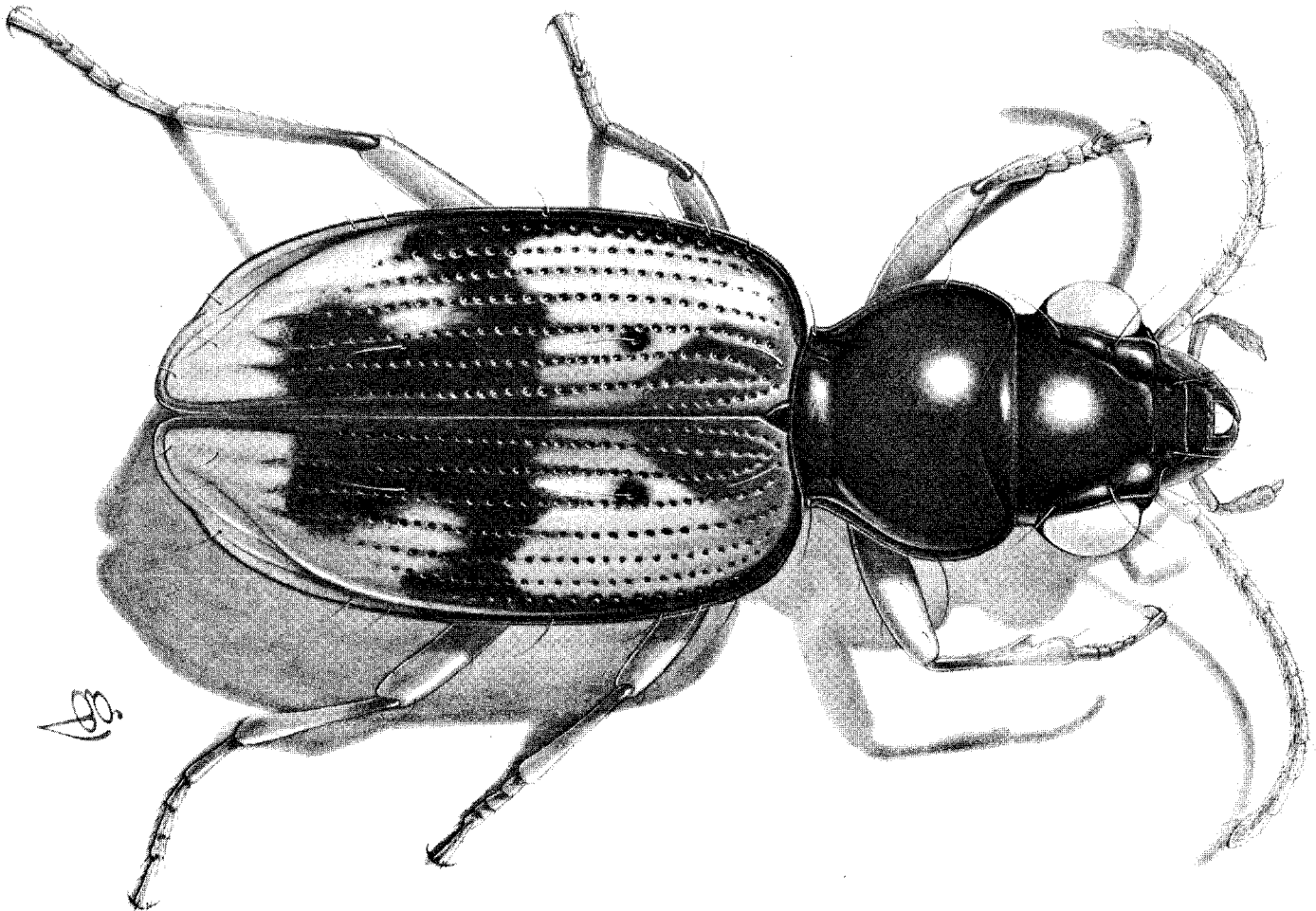




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*Bembiton darlingtoni* Muehler, dorsal aspect, male, from Soledad (Cienfuegos), Cuba.

