

Article XIX.—LIST OF THE CARABIDÆ OF FLORIDA.¹

BY CHARLES W. LENG.

In the Proceedings of the American Philosophical Society, February 1, 1878, appeared the 'Coleoptera of Florida' by H. G. Hubbard and E. A. Schwarz, with descriptions by John L. Leconte; 1457 species were therein enumerated. During the thirty-seven years which have elapsed since that famous paper was printed the number of known species has become about doubled, making a new list desirable.

The materials available include (1.) an annotated copy of the list above mentioned loaned by Mrs. Annie Trumbull Slosson, in which the results of many winter trips to Florida have been carefully recorded. Her collections were made principally at Jacksonville, Ormond, Lake Worth, De Funiak Springs, Tarpon Springs, Pensacola, Suwannee, Biscayne Bay, Belleair, Punta Gorda, Atlantic Beach, Altamonte, Enterprise, and Naples, always from January to March. The identifications were commonly made by Mr. Charles Liebeck, though frequently in particular groups by the authorities in such. (2.) An annotated list loaned by Mr. Schwarz, in which all additional data, either from printed matter or other communications were noted. Many of Mrs. Slosson's records are here duplicated, all the printed and manuscript lists by Castle and Laurent, Hamilton, Johnson and others are included, as well as stray notes from taxonomic papers, and corrections by Mr. Schwarz of the original list. (3.) The results of several trips to Florida by members of the staff of the American Museum of Natural History and of the New York Entomological Society, including those of Mr. Gustav Beyer to Key Largo; Dr. Frank E. Lutz, alone or with Mr. William T. Davis and the writer to Jacksonville, Lakeland, Titusville, Miami, the Florida Keys, Punta Gorda, Fort Myers and Newberry; Mr. Davis and the late John A. Grossbeck to Marco, Everglade, Deep Lake, Allen River, and Lake Okeechobee; Mr. Davis and Mr. Chas. E. Sleight to Ortega, La Grange, Big Pine Key and Key West; Mr. Andrew J. Mutchler and Mr. Frank E. Watson to Gainesville, Monticello, Crestview, De Funiak Springs, and Pensacola. (4.) A number of records have been obtained from

¹ The following new names are proposed in this paper, viz.

Scaphinotus elevatus var. *floridanus* n. var.

Phlæoxena signata var. *nigripennis* n. var.

Chlanius niger var. *ludovicianus* n. var.

Selenophorus chokoloskei n. sp.

Ferestria n. gen. (type *Pterostichus lævipennis* Lec.).

other travelers in Florida (Prof. J. Chester Bradley, Mr. J. R. Watson of the Florida Agricultural Experiment Station, Mr. Charles Dury and Mr. W. S. Blatchley especially), and from the writer's own collection, which includes the extensive material collected by Mr. W. S. Genung at Stephensville in Taylor County and at Sebastian and Paola, and that collected for Mr. Geo. W. J. Angell by Charles L. Brownell at Cape Sable and Enterprise, where sifting the lake shore debris in late fall and winter gave good results.

Notwithstanding the considerable amount of material thus included in making the new list, there are still many species included on doubtful or single records, and some instances in which the data given for captures contradict the previously recorded distribution of the species. These doubtful cases have been eliminated as far as possible, and in this connection the very careful collecting of Mr. H. P. Löding, of Mobile, Ala., has been used to check the Florida list. It appears to be a fact that the distribution of some species is actually very limited or "patchy" as Mr. P. H. Rolffs expressed it in speaking of a similar condition in the distribution of plants, so that a solitary record may well fail of repetition unless the exact locality and date is also repeated, and additions to the list may reasonably be expected as other localities are examined and other methods of collecting are applied. For Carabidæ, the sunken bottles, baited with molasses, so much used by Mr. Davis, are strongly to be recommended in this connection.

During 1914, volumes IV and V of the 'Memoirs of the Coleoptera' by Col. Thomas L. Casey, appeared and since they dealt largely with the Carabidæ, many additional records were thus obtained. If all the new names proposed in these papers were added, the list would be enlarged, particularly in the number of species peculiar to Florida; but this course has not seemed justifiable because the descriptions show the names in many instances to be intended to replace those now in use (and already cited) and their treatment as additions would therefore be misleading. Such names are, however, mentioned in their appropriate place, leaving the choice between using them and the older names for future investigation.

To all of the friends named above and to Dr. Leland O. Howard, Chief of the U. S. Bureau of Entomology, for permission to use the records accumulated by Mr. Schwarz, my thanks for assistance in various ways are due and heartily tendered.

As to the comparison of the species of Carabidæ now known to inhabit Florida with those of other regions, it may be said that nearly all are of the same genera and species as those of the more northern states, about one third, however, extending only into the Gulf Strip; about ten per cent. of the species and varieties are peculiar to Florida. Of that ten per cent. not quite

half occur also in Cuba, and one rather feeble variety occurs also in Yucatan. Many of the forms comprising the ten per cent. peculiar to Florida might be considered as merely varieties of northern species; the following are however remarkably distinct species, viz: *Cicindela striga*, *Euproctus trivittata*, *Onota floridana*, *Chlœnius maxillosus*, *Lebia lecta*. Their existence, and that of a few species which may have spread from Florida into adjoining states in recent times, might be explained by the assumption of ancient coral islets where southern Florida now stands which have since become joined to the American mainland by an advancing peninsula of coral, shell-rock and sand, bringing with it an insect population that could so overwhelm the scanty fauna of such an islet that only a feeble remnant would be traceable. That the great bulk of Florida Carabidæ are identical with those of the rest of the United States may be shown as follows: 284¹ species and varieties of Carabidæ are enumerated, of which 31 are not found elsewhere in the United States, and 71 more are found only in the extreme southern states, Georgia, Alabama, Louisiana and Texas. In other words, over one third of the species are new to the collector from the northern States, and it is this fact that has made the fauna so interesting. There remain 182 species known from the regions north and northwest of Florida, some extending to District of Columbia, others to New York, and a few even to Canada. Of these some are northern species whose southern limit of distribution is reached in Florida, but most are Sonoran species whose range extends variously northward.

The relation with Cuba is evidenced by the following cases of specific identity: *Calosoma splendidum*, a Cuban species found only occasionally at Key West; *Tetracha carolina*, a member of a tribe greatly developed in the tropics, which has a range northward to Washington, D. C.; *Cicindela marginata*, a species of marshy shores, from Cuba to Maine, along the Atlantic Coast; *Cicindela trifasciata*, a species of similar shore habits, occurring all around the Gulf of Mexico and in several West Indian islands, extending in the United States northward possibly to North Carolina; *Bembidium affine*, a member of a difficult group taxonomically; *Morio monilicornis*, found under bark of dead pines in Cuba, Florida and north to North Carolina; *Chlœnius perplexus*, a tropical species found in moist shore situations in Cuba, Florida and Central America; *Chlœnius niger*, a species of similar habit found from Newfoundland to Florida, Cuba and Louisiana, perhaps

¹ This number may be compared with 304 recorded from District of Columbia, 357 from New Jersey, and 366 from Indiana, to indicate the comparative scarcity of the Carabidæ in Florida, especially in the genera *Bembidium*, *Platynus*, *Pterostichus*, *Amara* and *Harpalus*, so fully represented in Transition regions. The comparison may be made with the additional condition of the smaller area included in each case in mind; an area equal to that of Florida surrounding the District of Columbia would doubtless yield more than 304 species.

the most remarkable distribution shown by the list; *Oodes amaroides*, a species of similar habit found in Cuba, and the United States northward to New York; *Plochionus pallens*, a species of somewhat cosmopolitan distribution; *Lebia cyanea*, a species found on plants in Cuba and Florida; and *Leptotrachelus dorsalis*, a species found on plants in Cuba, Florida, and northward to New York.

The Cuban relation is also shown by the fact that of all the genera of Carabidæ known from Cuba, 90% are also Floridian genera, and while the species by which the genera are represented differ in the two regions, the difference is often not great, and further study may, in *Selenophorus* for instance, add to the twelve cases of specific identity already known. Dr. Leconte's statement that "a remarkable feature in the geographical distribution . . . is the comparatively small number of species common to Florida and the Antilles," will require some modification, at least as far as Cuba and the family Carabidæ is concerned.

As to the difference between north and south Florida, it may be said that the marked difference in the trees, as stated by John K. Small ('Florida Trees,' 1913, brought to my attention by Mr. Davis), is not clearly paralleled in the Carabidæ. The difference is exhibited by the increased failure in southern Florida of the species of boreal genera, rather than by any considerable number of species confined to that part of the state. The factors governing the distribution of the Carabidæ are apparently more complicated than those operative in the plant world, particularly in respect of a variable capacity for adaptation to changes in temperature and moisture.

Dates of capture and environmental facts have been inserted as far as known. While some species may be found at all seasons, others are evidently more limited. Mr. Schwarz wrote long ago "the dry season, which corresponds with the winter months, causes a disappearance of insects in Florida almost as complete as in the north," and the experiences of Mr. Davis at Everglade, where *Tetracha* did not appear until after his departure in April, and of Mr. Brownell at Enterprise, where the Carabidæ were sifted from the debris on the shores of Lake Monroe in October, November and December, amply justify the importance of dates even in Florida. As to environment, such extreme cases as *Onota floridana* being confined to Palmetto are rare in Carabidæ, but there are no species to which the local environment is not a factor of prime importance.

After this paper was set in type, I learned that the last collections made by H. K. Morrison in Florida, which passed into the Angell collection labelled Key West, were in part made at Tampa. Some such specimens are also in my own collection. Key West records based thereon are therefore questionable.

Subfamily CICINDELINÆ.

Tribe MEGACEPHALINI.

Tetracha carolina (Linné). Enterprise, Cedar Keys, (Schwarz); Lake City (Agl. Exp. Sta.); Jacksonville (Genung); May, June, August. Common on mud-flats, hiding by day; also attracted by light. Extends northward to Virginia, westward to California, without modification; also southward to South America, but splitting south of the Rio Grande into several slightly differentiated races which have received names. In the West Indies the species *occidentalis* Klug, from Cuba, is considered identical by most authorities, and closely allied forms are known from Porto Rico, Haiti, St. Thomas and St. Croix.

Tetracha carolina subsp. *chevrolati* Chaudoir. Everglade, Lee Co. A few specimens taken in May, June and July by the family of Mr. Geo. W. Storter were forwarded to Mr. Wm. T. Davis, who had not found any species of the genus during his sojourn at this locality in April, indicating clearly the season for this genus. The identification was made by Dr. Walther Horn of Berlin from specimens sent to him by Mr. E. D. Harris; the sub-species differing from typical *carolina* mainly in the color, which is a deeper shade of blue; its occurrence is of special interest because it has previously been known from Yucatan.

Tetracha virginica (Linné). Enterprise, Cedar Keys, Kissimmee, Haw Creek (Schwarz); Key Largo (Harris Coll.); Everglade (Davis Coll.); Punta Gorda (Davis); May, June, July. The Punta Gorda record is based on an elytron, found November 16; no living specimens were found at the time. This species is found with *carolina* and has a similar but less extended range; northward to Virginia and Ohio (Dury), or even to Long Island, if the single specimen found at Central Park, L. I., by Mr. Davis can be considered as establishing its occurrence there, westward to Colorado. In the West Indies, *T. acutipennis* Dejean, of Cuba and Haiti, is closely related.

The genus *Tetracha* is represented by numerous species in Central and South America and by a few in Africa and Australia. In the old world, it has not extended north of the Mediterranean region.

Tribe CICINDELINI.

Cicindela scutellaris Say, var. *nigrior* Schaupp. Crestview, Oct. 15-16, 1914 (Mutchler and Watson). This variety is known from Alabama, where it has been found by H. P. Löding, but was found for the first time in

Florida in 1914. It is interesting to note that, notwithstanding the close relation to var. *unicolor* and the number of localities in which the latter has been found, it is apparently only at Crestview that the two varieties have been found together.

***Cicindela scutellaris* Say var. *unicolor* Dejean.** De Funiak Springs, Oct. 17-19 (M & W), Crescent City, Lake City, Pensacola, Oct. 11-14, Suwannee Springs (Schwarz); Tampa (Engelhardt); Enterprise (Brownell); Ormond (Mrs. Slosson); March, April (Blatchley); Taylor Co., (Genung); Lakeland (Davis); Key West? (Angell Coll.); La Grange (Davis); Crestview, Oct. 15-16 (M & W); February, March, September, October, November. Florida specimens, especially those from Key West, have a peculiar color, more bluish than northern forms, somewhat similar to that of var. *carolina* Harris. The variety *unicolor* extends northward to Georgia, westward to Texas. The species as a whole extends northward to Massachusetts, Canada and Manitoba and westward to the Rocky Mountains.

***Cicindela tranquebarica* Herbst.** De Funiak Springs, Oct. 17 (Mutchler & Watson). Specimens labelled "Fla." in Harris Coll.; Suwannee, January-March (Slosson Coll.). Florida specimens resemble var. *vulgaris-minor* Harris but are too few in number to permit of exclusive association with that race. The species is abundant in the pine woods of Louisiana, occurs in northeast Alabama but not near Mobile (Löding) and extends northward to Quebec and Newfoundland, westward to California. It is much modified, however, in the northern and western parts of its range, where it has received varietal names.

***Cicindela hirticollis* Say.** Sea shore, as far as Key West (Schwarz); St. George's Island, February (Schwarz); "Fla." (Harris Coll.). Not found recently by collectors, but abundant on Bay Shore, Baldwin Co., Ala. (Löding). Extends northward to Quebec (Beaulne, Le Nat. Can. 1914, p. 111), westward to California.

***Cicindela punctulata* Fabricius.** St. Augustine (Schwarz), Lake City (Agl. Exp. Sta.); Taylor Co. (Genung); Enterprise (Brownell); Lakeland, Everglade, and La Belle (Davis); La Grange, and Ortega (Davis & Sleight); Jacksonville; Gainesville, September, October, Camden, June 28, Crestview, Oct. 15-16, Monticello, Oct. 4-8. Common, appears about the beginning of May, actual dates from April 27 to Nov. 6. Some Florida specimens differ from those found northward in the more brassy color and smoother thorax, but much variation exists in these respects as well as in the completeness of the markings. Extends northward to Quebec (Beaulne, Le Nat. Can. 1914, p. 123), westward to Arizona.

***Cicindela trifasciata* Fabricius (= *tortuosa* Dejean).** Lake Worth, Pensacola, Key West, Biscayne Bay, St. Augustine (Schwarz); Choko-

loskee and Miami (Harris Coll.); Suwannee (Slosson Coll.); Enterprise (Brownell); Fort Myers, Everglade, Lakeland, Okeechobee, Deep Lake, Punta Gorda and La Belle (Davis); Pablo Beach, Big Pine Key, La Grange (Davis & Sleight); Gainesville, September, October, Crestview, Oct. 15-16. Everywhere, the most abundant species in Florida, often seen in immense numbers; Feb. 27 to Nov. 27; found on beaches, river banks, etc. Extends northward to Georgia, westward to California, where it is scarcely modified, and southward to West Indian islands.

