A study of the species of CRYPTOBIUM of North America.

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The following study was begun with the intention of presenting the observations regarding the variability of the males in their secondary sexual characters, with the expectation that those fortunate enough to possess large series would be enabled to re-arrange their material. Fearing that the hints given might result in greater confusion than benefit without applying them directly to the species, it has been thought advisable to extend the work making the study complete.

Fortunately the typical material described by Dr. LeConte has been before me at the time of the preparation of the work and this, with my own more ample material, supplemented by that of Mr. H. Ulke, leaves nothing to be desired in the study of the more difficult forms.

It is to be regretted that the use of the table in series A pre-supposes the possession of the two sexes. This is, however, unavoidable, but the difficulty is not entirely insurmountable.

Having acquired a large number of specimens of Cryptobium from Texas and Arizona I noticed some sexual peculiarities which seem to have escaped observation in species from other regions. That variations similar to those about to be described do occur is rendered probable from a few words by Dr. Sharp regarding the modification of the lobe of the fourth ventral segment (Trans. Ent. Soc. London, 1876, p. 210) in the Amazon species.

As far as the species in our fauna are concerned it may be stated that under all circumstances it is the males that have a plica or fovea on both the third* and fourth ventral segments. The females have at most a plica or fovea on the third segment, but never on the fourth, and in by far the large majority of species the ventral segments in the female are absolutely simple.

There is no dilatation of the anterior tarsi of the male, and the two sexes here precisely agree.

* It must be borne in mind that the first ventral is concealed under the coxae, and the true second is the first visible segment. This method of numbering the segments will prevail in the following pages.
The sexual peculiarity most numerous observed among the Staphylidæ, after the dilated tarsi, is some form of emargination or incisure of the seventh ♂ ventral segment. This is observed in about half of our Cryptobium.

As the species now stand recorded the following have the seventh ♂ ventral incised or emarginate: sellatum, californicum, flavicorne, tumidum, pallipes, latebricola, cribratum, serpentinum, prospiciens, pu-sillum and lepidum. The form of the incisure varies, and will be more fully explained under the different species.

In the other species not enumerated the seventh ventral is absolutely simple and alike in the two sexes. These, however, have a special character in fully developed males consisting of a prolongation of the middle of the fourth segment in the form of a lobe extending at times beyond the posterior margin of the fifth ventral. This lobe may be either broad and obtuse at tip or narrow and quite acute according to the species. The first variation observed in this lobe is in a specimen of arizonense, in which the tip is truncate, and the lobe shorter than the fifth ventral. From this the lobe becomes gradually shorter, losing the long fimbriae, until it becomes barely perceptible in the hind margin of the segment being a little more arcuate. The lobe, in fact, finally disappears entirely. Full series of at least six of our species are before me illustrating the shortening and final disappearance of the lobe, nothing remaining to distinguish the specimens as males excepting the plica or fovea on both the third and fourth segments. We have, therefore, among these species a true sexual polymorphism in the males which would be very confusing and lead to an undue multiplication of species without large series were at hand.

Near the posterior margin of the third ventral of the male we observe a short transverse plica bearing short erect setae. In several species the plica is reduced to a simple puncture as in ventrale. On the fourth ventral there is usually a puncture sometimes large and deep as in pimerianum, or small as in the greater number of species. Rarely the transverse plica is well marked on both segments.

As a general rule the size of the head gives no indication of the sex. Males with a well developed ventral lobe have a larger head than the females, while those males with a short or no lobe are not in any respect different from the females in the form of the head.

The seventh ventral is always simple in the female, and in but few species do we observe a plica, and then on the third segment only.
In several species, owing probably to the small number of specimens, it is not possible to assert with certainty that they have the fourth ventral lobed in the male. They have, however, the seventh ventral simple, the third and fourth foveate or plicate, and by inference they too are like the others of the series to which they belong.

In one species (prospicuens) it will be observed that the seventh ventral of the male is broadly triangularly emarginate and the fourth ventral lobed. We have thus the chief characters defining two groups united in one species.

In all the species there will be observed on the side of the head behind the eyes a fovea in and around which the punctures are denser. Those species with the head decidedly narrower behind the eyes have but little trace of the fovea.

In order that the various sexual differences above recorded may be more accurately described, and the species better defined, it is proposed to divide our species into three series, as follows:

Last ventral segment ♂ simple..............................................Series A.
Last ventral segment ♂ emarginate or incised.
Fourth ventral segment ♂ lobed.............................................Series B.
Fourth ventral segment ♂ simple..............................................Series C.

Series A.

The essential character of this series consists in the simple terminal ♂ ventral segment. It is also to be observed that the fully developed males have the fourth segment prolonged in a lobe variable in width and length not only between different species but also between males of the same species. All the males have either a puncture or short transverse plica at the middle of both the third and fourth segments. The females have usually an entirely simple venter; four species only as far as known to me have a plica on the third segment alone.

In consequence of the variability of the males I have thought it advisable to describe the forms separately, and I have accordingly improvised three terms to indicate them:

Complete form is that in which the lobe of the fourth ventral is fully developed.

Incomplete form that in which the lobe is abbreviated.

Imperfect form that in which the fourth segment is truncate posteriorly without trace of lobe.

Of these three forms the most abundant is the complete form, nearly as numerous are the imperfect males, while the incomplete males are far less common.
In four species the imperfect form of the male has alone been seen (floridanum, aneeps, lugubre and obliquum) and from the fact that the complete form is very much more abundant than either of the others in the species in which it occurs, it is possible that those above enumerated have no other form of male.

Reasoning deductively we might be safe in asserting that what is mentioned above as a supposition is a fact. If we except this as true then we have all the probable combinations of the foveae, lobe and emargination in the males and our series of species may be considered structurally a perfect one.