CARABID BEETLES OF THE WEST INDIES (INSECTS: COLEOPTERA): A SYNOPSIS  
OF THE GENERA AND CHECKLISTS OF TRIBES OF CARABOIDEA, AND OF THE  
WEST INDIAN SPECIES

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ABSTRACT

*The fauna of the Greater Antilles was extensively sampled and studied by P.J. Darlington, Jr., beginning with his early field trips there in 1934 and ending with his paper on tropical island carabids in 1970. The Lesser Antilles and Bahamas have had far less attention; most islands have not yet been sampled. The following tribes are recorded within the geographic area covered by the present study, which includes the Greater and Lesser Antilles, Bahamas, and most smaller islands not on the continental shelf: Carabini; Megacephalini; \*Cicindelini; Enceladini; Pseudomorphini; Scaritini; \*Clivinini; Ozaenini; Brachinini; \*Rhysodini; Trechini; Pogonini; \*Bembidiini; Morionini; \*Pterostichini; Panagaeini; Callistini; Oodini; Licinini; \*Harpalini; Ctenodactylini; Perigonini; Lachnophorini; Cyclosomini; Masoreini; Pentagonalicini; Odacanthini; \*Lebiini; \*Zuphiini; Galeritini. The tribes whose names are marked with an asterisk each have more than a dozen species thus far recorded from the West Indies.*

*The tribes which occur in this area are also extensively distributed in the world, and are well represented in the Neotropical Region. In addition, a few African taxa or taxa whose ancestors came from Africa already have been discovered and possibly more will be found. Absence of arboreal Agrina, Eucheila and Inna, and the myrmecophilous Helluonini from the islands is notable. Since the fauna needs much study and new groups are likely to be discovered, a key to carabid adults of the entire Neotropical Region and adjacent areas is provided. Keys are provided to genera of all tribes known to occur on the West Indies and these genera are subsequently annotated. A complete checklist and bibliography are given which cover published accounts and some anecdotal information provided by those now engaged in revisions of the West Indian carabids.*

SUMMARIO

*La fauna de las Antillas Mayores ha sido estudiada y muestreada ampliamente por P.J. Darlington, Jr., desde sus primeros viajes de campo en 1934 hasta su última publicación sobre carábidos en las islas tropicales en 1970. Las Antillas Menores y las Bahamas no han sido mayormente tomadas en cuenta, por que gran parte de las islas no han sido aún muestreadas. Las siguientes tribus están registradas dentro del área geográfica cubierta por este estudio, que incluye las Antillas Mayores y Menores, las Bahamas y la mayor parte de las pequeñas islas oceánicas: Carabini; Megacephalini; \*Cicindelini; Enceladini; Pseudomorphini; Scaritini; \*Clivinini; Ozaenini; Brachinini; \*Rhysodini; Trechini; Pogonini; \*Bembidiini; Morionini; \*Pterostichini; Panagaeini; Callistini; Oodini; Licinini; \*Harpalini;*

*Ctenodactylini; Perigonini; Lachnophorini; Cyclosomini; Masoreini; Pentagoncini; Odacanthini; \*Lebiini; \*Zuphiini; Galeritini. Las tribus cuyos nombres están marcados con un asterisco tienen hasta ahora registradas más de doce especies cada una.*

*Las tribus que aparecen en esta área también están ampliamente distribuidas en el mundo y muy bien representadas en la región Neotropical. Además, alguna taxa Africana o taxa cuyos ancestros vienen de Africa han sido ya descubiertos y posiblemente más serán hallados en el futuro. La ausencia de Agrina, Eucheila e Inna arbóreas y de myrmecophilous Helluonini en las islas es resaltante. Ya que la fauna necesita más estudios y que nuevos grupos probablemente serán descubiertos, se suministra una tabla dicotómica para carábidos adultos en toda la región neotropical y áreas adyacentes. También se proporcionan otras tablas para los géneros de todas las tribus que se conocen en las Indias Occidentales y que han sido posteriormente anotados. Se incluye además un listado, una bibliografía y algunas referencias anecdóticas e informes publicados que han sido proporcionados por aquellos actualmente ocupados en las revisiones de los carábidos de las Indias Occidentales.*

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### INTRODUCTION

The fauna of the Greater Antilles was extensively sampled and studied by Darlington (1934, 1935a and b, 1937a and b, 1939, 1941, 1947, 1953, and 1970) although many of the higher mountains remain untouched by carabid collectors. The Lesser Antilles and Bahamas have had far less attention; most islands have not yet been adequately sampled and some not even visited. The following 29 tribes are recorded within the geographic area covered by the study, which includes the Greater and Lesser Antilles, Bahamas, and most smaller islands not on the continental shelf (see Fig. 1): Carabini; Megacephalini; \*Cicindelini; Enceladini; Pseudomorphini; Scaritini; \*Clivinini; Ozaenini; Brachinini; \*Rhysodini; Trechini; Pogonini; \*Bembidiini; Morionini; \*Pterostichini; Panagaeini; Callistini; Oodini; Licinini; \*Harpalini; Ctenodactylini; Perigonini; Lachnophorini; Cyclosomini; Masoreini; Pentagoncini; Odacanthini; \*Lebiini; \*Zuphiini; Galeritini. The tribes whose names are marked with an asterisk each have more than a dozen species thus far recorded from the West Indies.

