varieties of *ornata*, but is readily known by the deeply striate elytra.

Occurs from Canada to Florida and westward to Missouri.

L. frigida, Chaud. Bull. Mosc. 1870, ii., p. 242.

This species is unknown to me in nature. The description and figure recall at once specimens of *ornata* with elytra more deeply striate than usual, of which several specimens are before me. Can it be possible that it is merely a variety of *L. fuscata*? Its length is about .18 inch; 4.5 mm.

Said by Chaudoir to occur near Boston.

DIANCHOMENA, Chaud.

The species comprised in this group are distinguished from the true *Lebiæ* by the mentum being without tooth and from *Aphelogenia* by the very evident constriction of the head behind the eyes with a greater convexity of the vertex.

In our fauna we have three :

Thorax narrowly margined.

Head and elytra green, thorax rufous.....**abdominalis**.

Thorax widely margined.

Head rugose at sides; elytra shining, moderately striate.....**scapularis**.

Head entirely rugoso-punctate; elytra less shining, deeply striate.

miranda.

D. abdominalis, Chaud. Bull. Mosc. 1843, p. 104; idem. 1871, i., p. 47.

To the characters already given it may be added: antennæ black, three basal joints piceo-testaceous, paler at their bases. Body beneath pale rufo-testaceous, meso- and metasternum and epipleuræ nearly black. Legs pale rufous, tarsi piceous. Length .20 inch; 5 mm.

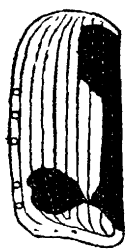
Occurs in Georgia, Texas and Missouri.

D. scapularis, Dej. Spec. v., p. 377; Chaud. Bull. Mosc. 1871, i., p. 52; *Lebia solea* Hentz, Trans. Am. Phil. Soc. iii., p. 255; *conjungens* Lec. Ann. Lyc. iv., p. 194.—Pale yellowish testaceous. Head irregularly striolate at the sides, vertex nearly smooth. Antennæ piceous, basal three joints testaceous. Elytra moderately striate, shining, testaceous with three black stripes on both together, as follows: a lateral stripe from the humerus four-fifths to the tip, becoming gradually broader and rounded at its apical end, this stripe does not, however, attain the extreme lateral margin; a common median stripe broad at base, somewhat narrowed at middle gradually broader behind and rounded at tip, but not larger than the lateral stripes. Sometimes the stripes become confluent at their apices and the yellow intervening spaces reduced to a very narrow and short stripe, in which case the elytra resemble those of *analis*. Length .18—.24 inch; 4.5—6 mm.

The variety known as *conjungens*, Lec., should be referred to this species and not to *vittata*. It has all the characters of this group. Chaudoir (Bull. Mosc. 1871, i., p. 41) suspected that it might be a variety of *vittata* to which a head of *scapularis* had been inadvertently attached and he requests a verification of his suspicion. It is that variety of *scapularis* in which the black stripes become confluent at their apices.

Occurs in the Middle States, Kansas, Dacota and the Indian Territory.

D. miranda, n. sp.—Yellowish testaceous. Head rugoso-punctate over the entire space between the eyes. Antennæ slender, pale yellowish testaceous.



Thorax not broader than the head, sides not sinuate near the hind angles, disc sub-opaque, very finely rugoso-punctate. Elytra feebly shining, slightly dilated behind, surface deeply striate, and with a common median stripe cordiform at base, occupying the middle four interspaces, and then gradually narrowing to the two middle interspaces extending nearly to the apex and rounded at tip, with a small oval spot near the lateral margin on a line with the tip of the median stripe. Body beneath and legs pale testaceous. Length .22 inch; 5.5 mm.

This species cannot be confounded with any other in our fauna, it resembling superficially *scapularis*, but without the lateral stripe of that species.

Occurs rather abundantly at Camp Grant, Arizona.

APHELOGENIA, Chaud.

Mentum without epilobes and truncate at bottom of emargination and not toothed. Head not constricted. Tarsi with fourth joint of posterior pair either bilobed or not. The following of our species belong to this group, and are thus distinguished:

Thorax widely margined.

Head and thorax pale testaceous; body beneath pale.

Elytra distinctly striate; and with narrow black stripes.....**vittata**.

Elytra finely striate; stripes broad { **furcata**.
Spraguei.