Cicindela dorsalis Say, var. **media** Leconte. Common on sea beach, Key West, Biscayne Bay, Lake Worth, St. Augustine (Schwarz); Miami, Nov. 23 (Davis); Daytona Beach, Jacksonville, July; Jupiter (Harris Coll.); Useppa Island (Davis Coll.); earliest date recorded is April 4; latest Nov. 23, Miami (Sleight). Not found in Alabama (Löding). Var. *sauleyi* Guérin, with elytra entirely white is less abundant; Key West, Gaspar Key (Schwarz); Marco, May (Harris Coll.), Long Boat Key, Sarasota, Aug. 14 (Bradley); Cape Sable (Brownell); Mobile and Baldwin Co., Ala. (Löding). *C. dorsalis*, sensibly modified, extends northward to Rhode Island; var. *media*, including immaculate forms, northward to Delaware; var. *sauleyi* appears to be confined to the shore of Gulf of Mexico, extending westward to Texas. It is noteworthy that no form of *dorsalis*, a species frequenting clean sandy beaches and avoiding the salt marshes, has yet been found in the West Indies.

Cicindela hamata Brullé. Cedar Keys, Punta Gorda (Schwarz); Marco (Harris Coll.); Punta Rassa, Marco (Davis); Long Boat Key, Sarasota, Aug. 14 (Bradley); Cape Sable (Angell Coll.); April 3, May, June. Confined to the shores of the Gulf of Mexico, extending westward to Texas; Mobile and Baldwin Co., Ala., June to October (Löding).

Cicindela marginata Fabricius. Common on the lagoon and ocean beach of the east coast, extending its range on the west coast at least to Marco. Lake Worth, Key West, Biscayne Bay, St. Augustine (Schwarz); Jacksonville, July, Big Pine Key, Miami (Davis & Sleight); Everglade, Useppa Island, Punta Rassa, Marco (Davis Coll.); April to November. Extends northward to Maine and occurs also in Cuba. Not found in Alabama (Löding).

Cicindela hirtilabris Leconte. St. Augustine, Crescent City (Schwarz); Taylor Co. (Genung); Cedar Keys (Harris Coll.); Bradentown, Aug. 15 (Bradley); Enterprise (Brownell); La Grange, Ortega (Davis & Sleight); June, October, November. A species peculiar to the open sandy places in the pine woods of Florida. Not found in Alabama (Löding).

Cicindela gratiosa Guérin. Pensacola, De Funiak Springs (Schwarz); "Fla." (Harris Coll.). Extends northward to Wilmington and Southern

Pines, N. C., also Mobile and Baldwin Co., Ala., June to October (Löding).

***Cicindela severa* Laferté.** Punta Gorda (Schwarz); Cape Sable, May (Brownell); Key West. Occurs also in Alabama, shore of Mississippi Sound, June–August (Löding); Louisiana and Texas.

***Cicindela striga* Leconte.** Lake Harney, Punta Gorda (Schwarz); “Fla.” (Harris Coll., a specimen taken by Mrs. Slosson); Fort Myers, April 22 (Davis and Grossbeck); “very rare in May, nocturnal in habit” (Schwarz); Fort Myers, June, at light (Löding Coll.). Probably lives on marshy beaches. Peculiar to Florida.

***Cicindela abdominalis* Fabricius.** Common in the pine woods. Enterprise, Cedar Keys, Pensacola, De Funiak Springs, Crescent City (Schwarz); Taylor Co. (Genung); Suwannee (Slosson Coll.); Enterprise (Brownell); March to November. Extends northward to Long Island, westward to Louisiana. Mobile and Baldwin, Ala., June–October (Löding).

***Cicindela scabrosa* Schaupp.** Crescent City (Schwarz); Cedar Keys, June (Harris Coll.); Lakeland, August 16 (Bradley); Taylor Co. (Genung); Enterprise (Brownell); La Grange, Nov. 10–11 (Davis & Sleight). Occurs sometimes with *abdominalis*, of which it is usually regarded as a race peculiar to Florida. Not found in Alabama (Löding). Casey (Memoirs on the Coleoptera, IV, 1913) has described *C. abdominalis* ssp. *faceta* and *C. extenuata*, the first without locality, the second from Crescent City and possibly identical with those cited above as *scabrosa* from that locality. *C. faceta* Casey is certainly not Floridian. There is a difference between the specimens of *abdominalis* from Florida and those from New Jersey in maculation, those from Florida having rarely more than the apical lunule and one discal dot, while those from New Jersey have usually in addition two dots representing the middle band and a marginal elongate spot near apical third. Rarely (in New Jersey specimens) the humeral lunule is also represented by two dots, and it is probably such a specimen that Casey has described as ssp. *faceta*, a name which may be used for the New Jersey form in future, though many specimens from that region lack the humeral dots called for by the description and some are almost as nearly immaculate as the Floridian form. As stated by Casey, the *faceta* forms have also more of a violet lustre than those from Florida, and taken as a whole are sufficiently different to make it certain that *faceta* could not be Floridian.

In regard to *C. extenuata* Casey, it is to be feared that the brief description of *scabrosa* by Schaupp, repeated by the writer, has led to an absolute synonym. Casey, under the name *extenuata*, has described a form supposed to differ from *scabrosa* by its smaller size (7.5–8.5 mm. against 10.5 mm. given for *scabrosa*), by the foveæ of the subsutural line being non-metallic

(not mentioned in *scabrosa* description), and by the conspicuous pronotal lateral vittæ of transverse white hairs (also unmentioned in *scabrosa* description). An examination of eighteen specimens of *scabrosa*, selected to show range of variation from a much larger number, shows a variation in size from 7.5 to 10 mm., none being quite as large as the measurement given by Schaupp; shows also the subsutural foveæ always non-metallic, and a great variation in pronotal pubescence, running from almost obsolete to the conspicuous vittæ described by Casey. The conclusion is inevitable that *extenuata* is a synonym of *scabrosa*, due to faulty description of the latter; the name selected being perhaps in allusion to the extenuating circumstances.

Cicindela repanda *Dejean*. "Fla." (Harris Coll.); "Fla." (Leng Coll.). This common species occurs in Georgia and Alabama (Mobile and Baldwin Co., bay shore and creek sides (Löding) and very commonly northward and westward over most of the United States and Canada; definite Floridian data lacking.

?**Cicindela sexguttata** *Fabricius*. "Fla." (Harris Coll.). The specimens were received from Schaupp Collection. Common in northern Alabama, one specimen from Mobile Co. (Löding).

?**Cicindela unipunctata** *Fabricius*. "Fla." (Harris Coll., Roberts Coll., Leng Coll.). The nearest locality Löding has is Blount Mt. in northern Alabama.

?**Cicindela blanda** *Dejean*. This species has been found on the banks of Spring Creek in Georgia. Since Spring Creek is a branch of the Apalachicola River, which flows through northern Florida, it seems likely that *C. blanda* will be found, as soon as the banks of the river are visited in summer. It occurs also in Alabama at Oak Grove in June and July (Löding).

The following additional species which occur in southern Alabama have never been reported from Florida, viz: *cursitans*, Mt. Vernon, bank of Mobile River, June 14; *togata*, Coden, salt marsh shore of Mississippi Sound; *rufiventris*, Mobile, and Baldwin Co., May to August; *cumatilis*, Mobile Co. There is no foundation for including them, though it may be likely they do occur in northwest Florida.

Sub-family CARABINÆ.

Tribe OMOPHRONINI.

Omophron labiatum (*Fabricius*). Common at light and on grassy shores, where it is found by pouring water over the banks. Sand Point, Indian River, etc. (Schwarz); Lake Worth, Miami (Slosson Coll.); Lakeland,

Fort Myers, Nov. 15, at light, Everglade, Lake Okeechobee (Davis); Enterprise (Brownell); Clearwater, etc.; March, April, June, November, December. Extends northward along Atlantic Coast to New Jersey, where it becomes rare; also Mobile Co., Ala., where Mr. Löding takes also *O. nitidum*.

Tribe CYCHRINI.

Scaphinotus elevatus var. **floridanus** n. var. A single specimen which passed from the Schaupp collection into that of Luetgens and then into the collection of the writer under the name of *elevatus*, formed the basis for crediting that species to Florida in Bull. Br. Ent. Soc. I, p. 34, and perhaps even for Roeschke's mention of northern Florida as the southern limit for that species. It differs, however, from *elevatus* in size and in the greatly thickened margin of the thorax and coarse punctures of the disk and may be described as follows:

Size and form similar to that of *S. elevatus*, variety *flammeus*, broader and shorter than in variety *tenebricosus*; color dark, almost black with faint bluish lustre. Thorax broader than long, with hind angles produced far over the elytra, and side margins elevated, but less so than in *elevatus*, the head greatly thickened and the disk strongly punctate, the coarse moderately closely placed punctures arranged in two curved spaces on either side of a smooth central space (divided only by a deeply impressed median line) which broaden and unite a little in front of the base. Elytra similar to those of *elevatus* variety *flammeus*, broad and but slightly convex on disk, and with the side margin less elevated at humerus than in typical *elevatus*. In the male the tip of the first tarsal joint and the whole of the second, third and fourth joints beneath are spongy pubescent. Length, 21 mm. ♂. ♀ unknown.

The thoracic punctuation is similar to that of *S. shoemakeri*; but, although the present is a smaller insect, the punctate area is much greater and the punctures deeper; the sinuation of the elytral margin, characteristic of *shoemakeri* is not even faintly indicated.

A *Scaphinotus* believed to be the true *unicolor* Fab. is taken by Mr. Löding at Mt. Vernon, Ala. It lacks both the thickened thoracic head and discal punctures characteristic of *floridanus*.

Tribe CARABINI.

Carabus sylvosus Say. Ormond (Slosson Coll.), January or March. Occurs in Ontario, Massachusetts, New York, New Jersey, Pennsylvania, District of Columbia, West Virginia, Indiana; New York to Texas (Bull. Br. Ent. Soc.); Baldwin Co., Ala., one specimen (Löding). *C. vinctus* var. and *C. lecontei* Casey are reported from Alabama (Löding).

Calosoma scrutator *Fabricius*. Crescent City (Schwarz); Ormond April 1-4 (Blatchley); Fort Myers, March 31, at light (Davis). Occurs throughout the United States, north to Ontario, even in Lower California.

Calosoma splendidum *Mannerheim*. Key West, at electric light (Angell Coll.). Mr. C. L. Brownell, who collected the material in the Angell Collection, states that the species was on one occasion extremely abundant. It is a well-known Cuban species.

Calosoma sayi *Dejean*. Centreville, in cottonfield (Schwarz); Jacksonville (Leng Coll.); Taylor Co. (Genung). Extends northward to New York, westward to Arizona. The Cuban *C. alternatum* is closely related. Very common at light in Alabama (Löding).

Tribe NOTIOPHILINI.

The species of *Notiophilus* present so different an appearance to other Carabidæ, and are besides so differentiated by the antennæ in repose being bent down under the head and by the obliquely truncate anterior tibiæ, as well as by the very prominent eyes, that it seems best to follow Chaudoir in treating them as a separate tribe, rather than Horn who included them in the tribe Nebriini, with *Opisthius*, *Leistus* and *Nebria*. The crowding together of the elytra striæ toward the sides, leaving a smooth shining space each side of the suture, is unmentioned in Horn's "Genera of Carabidæ" though a most striking characteristic.

Notiophilus novemstriatus *Leconte*. Pensacola (Fall). Extends northward to New York, westward to New Mexico; Mobile and Baldwin Co., Ala. (Löding).

Tribe SCARITINI.

Pasimachus marginatus (*Fabricius*). St. Augustine, Lake Worth, Crescent City (Schwarz); Punta Gorda (Slosson Coll.); Ormond, March 24, beneath log in open pine woods (Blatchley); Pablo Beach, Key West, September, Big Pine Key, September (Davis); Taylor Co. (Genung); Enterprise (Brownell); Marco, La Belle, Punta Gorda, under boards at edge of salt meadow (Davis); Florida (Casey), Big Pine Key (Davis Coll.); April and November. Not rare, occurring throughout the Gulf Strip Georgia, South Carolina, Louisiana, Texas.

Pasimachus floridanus *Casey*. Palm Beach (Casey); Miami, September (Davis); Orange Grove (M & W).

Pasimachus subsulcatus *Say*. St. Augustine, Lake Worth, Gulf Hammock, Crescent City, Key West (Schwarz); Ormond (Slosson Coll.);

Ortega, September (Davis); Tampa (Engelhardt); Ormond, April 6 (Blatchley); Enterprise, April (Davis Coll.), (Brownell); Lake City (Agl. Exp. Sta.) Marion Co., (Casey) Lakeland, Gainesville, September, March, April, May, November. Not rare, but apparently confined to Georgia and Florida.

***Pasimachus opacipennis* Casey.** "Florida."

***Pasimachus sublævis* Dejean.** St. Augustine (Schwarz); Gainesville, September; Suwannee Springs (Slosson); Silver Springs, (Engelhardt); Dunedin, Sarasota, Sanford, January, February, under logs in sandy woods (Blatchley); Enterprise (Brownell); Taylor Co. (Genung); Punta Gorda, under boards in pine woods (Davis); Lake Worth, Key West, (Casey). La Grange, June (Davis Coll.); Ortega, September, March, October, November, in syrup trap and under boards. Reported as rare in the first Florida list but apparently found frequently. Extends northward along the coast to Long Island.

***Pasimachus strenuus* Leconte.** St. Augustine, Crescent City (Schwarz); Gainesville, September; Ormond (Slosson Coll.); Ormond, March 24, beneath chunk in open pine woods (Blatchley); Lakeland, Rital (Davis); Florida (Casey); La Grange, June, Enterprise, September (Davis Coll.); La Grange, September (Davis); March, April, May, November. Peculiar to Florida. Not found in Alabama (Löding).

The species of *Pasimachus* are found under logs, etc., under boards in damp meadow, under dry cow dung (Mr. Davis found one with a *Canthon* in its jaws), and in bottles baited with syrup. They sometimes burrow deeply, Mr. Bischoff having found them at a depth of twelve inches. In addition to the four older species, all of which he recognizes, Col. Casey has described (Memoirs on the Coleoptera, IV, 1913) two more species and two subspecies, viz.: *floridanus*, *opacipennis*, *robustus* (subsp. of *strenuus*), and *subnitens* (subsp. of *subsulcatus*). The last two are based upon single examples, and in the large series now accumulated, the characters used to separate them tend towards becoming evanescent. The first two result from the dismemberment of the heterogeneous material heretofore called *subsulcatus*, the specimens with strong nearly equal sulci being *floridanus* Casey, while those with smooth elytra are *opacipennis* Casey. The connecting link supplied by *subsulcatus* has led to the mass being heretofore regarded as one species but there is no evidence that such is the case and until such is forthcoming Casey's two species must stand. His subsp. *robustus* based upon a comparison between single specimens of it and *strenuus* may not stand, for in a larger series intermediate degrees of development partly at least bridge the differences he describes, *robustus* being a rather small specimen with the elytral ridges moderately developed. His subsp. *subnitens*

is *subsulcatus* with the elytra smoother than usual and may also be bridged by intermediate forms.