The tribes which occur in this area are also extensively distributed in the world, and are well represented in the Neotropical Region. In addition, a few African lineages already have been discovered and possibly more will be found. Absence of arboreal Agrina, *Eucheila* and *Inna*, other arboreal lebiines, and the myrmecophilous Helluonini from the islands is notable.

The purpose of the present paper is to provide a foundation, that is keys, up-to-date checklist, and bibliography for those engaged in generic revisions of the West Indies fauna.



Geographic area covered by this paper and the West Indies Carabid Beetle Project; includes all the Greater and Lesser Antilles, Bahamas, and most smaller islands of the Caribbean not on the continental shelf.

These combined revisions will then provide the basis for a handbook of the fauna that will be dedicated to Philip J. Darlington Jr., who in 1934, stated that someday he wished to revise the West Indian carabid fauna when enough material became available. We hope that the present literature condensation will result in enhancing existing collections of West Indian ground beetles and that these will find their way to the generic revisors listed in Appendix B.

Since the fauna needs much study and new groups are likely to be discovered, a key to carabid adults of the entire Neotropical Region and adjacent areas is provided. Keys are provided to genera of all tribes known to occur on the West Indies and these genera are subsequently annotated. A complete checklist and bibliography are given which cover all published accounts and we provide some anecdotal information provided by those now engaged in revisions of the West Indian carabids. The classification of terrestrial Caraboidea provided herein is based on that given by Erwin (1984). Keys and generic annotations benefited greatly from Reichardt (1977).

#### CLASSIFICATION AND TRIBES OF TERRESTRIAL CARABOIDEA

Names in bold face are those of tribes represented in the West Indies

##### SUPERFAMILY CARABOIDEA

- I. Family Trachypachidae
  01. Tribe Trachypachini
  02. Tribe Systolosomini
- II. Family Carabidae
 

Division Nebriiformes

  - A. Subfamily Carabinae
    - a. Supertribe Nebriitae
      01. Tribe Nebriini
      02. Tribe Notiokasini
      03. Tribe Opisthiini
      04. Tribe Cicindisini
      05. Tribe Notiophilini
    - b. Supertribe Loriceritae
      06. Tribe Loricerini
    - c. Supertribe Carabitae
      07. Tribe **Carabini**
      08. Tribe Ceroglossini
      09. Tribe Pamborini
      10. Tribe Cychrini
    - d. Supertribe Cicindelitae
      11. Tribe Collyrini
      12. Tribe **Megacephalini**
      13. Tribe Ctenostomatini
      14. Tribe Mantichorini
      15. Tribe **Cicindelini**
    - e. Supertribe Omophronitae
      16. Tribe Omophronini

## Division Loxomeriformes

- B. Subfamily Scaritinae
- f. Supertribe Migadopitae
    - 17. Tribe Amarotypini
    - 18. Tribe Migadopini
  - g. Supertribe Elaphritae
    - 19. Tribe Elaphrini
  - h. Supertribe Promecognathitae
    - 20. Tribe Promecognathini
  - i. Supertribe Siagonitae
    - 21. Tribe **Enceladini**
    - 22. Tribe Siagonini
  - j. Supertribe Hiletitae
    - 23. Tribe Hiletini
  - k. Supertribe Pseudomorphitae
    - 24. Tribe **Pseudomorphini**
  - l. Supertribe Scarititae
    - 25. Tribe Cnemacanthini
    - 26. Tribe **Scaritini**
    - 27. Tribe **Clivinini**
- C. Subfamily Paussinae
- m. Supertribe Metriitae
    - 28. Tribe Metrini
  - n. Supertribe Paussitae
    - 29. Tribe Nototylini
    - 30. Tribe Mystropomini
    - 31. Tribe **Ozaenini**
    - 32. Tribe Protopaussini
    - 33. Tribe Paussini
  - o. Supertribe Brachinitae
    - 34. Tribe Crepidogastrini
    - 35. Tribe **Brachinini**