Head black, thorax brownish; abdomen black.

Elytra with striæ obsolete, ornate with spots.....**guttula**.

Thorax narrowly margined.

Elytra black with two white stripes on each.

Abdomen entirely rufous.....**bivittata**.

Elytra black with one white stripe on each.

Abdomen with two apical segments red.....**bilineata**.

A. Spraguei, n. sp.—Head pale rufous, broadly oval, sparsely punctured; palpi black. Antennæ black, two basal joints piceo-rufous, and somewhat



paler beneath. Thorax similar in form to *L. analis*, Dej., pale rufous, margin paler, surface finely wrinkled, median line finely impressed, on each side of which near the base is a small shallow fovea. Elytra pale rufo-testaceous with three broad black stripes united in nearly their whole length and each rounded at its apex as follows: a common sutural stripe occupying the four inner intervals except a small scutellar space; on each elytron an outer stripe on the intervals 6 and 7, at one-third their length invading the fifth and at apical third the eighth; surface finely striate, striæ obsoletely punctured, intervals flat with finely chagrined surface. Body beneath pale rufo-testaceous. Femora rufo-testaceous, at apices black, tibiæ and tarsi black. Fourth hind tarsal joint deeply emarginate. Length .24 inch; 6 mm.

This very distinct species bears a decided resemblance to some of the varieties of *L. analis* and *D. scapularis*, from both it may at once be known by its punctured and not grooved head. The testaceous stripe which divides the black stripes at base is short, one-fourth the length of the elytra and on the fifth interval. The conjoined black stripes at apex have a trilobed termination. The mentum at base is truncate and the head not not constricted behind, and it is therefore placed in Chaudoir's *Aphelogenia*. Several specimens received since the above description has been in type, have the basal stripe on the fifth interval wanting.

One specimen communicated by Mr. Philip S. Sprague, of Boston, who obtained it from Texas.

A. vittata, Fab, (*Carabus*) Syst. Eleut. i., p. 202; Dej. Spec. i., p. 267; Chaud. Bull. Mosc. 1871, i., p. 40; *flavovittata* Chev. Col. Mex. Cent. ii., No. 161 (fide Chaud.).—Pale yellowish testaceous, antennæ black sometimes with the basal joints paler. Elytra with a sutural black stripe occupying the two inner intervals not attaining the apex nor base, a lateral stripe on the fifth, sixth and seventh intervals, sometimes broader at apical end, but not attaining the basal nor apical margins. Body beneath pale yellowish testaceous, legs variable, sometimes totally black, usually with the tips of the femora and the entire tibiæ and tarsi black. Length .24 inch; 6 mm.

Occurs from Pennsylvania to Texas.

A. furcata, Lec. Ann. Lyc. iv., p. 193; Chaud. Bull. Mosc. 1871, i., p. 41.—Similar in color to preceding, with the elytra striped in the following manner: a narrow sutural stripe not attaining apex extending forward, becoming gradually broader to the middle of the suture, where it divides and extends forward attaining the base, the two branches thus enclosing a very narrow triangular space; an outer narrow stripe starting at the base of the seventh interval extending obliquely inward to the fourth striæ but not attaining the apical margin of the elytra. Body beneath and legs as in *vittata*. Length .24—.30 inch; 6—7.5 mm.

Occurs from Canada to Kansas and California.

The typical form of *vittata* is that described above and all the specimens before me correspond exactly with it. As compared with *furcata* the head is decidedly smooth, the thorax narrower, the elytra shorter and less deeply striate. In *furcata* I include those forms with the middle or sutural stripe furcate at its basal end. They are always larger, elytra more elongate and parallel than *vittata*. The figure which Chaudoir gives has not the sutural stripe of *vittata* furcate, but has the lateral band more dilated at the apical end than is usual in the species.

A. guttula, Lec. Ann. Lyc. v., p. 178; Chaud. Bull. Mosc. 1871, i., p. 44.—Head nearly black, sparsely punctulate. Antennæ pale testaceous. Thorax piceo-testaceous, margin paler. Elytra pale yellowish testaceous, striæ nearly obsolete, and with three brownish spots at the posterior third, as follows: a common oval spot larger than the others with a prolongation forward along the suture, and a smaller spot on each side of an irregular oval form very near the margin; apical margin narrowly broader with brown. Body beneath and legs pale testaceous, abdomen nearly black. Length .12—.16 inch; 3—4 mm.