The following table will enable our species to be separated:

| Third ventral segment ♀ with a fovea or short transverse plica very near its centre | 2. |
| 2.—Abdomen bicolorored, picease with last two segments rufo-testaceous; meso- | 3. |
| metathorax picose | bicolor. |
| 3.—Third and fourth ventral segments ♀ each with a well-marked transverse plica | 4. |
| Third segment with a plica, fourth with a puncture. | floridanum. |
| Head not conspicuously coarsely punctured, punctures of elytra close and confused; third joint of antennae conspicuously longer than the second. | 5. |
| Larger species .40-.60 inch | haidium. |
| Head relatively coarsely punctured, punctures of elytra coarse, and in distinct striae; third joint of antennae not longer than second. Small species .26 inch | vitatum. |
| 6.—Abdomen bicolorored. | 6. obliquum. |
| Last two segments paler. | 6. |
| Meso-metathorax and head rufo-testaceous | texanum. |
| Meso-metathorax and head picose | carolinum. |
| Last two segments picose, the others rufo-testaceous | vitatum. |
| Abdomen uniform in color, brownish testaceous, picose or almost black | 5. |
| 5.—Head gradually narrowed behind the eyes, the hind angles scarcely evident; elytral punctures substriate | 6. obliquum. |
| Head parallel behind the eyes, the angles broadly rounded; punctures of elytral confused | 7. |
| 6.—Abdomen bicolorored | 7. |
| Abdomen rufo-testaceous not differing from the thorax and elytra | 8. |
| 7.—Entire body above and beneath picose, almost black. | 8. |
| Head opaque, moderately densely punctured; elytra densely punctured. | 4. despectum. |
| Species small .28-.30 inch | 3. aneeps. |
| Head shining, rather sparsely punctured; elytra coarsely not densely punctured. Species large and robust .44 inch | 15. ventrale. |
| Head, thorax and elytra rufo-testaceous or pale castaneous. | Surface shining punctuation of head and thorax normally distinct, that of the abdomen very indistinct. |
| Surface subopaque, punctuation of thorax feeble, that of the abdomen rather coarse and distinct | vagum. |
NORTH AMERICAN COLEOPTERA.

8.—Head always darker than the thorax and elytra, punctuation of abdomen above very evident.

Species smaller, more slender and convex, fovea of fourth ventral $\gamma$ not very large.......................... ............................. ............................. ............................. ............................. 10. Lecontei.

Species larger, more depressed, fovea of fourth ventral $\gamma$ conspicuously large............................................................. 12. pimerianum.

Head, thorax and elytra rufo-testaceae or pale castaneous; punctuation of abdomen almost obsolete; fovea of fourth ventral $\gamma$ small, often punctiform.

13. arizonense.

1. C. badium Grav.—Uniformly brown in color, either darker or paler, head usually slightly darker. Antennæ pale brown, nearly as long as the head and thorax, third joint conspicuously longer than the second. Head shining, oval; sometimes broadly, sides nearly parallel, posteriorly suddenly constricted, surface not conspicuously coarsely punctured, the punctures not close except at the sides, front very sparsely punctured. Thorax about one-fourth longer than wide, sides very feebly arcuate, median smooth space well defined, on each side of which the punctures are coarse and numerous, a little less closely placed near the base and front angles. Elytra a little longer and one-half wider than the thorax, a little longer than wide conjointly, surface rather coarsely and deeply punctured the punctures close but not dense. Abdomen above comparatively finely and sparsely punctured, beneath a little more coarsely punctured, shining. Legs pale rufo-testaceae. Length $40-50$ inch; $12.5$ mm.

Male (Complete form).—Third ventral segment furnished at middle with a moderately long, slightly elevated transverse plica setose posteriorly; fourth ventral prolonged at middle in the form of a lobe with parallel sides and obtusely rounded tip, extending to the middle of the sixth segment, bearing long fimbriae from the margin and lower surface; at the middle of the segment is a large puncture bearing short setae. Last ventral segment entire (Pl. 1, fig. 1).

Male (Imperfect form).—Fourth ventral without any trace of the prolongation, the plica of the third and fovea of the fourth as in the perfect form (Pl. 1, fig. 2).

Female.—Third ventral segment with a short setigerous plica at middle (Pl. 1, fig. 3).

This species being so common and generally well known, forms with bicolor, convenient points of comparison for less known species.

Very little variation is observed in badium beyond the change of color from dark to lighter. As a general rule the males have longer and broader heads than the females, but this is by no means constant.

Occurs from Canada to Florida, westward to Nebraska and N. Mexico.

2. C. floridanum Lec.—Piceous, shining, sparsely pubescent. Antennæ brown, two basal joints paler, nearly as long as the head and thorax, third joint longer than the second. Head oval, hind angles broadly rounded, sides slightly arcuate, surface shining, moderately coarsely punctured, the punctures denser at the sides and very sparse on the front. Thorax about one-fourth longer than wide, narrower than the head, sides nearly parallel, median smooth space well defined, on each side of which the punctures are numerous, coarse and deep, arranged as in badium. Elytra one-third wider than the thorax and longer, longer than wide conjointly, surface coarsely and deeply punctured, the punctures closer and more
numerous than in *badium*. Abdomen above and beneath a little more coarsely punctured than in *badium*. Legs yellowish testaceous. Length .38–.44 inch; 9.5–11 mm.

**Male (Complete form).—**Unknown.

**Male (Imperfect form).—**Third and fourth ventral segments each with a short transverse plica at middle, bearing short setæ. Last ventral entire, subtruncate (Pl. 1, fig. 4).

**Female.**—Third ventral segment with a short transverse plica at middle, fourth simple (Pl. 1, fig. 5).

Of this species I have examined 2 ♂, 3 ♀. The males are exactly alike in their sexual characters, none have been seen with the fourth ventral lobed. It may be possible that this species *jugubre* and *anceps* do not possess males with the lobed fourth ventral.

In its general appearance *floridanum* resembles *pallipes*, but its facies is more slender and the sexual characters will readily distinguish it.

The type described by Dr. LeConte is before me, and having both sexes in my own cabinet it may be asserted that his specimen is a male and not a female as stated.

Occurs in Florida and Louisiana.

3. **C. aniceps** n. sp.—Form rather robust, black, shining, sparsely pubescent, abdomen piceous. Antennæ rufo-testaceous, not as long as the head and thorax, third joint conspicuously longer than the second. Head large, almost equal in area to the elytra, surface feebly shining, not conspicuously coarsely punctured, the punctures not close, nearly as in *badium*, front smoother and with a distinct fovea. Thorax narrower than the head, about one-fourth longer than wide, sides nearly parallel, median smooth space well defined, on each side of which the punctures are coarse and deep, closely placed in front, and more sparse posteriorly and at the sides. Elytra about one-fourth wider than the thorax and longer, longer than wide conjointly, the punctuation coarse, deep and close. Abdomen above and beneath with the punctuation relatively fine and sparse. Legs pale rufo-testaceous. Length .44 inch; 11 mm.

**Male (Incomplete form).—**Third and fourth ventral segments each with a small transverse plica at middle, almost punctiform. Last ventral entire (Pl. 1, fig. 6).

**Female, not known.**

Of this species two males of the form described above are known to me. The female being unknown, it is impossible to assign it a place with certainty in a synoptic table. I have ventured, however, to place it as if that sex had an entirely simple abdomen.

In facies the species resembles *pallipes* and *floridanum*, but is more robust and has a larger head.

Two specimens ♂, Arizona. Morrison.