## Division Melaneiformes

- D. Subfamily Broscinae
- p. Supertribe Melaenitae
    - 36. Tribe Melaenini
    - 37. Tribe Cymbionotini
  - q. Supertribe Broscitae
    - 38. Tribe Broscini
  - r. Supertribe Apotomitae
    - 39. Tribe Apotomini

## Division Psydriformes

- E. Subfamily Psydrinae
- s. Supertribe Psydritae
    - 40. Tribe Gehringiini
    - 41. Tribe Psydrini

- 42. Tribe Melisoderini
- 43. Tribe Tropidopterini
- 44. Tribe Meonidini
- 45. Tribe Patrobini
- 46. Tribe Amblytelini
- t. Supertribe Rhysoditae
  - 47. Tribe **Rhysodini**
- u. Supertribe Trechitae
  - 48. Tribe **Trechini**
  - 49. Tribe Zolini
  - 50. Tribe **Pogonini**
  - 51. Tribe **Bembidiini**
- F. Subfamily Harpalinae
  - v. Supertribe Pterostichitae
    - 52. Tribe **Morionini**
    - 53. Tribe **Pterostichini**
    - 54. Tribe Zabrinini
  - w. Supertribe Panagaeitae
    - 55. Tribe Bascanini
    - 56. Tribe **Panagaeini**
    - 57. Tribe Agonicini
    - 58. Tribe Disphaericini
    - 59. Tribe Peleciini
  - x. Supertribe Callistitae
    - 60. Tribe Cuneiptectini
    - 61. Tribe **Callistini**
    - 62. Tribe Chaetogenyini
    - 63. Tribe **Oodini**
    - 64. Tribe **Licinini**
  - y. Supertribe Harpalitae
    - 65. Tribe **Harpalini**
  - z. Supertribe Dryptitae
    - 66. Tribe Dryptini
    - 67. Tribe **Zuphiini**
    - 68. Tribe **Galeritini**
  - a'. Supertribe Anthiitae
    - 69. Tribe Helluonini
    - 70. Tribe Anthiini
    - 71. Tribe Helluodini
  - b'. Supertribe Orthogoniitae
    - 72. Tribe Idiomorphini
    - 73. Tribe Amorphomerini
    - 74. Tribe Orthogoniini
    - 75. Tribe Catapiesini
  - c'. Supertribe Ctenodactylitae
    - 76. Tribe Hexagoniini



- 77. Tribe **Ctenodactylini**
- 78. Tribe **Calophaenini**
- d'. Supertribe **Lebiitae**
- 79. Tribe **Perigonini**
- 80. Tribe **Lachnophorini**
- 81. Tribe **Graphipterini**
- 82. Tribe **Cyclosomini**
- 83. Tribe **Masoreini**
- 84. Tribe **Pentagonicini**
- 85. Tribe **Odacanthini**
- 86. Tribe **Lebiini**

**Key to Tribes and Some Genera of Neotropical Carabidae**<sup>1,2</sup>

- 1 Scutellum concealed by median lobe of posterior margin of pronotum. Intercoxal process of prosternum very broad, covering mesosternum. Body almost circular in outline ..... **OMOPHRONINI**, *Omophron* Latreille, p. 367
- 1' Scutellum visible. Intercoxal process of prosternum not enlarged. Shape of body various ..... 2
- 2 (1') Scape of antenna not evident from dorsal aspect. Head with short, deep antennal sulcus ventrally between eyes and mouthparts. Labium without suture between submentum and mentum ..... **PSEUDOMORPHINI**, *Pseudomorpha* Kirby, p. 369
- 2' Antenna with scape visible from above. Head with or without short deep antennal sulcus ..... 3
- 3 (2') Abdomen with seven or eight sterna normally exposed. Mandible with at least one setigerous puncture in scrobe. Head with one pair of supraorbital setigerous punctures ..... **BRACHININI**, p. 375
- 3' Abdomen with six sterna normally exposed ..... 4
- 4 (3') Clypeus broader than distance between sockets of antennae ..... **CICINDELITAE** ..... 5
- 4' Clypeus narrower than distance between antennal sockets ..... 7
- 5 (4) Metepisternum narrow, sulcate for entire length. Mesepisternum short. Lacinia of maxilla without articulated tooth ..... **CTENOSTOMATINI**, *Ctenostoma* Klug
- 5' Metepisternum plate-shaped, not entirely sulcate. Mesepisternum elongate. Lacinia with articulated tooth ..... 6
- 6 (5') Anterior angles of pronotum more advanced than anterior margin of prosternum. Anterior sulcus of pronotum separated or not from anterior sulcus of prosternum (as well as from prosternal-episternal sulcus). True

<sup>1</sup>Modified from G.E. Ball *In*, Reichardt 1977.