The Floridian species of *Pasimachus* may be separated by the following table based on Casey's:

Hind body short, generally but very little longer than wide;

Elytra conjointly broadly and obtusely rounded; humeral carina very short; hind tibiæ with sparse hairs within in both sexes; form stout, parallel, convex, 22-25.5 mm. *sublaevis*.

Elytra obliquely and obtusely pointed behind;

Body larger, humeral carina very short, 29.5-34 mm. *strenuus*.

Body smaller, humeral carina long, evenly contiguous with the inner lateral ridge;

Entire surface of elytra deeply, almost evenly sulcate, 20-22 mm.

floridanus.

Elytra with broad, feeble, more or less faint costæ, 21 mm. *subsulcatus*.

Elytra almost perfectly smooth, 20 mm. *opacipennis*.

Hind body always evidently longer than wide, rather depressed; elytra opaque with shining elevated ridges, 27-30 mm. *marginatus*.

***Scarites subterraneus Fabricius*.** St. Augustine, Enterprise, Jacksonville, Crescent City, Indian River, Key West, common (Schwarz); Biscayne Bay (Slosson); Ormond (Blatchley); Enterprise (Brownell); Fort Myers, Everglade, La Grange, Lake Okeechobee and Pablo Beach (Davis); Sebastian (Genung); January, March, April, May, June, July, August, September, November. At light and burrowing in the soil. Extends northward and westward, but seems absent from the southwest. Mobile, Baldwin and Lee Co., Ala (Löding).

***Scarites subterraneus* subsp. *substriatus* Haldeman.** St. Augustine, Lake Worth, Tampa (Schwarz); Sarasota, Fort Myers, March 1 to March 10, under logs in sandy woods (Blatchley, Slosson Coll.); Fort Myers (Davis); January-March, April. At light and under boards and rubbish at edge of pond. Occurs in southern and middle states, less abundant than preceding. Mobile Co., Ala (Löding)

***Scarites subterraneus* var. *californicus* Leconte.** Cedar Keys, very rare on the sea beach (Schwarz); Hillsboro Co., Jan. 23, beneath logs half buried in beach sand (Blatchley). According to Schaeffer (Bull. Br. Ent. Soc. VIII, 123) occurs in Texas, southern California, Arizona, Lower California, Mexico. "Smaller than *subterraneus*, much more shining and with the striæ of elytra almost obliterated" (Blatchley). A specimen approaching the characters of this variety was found by Davis on Big Pine Key, September 9.

?*Scarites alternans* Chaudoir. Chokoloskee (?) Schaeffer. The accuracy of the locality label is open to grave doubt on account of the number of Cuban species received from the same source.

Synoptic Table of *Scarites*.

Elytral striæ, including the seventh, exceedingly deeply impressed, intervals all very convex, 24 to 30 mm., Cuba	<i>alternans</i> .
Elytra striæ complete, the seventh feebly impressed, seventh interval at most feebly convex;	
Anterior tibiæ bearing usually only one denticle above the second tooth, 14 to 19 mm., U. S.	<i>subterraneus</i> .
Anterior tibiæ bearing usually two or three denticles above the second tooth, 24 to 30 mm., So. St.	<i>substriatus</i> .
Elytra striæ obliterated at sides, feebly impressed on disk;	
Anterior tibiæ as in <i>subterraneus</i> , 14 mm. S. W. St.	<i>californicus</i> .
Anterior tibiæ as in <i>substriatus</i> , 24 mm., Tex.	<i>lissopterus</i> .

The 10th and three or four preceding antennal joints are transverse in *subterraneus*, hardly as long as wide, while in *substriatus* they are rather more elongate.

***Dyschirius pumilus* Dejean.** Crescent City, Tampa, Fort Capron (Schwarz); Lake Worth, Belleair (Slosson Coll.); Key West (Engelhardt); Enterprise (Brownell); Punta Gorda, Pablo Beach, on the beach just above high tide mark and by washing banks of inlet, Everglade (Davis); under lake-shore debris (Brownell); at light (Davis); burrowing in damp sandy soil; found also by sweeping grasses at edge of standing rain pools; the habits of all the species are similar; January, March, May, November, December. Extends northward to New York.

?***Dyschirius falciger* Leconte.** Described from the banks of the Hillsboro River, Fla.; is doubtfully distinct from preceding.

***Dyschirius pallipennis* Say.** St. Augustine (Schwarz); Pablo Beach, by washing bank of inlet, Nov. 4. Occurs also in New Jersey.

***Dyschirius sphæricollis* Say.** Lake Worth (Schwarz); Fort Myers, April 1, at light (Davis); Key West ? (Angell Coll.). Extends northward to New York, and westward to Indiana.

***Dyschirius erythrocerus* Leconte.** Fort Capron, Haulover, Enterprise (Schwarz); Belleair, Lake Worth (Slosson Coll.). Occurs also in New York, New Jersey, Ohio, Indiana.

***Dyschirius hæmorrhoidalis* Dejean.** Biscayne Bay (Slosson Coll.). Occurs also in District of Columbia, Pennsylvania, Ohio, Indiana, Kansas.

***Dyschirius globulosus* Say.** Fort Capron, Haulover, Tampa (Schwarz); Jacksonville, Lake Worth, (Slosson Coll.); Everglade (Davis Coll.); January-March, June. Extends northward to Canada, westward to Indiana.

***Dyschirius filiformis* Leconte.** Fort Capron, Haulover, rare (Schwarz);

Punta Gorda (Slosson Coll.); January–March (Slosson). Occurs also in New York and New Jersey.

Dyschirius sublævis Putzeys. Key West? Specimens in Leng Coll. from Roberts Coll. and Angell Coll. Originally described from Texas.

?**Dyschirius sellatus** Leconte. Enterprise (Castle and Laurent). Confirmation of this record is lacking; the species is known from New York and New Jersey.

A thorough study of the genus *Dyschirius* is needed, with an examination of the types, to make sure that in some cases the same species does not appear above under two names, as well as to verify the identity of the Floridian species with the northern ones of which the names are used. The same condition applies to the following genus, *Clivina*. The abundance of these small Scaritini is perhaps due to the porous damp soil of parts of Florida as well as to the southern character of the tribe, of which several hundred species, partly poorly differentiated, are described from tropical America.

Clivina morula Leconte. Biscayne Bay, Punta Gorda, Lake Worth (Slosson Coll., January–March); Key West? (Roberts Coll.); Crestview, Oct. 15–16, Fort Myers, March 30, at light. Recorded also from District of Columbia and Louisiana, Mobile Co., Ala., (Löding).

Clivina americana Dejean. Enterprise, Crescent City, not rare (Schwarz); Sarasota, Lake Okeechobee, March, on moist banks (Blatchley); Taylor Co. (Genung); Fort Myers, April, at light (Davis); Everglade, April (Davis); Enterprise, December, under lake shore debris (Brownell). A widely distributed species, in damp sandy river banks, north to New York, west to Indiana and Texas.

Clivina striatopunctata Dejean (*picea* Putzeys included as a synonym). Enterprise, Tampa (Schwarz); Monticello, Oct. 4–8; Lake Worth (Hamilton); St. Augustine, Crescent City, Tampa, Centreville (Schwarz); Biscayne Bay (Slosson Coll.); Enterprise, November, December, under lake shore debris (Brownell). Extends northward to New Jersey, and Staten Island, New York (where it is found on salt meadow), westward to Louisiana.

Clivina bipustulata (Fabricius). Punta Gorda, Jacksonville, abundant with *Ega sallei* at edge of brooks and streams (Slosson Coll.); St. Lucie, (Schwarz); Sarasota, Lake Okeechobee, March 4, March 11, on moist banks (Blatchley); Fort Myers, Lake Okeechobee, April, at light (Davis). Extends northward to Staten Island, New York (where it is found like *Scarites subterraneus* in garden soil), westward to Louisiana and Indiana. Mobile and Baldwin Co., Ala., common (Löding).

Clivina dentipes Dejean. Enterprise, Dec. 12, under lake shore debris (Brownell); Florida, not rare (Schwarz). Extends northward to

New York, westward to Texas and Indiana. Very common in Mobile Co., Ala. (Löding).

Clivina cordata *Putzeys*. Biscayne Bay (Slosson Coll.); "Fla." (Schaupp Coll. identified by Leconte). Described from Louisiana, apparently seldom recognized.

Clivina rufa *Leconte*. Enterprise, rare (Schwarz); Taylor Co., March (Genung); Fort Myers, April 23 (Davis). Extends northward to New Jersey, westward to Kansas. Mobile Co., Ala (Löding).

Clivina rubicunda *Leconte*. Enterprise, one specimen (Schwarz); Hillsboro Co., Jan. 16 (Blatchley). Extends northward to New Jersey, westward to Louisiana and Illinois.

The *C. picipes* Putz. of the first Florida list, I fail to recognize. If an error for *picea*, the records should be included with those for *striatopunctata*. If an error for *fissipes* Putz. the records should be included with those for *dentipes*. In addition to those names noted above, Mr. Löding finds *ferrea* (?) and *pallida* in Mobile Co., Ala.

Aspidoglossa subangulata (*Chaudoir*). Not rare (Schwarz); Lake Worth, Jacksonville (Slosson Coll.); "Fla." (Blatchley); Clearwater, April 28; Fort Myers, Everglade, Lake Okeechobee, March, April, May (Davis). At light, in grassy field, under dry grass, in humus. One of the most common Floridian species, also very common in Mobile Co., Ala. (Löding), extending to District of Columbia on the Atlantic coast and westward to Texas.

Schizogenius sallei *Putzeys*. Lake Altapopka, very rare (Schwarz); Enterprise, October, December, under lake shore debris (Brownell). Described from Texas.

Schizogenius ferrugineus *Putzeys*. Fernandina, two specimens on the sea beach (Schwarz). Extends northward to New Jersey, westward to Texas.

Ardistomis obliquata *Putzeys*. Not rare (Schwarz); Lake Worth (Hamilton); Enterprise (Castle & Laurent); Biscayne Bay, Crescent City (Schwarz); Miami (Slosson Coll.); Arch Creek, February, March, Lake Okeechobee, March, on moist banks (Blatchley); Sebastian, August (Genung); Fort Myers, Everglade, Lake Okeechobee, March, April, May, June (Davis). At light, sweeping grassy meadows, under dry grass in humus; a most abundant species; rarely reported outside the extreme southern states.

Ardistomis viridis (*Say*). Common (Schwarz); St. Augustine, Lake Worth, Biscayne Bay (Schwarz); Punta Gorda, Jacksonville, Belleair (Slosson); Arch Creek, February, March, Lake Okeechobee, March, on moist banks (Blatchley); Tampa, April, October; Fort Myers, Marco,

Lake Okeechobee (Davis); Gainesville, September, October, Monticello, Oct. 4-8. Occurs in Florida, with the preceding, but extends further north and west, reaching New York, Indiana, Texas, common in Mobile and Baldwin Co., Ala. (Löding).

***Ardistomis puncticollis* Putzeys.** Cited by Mr. Schwarz as very rare but reported since quite often. St. Augustine, Crescent City, Haw Creek (Schwarz); Lake Worth, Biscayne Bay (Slosson); Florida (Blatchley); Enterprise, November, December (Brownell); Lake Okeechobee, April, May (Davis). Confined to Florida except for Blatchley's Indiana records.

***Ardistomis schaumii* Leconte.** Common (Schwarz); Miami, Biscayne Bay, Belleair (Slosson); Dunedin, Arch Creek, Lake Okeechobee, January, February, March (Blatchley); Monticello, Oct. 4-8 Enterprise, Oct. 14 (Brownell). Confined to Louisiana and Florida.

***Ardistomis morio* (Dejean).** Fort Myers, March 30, at light (Grossbeck). This species, in which the striæ of the elytra are punctate in front, must be added to the list. Described from Georgia.

In concluding the enumeration of Floridian Scaritini, it may be interesting to compare the total of thirty-six species with the twenty-seven cited as inhabiting New Jersey, by Smith, as an illustration of the extent to which the tribe becomes developed in southern latitudes. The comparison is liable to become more striking when the smaller Floridian species are more thoroughly studied, and the increased number in this tribe is contrasted with the general paucity of carnivorous beetles in the state. It is a southern tribe, gradually diminishing in number of representatives as one traces its distribution northward until it finally fails completely in Newfoundland and Labrador.

Subfamily HARPALINÆ.

Tribe PANAGÆINI.

***Panagæus crucigerus* (Say).** Haulover, Lake Harney (Schwarz); Punta Gorda, Lake Worth, Biscayne Bay, Ormond (Slosson Coll., January-March); Fort Myers, March 30, at light (Grossbeck). Extends northward to New Jersey, westward to Louisiana and Indiana. Nowhere common. Mr. Löding finds it rarely in the city of Mobile in July.

***Panagæus fasciatus* (Say).** Fort Capron, Sebastian (Schwarz); Lake Worth (Dietz); Fort Myers, April 2, at light (Davis). Extends northward to New York, westward to Kansas. Under stones, etc., in dry, sandy places; not common. Mobile Co., Ala., February, March, July (Löding).

Tribe MORIONINI.

Morio monilicornis *Latreille*, Tampa, St. Augustine, Lake Poinsett, not rare, under old pine bark (Schwarz); Punta Gorda, Tarpon Springs (Slosson Coll. January–March); Silver Springs, Nov. 25 (Engelhardt); Ormond, March, frequent between bark of pine logs and snags (Blatchley); Enterprise, September, November (Brownell). Extends northward to North Carolina, westward to Lower California; occurs also in the West Indies. Common under pine bark in Alabama (Löding).

Tribe BEMBIDIINI.

Many of the records quoted below were made before the late Roland Hayward's studies in the tribe were published and to some extent disagree with the distribution given by him for the species. Such are preceded by an interrogation to indicate the doubt that must exist until the data are reconciled.

Bembidium contractum *Say*. Common, near the sea coast, from Massachusetts to Florida (Schwarz, Hayward); Punta Gorda, Lake Worth (Slosson Coll. January–March); Dunedin, Sarasota, Arch Creek, January, March, on beach of gulf and bays (Blatchley); Key West ? (Leng Coll.); Everglade, Fort Myers, April, May, June, July (Davis); Clearwater, April 28 (Van Duzee); at light and in salt marshes.

Bembidium constrictum *Leconte*. Occurs with the preceding and not easily separated from it. Lake Worth, Biscayne Bay (Slosson); Key West Nov. 21 (Engelhardt). Extends north to Canada and west to New Mexico (Hayward).

?**Bembidium affine** *Say*. Cited but not seen by Schwarz; occurs along Atlantic coast, New England to Florida, and west to Arizona (Hayward). No definite Floridian recent records are known, but the name is included in the Cuban list.