4. **C. despectum** Leç.—Piceous, feebly shining, very sparsely pubescent. Antennæ slender, nearly as long as the head and thorax, brown, two basal joints paler, third joint longer than second. Head oval, suddenly constricted behind, hind angles rounded, surface subopaque, moderately densely and finely punctured,
front smoother. Thorax a little narrower than the head, one-fourth longer than wide, sides nearly parallel, median smooth space well defined, on each side of which the punctures are moderately fine and dense, sparser near the sides. Elytra a little wider than the thorax and slightly longer, black, subopaque, apical border narrowly yellow, surface densely punctured, the punctures finer than those of the thorax and coarser than of the head. Abdomen sparsely punctured, the punctures equalling those of the head. Legs yellowish testaceous. Length .28 inch; 7 mm.

**Male (Complete form).**—Third ventral with a moderately long setigerous plica at middle, fourth with a similar plica and prolonged in a lobe at its posterior border very broad at base and reaching the middle of the sixth segment; last ventral entire (Pl. 1, fig. 7).

**Male (Imperfect form).**—Fourth ventral not lobed, but squarely truncate, the third and fourth segments plicate at middle as above. (Cab. LeC.)

**Female.**—Third and fourth ventral segments simple, without fovea or plica.

At first glance this species recalls some forms of *Cajius*. Among the species of the present genus it can only be compared with *pallipes*, from which it differs in too many particulars to require special note.

I have seen two complete males, two imperfect males and three females. Occurs in Louisiana and Florida.

5. **C. lugubre** LeC.—Form slender, entirely piceous or nearly black, shining, sparsely pubescent. Antennae shorter than the head and thorax, rufous—testaceous, joints 3–6 darker, the third not longer than the second. Head oval, suddenly constricted at base, hind angles rounded, sides parallel, surface coarsely and sparsely punctured. Thorax very little narrower than the head, one-fourth longer than wide, sides nearly parallel, median smooth space well defined, on each side of which the punctures are large and deep, but not numerous. Elytra scarcely wider than the thorax and equal in length, with very coarse and deep punctures substriately arranged. Abdomen above and beneath relatively coarsely and sparsely punctured. Legs yellowish testaceous. Length .26 inch; 6.5 mm.

**Male (Imperfect form).**—Third ventral segment bearing a transverse setigerous plica at middle, fourth segment with a small fovea; seventh ventral entire (Pl. 1, fig. 8).

**Female.**—Third ventral with a very short plica almost fovea like in form; smooth ventral entire (Pl. 1, fig. 9).

The only variation observed in the nine specimens before me is that some are slightly paler in color, varying, however, less than *badium*. I have seen but two males as above; it may be possible that the form with fourth ventral lobed does not exist.

Occurs in Florida. Hubbard and Schwarz.

6. **C. obliquum** LeC.—Piceous, nearly black, shining, very sparsely pubescent. Antennae shorter than the head and thorax, yellowish testaceous, second and third joints nearly equal. Head oval, sides obliquely narrowing behind the eyes, hind angles scarcely evident, surface shining, very sparsely punctate. Thorax a little narrower than the head, scarcely one-fourth longer than wide, disc more convex than usual, median smooth space well defined, on each side of which the
punctures are very coarse and deep, sparsely placed. Elytra a little wider and one-fourth longer than the thorax, the punctuation coarse and deep, substriately arranged near the base, confused at apex. Abdomen coarsely but sparsely punctured, the intermediate space very finely alutaceous. Legs yellowish testaceous. Length 24–26 inch; 6–6.5 mm.

Male (Complete form).—Third segment with a very short setigerous plica; fourth segment with an almost obsolete fovea at middle, prolonged at middle posteriorly, in a narrow triangular lobe attaining the sixth segment; last ventral entire.

Male (Imperfect form).—Third ventral with a short setigerous plica, fourth not lobed behind but with a small fovea at middle (Pl. 1, fig. 10).

Female.—Ventral segments without fovea or plica, the terminal entire.

The form of the head and its sparse punctuation will serve to distinguish this species from any in the group in which it is placed. The only other species with this form of head are of large size and different coloration.

I have seen but four specimens; the two males described are in LeConte’s cabinet, the females (parcum Lec.) are one in each cabinet.

Florida. Hubbard and Schwarz.

7. C. bicolor Grav.—Piceous, shining, thorax, elytra and last two ventral segments rufo-testaceous. Antennæ shorter than the head and thorax, rufo-testaceous, third joint longer than the second. Head black, shining, coarsely not densely punctured except at the sides, front smoother, form oblong-oval, very rarely with the sides of the head slightly oblique. Thorax narrower than the head, scarcely more than a fourth longer than wide, sides nearly parallel, median smooth space well defined, close to which the punctuation is coarse and close, near the base and at the sides much sparser. Elytra about one-third wider than the thorax and distinctly longer, the punctuation coarse and deep, close but not dense, irregularly arranged. Abdomen sparsely and comparatively finely punctured. Legs pale rufo-testaceous. Length 30–40 inch; 7.5–10 mm.

Male (Complete form).—Third ventral with a short, median, transverse, setigerous plica; fourth segment prolonged posteriorly in a lobe with parallel sides and rounded tip, passing the posterior margin of the fifth segment, at middle a fovea of moderate size; last ventral entire (Pl. 1, fig. 11).

Male (Incomplete form).—Lobe of fourth ventral extremely short indicated merely by the posterior margin being more arcuate at middle; the plica of the third segment as above, the fovea of the fourth larger than the complete form (Pl. 1, fig. 12).

Male (Imperfect form).—Plica and fovea as in the incomplete form; fourth ventral truncate behind without trace of lobe (Pl. 1, fig. 13).

Female.—Third ventral at middle with a fovea of moderate size and rather transverse (Pl. 1, fig. 14).

In color the species seems wonderfully constant, and immature specimens, with the black head rendered thereby more conspicuous, have been described as melanoecephalum.

Occurs from Michigan to Georgia and Texas, and as far west as Neb.

8. C. carolinum Er.—Piceous, moderately shining, thorax, elytra and last two ventral segments rufo-piceous. Antennæ a little shorter than the head and
thorax, brownish, two basal joints paler, third joint distinctly longer than the second. Head rather broadly oval, as wide as the elytra, black, shining, the punctuation coarse not dense, front much smoother, usually a large vertical puncture. Thorax narrower than the head, scarcely a fourth longer than wide, the median smooth space distinct, the punctures coarse, deep and numerous, and quite regularly placed. Elytra scarcely a fourth wider than the thorax but distinctly longer, punctuation coarse and deep, closely not densely placed, and in some specimens substrate near the suture. Abdomen coarsely not closely punctate. Legs testaceous. Length .34-.42 inch; 8.5-10.5 mm.

**Male (Complete form).**—Third ventral segment with a very short plica at centre; fourth ventral with a moderately large fovea, the posterior margin prolonged in a rather broad obtuse lobe which does not extend beyond the fifth ventral; last ventral entire (Pl. 1, fig. 15).