<sup>2</sup>Other genera of the West Indies treated below under tribal discussions; not all Neotropical genera mentioned by name.

	ornamental pubescence absent. Terminal palpomere of maxillary palpus shorter or not than penultimate palpomere . . . . .	
	. . . . . MEGACEPHALINI, p. 366	
6'	Anterior angles of pronotum not more advanced than anterior margin of prosternum. Anterior sulcus continuous from pronotum to prosternum. True ornamental pubescence present in members of most taxa. Terminal palpomere of maxillary palpus longer than penultimate palpomere in members of most taxa . . . . .	CICINDELINI, p. 366
7 (4')	Metasternum without antecoxal suture, almost as long as combined length of abdominal sterna. Front tibia without apical spur (but with pair of prominent apical spines). Antenna moniliform. Head and pronotum deeply grooved . . . . .	RHYSODINI, p. 376
7'	Metasternum with antecoxal suture, and shorter in length. Front tibia with apical spur . . . . .	8
8 (7')	Front tibia with two spurs terminal and ventral, independent of antenna cleaner (latter present or absent) . . . . .	9
8'	Front tibia with one spur apical, one displaced distally, toward antenna cleaner . . . . .	13
9 (8)	Tarsal claws unequal, anterior longer and stronger than posterior. Hind coxae contiguous. Elytron with base marginate to scutellum. Scutellar interneur short . . . . .	CICINDISINI, <i>Cicindis</i> Bruch
9'	Tarsal claws equal. Hind coxae separate. Base of elytron not marginate, or marginate only to lateral constriction . . . . .	10
10 (9)	Hind coxa extended laterally to elytral epipleuron . . . . .	
	. . . . . TRACHYPACHIDAE, SYSTOLOSOMINI, <i>Systolosoma</i> Solier	
10'	Hind coxa normal, not in contact laterally with elytral epipleuron . . . . .	11
11 (10')	Elytron without subapical fold at outer edge. Anterior tibia simple, without longitudinal sulcus or antenna cleaner . . . . .	
	. . . . . NOTOTYLINI, <i>Nototylus</i> Schaum	
11'	Elytron with subapical fold at outer edge. Anterior tibia with antenna cleaner . . . . .	PAUSSITAE, . . . . . 12
12 (1')	Antenna of 11 clearly visible antennomeres, antennomere 2 distinct, slightly shorter than 3, antennomeres 3 - 11 free, clearly separated and articulated. Anterior coxae not much projected, separated from each other by normal process . . . . .	OZAENINI, p. 374
12'	Antenna of 10 clearly visible antennomeres, antennomere 2 markedly reduced, indistinct. Anterior coxae prominent, contiguous, separated at base, or not, by narrow process . . . . .	PAUSSINI
13 (8')	Anterior coxal cavities open posteriorly . . . . .	14
13'	Anterior coxal cavities closed posteriorly . . . . .	17
14 (13)	Head with two pairs of supraorbital setigerous punctures. Scape of antenna as long as antennomeres 2 - 6 together. Head with short, deep sulcus beneath, between eye and gular region. Mandibles spoon-shaped, each with several teeth . . . . .	HILETINI, <i>Eucamaragnathus</i> Jeannel
14'	Head with single pair of supraorbital setigerous punctures. Scape of antenna normal, less in length than length of antennomeres 2 - 6 together.	