Occurs in California, Nevada and Utah.

A. bivittata, Fab. (*Carabus*) Ent. Syst. Suppl., p. 59; Chaud. Bull. Mosc. 1871, i., p. 45; *quadrivittata*, Dej. Spec. i., p. 268.—Head black. Antennæ black, basal joints testaceous. Thorax rufous, moderately convex, very narrowly margined. Elytra black with an oblique white stripe starting at the humerus extending nearly to the apex and ending at the second stria; a short lateral stripe near to the margin, gradually broader behind. Epipleuræ black. Body beneath and abdomen pale rufous, meso- and metasternum black. Femora rufous, black at tips, tibiæ and tarsi usually black. Length .22 inch; 5.5 mm.

Occurs in the Southern and Western States.

A. bilineata, Motsch. Bull. Mosc. 1859, iii., p. 145, pl. iii., fig. 6.

This species is almost an exact reproduction of the preceding and differs as follows: elytra with an oblique stripe, lateral stripe absent, abdomen black, last two segments rufous. Length .22 inch; 5.5 mm.

One specimen from Fort Tejon, California, in my cabinet.

Two species in our list of *Lebiæ* remain unaccounted for.

L. angulata, Boheman, Res. Eugen. 1858, p. 7; *goniodera* G. and H. Catalogus, p. 138.

This species is said to be from California, but the localities of the insects collected on the voyage are so mixed as to be unreliable. Chaudoir says (Bull. Mosc. 1870, ii., p. 113) that the species is a *Rhomboдера*; the name proposed by Gemminger and Harold is therefore unnecessary.

L. divisa, Lec. Agassiz Lake Sup., p. 203; *concinna* || Lec. Ann. Lyc. iv., p. 192.

This insect certainly does not belong to the *Lebiidæ veræ* as restricted by Chaudoir. The following characters may serve to explain its relationship.

Mentum with broad tooth of merely semi-corneous structure, basal membrane of ligula distinct on each side; epilobes of mentum distinct, the suture dividing the tooth from the body of mentum. Ligula obtuse at apex, bisetose, slightly longer than the paroglossæ which are entirely connate with it, membranous and pilose at apex. Maxillary and labial palpi similar, terminal joints

as in *Lebia*. Tarsi robust, fourth joint deeply bilobed. Body above punctured and sparsely pubescent.

The specimen before appears to be a female, the tarsi being short and of nearly equal breadth. The male is required to determine with certainty the position it should occupy. Should it belong to the Lebiidæ its position is probably near *Dictya*, Chaud. Its deeply punctured head and thorax recalls a similar character in *Cymindis*. In fact it resembles a *Cymindide* more than a *Lebiide*. It is, however, not a *Singilis* as surmised by Chaudoir.

Head rufous, broadly oval, coarsely punctured. Antennæ black, basal joint only rufous. Thorax rufous, coarsely punctured and more densely than the head, sides broadly margined, arcuate, sinuate near the hind angles which are nearly rectangular, disc with feeble median line, basal transverse impression moderate. Elytra violet blue, basal fourth rufous, surface feebly striate, striae finely punctured, intervals flat and irregularly sparsely punctured, the punctures coarse on the basal rufous portion. Body beneath rufous, abdomen black. Femora rufous, tibiæ and tarsi black. Epipleuræ at basal portion rufous. Length .32 inch; 8 mm.

One specimen, ♀, from Lake Superior region.

The following species of *Lebia* have been published by Motschulsky (Bull. Mosc. 1864, iii, p. 227), the only characters given being the few words contained in a synoptic table, and those characters the most subject to vary of any made use of in the separation of species. They all appear to me to be well known forms, and as far as the characters given, are of value for determination, are as follows:

- L. subfigurata*, Motsch.—Apparently *analys*, Dej., var. *appendiculata*, Chaud.
- L. scapularis*, ‡ Motsch. } —These two are probably varieties of *ornata*, Say.
- L. flaviventris*, Motsch. }
- L. brunnicollis*, Motsch., 1864.—Appears to be *lobulata*, Lec. 1863.
- L. flavolineata*, Motsch.—Probably *scapularis*, Dej.
- L. sublimbata*, Motsch.—Unknown.