**Male (Incomplete form).**—Third ventral plicate, fourth with a fovea, the posterior margin of the fourth prolonged in a very short lobe.

**Male (Imperfect form).**—Third and fourth ventrals with the plica and fovea as above, the fourth truncate posteriorly without trace of lobe (Pl. 1, fig. 16).

**Female.**—Ventral segments simple, without plica or fovea.

In general appearance this species is intermediate between *badium* and *bicolor*. The head is dark as in these two species, and more broadly oval than in *badium*, which occupies really an intermediate position in this respect between *bicolor* and *carolinum*. The last two abdominal segments are pale as in *bicolor*, but much less conspicuously so, in fact in some specimens gradually paler to tip. When both sexes are present it may be known from either of the above species by the simple abdomen of the female. The male is never as fully developed in its ventral lobe as the above species, but this character cannot be used from the variability of the males of all the species of this series. In the table it is placed next to *texanum*, from which it is readily known by its large black head.

Taken rather abundantly in the District of Columbia by Mr. H. Ulke.

**9. C. texanum** Lec.—Pale castaneous, moderately shining, four basal segments alone piceous. Antennæ rufo-testaceous, shorter than the head and thorax, third joint distinctly longer than second. Head oval, hind angles gradually rounded, surface moderately coarsely not closely punctured, front smoother. Thorax narrower than the head, barely a fourth longer than wide, sides nearly parallel, median smooth space well defined, on each side the punctures are coarse and deep, closely placed along the smooth space and at apex, sparsely at the sides and posteriorly. Elytra one-third wider and slightly longer than the thorax, usually with a darker space along the suture widest at base, punctures coarse and deep, a little closer than in *bicolor* with the spaces between them less elevated. Abdomen rather sparsely finely punctured. Legs rufo-testaceous. Length .32-.44 inch; 8-11 mm.

**Male (Complete form).**—Third ventral with a short setigerous plica at its centre; fourth ventral with a large and deep fovea at centre, the posterior margin of the segment prolonged in a lobe as in *bicolor*; last ventral entire (Pl. 1, fig. 20).
Male (Incomplete form).—Third and fourth ventrals with the plica and fovea as above, the fourth with a very short lobe from its posterior margin (Pl. 1, fig. 21).

Male (Imperfect form).—Third and fourth ventrals with the normal plica and fovea, fourth ventral truncate posteriorly (Pl. 1, fig. 22).

Female.—Third and fourth ventral segments simple; last ventral entire.

This species closely resembles bicolor, and might readily be mistaken for a variety of it. The head is similar in color to the thorax and elytra. In bicolor the meso-metathorax is piceous in all the specimens I have seen, in texanum rufo-testaceous. The punctuation of the elytra, although nearly as coarse, causes the entire surface to appear less irregular than in bicolor.

Eight specimens, five ♂ three ♀, have been examined, they are from southwestern Texas.

10. C. Lecontei (carolinum Lec.).—Castaneous, shining, head piceous, very sparsely pubescent. Antennae shorter than the head and thorax, rufo-testaceous, third joint slightly longer than the second. Head oval, sides parallel, hind angles gradually rounded, surface feebly shining, moderately coarsely and rather closely punctate, front smoother. Thorax narrower than the head, about one-fourth longer than wide, median smooth space well defined, on each side of which the punctures are coarse, deep and closely placed, but distant near the lateral margin. Elytra one-third wider than the thorax and slightly longer, the punctuation coarse, moderately deep, closely and regularly placed. Abdomen moderately coarsely and sparsely punctured, the punctures finer than on the head. Legs rufo-testaceous. Length 34–38 inch; 8.5–9.5 mm.

Male (Complete form).—Third ventral with moderately long, distinctly elevated setigerous plica at centre; fourth with a moderate fovea at centre, the posterior margin prolonged at middle in a lobe which reaches the middle of the sixth segment, the base broad, the sides convergent, the apex broad and obtuse: seventh ventral entire (Pl. 1, fig. 17).

Male (Incomplete form).—Third and fourth ventrals plicate and foveate as above, the lobe of the fourth very short, barely reaching the middle of the fifth segment (Pl. 1, fig. 18).

Male (Imperfect form).—Third and fourth ventrals with normal plica and fovea, the fourth ventral truncate posteriorly without trace of lobe (Pl. 1, fig. 19).

Female.—Ventral segments absolutely simple without trace of plica or fovea.

Although this species is placed in the series following bicolor, resembles badium, although more slender and smaller. The males are also difficult to distinguish except by comparison, those of the present species will be observed to have the thorax more numerous punctured, the punctures of the elytra less coarse, closer and more regular. The color of the abdomen will readily distinguish it from either bicolor or texanum.

This species has been determined by Dr. LeConte to be carolinum Erichs., but I think incorrectly.

Occurs in southwestern Texas and Kansas.
11. C. vagum n. sp.—Form slender, body beneath and abdomen piceous, head, thorax and elytra pale castaneous or rufo-testaceous, very feebly shining. Antennæ rufo-testaceous, a little shorter than the head and thorax, third joint slightly longer than the second. Head oval, sides parallel, hind angles broadly rounded, surface subopaque, finely alutaceous, sparsely punctate at middle, more densely at the sides. Thorax narrower than the head, one-fourth longer than wide, sides feebly arcuate, surface subopaque, finely alutaceous, median smooth space well defined, the punctures at the sides moderate not deep, regularly sparsely placed. Elytra one-third wider than the thorax and distinctly longer, the surface somewhat more shining than the head and thorax, the punctation moderate in size not deep, very regularly placed. Abdomen a little more shining, sparsely finely punctate. Legs pale yellowish testaceous. Length .28–.32 inch; 7–8 mm.

Male (Complete form).—Third ventral with a short transverse plica at centre, fourth with a moderate fovea at centre, the hind margin prolonged at middle in a lobe extending to the posterior margin of the fifth segment, the sides convergent, base of the lobe nearly as broad as its length; seventh ventral entire (Pl. 1, fig. 23).

Male (Incomplete form).—Third and fourth ventrals with the fovea and plica as above, the lobe of the fourth very short barely reaching the middle of the fifth segment (Pl. 1, fig. 24).

Male (Imperfect form).—Third and fourth ventrals with a smaller plica and fovea, the hind margin truncate without trace of lobe (Pl. 1, fig. 25).

Female.—Ventral segments simple without trace of plica or fovea.

This species although placed next ventrale in the table is very little related except in color. It is smaller, more slender, less depressed. In general appearance it seems more nearly part of the series which precedes it. It may be known by the want of lustre of the head and thorax, and by the punctation of the latter less decided and apparently with a tendency to become obsolete.