	Mandibles average . . . . .	15
15	(14') Frons with series of longitudinal costae. Middle coxal cavities conjunct (entirely enclosed by sterna). Head very broad. Eyes large. Body flat. Size small, length less than 7.0 mm . . . NOTIOPHILINI, <i>Notiophilus</i> Duméril	
15'	Frons without series of parallel carinae. Middle coxal cavities disjunct (not entirely enclosed by sterna). Size large, length greater than 10.0 mm . . . . .	16
16	(15') Head very narrow (less than half as wide as pronotum at apex). Mandibles elongate, each with two sharp teeth near apex. Labrum long, deeply notched, bilobed . . . . . CYCHRINI, <i>Scaphinotus</i> Latreille	
16'	Head average. Mandibles of normal length, without large teeth near apex. Labrum of normal proportions, apical margin sinuate, but not deeply notched . . . . . CARABINI, p. 365	
17	(13') Middle coxal cavities disjunct (not entirely enclosed by sterna) . . . . .	18
17'	Middle coxal cavities conjunct (entirely enclosed by sterna) . . . . .	21
18	(17) Antennomeres 2 - 6 with markedly large setae; antennomeres 2 - 4 irregular in shape. Head with two large foveae and deep transverse sulcus behind eyes. Elytron with 12 regular striae . . . . . LORICERINI, <i>Loricera</i> Latreille	
18'	Antennomeres 2 - 6 without markedly elongate setae. Combination of other characters not as above . . . . .	19
19	(18') Anterior tibia with both spurs nearly apical. Antenna cleaner, sulcate, confined to posterior surface of tibia, not visible from anterior surface. Body pedunculate . . . . . ENCELADINI, p. 368	
19'	Anterior tibia with one spur markedly preapical, above groove of antenna cleaner, latter in form of notch in antero-lateral surface, visible anteriorly. Body pedunculate or not. Size various . . . . .	20
20	(19') Elytron with scutellar stria short (or absent). Body pedunculate . . . . . Supertribe SCARITITAE, p. 369	
20'	Elytron with scutellar stria extended to apex, parallel to elytral suture. Body not pedunculate (in form nebrioid, amaroid, pterostichoid, elongate or ovoid) . . . . . MIGADOPINI	
21	(17') Scrobe of mandible with one or more setigerous punctures . . . . .	22
21'	Mandibular scrobe asetose . . . . .	29
22	(21) Head with single pair of supraorbital setigerous punctures . . . . .	23
22'	Head with more than one pair of supraorbital setae . . . . .	24
23	(22) Body pubescent. Size small, length of body less than 6.0 mm. Color rufous . . . . . APOTOMINI, <i>Apotomus</i> Illiger	
23'	Body glabrous except for usual fixed setae. Length more than 10.0 mm. Color various, black, coppery, green, but not rufous . . . . . BROSCINI (in part)	
24	(22') Head with three or more pairs of supraorbital setigerous punctures. Dorsal surfaces of posterior tarsomeres glabrous. Size larger, length of body more than 10.00 mm . . . . . BROSCINI (in part)	
24'	Head with two pairs of supraorbital setae. Dorsal surfaces of posterior tarsomeres each with two or more setae. Size various . . . . .	25
25	(24') Penultimate maxillary palpomere pubescent. Frontal grooves more widely	

- separated at middle than at anterior part, and terminated before posterior margins of eyes. Anophthalmous specimens with penultimate maxillary palpomere tumid . . . . . 26
- 25' Penultimate maxillary palpomere glabrous . . . . . 28
- 26 (25) Terminal maxillary palpomere much shorter and more slender than penultimate palpomere. Elytron with base margined. Tarsomeres with dorsal surfaces sulcate longitudinally, or not . . . . . BEMBIDIINI, p. 377
- 26' Terminal maxillary palpomere normal . . . . . 27
- 27 (26') Elytron with plica posterior to epipleuron. Article 2 of antenna pubescent. Base of elytron margined or not. Each tarsomere with dorsal surface grooved longitudinally or not . . . . . ZOLINI
- 27' Elytron with internal fold (=plica) not interrupting lateral margin. Antennomere 2 with tuft of setae, only. Base of elytron margined. Dorsal surface of each tarsomere smooth, without longitudinal groove . . . . . POGONINI, p. 377
- 28 (25') Elytron without internal plica behind epipleuron. Frontal grooves curved: at middle, distance between eye and adjacent groove subequal to distance between grooves, then expanded to genae and ventral side. Glossal sclerite ("ligula") with six or more setae. Male with front tarsomeres 1 - 2 expanded and with tooth apically at inner side . . . . . TRECHINI, p. 377
- 28' Elytron with internal plica. Frontal grooves at middle more distant from each other than from eyes; grooves not extended behind eyes. Glossal sclerite with two or three setae. Three or four basal front tarsomeres of male slightly and symmetrically expanded and rounded to apex (or simple) . . . . . PSYDRINI
- 29 (21') Terminal maxillary palpomere articulated obliquely with penultimate palpomere. Integument markedly punctate. Head and pronotum either with pubescence thick and long, or completely glabrous, and surface brilliant, metallic. Elytron with well developed plica . . . . . PANAGAEINI, p. 385
- 29' Terminal and penultimate maxillary palpomeres articulated in straight line, at apex of penultimate palpomere. Integument punctate or not, setose or not. Elytron with or without plica . . . . . 30
- 30 (29') Head with more than two pairs of supraorbital setigerous punctures. Lateral edge of pronotum with several setae. Anterior tibia extended latero-apically as prominent, thick tooth-like projection . . . . . CNEMACANTHINI, *Cnemalobus* Guerin-Mènèville
- 30' Head without, or with one or two pairs of supraorbital setigerous punctures. Number of pronotal setae various. Form of front tibia various . . . . . 31
- 31 (30') Antennomeres 3-10 each with apical ring of long setae, each seta longer than antennal scape. Labrum elongate, anterior margin projected as broadly rounded lobe. Mentum and submentum fused, mental suture not evident; mentum-submentum bilobed posteriorly, each lobe with three or more long setae. Penultimate labial palpomere long, with numerous setae. Glossal sclerite slender, projected well beyond apices of paraglossae, with four or more apical setae . . . . .