Bembidium versicolor *Leconte*. Not rare (Schwarz); St. Augustine (Johnson); "Fla." (Slosson Coll. January–March); Enterprise, Nov. 12, under lake shore debris (Brownell); Fort Myers, Nov. 15, at light; Punta Gorda, Nov. 16 (Davis). The specimens I have seen are darker and smaller than the usual northern form; Hayward gives "United States and Canada reaching to Newfoundland, Anticosti Island and Manitoba" and Texas and southern California, but does not mention Florida, apparently including Floridian specimens with *affine*. Blatchley cites *flavopictum* Mots. which

Hayward treats as a synonym of *versicolor*, perhaps erroneously, if *flavopictum* is conspecific with the darker Floridian form.

Bembidium lævigatum Say. Tallahassee (Schwarz). Extends northward to New Hampshire, westward to Texas and Montreal.

?**Bembidium inæquale** Say. Included only on Hayward's statement quoted by Schwarz. Has the same range as preceding.

?**Bembidium assimile** Gyllenhal. St. Augustine (collected by Johnson, determined by Hamilton). Occurs in Europe and in our northern regions as far south as Virginia (Hayward).

?**Bembidium fraternum** Leconte. Sanford, March 27, on lake shore. (Blatchley). Described from Habersham Co., in the mountains of Georgia. Hayward has associated under this name specimens from Louisiana, Virginia, Pennsylvania, and Nantucket.

To the northern collector the small number of species of *Bembidium*, eight in all, even including the four doubtful cases, is a marked feature of the Floridian fauna. A method of collecting, very productive in the north, possibly not yet tried in Florida, consists in examining banks of streams and ponds at night.

?**Anillus dohrni** Ehlers. Florida (Ehlers). This record has been questioned by Mr. Schwarz in the Proc. Ent. Soc. Wash.

Tachys ænescens Leconte. Enterprise, very rare (Schwarz); Marco, April 20 (Davis). Florida, Louisiana, North Carolina, Arkansas (Hayward).

Tachys nanus Gyllenhal. Common under bark in Florida, United States, also Eurasia.

Tachys flavicauda Say. Common under bark from Canada to Florida and westward to California.

Tachys granarius Dejean. Common from Canada to Florida and westward to Nebraska. In the damp soil and at light; found also in sifting shore debris at mouth of Peace River.

Tachys incurvus Say. Common from Canada to Florida and westward to Pacific Coast. In the soil; northward it is frequent in nests of *Formica exsectoides*; with preceding at mouth of Peace River, also on bank of St. John's River; Monticello, Oct. 4-8.

Tachys fuscicornis Chaudoir. Biscayne Bay (Slosson Coll., January-March); Punta Gorda, Nov. 12, around pools (Davis). Described from Louisiana; cited in Smith's New Jersey List.

Tachys xanthopus Dejean. Common (Schwarz); Dunedin, Sanford, Sarasota, Ormond, St. Petersburg, Bassenger, January to April in moist places beneath cover (Blatchley); Everglade, July (Davis Coll.); Fort Myers, at light, Nov. 15 (Lutz); Monticello, Oct. 4-8. Massachusetts to Florida (Hayward). Cited in District of Columbia, New Jersey and Indiana Lists.

Tachys capax *Leconte*. Jacksonville (Slosson Coll.); St. Augustine (Johnson); Lakeland, Nov. 10; Punta Gorda, Nov. 12, around pools (Davis); District of Columbia, New Jersey, Florida, Missouri, Iowa, Indiana (Hayward).

Tachys lævus *Say*. Common (Schwarz); Jacksonville (Slosson Coll. January–March); Florida, more common with *xanthopus* (Blatchley); Lakeland, Nov. 8, sifting leaves on shore of Lake Parker; Canada to Louisiana (Hayward).

Tachys pallidus *Chaudoir*. Haulover, Tampa, very rare (Schwarz); Everglade, April 9 (Davis). Described from Texas; known also from New Jersey.

Tachys occultator *Casey*. Charlotte Harbor, Biscayne Bay (Slosson Coll. January–March); Key West ? (Leng Coll.); Everglade, April, May, June, July, Ocean Beach, Miami, September (Davis); Fort Myers, April; New Jersey to Florida and Texas (Hayward). This is a salt marsh species, occasionally coming to light. It varies in color more than the descriptions indicate.

Tachys albipes *Leconte*. Fort Capron, Sand Point, Enterprise, Tampa, rare (Schwarz); Sebastian, August (Genung). Confined to Florida and Louisiana.

Tachys ventricosus *Leconte*. Sebastian, August (Genung). Mr. Schwarz says "common," but this is hardly corroborated by recent results. Confined to Florida and Louisiana.

Tachys scitulus *Leconte*. Everglade, May, June, July; Fort Myers, March 30 (Davis). Hayward gives Massachusetts to North Carolina only.

Tachys columbiensis *Hayward* (Zimm. mss.). St. Augustine, Lake Worth, common (Schwarz); Enterprise, November, December, in lake shore debris (Brownell); Monticello, Oct. 4–8, Gainesville, September, October; South Carolina, Florida (Hayward); Florida (Blatchley).

Tachys corruscus *Leconte*. Biscayne Bay (Slosson Coll. January–March); Florida, same places as *xanthopus* (Blatchley); Punta Gorda, Nov. 16, sifting debris on shore of Charlotte Harbor. Canada and Massachusetts to Florida (Hayward).

Tachys pumilus *Dejean*. Daytona, Nov. 10 (Engelhardt); under the name *umbripennis*, which Hayward considers a synonym, Biscayne Bay (Schwarz). The records for this species are not numerous and include District of Columbia, Louisiana, Texas.

In addition to the above named species of *Tachys*, Mr. Schwarz originally cited *T. carolinus* Zimm. mss., a name not recognized by Hayward, and three unnamed species, presumably now covered by names given above; the following species, viz., *dolosus*, *nebulosus*, *bradycellinus*, may, from their known

occurrence in Louisiana and other southern states, be reasonably expected to occur in Florida. Mr. Löding includes also *T. misellus* Laf. in his Alabama list and *T. ephippiatus* Say.

Notwithstanding the considerable number of species of *Tachys*, many of which are widely distributed, the whole tribe Bembidiini is represented by but twenty-five species against forty recorded for New Jersey, the tribe being apparently of northern origin, and except for the widely distributed little *Tachys*, of cortical and riparial environment, and the salt marsh Bembidium, has scarcely been able to establish itself in Florida. The condition existing in Scaritini are apparently reversed in this tribe.

Tribe POGONINI.

Pogonus lecontei Horn. Ormond (Slosson Coll. January–March). Known also from New Jersey and Texas.

Tribe PTEROSTICHINI.

Pterostichus ebeninus Dejean. "Fla." (Slosson Coll. January–March); under the name *acutangulus* Chaudoir, which is synonymous, Fort Capron, Tampa, very rare (Schwarz). Extends northward to New York, westward to Illinois and Texas. Mobile Co., Ala., subaquatic (Löding).

Pterostichus erythropus Dejean. St. Augustine (Johnson). Extends northward to Connecticut (Champlain, Psyche, XVIII, p. 36) and westward to Indiana. Mr. Löding has not found it in Alabama.

Pterostichus fallax Dejean. Suwannee, Pensacola, Jacksonville (Slosson Coll. January–March). A southern species found also in Georgia and Texas; Mobile and Baldwin Co., Ala. (Löding).

?Pterostichus permundus Say. Jacksonville, April 21 (Laurent). Described from Indiana and known also from Illinois, Missouri and Nebraska. Found in Alabama by Löding but only in northeastern part of the state.

Mr. Löding finds in South Alabama the following species, not so far known from Florida, viz., *sayi*, Mobile Co., June and July;

Lophoglossus haldemani Leconte. Jacksonville (Castle and Laurent). A rare species found near margins of cypress swamps. Reported also from Mobile Co., Ala., 2 specimens (Löding); and from Indiana.

Lophoglossus tartaricus Say. Cited as from northern Florida but not seen by Mr. Schwarz. Found in New Jersey and in Indiana, sandy localities near water; Mobile Co., Ala., subaquatic (Löding).

Piesmus monedulus Germar (**submarginatus** Say). Tallahassee, Chuluota (Schwarz); Pensacola (Slosson Coll.); Ormond, March, April, beneath bark of pine logs (Blatchley); Taylor Co., January, March (Gnung). Confined to Southern States, Mobile and Baldwin Co., Ala., under bark of pine and oak (Löding).

Casey (Memoirs IV, 1913, p. 143) restricts the name *submarginatus* to specimens from North Carolina, in which the striae are coarse, moderately impressed, distinctly but not extremely punctured, and calls the Florida specimens with distinctly shorter elytra, the striae of which are extremely coarse, in fact sulciform, and still more coarsely and conspicuously punctured, *monedulus* Germar. Germar's name having priority by about a year would also take precedence of Say's if Casey's view were not acceptable.

The species *ventralis* Say (*cycloderus* Chaudoir), *obscurus* Say and *tumescens* Lec. differ so widely by the coarse punctuation of the under surface that they may require a new genus. Though they constitute a separate section "B" in Schaupp's synopsis, the distinguishing character does not receive sufficient prominence, and "abdomen punctate" might with advantage be added to 18th line on p. 23, following the words "scutellar stria short."

?Pterostichus ventralis Say. "Fla." (Bull. Br. Ent. Soc., v. p. 41). There is no confirmation of this record and the known distribution does not support it. Occurs also in Louisiana, Kansas, Missouri.

Ferestria n. gen.

The four species that follow, with *approximatus*, constitute a section of the tribe Pterostichini, which looks very different from the remainder on account of the more or less complete absence of the elytral striae. I propose to separate them under a new genus, named *Ferestria* and defined as follows:

Thorax strongly rounded in front of the sides, deeply sinuate behind, with small but distinct rectangular hind angles in some species, obtuse hind angles in others; elytra short, scarcely half as long as body, with the external striae more or less obsolete, all the striae feebly impressed, and one dorsal puncture behind the middle; each ventral segment with two distant setigerous punctures near hinder margin; designating *Pterostichus laevipennis* Lec. as the type, since in that species the characters which isolate the new genus are most marked.

Ferestria obsoleta (Say). Tampa, in the pine woods under sticks, rare (Schwarz); Gulf Hammock (Castle and Laurent); Key West (Angell Coll.). Described from Indiana, known also from Illinois, Ohio, and Texas. Found by Löding only in northern Alabama.

Ferestria acuta (*Leconte*). Tallahassee (Schwarz); "Fla." (Schaupp Coll.). Confined to Florida, Georgia, Louisiana. Mr. Löding finds a species near *acuta* in Mobile Co., October–December.

Ferestria lævipennis (*Leconte*). St. Augustine (Schwarz); Enterprise, April 20 (Brownell). Confined to Florida and Georgia.

Ferestria morio (*Dejean*). Enterprise, rare (Schwarz); Lake Worth (Slosson Coll. January–March); Dunedin, Jan. 17, beneath chunk near border of Lake (Blatchley); "Fla." (Schaupp Coll.). Confined to Florida and Alabama. Mobile and Baldwin Co., Ala., all year (Löding).

In addition to above *F. approximatus* (*Leconte*) is reported from Jacksonville, but I believe this name belongs to the more northern form found in District of Columbia and Pennsylvania. As to the localities in which the genus occurs, it may be added that near Clayton, Ga., a few specimens were found under stones near a brook in a pasture.

Evarthrus faber (*German*). Tampa, very rare (Schwarz); Pensacola, Atlantic Beach, Punta Gorda, Suwannee, Jacksonville (Slosson Coll. January–March); La Belle, April 27 (Davis); "Fla." Very common at six widely separated localities (Blatchley); (Schaupp Coll.); Florida and New York (*teste* Schaupp).

Evarthrus seximpressus *Leconte*. Enterprise, Cedar Keys, rare, Haw Creek (Schwarz); Enterprise, March (Brownell). Illinois, Indiana, Kansas, Texas, Louisiana, Mobile Co., Ala. (Löding).

Evarthrus americanus *Dejean*. One specimen, Polk Co. (Schwarz); Jacksonville, April 21 (Laurent); Jacksonville (Slosson Coll., January–March); Lakeland, Nov. 17, at light (Davis); "Fla." (Schaupp Coll.); Indiana, Texas, Louisiana, Georgia. A specimen was found in the pine woods at South Jacksonville drowned in a discarded beer bottle part full of rain water. Mobile Co., Ala. (Löding).

?Evarthrus nonnitens *Leconte*. Jacksonville, April 21 (Laurent). Texas and Louisiana. This and the following are not found in Alabama by Löding, but he cites instead *sigillatus* and *rotundatus* on authority of Dr. E. C. Van Dyke.

?Evarthrus engelmanni *Leconte*. Ormond (Slosson Coll., January–March); Texas.

Amara impuncticollis *Say*. "Fla." (Hayward). "Occurs from Canada to Florida and Louisiana. Mobile and Baldwin Co., Ala." (Löding). Löding takes also *A. cupreolata* Putz.

?Amara musculus *Say*. "Fla." (Say quoted by Schwarz). Possibly an error for *Evolenes* which looks like *A. musculus* superficially. Mobile Co., Ala. (Löding).

?Amara crassispina *Leconte*. Recorded from Alabama, but not found

there by Löding, who cites instead *A. exarata*. *A. crassispina* was described from Lake Superior.

***Loxandrus reflexus* Leconte.** Fort Capron, Enterprise, Cedar Keys, Tampa, common (Schwarz); St. Augustine (Schwarz, Slosson); Sarasota, Lake Okeechobee, February, March, under logs at border of ponds (Blatchley); Taylor Co. (Genung); Marion Co. (Leng Coll.). Confined to Florida and Alabama (Mobile Co., Löding).

***Loxandrus calathinus* Leconte.** Tampa, not rare (Schwarz); Everglade, May, June, July, Miami, September (Davis). Confined to Florida.

***Loxandrus floridanus* Leconte.** Fort Capron, Tampa, Enterprise, common (Schwarz); Miami, Lake Worth, Biscayne Bay, January–March (Slosson). Confined to Florida.

***Loxandrus brevicollis* Leconte.** Biscayne Bay, under seaweed and debris on the beach together with *L. celeris* and *floridanus*, running swiftly when disturbed (Slosson Coll. January–March). Found in northern Alabama by Löding.

?*Loxandrus erraticus* Dejean. Enterprise, very rare (Schwarz). This name is generally applied to specimens usually with dark legs, from District of Columbia, Indiana, and other northern localities. Its occurrence in Florida rests upon the original Schwarz record unconfirmed since 1876; it is, however, found in Mobile Co. by Löding.

***Loxandrus celeris* Dejean.** Fort Capron, Enterprise, rare (Schwarz); Miami, Biscayne Bay (Slosson Coll., January–March); (Blatchley); Enterprise (Schaupp Coll. and Brownell); Everglade, May (Davis Coll.); Fort Myers, April 26, under boards and rubbish at edge of pond. Occurs also in Texas and a closely related species, which also has a reddish sutural spot, is found in Cuba.

***Loxandrus agilis* Dejean.** Common (Schwarz). Gainesville (J. R. Watson) Lake Worth (Hamilton); Jacksonville (Castle and Laurent); Belleair (Slosson Coll. January–March); Sanford, Sarasota, January–March, beneath cover at border of ponds (Blatchley); Punta Gorda, Nov. 15 in syrup trap. Extends northward to Pennsylvania and Indiana; Mobile Co., Ala. (Löding).