Occurs in southwestern Texas; eighteen specimens examined.

12. C. pimerianum Lec.—Pale brown, moderately shining, very sparsely pubescent, head piceous. Antennæ shorter than the head and thorax, brown, two basal joints paler, third slightly longer than second. Head rather broadly oval, sides parallel, hind angles broadly rounded, surface less shining than the thorax, the punctation moderate and rather close, the front smoother. Thorax narrower than the head, scarcely more than a fifth longer than wide, sides slightly arcuate, median smooth space well defined, on each side the punctures are coarse, moderately deep not closely placed but equally disposed. Elytra one-fourth wider than the thorax and distinctly longer, the punctation coarse and deep, closely not densely placed. Abdomen distinctly punctured and (in comparison with the usual punctation) rather coarse and close. Legs rufo-testaceous. Length .34–.44 inch; 8.5–11 mm.

Male (Complete form).—Third ventral with a short but well elevated plica at centre; fourth with a large fovea, the posterior margin prolonged at middle into a lobe extending to the middle of the sixth segment, its sides convergent; seventh ventral entire (Pl. 2, fig. 1).

Male (Imperfect form).—Third and fourth ventrals with the plica and fovea as above, fourth ventral truncate without trace of lobe posteriorly (Pl. 2, fig. 2).

Female.—Ventral segments absolutely simple.
With this species begins a small group of Arizona species with a generally broader and more depressed facies. The present species varies but little in color except that the abdomen may become darker than the thorax, and elytra approaching ventrale, in which case the color of the head and the more distinctly punctured abdomen will distinguish the present species.

Occurs in Arizona near the southern boundary.

13. C. arizonense n. sp.—Rufo-testaceose or castaneous, shining, head not darker except rarely at the sides, very sparsely pubescent. Antennæ rufo-testaceose, shorter than the head and thorax, third joint longer than the second. Head oval, less shining, sides slightly arcuate, a little broader at the hind angles than between the eyes, surface moderately coarsely punctate, denser at the sides. Thorax narrower than the head, one-fourth longer than wide, sides nearly parallel, median smooth space well defined, on each side with coarse and deep punctures, closely placed in front, distant near the side and posteriorly. Elytra one-third wider than the thorax and distinctly longer, punctuation coarser and deep not dense, regularly disposed. Abdomen finely obsoletely punctured. Legs rufo-testaceose. Length .40–.42 inch; 10–10.5 mm.

Male (Complete form).—Third ventral with a short plica at centre; fourth with a longer plica but less distinct, the posterior margin prolonged in a lobe reaching the middle of the sixth segment, the sides parallel, the apex obtuse; seventh ventral entire (Pl. 2, fig. 3).

Male (Incomplete form).—Third and fourth ventrals plicate as above, the lobe of the fourth segment short, truncate and emarginate at tip, reaching only the middle of the fifth segment (Pl. 2, fig. 4).

Male (Imperfect form).—The plice of the third and fourth ventrals rather more distinct; the posterior margin of the fourth truncate, without trace of lobe (Pl. 2, fig. 5).

Female.—Ventral segments simple, without trace of fovea or plica.

This species resembles pimerianum, and may be distinguished in both sexes by the conolorous head and the obsolete punctuation of the abdomen. The following species (15) has the abdomen conspicuously piceous.

Occurs in Arizona.

14. C. vitatum n. sp.—Rufo-testaceose, moderately shining, sparsely pubescent, last two segments of abdomen piceous. Antennæ rufo-testaceose, shorter than the head and thorax, third joint longer than the second. Head oval, coarsely and moderately closely punctate. Thorax narrower than the head, one-fourth longer than wide, median smooth space narrow, the punctures each side coarse, deep and closely placed. Elytra one-third wider than the thorax and distinctly longer, the punctures coarse, deep and closely placed. Abdomen with distinct punctuation but fine and sparsely placed. Legs testaceose. Length .42 inch; 10.5 mm.

Male.—Unknown.

Female.—Abdomen simple.

This species resembles pimerianum, etc., in form and general appearance. It differs from any species known to me in having the last two.
segments of the abdomen darker than the other segments, the usual tendency being to have these segments paler.

While the female alone is known to me I have no hesitation in placing it in the present series.

Two specimens ♀. Arizona.

15. **C. ventrale** n. sp.—Body beneath and abdomen piceous; head, thorax and elytra rufo-testaceous, shining, sparsely pubescent. Antennæ rufo-testaceous, shorter than the head and thorax, third joint longer than the second. Head oval, sides behind the eyes feebly arcuate, nearly parallel, hind angles rounded, color rufo-testaceous, sides rarely slightly darker, surface moderately coarsely and closely punctate. Thorax narrower than the head, slightly narrower posteriorly, about one-fourth longer than wide, median smooth space well defined, on each side the punctuation coarse and deep, close in front, sparse posteriorly and near the lateral margin. Elytra one-third wider than the thorax and a little longer, the punctuation coarse and deep, rather closely and regularly placed. Abdomen above very finely and sparsely punctate, beneath more distinctly punctate. Length .44 inch; 11 mm.

**Male (Complete form).**—Third ventral with a small punctiform fovea at centre; fourth ventral with a small fovea at centre, the posterior margin prolonged in a lobe with parallel sides and broad obtuse tip which extends to the middle of the sixth segment; seventh segment entire (Pl. 2, fig. 6).

**Male (Incomplete form).**—Third and fourth segments foveate as above, the lobe of the fourth variable in length extending sometimes to the margin of the fifth segment or gradually shorter, so as to be barely visible (Pl. 2, figs. 7, 8).

**Male (Imperfect form).**—Foveae of the third and fourth ventrals very small, the latter segment truncate without trace of lobe (Pl. 2, fig. 9).

**Female.**—Ventral segments without trace of foveae.

The striking differences between this species and the two preceding, to which it is most closely allied, have been already referred to in the notes on these. A very large series has been examined from which I have selected about thirty specimens for my cabinet more perfectly illustrating the polymorphic tendencies of the male than in any other species. It was the difficulty in attempting to assort the material according to what seemed to be the accepted standard, which led me to prepare the remarks on the sexual characters with which this paper is begun.

Collected in Arizona, near the southern boundary.

**Series B.**

The species here separated is characterized by the presence in the male of the emargination of the seventh ventral together with the prolonged lobe on the fourth. The form of the head on which Dr. LeConte laid some additional stress seems more purely a specific character, as we have the same foreshadowed in *tumidum* and several of the smaller species. It is worthy of mention that the male has the third ventral simple, the
fourth plicate, while the female has the perforated tubercle on the third as an illustration of the persistent avoidance of any sexual mark on the fourth ventral of the female. To this group should be referred two species described by Erichson, but no mention is made of any peculiarities in the form of the head; the species are *fulvipes*, from Porto Rico, and *dispar*, from Columbia. It is remarkable that in twenty species described by Dr. Sharp from Brazil (Trans. Ent. Soc. Lond. 1876), there is not one which can be referred to this series. As far as at present known we have but one.

16. C. *prospiciens* Lec.—Pale brown, moderately shining, sparsely pubescent. Antennae shorter than the head and thorax, pale brown, third joint longer than the second. Head oval, eyes more prominent than usual, sides of head behind the eyes arcately narrowing, so that the posterior portion of the head is nearly semi-circular in form, surface rather sparsely obsolete punctured. Thorax narrower than the head, about one-fourth longer than wide, sides parallel, a median smooth space, on each side of which the punctures are fine, sparse and indistinct. Elytra one-third wider than the thorax and distinctly longer, the punctuation fine and sparse, and the pubescence more persistent than usual. Abdomen finely and moderately closely but very indistinctly punctate. Legs rufotestaceous. Length .34-.36 inch; 8.5-9 mm.

Male (Complete form).—Third ventral segment simple, fourth with a small fovea at centre and a narrow lobe from the middle of the hind margin extending beyond the fifth segment; seventh ventral with a triangular notch wider than deep (Pl. 2, fig. 10).

Female.—Third ventral with a small tubercle at centre slightly perforated at summit (Pl. 2, fig. 12).

This species is remarkable in combining the male sexual characters of two series by the presence of the fourth ventral lobe and the emarginate seventh ventral.

In the male in my cabinet the lobe of the fourth ventral is rather broader and longer than in the specimens in Dr. LeConte’s cabinet, and the fovea is more distinctly a plica.

Occurs in Texas and Arizona, five specimens.

Series C.

The males of the species here placed have the terminal ventral segment emarginate either in triangular form or with a deeper incisure with parallel sides. The fourth ventral is without trace of lobe, and with the exception of two species (*properum* and *nactum*) there is no trace of foveae on the ventral segments.

In the accompanying table the series is primarily divided into two portions including, *first*, those with the head of the usual form of the genus, and *secondly*, those with the head rapidly narrowing from the eyes to the constriction of the neck.
While the first division is of more nearly the usual construction in
the genus it nevertheless presents a slight difference worthy of mention,
as it may assist in the recognition of species when only females are at
hand. If we imagine a quadrangle formed by drawing a line across the
front of the eyes, another parallel to it across the basal constriction of the
head, and two others along the sides, it will be observed that in species
17–23 (also 16 of Series B) the quadrangle thus formed is always
broader than long, while in all the species of Series A the quadrangle is
either square or longer than wide.

The last three species of the present series form a group by themselves
characterized by the form of the head, the occurrence of which is pre-
dicted by that of obliquum of Series A.

The following species occur in our fauna:

Head parallel, or somewhat arcuate behind the eyes and abruptly narrowed; hind
angles distinct ................................................................. 2.
Head obliquely narrowed from the eyes to the neck; the hind angles not distinct. 6.
2.—Large species, piceous, almost black ....................................... 3.
   Small species, brown or rufo-testaceous ........................................... 5.
3.—Sides of head strongly arcuate and broader behind the eyes. 17. tumidum.
   Sides of head nearly parallel, not wider behind the eyes ......................... 4
4.—Last ventral ꝏ deeply narrowly incised .................................. 18. californicum.
   Last ventral ꝏ triangularly emarginate ........................................ 19. pallipes.
5.—Head very coarsely, deeply and closely punctured .......................... 21. pusillum.
   Head sparsely punctured.
   Dark brown, head and thorax a little paler .................................... 20. properum.
   Pale rufo-testaceous, shining.
   Median smooth space of thorax well defined and somewhat elevated pos-
teriorly; punctuation of elytra very distinct .................................. 23. lepidum.
   Median smooth space not well defined, flat; punctuation of elytra finer
   and rather indistinct ............................................................. 22. nactum.
6.—Head with extremely few punctures ........................................ 7.
   Head smooth in front, normally punctured posteriorly .......................... 8.
   —Piceous, elytra rufo-testaceous, coarsely deeply, not closely punctate.
   24. eribratum.
   Anterior portion of head, thorax, two basal and two apical segments black,
surface elsewhere reddish yellow; elytra sparsely coarsely punctate.
   26. serpentinum.
   8.—Color black, elytra reddish yellow with a broad sutural stripe not reaching the
   apex; punctuation of elytra close ............................................ 25. sellatum.

17. C. tumidum Lec.—Piceous, almost black, elytra somewhat paler, shing-
ing, sparsely pubescent. Antennæ rufo-testaceous, nearly as long as the head and
thorax, third joint distinctly longer than the second. Head black, shining,
broadly oval, wider behind the eyes, the sides arcuate, hind angles broadly rounded,
surface coarsely, deeply and closely punctate. Thorax narrower than the head,
about one-fourth wider than long, sides parallel, median smooth space well de-
filed, the punctures finer than those of the head, closely placed near the smooth
space, otherwise sparse. Elytra one-third wider than the thorax and slightly longer, the punctuation equal to that of the thorax; deep, closely and regularly placed. Abdomen rather coarsely and closely punctate the surface distinctly alutaceous. Legs rufo-testaceous. Length .34-.40 inch; 8.5-10 mm.

**Male.**—Seventh ventral segment deeply emarginate, the emargination nearly twice as deep as wide and rounded at bottom (Pl. 2, fig. 13).

**Female.**—Seventh ventral entire.

This species is closely related to *californicum*, but differs in both sexes by the form of the head.

Occurs in California, Arizona and Utah.

18. **C. californicum** LeC.—Piceous or nearly black, shining. Antennæ piceous, much shorter than the head and thorax. Head oval, sides parallel or very slightly convergent behind, coarsely not closely punctate, smoother in front, surface shining. Thorax narrower than the head, scarcely a fourth longer than wide, slightly narrower posteriorly, median smooth space distinct, the punctures on each side a little coarser than those on the head and not numerous. Elytra one-fourth wider and a little longer than the thorax, punctuation finer than on the thorax, densely placed, the surface shining. Abdomen rather coarsely and moderately closely punctured, surface slightly iridescent. Legs pale rufo-testaceous. Length .30-.34 inch; 7.5-8.5 mm.

**Male.**—Seventh ventral segment with a deep notch with nearly parallel sides and rounded at bottom and prolonged in a shallow groove forward; sixth segment broadly and feebly emarginate at middle (Pl. 2, fig. 14).

**Female.**—Ventral segments entire.

While it superficially resembles *tumidum*, the present species is really more nearly related to *pallipes*.

Occurs in Vancouver, Nevada and through California to the south.