***Loxandrus rectus* Say,** not Leconte (*velox* Dejean, included as synonym). St. Augustine (Schwarz); Atlantic Beach (Slosson Coll. January–March); Sarasota, Oneca, Utopia, January, March (Blatchley); Paola (Genung). Extends northward to Georgia, and Indiana; Mobile Co., Ala. (Löding). *L. rectus* in most collections that I have seen is erroneously used for a species 14 mm. or more in length with yellow legs, the *L. lucidulus* of Dejean. It is true that Say gave the length as $\frac{3}{8}$ inch but he undoubtedly meant $\frac{3}{10}$, for his description of the punctures of the striae, of the rounded

hind angles of the thorax, and especially his comparison with *Stenolophus ochropezus*, absolutely disagree with the larger insect. Leconte in 1846, guided perhaps by specimens received from Melsheimer, Ziegler or Halde-man, who were likely to have derived the name from Say, treated *rectus* as it is treated here; and he appears to have hastily changed his identification later on observing the printed length. His later description of the hind angles is incorrect, differing from his own earlier description and from Say's original description.

***Loxandrus rectangulus* Leconte.** Enterprise, two specimens (Schwarz). Rests upon these original specimens and possibly a synonym.

***Loxandrus crenatus* Leconte.** Not rare (Schwarz); Jacksonville (Slosson Coll. January–March); Enterprise (Schaupp Coll.); Lakeland, Nov. 9, caught by sifting leaves on shore of Lake Parker; Sebastian, Aug. (Genung). Confined to Florida and Alabama, Mobile Co. (Löding).

In addition, Blatchley cites *L. saphyrinus* Chaudoir, which name was also used by Austin for specimens from Tampa, but it appears to me that Florida specimens are all *reflexus*. There is very little to separate *reflexus* from *saphyrinus*, of which it seems to be the Floridian representative, but if Leconte's name is used, it must exclude Chaudoir's. Mr. Löding in Alabama finds also *lucidulus*, *lucens*, *minor* and *iris*. It may be noted in concluding the tribe Pterostichini, that feebly represented as it is in Florida (thirty species against forty-six in New Jersey), that representation is mainly composed of the genera *Loxandrus*, *Evarthrus* and *Ferestria*, hardly known near New York; the typical *Pterostichus* and *Amara* of northern woods having scarcely any standing in Florida. Furthermore, a glance at the localities given shows that it is mainly the northern half of the State that shelters what remains of the tribe, especially in *Evarthrus* and *Lophoglossus*. It is therefore in keeping with these facts that *Loxandrus*, the one strongly Floridian genus, should be the only one known in Cuba, its beach environment being possibly suggestive of the method of transportation.

Tribe LICININI.

***Diplochila laticollis* Leconte.** Biscayne Bay, Lake Worth (Slosson Coll. January–March); Ormond, March 17, beneath bark (Blatchley); Fort Myers, March 30, at light (Davis). Extends northward to Connecticut (Champlain, Psyche, XVIII, p. 36), westward to Nebraska. Common at light in Mobile Co., Ala. (Löding).

***Diplochila major* Leconte.** Common (Schwarz); Lake Worth (Hamilton); Biscayne Bay (Slosson Coll. January–March); Fort Myers, March 30,

at light; Everglade, June (Davis); Crescent City, April 20. Extends northward to New Jersey, westward to Indiana. Common at light in Mobile Co., Ala. (Löding).

Diplochila nupera Casey. Lake Worth (Casey); Biscayne Bay (Slosson Coll. January–March); Arch Creek, March 21 (Blatchley); Everglade, June and July (Davis). Described from Florida, thus far unknown outside the State.

Dicælus purpuratus Bonelli. Between Allen River and Deep Lake, April 13 (Davis); "Fla." (Leng Coll.); "Fla." (Bull. Br. Ent. Soc. III, p. 52). Extends northward to Connecticut (Champlain, Psyche, XVIII, p. 36), westward to Missouri. The purple color is barely evident by artificial light. Mobile and Baldwin Co., Ala., common (Löding).

Dicælus quadratus Leconte. Cedar Keys, very rare, Biscayne Bay (Schwarz); Fort Myers, March 6 (Blatchley); Taylor Co. (Genung). Confined to Florida and Alabama (Magazine Point, Mobile Co., Löding).

Dicælus carinatus Dejean. Lake Harney, one specimen, Biscayne Bay, Busk Key (Schwarz); St. Petersburg, Jan. 17, beneath chunks in low damp woods (Blatchley); Taylor Co. (Genung); Lakeland, May 7; Big Pine Key, September (Davis); Key West. Confined to Florida, Alabama and Georgia. Mobile Co., Ala., rare, but found in several localities (Löding).

Dicælus alternans Dejean. Lake Harney, Enterprise, Tampa, St. Augustine, Crescent City, Lake Poinsett (Schwarz); Altamonte, Ormond, Biscayne Bay (Slosson Coll. January–March); Punta Gorda, under wood by roadside, Nov. 12. Confined to Florida and Georgia.

Dicælus elongatus Dejean. Enterprise, very rare, St. Augustine, Crescent City (Schwarz). Extends north to Connecticut, west to Illinois and Texas. Mobile Co., Ala. (Löding).

Dicælus crenatus Leconte. Tallahassee (Barber); occurs also in Louisiana, Texas and Alabama, Mobile Co. (Löding).

Dicælus subtropicus Casey. Palm Beach (Kinzel). Described in Memoirs IV, p. 151, and said to differ from *ovalis* and *fervus* in its narrower form, thoracic impressions and alternately distinctly wider and more convex striae intervals.

?**Dicælus politus** Dejean. "Fla." (Bull. Br. Ent. Soc. III, p. 52). Abundant in District of Columbia, Pennsylvania, New York, extends to Connecticut, but recent confirmation of its occurrence in Florida is lacking. Found only in Madison and St. Clair Co. in northern Alabama by Löding.

?**Dicælus fervus** Say. "Fla." (Bull. Br. Ent. Soc. III, p. 52). This species also occurs in Kentucky, Ohio, Indiana, Missouri, etc., and has not recently been reported from Florida.

Badister elegans Leconte. Haw Creek (Schwarz). Rare in New Jersey, also Texas.

Badister micans *Leconte*. Fort Capron, Lake Harney, Tampa, not rare, Biscayne Bay (Schwarz); "Fla." (Brownell). Extends northward to Massachusetts, westward to Indiana.

Badister reflexus *Leconte*. Suwannee (Slosson Coll. January-March). Extends northward to New York, westward to Indiana.

Badister flavipes *Leconte*. Fort Capron, Enterprise, Tampa, rare (Schwarz); one specimen, Little River, March 16 (Blatchley); Sebastian, August (Genung). Extends northward to New York; no records known to me outside the Atlantic States.

The species of *Badister* look out of place in this tribe, resembling strongly *Stenolophus*. The definition of the tribe given by Horn is replete with exception and it may later be advisable to remove *Badister*.

Tribe PLATYNINI.

Calathus gregarius *Dejean*. "Fla." (Bull. Br. Ent. Soc. VI, p. 49). A northern species not recently found in Florida. In Alabama Mr. Löding finds *C. opaculus* only.

Platynus cincticollis *Say*. St. Augustine, Crescent City (Schwarz); Dunedin, Sanford, Sarasota, Eustis, Kissimmee, January, March, beneath cover at border of ponds (Blatchley); Enterprise, Dec. 12. (Brownell); Key West. Occurs throughout the middle and southern states. Mobile and Baldwin Co., Ala (Löding).

Platynus decorus *Say*. Tampa, common (Schwarz); Crescent City (Schwarz); Dunedin, Sarasota, (scarce) January, April (Blatchley). Also occurs throughout the middle and southern states. Mobile and Baldwin Co., Ala. (Löding).

Platynus floridanus *Leconte*. Common, St. Augustine, Biscayne Bay, Jupiter, Crescent City, Miami (Schwarz); Lake Worth (Hamilton); Enterprise (Castle and Laurent); Ormond (Slosson Coll. January to March); "all the places I collected, common, damp places under cover" (Blatchley); Jacksonville (Genung); Punta Gorda, Nov. 17, caught by beating bushes between beach and salt meadow. Confined to Florida.

Platynus æruginosus *Dejean*. Monticello, Oct. 4-8, 1914 (Mutchler & Watson). Occurs in Atlantic States northward to Massachusetts, not previously reported from Florida. The specimens from Florida are more robust than those I have seen from more northern regions and may require a varietal name later.

Platynus punctiformis *Say*. Haulover, Enterprise, Haw Creek, Bartow, Tallahassee (Schwarz); Lake Worth (Hamilton); Jacksonville

(Slosson Coll. January–March); Daytona, Nov. 10 (Engelhardt); Florida, common, same as *floridanus* (Blatchley); Enterprise, Dec. 12, in lake shore debris (Brownell); Titusville, Nov. 8, at light; Punta Gorda, Nov. 17, beating bushes; Everglade, June (Davis Coll.). Extends northward to Lake Superior. Common in Mobile and Baldwin Co., Ala. (Löding). *P. rubripes* also occurs in Mobile Co., Ala.

Platynus octopunctatus Fabricius. Tampa, one specimen (Schwarz); "Fla." (Leng Coll.). Middle and western states. Mobile Co., Ala., rare (Löding).

Platynus picticornis Newman. Upper St. John's River, under drift wood (Schwarz). Reported from Florida, Illinois, District of Columbia (?).

Platynus nutans Say* var. *striatopunctatus Dejean (and including *crenulatus* Leconte as a synonym). Jacksonville, April 21 (Laurant); Punta Gorda, Nov. 17, Fort Myers, March 30, at light, April 26, April 11, under boards at edge of pond and sweeping grassy meadow, Lake Okeechobee, April 29–May 2, very abundant (Davis); Enterprise, Dec. 12 (Brownell); Key West; Lake Okeechobee, April, under boards and on corn blossoms (Grossbeck). *P. nutans* occurs in Pennsylvania, Kansas, etc., the variety *striatopunctatus* in the southern states. The specimens which Messrs. Davis and Grossbeck found abundant at Lake Okeechobee show little evidence of the stria punctures supposed to characterize the southern race. *P. crenulatus* is found in Mobile Co., Ala., rare (Löding).

Platynus limbatus Say. "Fla." (Bull. Br. Ent. Soc. III, p. 57); Key West? (Leng Coll.). Occurs also in South Carolina, Georgia, Texas and Alabama., Mobile, Baldwin and Lee Co. (Löding).

Olisthopus parmatus (Say). Crescent City (Schwarz). Extends northward to New York, westward to Indiana.

Perigona pallipennis Leconte (including *nigriceps* Dejean as a synonym). Enterprise, rare, Crescent City (Schwarz); Lake Worth (Slosson Coll. January–March); Enterprise, April, November, under rubbish (Brownell); Biscayne Bay (Leng Coll.). Rare but occasionally found in North Carolina, District of Columbia, New Jersey, Indiana.

The tribe Platynini is generally northern in habitat, forty-two species are recorded for New Jersey, eleven for Florida, of which two only seem to be frequently found. *P. nutans* is, north at least, often found in trees; the others are usually found under stones, etc., in damp places. It may prove that there are more species in the northern and western part of the state.

Tribe ANCHONODERINI.

Euphorticus pubescens Dejean. Common (Schwarz); Suwannee Springs (Slosson); Biscayne Bay (Slosson); Monticello, Oct. 4–8, Lakeland,

Nov. 10, about grassy pool in white sandy plain caught by pouring water on the bank; Lakeland, May (Davis); Taylor Co., May (Genung); Enterprise, October (Brownell). Occurs only in Georgia, Florida and Alabama, Mobile Co., April, May, where *Atranus pubescens* is also found (Löding).

Tribe CTENODACTYLINI.

Leptotrachelus dorsalis Fabricius. Fort Capron, very rare (Schwarz); Jacksonville, January–March (Slosson Coll.); Lake Okeechobee, April 30 (Davis); Enterprise, November, at light (Brownell); Fort Myers, April 1, sweeping in grassy meadow. Extends westward to Kansas and northward to New York, where it occasionally comes to light and has once been found in numbers between the layers of cattail stems. Mobile and Baldwin Co., Ala. (Löding). Reported also from Cuba.

Tribe ODACANTHINI.

Casnonia pennsylvanica Linné. Sarasota, Miuku, on the ground in dry places, January, February (Blatchley); Taylor Co. (Genung); Key West, September (Davis). Extends northward to Massachusetts, westward to California. Common in Mobile Co., Ala. (Löding). The black spots on the elytra are larger in specimens from Texas and Florida.

Casnonia ludoviciana Sallé. Fort Capron, Sand Point, Lake Harney, Cedar Keys, not rare (Schwarz); Lake Worth, Biscayne Bay (Slosson Coll., January–March); St. Lucie, Miami, Sebastian River (Schwarz); Lake Okeechobee, April 30 (Davis); one only (Blatchley). Extends northward to Camden, N. J., where it has been found by Wenzel, westward to Louisiana; Mobile Co., Ala., May, rare (Löding).

Tribe DRYPTINI.

Galerita janus Fabricius. St. Augustine, Jacksonville, Tallahassee (Schwarz); Ormond, Punta Gorda, Belleair (Slosson Coll., January–March); Punta Gorda, in syrup trap, Nov. 15; Fort Myers, March 30, at light. Extends northward to New York, westward to Kansas. Mobile and Baldwin Co., Ala. (Löding).

Galerita lecontei Dejean. Fort Capron, Sand Point, Enterprise, not rare, found also on sugared trees (Schwarz); Lake Worth (Hamilton); "Fla." (Blatchley); Monticello, Oct. 4–8. Reported also from South Carolina, Texas, Colorado and Alabama (Mobile and Baldwin Co., Löding).

Galerita bicolor var. **obliqua** Casey. Lake Worth, (Casey, type locality); "Fla." (Blatchley); Fort Myers, April 1, April 23, at light (Davis); Everglade, May, June, July (Davis Coll.). The variety, so far as known, is confined to Florida. Mr. Löding finds the species in Mobile and Baldwin Co., Ala.

Galerita thoracica Casey. "Fla." (Casey).

?**Agra** sp. With much doubt, this genus is included on a reported capture of a specimen at Archer by Koebele.

Diaphorus lecontei Dejean. Enterprise, Tampa, very rare, also attracted by light, Crescent City (Schwarz); Enterprise, April (Brownell). Occurs also in Georgia and Florida.

Thalpius pygmaeus Dejean. Very rare (Schwarz); Enterprise, Nov. 17 (Brownell). Occurs also in Louisiana and Texas.

Thalpius dorsalis Brullé. Jacksonville (Slosson Coll., January-March). Extends northward to District of Columbia, westward to Louisiana.

Tribe EGINI.

Ega sallei Chevrolat. Enterprise, Cedar Keys, Tampa, common (Schwarz); Suwannee, Punta Gorda, Jacksonville, Belleair (Slosson Coll., January-March); Enterprise, October (Brownell); Monticello, Oct. 4-8. Occurs also in Louisiana and Alabama (Mobile Co., Löding).