19. **C. pallipes** Grav.—Piceous, nearly black, shining. Antennæ rufo-testaceous or brownish, nearly as long as the head and thorax. Head oval, punctuation a little variable, either quite sparse or moderately close, sides nearly parallel or slightly arcuate. Thorax a little narrower than the head, barely a fifth longer than wide, median smooth space well defined, the punctures each side moderate in size not closely but rather regularly placed over the entire surface. Elytra a very little wider than the thorax and as long or a very little longer, the punctuation finer than that of the thorax, rather densely placed and sometimes submuri cate towards the sides. Abdomen rather coarsely and closely punctate. Legs rufo-testaceous. Length .30-.44 inch; 7.5-11 mm.

**Male.**—Last ventral triangularly emarginate, the notch as wide as deep; sixth ventral entire (Pl. 2, fig. 15).

**Female.**—Ventral segments entire.

In studying the material before me I find a certain amount of variation in the form of the head and its sculpture and the length of the elytra as compared with the thorax. The head may have the sides either slightly arcuate or nearly parallel, the former being usually but not always in the male, and as nearly all the species exhibit a similar variation this is passed without further notice. The variation of the elytra in length
is partly real and at times merely a deception, at all events the same has
been observed in the two preceding species, and is also mentioned as oc-
curring in the European species *glaberrimum* (Fauvel, Faune Gallo-
Rhénane iii, p. 365). Finally the punctuation of the head may be well
separated or may be coarser and closer. This character if borne out by
others might give the means of separating the species into at least two.
If, however, the specimens are assorted on this basis we will find all
forms of head and length of elytra equally confused. Moreover the
character seems gradually evanescent.

In the large series before me I am entirely unable to separate *pallipes*
and *latebricola*, nor do I find any characters of moment given by Erich-
son. I also add as a synonym *flavicorne* Lec. as it proves to be a slightly
immature specimen.

Occurs from Canada to Florida and westward to Missouri.

20. **C. properum** n. sp.—Piceous, subopaque, head and thorax brown.
Antennae rufo-testaceous, nearly as long as the head and thorax, third joint very
little longer than the second. Head oval, sides arcuately narrowing to base, sur-
face relatively coarsely but sparsely punctate. Thorax very little narrower than
the head and very little longer than wide, sides slightly arcuate, median smooth
space distinct, the punctures each side rather large, not deeply impressed and
sparsely placed. Elytra a little wider than the thorax and slightly longer, the
punctuation coarse and closely placed. Abdomen slightly iridescent, punctuation
fine and not closely placed. Legs rufo-testaceous. Length .28 inch; 7 mm.

**Male.**—Third ventral segment with a tubercle at centre punctured at its sum-
mit; seventh ventral deeply emarginate, the emargination narrow and with
slightly divergent sides; sixth ventral with a slight notch at middle (Pl. 2, fig. 16).

**Female.**—Ventral segments entire.

At first sight resembles a very small *pallipes*, but is more slender.
The sexual characters of the male will distinguish it readily. It is pos-
sible that more specimens may show this species to belong with Series B.

Arizona, three specimens ♂ ♂ ; ♀ .

21. **C. pusillum** Lec.—Form slender, piceous brown, shining. Antennae
nearly as long as the head and thorax, rufo-testaceous, third joint scarcely longer
than the second. Head oval, slightly narrowing behind the eyes which are
slightly prominent, surface shining, unusually coarsely and deeply, rather closely
punctate. Thorax nearly as wide as the head, slightly narrower behind, one-
fourth longer than wide, median smooth space narrow, the punctuation very
coarse and deep, closely placed. Elytra very little wider than the thorax, and not
longer, the punctuation less coarse than on the thorax, deep and rather closely
placed. Abdomen coarsely, not closely punctate. Legs yellowish testaceous.
Length .20 inch; 5 mm.

**Male.**—Seventh ventral with a deep notch with parallel sides; sixth ventral
slightly impressed at the middle of the hind margin.

**Female.**—Unknown.
A small slender species remarkable for the unusually coarse punctuation of the head and thorax.

One specimen from Long Island, near New York (cab. LeConte).

22. **C. nactum** n. sp.—Slender, rufo-testaceous, shining. Antennæ slender, rufo-testaceous, as long as the head and thorax, third joint distinctly longer than the second. Head oval, abruptly narrowed to a very slender neck, sides arcuately narrowing, surface shining, very sparsely punctate. Thorax narrower than the head, about one-fifth longer than wide, the median smooth space not well defined, a row of very obsolete punctures along its middle, the lateral punctures moderate in size, sparsely irregularly placed. Elytra wider than the thorax, scarcely longer, depressed, the punctuation fine and dense, sutural line scarcely impressed. Abdomen more coarsely, sparsely punctured. Length .20 inch; 5 mm.

**Male.**—Seventh ventral with a small, broadly triangular emargination; fourth ventral with two fovea at middle, side by side, near the base of the segment (Pl. 2, fig. 18).

**Female.**—Unknown.

A small depressed species resembling a diminutive *arizonense*, with unique sexual characters, and with the elytra less distinctly punctured than any other species in our fauna.

One specimen, Arizona, my cabinet.

23. **C. lepidum** Lec.—Slender, depressed, rufo-testaceous, moderately shining, sparsely pubescent. Antennæ rufo-testaceous, shorter than the head and thorax, third joint distinctly longer than the second. Head oval, the sides parallel for a short distance in front then arcuately narrowing, the hind angles very broadly rounded, eyes slightly prominent, surface shining, punctuation relatively coarse, sparsely placed. Thorax narrower than the head, about one-fourth longer than wide, the sides slightly arcuately narrowing in front, median smooth space distinctly limited, slightly elevated behind, the punctures coarse and closely placed near the smooth space more distant and irregular toward the sides. Elytra one-fourth wider than the thorax and very decidedly longer, the punctuation moderately coarse and deep, regularly but not very closely placed, separated from each other by at least their own diameters. Abdomen moderately coarsely and rather closely placed. Legs pale rufo-testaceous. Length .14-.16 inch; 3.5-4 mm.

**Male.**—Unknown.

**Female.**—Ventral segments entire.

Of this species I have seen but the two in the cabinet of Dr. LeConte. Among our species it resembles *nactum* alone, which is quite differently sculptured, especially on the elytra.

Two females, Texas.

24. **C. eribratum** Lec.—Elongate, black, shining, elytra pale rufo-testaceous with the suture at base and basal margin narrowly piceous. Antennæ rufo-testaceous, shorter than the head and thorax, the third joint longer than the second. Head elongate oval, sides gradually narrowing behind the eyes, surface shining, very sparsely punctate. Thorax somewhat narrower than the head, one-fourth longer than wide, apex slightly narrower than the base, sides slightly arcuate, median space smooth, on each side a distinct dorsal series of from 7 to 9.
coarse punctures external to which are a few punctures sparsely placed. Elytra one-third wider than the thorax and about as long, surface shining with the punctures coarse distantly placed, arranged in about nine series. Abdomen moderately coarsely and closely punctate. Legs yellowish testaceous. Length .34-.40 inch; .5-10 mm.

**Male.**—Seventh ventral segment with a triangular emargination extending about one-fourth the length of the segment, its sides slightly inflexed.

**Female.**—Ventral segments entire (Pl. 2, fig. 19).

A conspicuous species, readily known by the narrowed head and the sculpture of the head and elytra.

Occurs from Massachusetts to District of Columbia; westward to Nebraska.

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**25. *C. sellatum* Lec.**—Black, shining, elytra rufo-testaceous, with a broad sutural black space reaching two-thirds to apex. Antennæ rufo-testaceous, nearly as long as the head and thorax; third joint very little longer than the second. Head oval, eyes slightly rounded, sides gradually narrower to the neck, surface shining, coarsely and moderately closely punctate. Thorax narrower than the head, one-fourth longer than wide, median smooth space distinct, punctures each side coarse and sparsely placed. Elytra one-third wider than the thorax and distinctly longer, the punctuation moderately coarse and closely placed. Abdomen rather finely and moderately closely punctate. Legs yellowish testaceous. Length .32-.36 inch; 8-9 mm.

**Male.**—Last ventral with a triangular emargination extending one-fourth the length of the segment, the sides of the notch slightly inflexed (Pl. 2, fig. 20).

**Female.**—Ventral segments entire.

A very easily known species, resembling the preceding in color, but distinguishable by the sculpture.

Occurs in Illinois, Kansas, Nebraska and Dacotah, rare.

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**26. *C. serpentinum* Lec.**—Slender, elongate, body beneath, anterior portion of head, two apical and two basal segments of abdomen black, the rest of the surface reddish yellow, shining. Antennæ nearly as long as the head and thorax, rufo-testaceous, joints 2-4 darker, the third slightly longer than the second. Head oval, very shining and with very few punctures, the sides arrately narrowed from the eyes to the neck; color reddish yellow, that portion of the head in front of an arcuate line starting slightly behind the eyes, black. Thorax narrower than the head, almost a third longer than wide, apex distinctly narrower the punctures rather coarse forming an irregular discal series on each side of the smooth space, and with very few punctures between this and the lateral margin. Elytra one-fourth wider than the thorax and slightly shorter, conjointly nearly square, the punctuation coarse, deep and distant, arranged in very vague series; color reddish yellow with the scutellar region narrowly piceous. Abdomen shining, the punctuation rather coarse and very sparsely placed. Legs pale reddish yellow. Length .38-.40 inch; 9.5-10 mm.

**Male.**—Seventh ventral segment with a triangular emargination, extending one-fourth the length of the segment, the sides slightly inflexed (Pl. 2, fig. 21).

**Female.**—Ventral segments entire.
A very beautiful species with notable resemblance in form to Ophites, as remarked by Dr. LeConte. The style of coloration is certainly remarkable, the head being partly reddish yellow and black, the thorax black, elytra reddish yellow, the first two abdominal segments black, the third, fourth, fifth and base of sixth reddish yellow, the sixth otherwise and seventh black.

A very rare species, of which I have seen but four specimens from Pennsylvania, North Carolina, Alabama and Kansas.

While the preceding pages were passing through the press there appeared a pamphlet, privately printed by Lieut. Casey, in which, among other things, four new species of Cryptobium are described from uniques in three and two specimens in the fourth. These are—

C. capito. Is a somewhat immature male of C. pullipes Grav.

C. convergens, parallelum and proximum are specimens in various stages of maturity of C. floridanum Lec. They are all, moreover, males of the form described in the preceding pages as imperfect, and not females, as described by Casey.

The actual types of the above are before me, they having been, on my application, kindly loaned me for study by the Museum of Comparative Zoology at Cambridge, to which Mr. Casey has presented his entire collection.

In order to give some idea of the ventral differences in the males I have prepared the accompanying outline plates which are rather diagrams than exact figures of the modifications spoken of in the preceding pages. Many of the figures are practically repetitions, but I have given them all to show in what species the modifications have been observed.
Synonymy and Bibliography.

**CRYPTOBUM** Mann.

3. — **C. aniceps** n. sp. ante.
   parcum Lec. Q loc. cit. p. 394.
   87; Erichs. Staph. p. 563.
10. — **C. LeContei** Horn ante.
11. — **C. vagum** n. sp. ante.
13. — **C. arizonense** n. sp. ante.
14. — **C. vitatum** n. sp. ante.
15. — **C. ventrale** n. sp. ante.
17. — **C. tumidum** Lec. loc. cit. p. 393.
    Staph. p. 568.
    Gravenhorstii Kirby, Fauna Bor. Am. p. 87, pl. 2, fig. 2.
    flavicorne Lec. loc. cit. p. 392.
20. — **C. properum** n. sp. ante.
22. — **C. nactum** n. sp. ante.
EXPLANATION OF PLATE I.

C. badium, 1 complete ♂, 2 imperfect ♀, 3 female.
C. floridanum, 4 ♂ only form known, 5 female.
C. aniceps, 6 ♂ only form known.
C. despectum, 7 complete ♂.
C. lugubre, 8 ♂ only form known, 9 female.
C. obliquum, 10 ♂.
C. bicolor, 11 complete ♂, 12 incomplete ♂, 14 female.
C. carolinum, 15 complete ♂, 16 imperfect ♂.
C. Lecontei, 17 complete ♂, 18 incomplete ♂, 19 imperfect ♂.
C. texanum, 20 complete ♂, 21 incomplete ♂, 22 imperfect ♂.
C. vagum, 23 complete ♂, 24 incomplete ♂, 25 imperfect ♂.

EXPLANATION OF PLATE II.

C. pimerianum, 1 complete ♂, 2 imperfect ♂.
C. arizonense, 3 complete ♂, 4 incomplete ♂, 5 imperfect ♂.
C. ventralis, 6 complete ♂, 7 and 8 incomplete ♂ 9 imperfect ♂.
C. prospections, 10 complete ♂, 11 incomplete ♂, 12 female.
C. tumidum, 13 ♂.
C. californicum, 14 ♂.
C. pallipes, 15 ♂.
C. properum, 16 ♂.
C. pusillum, 17 ♂.
C. nactum, 18 ♂.
C. cribdatum, 19 ♂.
C. sellatum, 20 ♂.
C. serpentinum, 21 ♂.
22.—Head of C. obliquum.
23.—Head of C. serpentinum.
24.—Head of C. bicolor, pimerianum, etc.
25.—Head of C. prospections.