Tribe LEBIINI.

In this tribe of plant loving Carabidæ the family reaches its highest development in Florida, the forty-three species recorded slightly exceeding the number given for New Jersey, and being often represented by a large number of records, showing their wide distribution within the state and comparative abundance. The development of the tribe is also shown by the number of species peculiar to the state and the tendency in other species to form races, some of which have not yet received names.

Tetragonoderus intersectus Germar. Not rare, Fort Capron, Enterprise, Cedar Keys (Schwarz); Lake Worth (Hamilton); Suwannee Springs, Pensacola, Belleair, Biscayne Bay (Slosson Coll., January-March); Pensacola, Oct. 11, Miami, Nov. 15 (Engelhardt); Lake City (Agric. Exp. Sta.); common, twenty beneath board in yard at Dunedin (Blatchley); Lakeland, at light, Nov. 9; Fort Myers, March 30, April 27, at light, Deep Lake, April 13 (Davis); Enterprise, April (Brownell); December, in lake shore debris; Clearwater, April 28, Titusville, Nov. 8, at light. Occurs

in Georgia and Florida; not uncommon in Alabama, Mobile Co., July, August (Löding); and has also been reported from Kentucky. Varies in the extent of the yellow maculation, some of Mr. Davis' specimens from Deep Lake being immaculate. Mr. Löding has also found one specimen of *T. fasciatus* in Mobile Co., Ala.

Nemotarsus elegans Leconte. Cited but not seen by Mr. Schwarz; Archer (Koebele). Occurs in Illinois, Maryland, Virginia, Alabama (Mobile Co., under white oak bark in winter, Löding).

Loxopeza tricolor Say. Tampa, rare (Schwarz). Occurs commonly from District of Columbia northward to Canada. Mobile Co., Ala., two specimens (Löding). *L. grandis* has also been reported from Gulf States. Mr. Löding finds the latter in Mobile Co., Ala., but not common.

Lebia pulchella Dejean. Fort Capron, Tampa, rare (Schwarz). Occurs from Canada to Texas, usually not common anywhere. Mobile Co., Ala., July (Löding).

Lebia marginicollis Dejean. Not rare, St. Augustine, Crescent City, Bartow, Centerville (Schwarz); Lake Worth (Hamilton); Belleair, Jacksonville (January-March, Slosson Coll.); Sarasota, Bassenger, Sanford, Fort Myers, Lake Okeechobee, January, March, found by beating oak, etc. (Blatchley); Lakeland, Nev. 9, Punta Gorda, Nov. 14, Fort Myers, March 31, at light, April 24, April 1, sweeping in grassy meadow and low shrubs (Davis); Monticello, Oct. 4. Occurs in Peru, Brazil and North America to New Jersey. Mr. Löding has not so far found either this or the following variety in Alabama.

Lebia marginicollis var. **cyanea** Dejean, described from Cuba, has been regarded as a synonym perhaps incorrectly, and is included above as the records cover both forms.

Lebia viridis Say. Enterprise, Lake Harney, New Smyrna, St. Augustine (Schwarz); Belleair, Biscayne Bay (Slosson Coll., January-March); Lakeland, Nov. 7 and 9, Jacksonville, Nov. 3, Fort Myers, April 1 (Davis); Clearwater, April, May, Crescent City, Sanford (Van Duzee); Monticello, October, Gainesville, September, taken abundantly by sweeping vegetation. Extends from Maine to Guatemala. Mobile and Baldwin Co., Ala. (Löding).

Lebia viridis var. **rhodopus** Schwarz. Tampa, rare (Schwarz). Described as new species by Schwarz, treated as a variety by Horn, and apparently not found by recent collectors.

Lebia pumila Dejean. Enterprise (Castle and Laurent); Crescent City, April 22 (Van Duzee). Occurs from Maine to Georgia; Mobile Co., Ala., April, May, July (Löding).

Lebia lecta Horn. "Fla." (Ashmead); Key Largo (Schaeffer Coll.).

Described from Florida; apparently very rare, received from Gustav Beyer who says he found them in curled leaves following a fire which destroyed the weeds growing up among a heap of old cut branches.

Lebia viridipennis *Dejean*. Fort Capron, Enterprise, Cedar Keys, not rare (Schwarz); Lakeland, Nov. 10 (Davis); La Belle, April 27, at light; De Funiak Springs, Oct. 17. Occurs from Canada to Texas. Mobile Co., Ala. (Löding).

Lebia lobulata *Leconte*. Enterprise, rare (Schwarz). Known from Louisiana, Indiana, Virginia, District of Columbia, New Jersey; always rare. Mobile Co., Ala., November, under hickory bark (Löding).

Lebia ornata *Say*. Key West? (Leng Coll.); Taylor Co. (Genung). Widely distributed in United States, common northward, apparently not so in Florida. Mobile Co., Ala., May, June (Löding).

Lebia collaris *Dejean*. Tampa, Enterprise, St. Augustine (Schwarz); Enterprise (Brownell). Occurs in Middle and Southern States. Mobile Co., Ala., September, October, November, on golden rod (Löding).

Lebia analis *Dejean*. Enterprise (Castle and Laurent), also (Brownell); Miami, March 10 (Brownell). Throughout northern and southern states, also in Indiana; Mobile Co., Ala., May, July (Löding).

Lebia fuscata *Dejean*. Cited but not seen by Schwarz; Belleair (Slosson); Jacksonville, Nov. 5. Occurs from Canada to Florida and Missouri. Not found in Alabama by Löding.

Lebia abdominalis *Chaudoir*. Enterprise, one specimen, Jupiter (Schwarz); Lake Worth, Biscayne Bay (Slosson Coll., January–March). Occurs in Georgia, District of Columbia, Texas, Missouri, Indiana; Mobile Co., Ala., rare, February, April (Löding).

Dianchomena scapularis *Dejean*. Enterprise, one specimen (Schwarz). Extends northward to New Jersey, westward to Dakota. Mobile Co., Ala., one specimen, October (Löding).

Aphelogenia vittata *Fabricius*. Jacksonville (Slosson Coll., January–March); Lakeland, Nov. 8 (Davis); "Fla." (Leng Coll.). Pennsylvania to Texas; Mobile Co., July (Löding).

Aphelogenia furcata *Leconte*. Tampa, rare, Crescent City, one specimen (Schwarz); Gainesville (J. R. Watson). Occurs from Canada to Florida and westward to California.

?**Lebia chloroptera** *Chaudoir* occurs in tropical regions including Brazil. Chaudoir gives Florida also but the statement is not recently confirmed.

Phloeoxena signata *Dejean*. Enterprise, Tampa, rare, Crescent City (Schwarz); Sanford, Jan. 16, one only, beneath bark of pine (Blatchley); Key West. Occurs in Gulf States, North Carolina, South Carolina, Georgia and Alabama; Mobile Co., under bark of oak and pine in winter (Löding).

Phlæoxena signata var. **nigripennis** n. var. Enterprise, Oct. 6, Oct. 16, Nov. 1 (Brownell). Differs from *signata* by the dark piceous head, immaculate testaceous thorax, immaculate black elytra.

Coptodera ærata Dejean. Key West? (Morrison, two specimens in Leng Coll. received through Angell Coll.). Occurs in Alabama (Löding, June), Louisiana, Texas, Kentucky, Ohio, South Carolina, Middle, Western and Southern States.

Mr. Löding takes in Mobile Co., Ala., the following, not thus far found in Florida: *Dromius piceus* Dejean, January, February; *Axinopalpus biplagiatus* Dejean, May. These are therefore more or less likely to occur in northern Florida.

Euproctus trivittata Leconte. Capron (Bolter); Lake Worth (Dietz); Key West, Biscayne Bay (Schwarz). Described from Florida and thus far unknown elsewhere.

?**Callida purpurea** Say. Jacksonville (Slosson Coll., January–March). Occurs from New York to Georgia, and westward to Nebraska. This is the only Floridian record. Mobile, Ala., one specimen (Löding).

Callida fulgida Dejean. Fort Capron, Haulover, Enterprise (Schwarz); Enterprise (Castle and Laurent); Lakeland, Nov. 10, sweeping (Davis); Fort Myers, March 31, sweeping bushes near river; Green Cove Spring; Taylor Co., April, May (Genung); Pensacola, Oct. 11. Gulf States only, Georgia, Florida, Texas, Alabama; on scrub oak hunting larvæ of *Metachroma* (Löding).

Callida decora Fabricius. Enterprise, Tallahassee, common in winter under oak bark, in summer on cotton (Schwarz); Lake Worth (Hamilton); Enterprise (Castle & Laurent); Silver Springs, Nov. 25 (Engelhardt); Newberry, Nov. 19; La Grange, September, Lakeland, May 5 (Davis); Enterprise, April (Brownell); Sebastian, Aug. (Genung); Gainesville, September, October. Gulf States, extending into Mexico, northward to Iowa in Mississippi Valley. Mr. Löding does not mention this species but cites *punctata* as common in Alabama.

Callida striata Casey. Florida (locality unrecorded). Described in Memoirs, IV, p. 177, as differing from *viridipennis* in its narrower form, coloration, deeper striæ, more convex and subalutaceous intervals, relatively narrower base of the elytra and many other features. The color is described as black, the head and pronotum with rather obscure violaceous lustre, variegated with metallic green, of which a vitta parallel to and not very near the thoracic margin from apex to base is especially noticeable; elytra vivid green, gradually with feebly cupreous lustre broadly toward the sides; under surface metallic green, legs black.

Callida viridipennis Say. Orange Grove, May (Seifert); Haulover,

Enterprise, Crescent City, St. Lucie (Schwarz); Lake Worth (Dietz); St. Augustine (Johnson); Enterprise (Castle & Laurent); Jacksonville, Biscayne Bay (Slosson Coll., January-March); Dunedin, Ormond, Arch Creek, Lake Okeechobee, March, April, found by beating oak (Blatchley). Mt. Vernon, Mobile Co., Ala., under white oak bark (Löding).

?**Philophuga viridicollis** *Leconte*. Jacksonville (Slosson Coll., January-March). The only Florida record for this Texan species.

Plochionus discoideus *Schaupp*. (Bull. Br. Ent. Soc., II, p. 86, 1880 = *dorsalis* Horn, 1882). Biscayne Bay, St. Lucie, on herbage (Schwarz); St. Augustine (Johnson); Lake Worth (Hamilton); Key West (Schwarz); Enterprise, April (Brownell); Key Largo (Beyer). Confined to Florida and Georgia.

Plochionus vittatus *Leconte*. Described from Florida, recently found near Mobile, Ala., Dec. 20, by H. P. Löding in larval nest of leaf rollers on American olive.

Plochionus amandus *Newman*. Described from Florida. Not recently recorded except in the view which regards the preceding two as varieties.

?**Plochionus pallens** *Fabricius* (= *bonfilsii* Dejean, *valens* *Leconte*). New Smyrna, one specimen (Schwarz); stated to be a variety and perhaps not synonymous with the Fabrician species, which appears to be a West Indian insect, distributed by commerce so that it has occurred at seaboard cities in Europe and America.

Plochionus timidus *Haldeman*. Enterprise, Haw Creek, each one specimen (Schwarz); Enterprise, April, a variety with elytra entirely black (Brownell). Extends northward to New Jersey, westward to California.

Pinacodera limbata *Dejean*. Lake Worth (Dietz). Extends northward to Connecticut, westward to Texas; Mobile Co., Ala., common (Löding).

Pinacodera platicollis *Say* var. **fuscata** *Dejean*. Haulover, Enterprise, St. Augustine, Crescent City, Indian River (Schwarz); Jacksonville (Castle and Laurent); Lakeland, Nov. 10, Ortega, September (Davis); Enterprise, October, November (Brownell); Taylor Co. (Genung); Jacksonville, Nov. 3, beating palmetto, Nov. 5; Lakeland, Nov. 8, beating oaks; beaten from large bunches of "Spanish Moss" (*Tillandsia usneoides* L.) at Dunedin, Lake Okeechobee and Ormond (Blatchley). The species extends north to New Jersey, west to Texas; the variety appears to be confined to the Gulf States.

Cymindis elegans *Leconte*. Enterprise, Oct. 12 (Brownell); "Mass. to Fla." (Horn); Crestview, Oct. 15 (Mutchler & Watson). The true *elegans* seems to be confined to the Gulf Strip.

?**Cymindis planipennis** *Leconte*. Suwannee Springs (Slosson Coll., January–March); Enterprise, Nov. 1 (Brownell). Occurs only in New Mexico and Kansas *vide* Horn. At least one species of *Cymindis* is taken by Mr. Löding in Alabama.

Apenes angustata *Schwarz*. Enterprise, St. Augustine (Schwarz); Lake Worth (Hamilton); Sebastian, August (Genung). Confined to Florida. Horn treated this erroneously as = *lucidula*, a more northern species from which it is distinguishable as stated by Schwarz.

Apenes sinuata *Say*. Enterprise, Crescent City (Schwarz); Lake Worth (Slosson Coll., January–March); Taylor Co. (Genung). Extends northward to New Jersey. An allied form, undescribed, which is, however, smaller and narrower, occurs in Texas. Mobile Co., Ala., June, November (Löding).

Apenes opaca *Leconte*. Tampa, in the pine woods, under sticks, rare (Schwarz); Naples (Slosson Coll., January–March). Confined to Georgia, Florida, and Alabama (one specimen, Mobile Co., (Löding). *A. parallela* of the Bahamas and Cuba is a similar species.

Eucærus varicornis *Leconte*. Fort Capron, Tampa, Crescent City (Schwarz); Lake Okeechobee, May (Davis). Florida, Alabama, Louisiana.

Pentagonica flavipes *Leconte* (= *Rhombodera pallipes* *Leconte*). Crescent City, Haw Creek (Schwarz); Taylor Co. (Genung); Enterprise (Brownell). Extends northward to New Jersey, westward to Arizona.

Onota floridana *Horn*. Lake Poinsett, Haw Creek, Biscayne Bay, concealed in leaves of Palmetto (Schwarz); Enterprise, Nov. 10, Nov. 17 (Brownell). Confined to Florida.

In addition to the above listed Lebiini, *Dromius atriceps* occurring in Georgia and Louisiana, probably is to be found, but there are no definite records.

Tribe HELLUONINI.

Helluomorpha ferruginea *Leconte*. Ormond, March 24 (Blatchley); six were secured beneath a pine log in open woods.

Helluomorpha præusta *Dejean*. Sand Point, Tampa, very rare, under old pine bark (Schwarz). Occurs also in Georgia.

Helluomorpha clairvillei *Dejean*. Pensacola, Charlotte Harbor (Slosson Coll. January–March); La Grange, September (Davis); near Pablo Beach, in an abandoned garden, Nov. 4. Occurs also in Georgia, where *H. nigripennis*, not known so far from Florida, is also found. Both species are found, rare, in Alabama by Löding.

Tribe BRACHYNINI.

The definition of the species cited in this tribe is unsatisfactory and must perhaps remain so until comparison can be made with the types.

Brachynus alternans *Dejean*, larger than *fumans* and with strongly elevated costæ, is recorded by Blatchley and a similar species (*?deyrollei*) by Brownell. *B. alternans*, identified by Prof. H. C. Fall, is taken in Mobile Co., Ala., by Löding.

?Brachynus americanus *Leconte*, is also included by Blatchley only; St. Petersburg, Lake Okeechobee, Ormond, Dunedin, January, April, beneath cover at borders of ponds.

Brachynus fumans *Fabricius*. Enterprise (Castle and Laurent); Punta Gorda (Slosson Coll., January–March); (Sanford, Fort Myers, Sarasota, Lake Istokpogee, January, March (Blatchley); Everglade, May, June, July (Davis Coll.); Monticello, Oct. 4.

Brachynus quadripennis *Dejean*. Lake Worth (Hamilton); Biscayne Bay (Slosson Coll., January–March). Mobile Co., Ala. (Löding).

Brachynus cordicollis *Dejean*. St. Augustine (Schwarz); Lake Worth (Hamilton); Dunedin, Sanford, Sarasota, January, March (Blatchley); Punta Gorda, Nov. 16, under boards. Mobile Co., Ala. (Löding).

?Brachynus pulchellus *Blatchley*. Described from Indiana, occurs also in Florida, according to Blatchley: Sarasota, February, March. Determination is doubtful.

Brachynus lateralis *Dejean*. Common (Schwarz); all places collected, common (Blatchley); Enterprise, April (Brownell). Mobile Co., Ala., common (Löding).

Brachynus puberulus *Chaudoir*. Biscayne Bay (Slosson Coll., January–March).

Brachynus cyanipennis *Say*. Enterprise (Castle and Laurent); Silver Springs, Nov. 26 (Engelhardt); Punta Gorda, Nov. 13, Nov. 16, under board along roadside; Everglade, July (Davis Coll.); Fort Myers, April 26, under boards and rubbish at edge of pond.

No comparative distribution data are given in this tribe on account of the unreliability of the identification. It may be noted that Mr. Schwarz has committed himself in very few instances in this tribe. In addition to species named above Prof. Fall has identified among specimens taken near Mobile by Mr. Löding the following: *viridipennis*, *perplexus*, *medius*, *tomentosus*.

Tribe CHLÆNIINI.

Chlænius herbaceus *Chevrolat*. Fort Capron, Sand Point, Lake Harney, Tampa (Schwarz); Jacksonville (Castle and Laurent); Enterprise

(Slosson Coll., January–March); Silver Springs, Nov. 25 (Engelhardt); St. Petersburg, Jan. 21, under boards along border of small lake (Blatchley); Lake Okeechobee, April 20 (Davis); Fort Myers, April 26, under boards and rubbish at edge of pond. Occurs also in Ga., Ala., and Mexico, Mobile Co., Ala., Feb. and March. (Löding).

Chænium erythropus Germar. Indian River (Schwarz); Jacksonville (Castle and Laurent); (Slosson Coll., Jan.–March); "Fla." (Blatchley); Punta Gorda, Nov. 15, in syrup trap at edge of fresh water meadow (Davis); Deep Lake, April 12, east of Great Cypress Swamp (Davis); Everglade, May, June, July (Davis Coll.); Enterprise, March (Brownell); Fort Myers, April 26, under boards and rubbish at edge of pond. Occurs from Ohio to Nebraska; also in New Jersey, southward to Louisiana. Mobile Co., Ala., January, February, Mexico, June (Löding).

Chlænium fuscicornis Dejean. Not readily separable from preceding; is given by Schwarz as occurring at Sand Point, Tampa, and Lake Worth and is also included by Blatchley. According to Schaupp, it occurs in Gulf States, Illinois and Missouri. Mobile Co., Ala., February, March (Löding).

Chlænium laticollis Say. Crescent City, Lake Poinsett, common (Schwarz); Lake Worth (Hamilton); Pensacola, Biscayne Bay, Atlantic Beach (Slosson Coll., January–March); "Fla." (Blatchley); Everglade, May, June, July (Davis Coll.); Enterprise, Dec. 12 (Brownell); Punta Gorda, under boards, Nov. 15; Fort Myers, April 26, under boards and rubbish at edge of pond; Monticello, Oct. 4. Extends northward to Conn., westward to Arizona. Mobile and Baldwin Co., Ala., common (Löding).

Chlænium æstivus Say. Enterprise, rare, St. Augustine, Gulf Hammock, Lake Poinsett, Tallahassee (Schwarz). This species and *C. diffinis* Chaudoir are more abundant in the Middle States. Mobile Co., April, July, not common (Löding).

?**Chlænium augustus** Newman. Described from Georgia, cited but not seen by Schwarz, taken once in wash-up in New Jersey, this species remains one of the least known. Mobile Co., Ala., January, February, very local (Löding). Mr. Löding takes *sericeus* also in Alabama.

Chlænium prasinus Dejean. Enterprise, Lake Poinsett (Schwarz); Dunedin, St. Petersburg, January, March, beneath boards at borders of ponds (Blatchley); "Fla." (Leng Coll.); Everglades, August. Occurs from Middle States west to Colorado and Texas. *C. solitarius* which is said to occur from Canada to Louisiana should be compared. Mobile Co., Ala., May, June, frequent (Löding).

Chlænium nemoralis Say. Tallahassee (Schwarz); Enterprise, March (Brownell, Castle and Laurent); Biscayne Bay (Slosson Coll., January–March); Dunedin, Sanford, Sarasota, January, March (Blatchley); Fort

Myers, April 26, under boards and rubbish at edge of pond. A common species from Canada to Texas. Mobile, Baldwin Co., Ala. (Löding).

Chlænius tricolor *Dejean*. St. Augustine (Schwarz); Enterprise, March (Brownell). Common east of Rocky Mountains. Mobile, Baldwin Co., common (Löding).

Chlænius floridanus *Horn*. Lake Worth (Dietz); Belleair (Slosson Coll., January–March); Sarasota, March 4 (Blatchley); Everglade, July (Davis Coll.); “Fla.” (Leng Coll.). Described from Florida.

?**Chlænius pennsylvanicus** *Say*. Tampa, Enterprise, rare (Schwarz). “Occurs principally in northern states and Canada” (Horn).

The four species last named are similar in size and color.

Chlænius circumcinctus *Say* (*perplexus* *Dej.*). Fort Capron, Enterprise, Tampa, Crescent City (Schwarz); Miami (Slosson Coll., January–March); Arch Creek, March 21, one only (Blatchley); Fort Myers, April 26, under boards and rubbish at edge of pond; Lake Okeechobee, April 20, under dry grass, in humus at edge of lake. Occurs in Gulf States and Cuba, Mobile Co., Ala., May, June, rare (Löding).

Chlænius maxillosus *Horn*. Fort Capron, Lake Harney, two specimens (Schwarz); Everglade, April 7 (Davis); Everglade, May, June, July, common (Davis Coll.); “Fla.” one specimen (Brownell). It is interesting to note that this species described from specimens found by Hubbard and Schwarz, and always considered rare, should be missing in northern Florida records but found common at Everglade in summer by Mr. Davis’ collectors. It appears to be confined to the southern part of the peninsula, a distribution so restricted as to contrast sharply with that of the next.

Chlænius niger *Randall* var. *ludoviciana* n. var. The following localities are given for *C. niger*, all however, are believed to belong to the variety: Fort Capron (Schwarz); Lake Worth, Biscayne Bay (Slosson Coll., January–March); Jacksonville (Castle and Laurent) Mobile Co., Ala., July (Löding). The species extends from Newfoundland to the great Zapata swamp on the southern coast of Cuba and westward to Iowa, Nebraska, but varies greatly in its extended range. The type came from New England, the Newfoundland specimens differ, but not so much as those from Louisiana, Florida, and Cuba, in which the thorax is broader and shorter, the elytral sculpture less pronounced, and the size larger. The type of the new variety is in my collection, labelled Louisiana, and was obtained from the Luetgens collection.

Black, above and beneath, antennæ and mouth parts slightly paler, head and thorax shining, elytra dull, densely punctate and clothed between the striæ with decumbent hair. Head finely punctulate, with two irregular and vague grooves between the eyes, thorax with very large punctures in front, on the two sides of the

disk and beside the median line, with a cluster of punctures in each hind angle; thorax much wider than long, vaguely depressed along median line and each side of the base. Length 15 mm.

Chlænius impunctifrons Say. Lake Poinsett (Schwarz). Canada to Texas (Horn). Mobile Co., Ala., March, April, not uncommon (Löding).

Chlænius tomentosus Say. Centreville (Schwarz); Jacksonville (Castle and Laurent). Nearly everywhere east of Rocky Mts. (Horn). Mobile, Baldwin Co., Ala., common (Löding).

Anomoglossus emarginatus Say. Tampa, one specimen, St. Augustine, Crescent City (Schwarz). Canada to Kentucky (Horn). Mobile Co., Ala., common (Löding). An allied species, *A. amænus*, occurs but appears to be rare in Georgia.

Anomoglossus pusillus Say. Haw Creek, Jan. 14, 1896 (Schwarz). A specimen found at Fort Myers, April 26, 1913, under boards and rubbish at edge of pond, is doubtfully referred to this species. Horn gives the distribution as Massachusetts to Illinois. Mobile Co., Ala., not common, March (Löding).

Mr. Löding takes *Brachylobus lithophilus* in Mobile Co., Ala., but so far there is no record of its occurrence in Florida.

Group *Oödes*.

The remarkable inconstancy of the setigerous punctures in *Oödes* causes some doubt of the propriety of including them in the tribe Chlæniini. The rarity of one of the genera associated with *Oödes* in forming the group by Horn has however prevented a careful study and the classification is therefore reluctantly left as it stands in his *Genera of Carabidæ*.

Lachnocrepis parallelus Say. Fort Capron, Haulover, Biscayne Bay, rare (Schwarz); Biscayne Bay, January (Slosson Coll.); Fort Myers, April 11, in grassy meadow with small pines. Extends northward to Canada, westward to Missouri.

Anatrichis minuta Dejean. Fort Capron, Cedar Keys, Tampa, St. Augustine, Sebastian River (Schwarz); Lake Worth (Hamilton); Biscayne Bay, January (Slosson Coll.); Fort Myers, April 1, at light (Davis). Extends northward to District of Columbia, west to Texas, Indiana, Missouri, nowhere common.

Anatrichis picea Horn. Arch Creek, 10 miles north of Miami, March 21 (Blatchley); Everglade, May (Davis Coll.). Described from Florida.

Oodes amaroides Dejean. Fort Capron, Enterprise, Tampa, St. Augustine (Schwarz); Arch Creek, Dunedin, January, April (Brownell); Lake

Okeechobee, April 30, under dry grass, in humus at edge of lake (Davis); Monticello, Oct. 4. Extends northward to New York, west to Texas and Kansas. Mobile Co., Ala., subaquatic (Löding). Reported also from Cuba.

Oodes americanus *Dejean*. Sand Point, Fort Capron (Schwarz); Lake Worth (Hamilton, Slosson); Belleair (Slosson Coll., January–March); Lake Okeechobee, April 29 and 30, shore of lake (Davis); Monticello, Oct. 4. Extends northward to New York, west to Indiana. One of Mrs. Slosson's specimens from Biscayne Bay has been determined, probably by Liebeck, as *O. fluvialis*, a very closely allied species. Mr. Löding has found one specimen of *O. americanus* in Mobile Co., Ala.

Oodes 14-striatus *Chaudoir*. St. Lucie, Crescent City, rare (Schwarz); Enterprise (Castle and Laurent); Lake Worth (Slosson Coll., January–March); La Belle, Deep Lake, April (Davis); Everglade, May, June, July (Davis Coll.); Allen River to Deep Lake, April 14, in a grassy place with thistles in patches. Known from Louisiana, Texas, Indiana and Alabama (Mobile Co., scarce, subaquatic, Löding).

Oodes (Stenous) cupræus *Chaudoir*. St. Augustine, Lake Harney, Lake Poinsett, Fort Capron (Schwarz); Biscayne Bay (Slosson Coll., January–March); Arch Creek, one only, March 21 (Blatchley). Other records for this species are western, viz.: Indiana, Missouri, Kansas, Texas, New Mexico, except Mr. Löding's Alabama record (Mobile Co.).

Oodes (Stenous) lecontei *Chaudoir*. Fort Capron Enterprise, Tampa, Sebastian River (Schwarz); Lake Worth (Hamilton); Miami (Slosson Coll., Jan.–March); Arch Creek, Dunedin, Lake Okeechobee, February, March (Blatchley); Lake Okeechobee, April (Davis); Everglade, May, June, July (Davis Coll.); Fort Myers, April 20, under boards and rubbish at edge of pond. The abundance of this species in southern Florida is noteworthy. Outside the state there are records from Louisiana, Alabama (Mobile Co., July, rare, Löding) and New Jersey (?).

Evolenus exaratus *Dejean*. Tallahassee (Schwarz). "Fla." (Leng Coll.). Recorded also from Georgia, Alabama, and District of Columbia. The allied *E. impressa* is known from Louisiana. They are said to resemble *Amara musculus* and the paucity of records may result partly from being confused therewith.

Tribe HARPALINI.

Agonoderus infuscatus *Dejean*. Not rare (Schwarz); Lake Worth (Hamilton); Biscayne Bay, Jacksonville (Slosson Coll., January–March); Lake City (Agl. Exp. Sta.); Sarasota, Sanford, Fort Myers, March, beneath

dead crayfish (Blatchley); Everglade, May, June, July (Davis Coll.); April, at light, La Grange, September (Davis); Sebastian, Jacksonville (Genung); Enterprise, Dec. 12, in lake shore debris (Brownell); Sanford, May; Clearwater, April 28; La Belle, April 27, at light. Fort Myers, March 31, at light, Nov. 15, at light, Florida (Casey). An abundant species in eastern United States, extending north to New Jersey; west to Texas. Mobile Co., Ala., common (Löding).

Agonoderus testaceus *Dejean*. Common (Schwarz); Jacksonville (Slosson Coll., January–March); Sarasota, March 1, one only (Blatchley); Punta Gorda, Nov. 12 (Davis). Extends northward to New York, west to Indiana. Mobile Co., Ala., common (Löding). Mr. Löding also lists *A. indistinctus* as rare in Mobile Co., Ala.

Agonoderus pauperculus *Dejean*. Crescent City (Schwarz). Recorded from District of Columbia, New Jersey, Indiana, and more common in Southern States.

Gynandropus hylaxis var. **elongatus** *Leconte*. Fort Capron, Tampa, St. Augustine, Jupiter, Indian River (Schwarz); Enterprise, December (Brownell). Extends northward to Staten Island, New York, where it is found under pine bark, west to Indiana. Mobile Co., Ala., January, two specimens (Löding).

Harpalus viridiæneus *Beauvois*. Lake Worth (Slosson Coll., January–March). A common species northward, extending to Canada, for which there is only Mrs. Slosson's record in Florida.

Harpalus caliginosus *Fabricius*. St. Augustine (Schwarz). This is the only record for this, one of the most widely distributed of ground beetles, covering practically all the United States. Common in Mobile Co., Ala. (Löding).

Harpalus pennsylvanicus *De Geer*. Not rare (Schwarz); St. Augustine (Schwarz); Pablo Beach, September, Lakeland, Nov. 7 (Davis); Gainesville, Monticello, De Funiak Springs, Florida (Casey). Extends northward to Connecticut westward to Indiana. Common in Mobile Co., Ala. (Löding).

Harpalus compar *Leconte*. Pensacola (Slosson Coll., January–March). Fort Myers, March 30, April 22, at light; Everglade, April 14; at light, Ortega, South Jacksonville, September (Davis); Everglade, May, June, July (Davis Coll.); Enterprise, October (Brownell); Sanford, May; Clearwater, April 28; Lakeland, May, in level pine land. Equally distributed with the preceding and usually treated as a variety thereof. Mobile Co., Ala. (Löding).

Harpalus herbivagus *Say*. St. Augustine (Schwarz). Abundant in New Jersey, and is even reported from Newfoundland.

Harpalus nitidulus *Chaudoir*. Haulover, Enterprise, rare (Schwarz);

Lake Worth (Hamilton); Lake Okeechobee, May (Davis). Mobile Co., Ala.? (Löding).

It will be noted how poorly the genus *Harpalus*, so commonly found in more northern regions, is represented in Florida. The reverse will be found in the following genus, which both in species and individuals, seems to abound, forming a characteristic feature of every Florida collection, at least from the southerly part of the state.

The genus *Hemisopalus* Casey (type *Selenophorus opalinus* Lec.) differs from *Selenophorus* by the more or less depressed dorsal surface, by the very slender hind tarsi, nearly as long as the tibiae, and other characters, including the frequently opalescent elytra; it includes of previously described Floridian species, *opalinus*, *gagatinus*, *iripennis* and *subtinctus*, besides the following described by Casey as new, viz.: (1) *delumbis* Csy, Lake Worth, said to be allied to *subtinctus* which Casey did not have for comparison; (2) *depressulus* Csy, Lake Worth, said to be closely allied to *iripennis*, not represented in Casey's collection; (3) *vigilans* Csy, Florida, placed next to *depressulus*. As in some other instances, the description of these species as new seems to result from Col. Casey's inability to make the characters observed in Floridian specimens coincide with those described from more northern specimens; he does not record as Floridian the species given below his own species apparently replacing them, rather than constituting additions to the list. It may therefore be eventually necessary to use his names in place of those we have cited, perhaps in varietal or trinomial form, but not probably as pure additions to the list.

***Selenophorus palliatus* Fabricius** (including *S. stigmatosus* Leconte, treated as a synonym in Horn's revision of the genus). Enterprise, St. Augustine, Lake Worth, Buck Key, not rare, frequently attracted by the light (Schwarz); Biscayne Bay (Slosson Coll., January-March); Lake City (Agl. Exp. Sta.); Sanford, Jan. 13, one only, beneath board in field (Blatchley); Lakeland, Nov. 7 (Davis); Everglade, May, July (one only) (Davis Coll.); Paola, Jacksonville, Sebastian, Aug. (Genung); Enterprise April, October, November, December (Brownell); Key West (Angell. Coll.); Sanford, May; Clearwater, April 28, Fort Myers, March 30, April 22, at light. Extends north to Georgia, west to Arkansas and Texas. A closely allied, apparently unnamed form, extends to Lower California. Common in Mobile Co., Ala. (Löding).

***Selenophorus chokoloskei* n. sp.**

Piceous, legs pale, upper surface shining, bronzed. Thorax equally wide at base and apex, sides regularly arcuate, widest a little before the middle, hind angles distinct but obtuse and rounded, basal impressions almost obsolete. Elytra a little

wider than the thorax, oblong oval, sinuate at tip, finely striate, striae 2-5-7 each with small but distinct punctures. Length, 6.75 to 7.50 mm.

Chokoloskee, April 8; Everglade, April 6, April 7, in truck garden and grassy lowlands (Davis). This species while as large as small specimens of *S. palliatus* and similarly bronzed, differs by the dorsal series of punctures being small but distinct, its depressed form, the more equally rounded sides of the thorax and the very feeble basal impressions. It may possibly prove identical with one of the numerous Cuban species but cannot be successfully compared with the brief descriptions given for them, nor could it be found in the Gundlach collection.

Selenophorus pedicularius *Dejean*. Tortugas, Buck Key (Schwarz); Lakeland, May 6, Deep Lake, April 13, Fort Myers, April 1, at light, Everglade, April, May (Davis). Horn gives the distribution as Middle States to Kansas, Florida, Arizona. He included *troglydites* as a synonym.

Selenophorus fatuus *Leconte* (*S. excisus* Lec. included as a synonym). Biscayne Bay (Slosson Coll., January-March); Southern Florida (Dr. Palmer, Leconte); Key West (Angell Coll.); Key West, Big Pine Key, September (Davis); Everglade, June (Davis Coll.). Confined to Gulf States. Rare in Mobile Co., Ala. (Löding). *S. mustus* Casey (Mem. Col. V. Oct. 1914) has been described from Biscayne Bay as near *fatuus*.

Selenophorus iripennis *Say*. Lake Worth, Biscayne Bay, very common under boards and rubbish (Slosson Coll., January-March); Enterprise, April, October (Brownell); Lakeland, Nov. 7; Fort Myers, March 30, at light, April, November, Gainesville, Sept. 26. Extends northward to New Jersey, west to Illinois and Texas. Rare in Mobile Co., Ala. (Löding).

Selenophorus subtinctorius *Leconte*. Fort Capron, Sand Point, very rare (Schwarz). This species is very close to the preceding and possibly some of the records there cited should be placed here. It was described from Louisiana.

Selenophorus opalinus *Leconte*. Enterprise, rare (Schwarz); Wisconsin and Michigan to Florida (Horn); Key West (Angell Coll.); Enterprise, November (Brownell); Everglade, April 15, in syrup trap, April 6, in grassy meadow with low bushes, April 5, in truck garden, April 10, at light, May, June, July, the most abundant Carabid beetle at Everglade (Davis Coll.); Fort Myers, March 30, at light. If the identifications are correct, this species extends north to New York and west to California, but there seems to me some question about the specific identity of the forms included. Common in Mobile Co., Ala. (Löding).

Selenophorus gagatinus *Dejean*. Enterprise (Schwarz); Lake Worth (Slosson Coll., January-March) Massachusetts to Texas (Horn). Accord-

ing to Mr. Schaeffer, who has studied this genus closely, some of the records I have credited to *S. opalinus* may belong here.

The genus *Celiamorphus* Casey though not differing by any decisive structural characters is proposed for the small elliptical subdepressed species allied to *ellipticus*, and it is pointed out that in their opaque integuments, at least in the female, they also differ; *fossulatus*, *ovalis* and *ellipticus* of this list are included.

***Selenophorus fossulatus* Dejean.** Fort Capron, Polk Co. (Schwarz); Lake Worth (Hamilton); Atlantic Beach, Belleair (Slosson Coll., January–March); Tampa, Nov. 23 (Engelhardt); Sarasota, Feb. 15–March 2, common under dry cow dung in pine woods (Blatchley); Enterprise, April, December (Brownell); Taylor Co., April, May (Genung). Confined to Georgia, Florida and Alabama (Baldwin Co., May 20, rare, Löding).

***Selenophorus ovalis* Dejean.** Tampa, very rare, St. Augustine (Schwarz); Lakeland, Nov. 8 (Davis), running in sandy field between patches of Dog-Fennel. Confined to Georgia and Florida. Included in Smith's New Jersey List, probably in error, for the next species is similar and is the one that extends northward.

***Selenophorus ellipticus* Dejean.** Crescent City (Schwarz); Jacksonville (Castle and Laurent); Pensacola (Slosson Coll., January–March); Pensacola, Oct. 11. Middle States to Georgia and Texas. Not uncommon in Mobile Co., Ala., March (Löding).

There are thus eleven species of *Selenophorus* recorded for Florida against five for New Jersey, one of them noted as the most common Carabid at Everglade, supporting the prevalence of the genus in the southern part of the peninsula, and suggestively comparable with its development in Cuba.

***Stenolophus conjunctus* Say.** Crescent City, St. Augustine (Schwarz). Occurs over a wide range, from the Atlantic to the Pacific ocean, northward to New Jersey. Common in Mobile and Baldwin Co., Ala. (Löding).

***Stenolophus spretus* Dejean.** Fort Capron, Enterprise, Tampa, Jupiter, not rare (Schwarz); Sarasota, Arch Creek, March (Blatchley); Everglade, April 11, at light. Extends northward along the Atlantic Coast to New Jersey.

***Stenolophus plebejus* Dejean.** Tampa, one specimen (Schwarz); Little River, February, March (Blatchley, Schaupp). Same range as preceding, also Indiana.

***Stenolophus ochropezus* Say.** Enterprise (Schwarz); Biscayne Bay, Jacksonville (Slosson Coll., January–March); Sarasota, Little River, Lake Okeechobee, January, March, beneath cover in damp places (Blatchley); Lakeland, Nov. 9 (Davis); Florida (Casey); Gainesville,

Sept. 26. Same range as preceding. Common in Mobile and Baldwin Co., Ala. (Löding).

There is still an unidentified specimen of *Stenolophus* in Mrs. Slosson's collection, and probably more of this and of the two following genera in other collections; possibly these small and obscure insects are also to some extent overlooked by collectors, for the records seem relatively poorer for them than for other genera.

Acupalpus longulus *Dejean*. Dunedin, Lake Okeechobee, Sanford, Jan. 24–March 30, by sifting (Blatchley); Key Largo (Beyer ?); Sebastian, August (Genung). Known also from Georgia.

Acupalpus flavilimbus *Leconte*. Tampa (Schaupp Coll.). Described from Georgia.

Acupalpus rectangularis *Chaudoir*. "Fla." (Schwarz). Recorded from Louisiana, Georgia, South Carolina, District of Columbia.

Bradycellus rupestris *Say*. "Fla." (Brownell, Slosson Coll., January–March). Widely distributed in United States. Mobile Co., Ala., June (Löding).

Bradycellus tantillus *Chaudoir*. Biscayne Bay, Jacksonville (Slosson Coll., January–March); "Fla." (Blatchley); Key Largo (Roberts Coll.). Widely distributed in United States. Common in Mobile Co., Ala (Löding).

Bradycellus nigriceps *Leconte*. "Fla." (Blatchley). Extends northward to New Jersey.

Anisodactylus lödingi *Schaeffer*. St. Augustine, Nov. 8 (Engelhardt); Everglade, April, June, July (Davis Coll.); Lakeland, May 7, La Belle, April 27 (Davis); Newberry, under rubbish and cow dung, Nov. 18, Titusville, Nov. 8. Described from Alabama, closely allied to the northern *A. agricola*. Mr. Löding says it is subaquatic and rare in Mobile Co., in February, March.

Anisodactylus rusticus *Dejean*. Jacksonville (Slosson Coll., January–March); Lake City, February (Agl. Exp. Sta.); Ormond, April 1 (Blatchley). Occurs commonly everywhere east of Rocky Mts. The Florida insect is usually cited as *A. merula* which is very similar but has dentate humeri instead of the simple ones of *A. rusticus*, and cannot therefore be a synonym as stated by Horn. *A. rusticus* is common in Mobile Co., Ala. (Löding).

Anisodactylus merula *Germar*. St. Augustine, Lake Worth, Enterprise, Jacksonville, not rare (Schwarz); Sanford, Nov. 27 (Engelhardt); Lakeland, Nov. 8, Newberry, Nov. 19 (Davis); Gainesville, Sept. 26, Pensacola, Oct. 10, De Funiak Springs, Oct. 17, Monticello, Oct. 4, Florida (Casey); St. Petersburg, April 28, La Grange, May and September, Everglade, August (Davis Coll.); *A. rusticus* and *A. merula* are placed by Casey in *Triplectrus* Lec.

Anisodactylus lætus *Dejean*. Sarasota, March 3, beneath dead crawfish in old pond slush (Blatchley); Clearwater, April 28; Fort Myers, March 31, April 23, at light. Extends northward to New Jersey, west to Texas. Common at light in Mobile Co., Ala. (Löding).

Anisodactylus agilis *Dejean*. Haulover, Pensacola, Jacksonville, Crescent City (Schwarz); Ormond, Lake Worth, Jacksonville (Slosson Coll., January–March); Daytona, Nov. 19 (Engelhardt); Lake City, Oct. (Agl. Exp. Sta.); Fort Myers, April 1, at light; Everglade, April 7, Pablo Beach, Ortega, September (Davis); Enterprise, September, October (Brownell); Sebastian, August (Genung); Key West (Angell Coll.). Occurs also in Georgia.

Anisodactylus nitidipennis *Leconte*. Haulover, Enterprise, Cedar Keys, not rare (Schwarz); St. Augustine (Johnson); Lake Worth (Hamilton); Biscayne Bay (Slosson Coll., January–March); Fort Myers, Nov. 12; March 30, at light, April 22, at light; Lakeland, Nov. 8, April 22; Lake Okeechobee, April 29; Everglade, April 6, grassy meadow with low bushes. Extends north to District of Columbia and Indiana. Very common at light in Mobile Co., Ala (Löding).

The three species last named are placed in *Anisotarsus* Chaudoir by Casey and in addition to them he has recently (Memoirs V, Oct., 1914) described three other species from Florida, viz.; *A. floridanus* Casey, "Florida," allied to *terminatus*; *A. cephalus* Casey, "Florida"; and *A. tenuitarsis* Casey, "Lake Worth (Kinzel)." These, from the descriptions given, seem close to the specimens listed above as *agilis* and *nitidipennis*. The latter, described from a single specimen from Georgia by Leconte, Casey is unable to recognize among his material, though he says there can be little doubt that it belongs near *cephalus* and *tenuitarsis*. The name *agilis* which has been heretofore used by Schwarz, and others for Florida specimens, Casey restricts to specimens from Missouri and Texas, and considers it not as closely related to *nitidipennis* as indicated by Leconte. It would therefore not increase the list to include the three species he has described, but would substitute the names he has given for those heretofore in use, a course I am not at present willing to adopt.

Anisodactylus terminatus *Dejean*. Ormond, March, April (Blatchley). Occurs northward in District of Columbia, New Jersey, Indiana.

The tribe Harpalini has thus thirty-nine representatives known to occur in Florida, to which number two (*Tachycellus nebulosus* Lee, known from Georgia to Texas, and *Discoderus parallelus* Hald, known from Pennsylvania to New Mexico), might be added as probable, but even so the total would be small as compared with the sixty-eight recorded from New Jersey.

Subfamily PSEUDOMORPHINÆ.

There are no Florida records known, but as *Pseudomorpha excrucians* is known to occur in Georgia and Alabama (Orchard, Mobile Co., Ala., rare, Löding), there is some likelihood of it being found in northern Florida.