	..... CHAETOGENYINI, <i>Camptotoma</i> Reiche	
31'	Antennomeres 3-10 with apical setae shorter than scape. Combination of characters other than as above .....	32.
32 (30')	Head without or with one pair of supraorbital setigerous punctures .....	33
32'	Head with two pairs of supraorbital setigerous punctures .....	40
33 (32)	Elytron with apical margin truncate. Body glabrous and shining, depressed. Head without or with one pair of supraorbital setigerous punctures. Pronotum without, or with one pair of setigerous punctures at posterior angles .....	CATAPIESINI
33'	Elytron with apical margin not truncate. Body various. Head with one pair of supraorbital setigerous punctures. Pronotum with one or two pairs of setigerous punctures .....	34
34 (33')	Elytron without internal plica near apex .....	35
34'	Elytron with internal plica .....	38
35 (34)	Antennomere 3 with few setae only, not pubescent, antennomere 4 pubescent in apical 0.33 .....	36
35'	Antennomere 3 pubescent in apical 0.33, antennomere 3 pubescent throughout .....	37
36 (35,60)	Body rotund, elytra vaulted. Elytron with deep interneurs. Mandibles and maxillae elongate. Mentum of labium shallowly bisinuate, with short tooth .....	PTEROSTICHINI, <i>Cyrtolaus</i> Bates
36'	Body average, elytra normal. Striae of elytra average. Mouthparts not as above .....	PTEROSTICHINI, <i>Agonina</i> (part), p. 383
37 (35')	Terminal maxillary palpomere elongate, more than twice length of penultimate palpomere. Terminal labial palpomere glabrous, not elongate. Antennomeres of flagellum quadrate .....	PTEROSTICHINI, <i>Cratocerus</i> Dejean
37'	Terminal maxillary and labial palpomeres similar in size and proportions. Antennomeres of flagellum slender, elongate, antenna filiform .....	HARPALINI, p. 388
38 (34')	Surface of elytra and pronotum finely and densely punctate, with fine pubescence. Scutellar interneur normal .....	CALLISTINI, p. 386
38'	Dorsal surface not densely punctate, without fine pubescence. Scutellar interneur short or absent .....	39
39 (38')	Elytron with interval 9 almost absent; interneur 8 in form of deep, rugose groove, especially from middle onward; scutellar interneur short; epipleuron gradually tapered to apex. Terminal palpomere (maxillary or labial) normal .....	OODINI, p. 386
39'	Elytron with interval 9 normal, wider or narrower; interneur 8 normal, similar to others; scutellar interneur absent, epipleuron expanded near mesothoracic region, then tapered gradually posteriorly .....	PELECIINI, <i>Pelecium</i> Kirby
40 (32')	Antennomeres 5 - 10 submoniliform, short or slightly depressed. Margin of pronotum with approximately seven pairs of setae. Interneur 8 in form of zigzag sulcus, with numerous scattered setigerous punctures. Body	

	subpedunculate. Legs flattened . . . . .	MORIONINI, p. 381	
40'	Antennomeres 5 - 10 slender, antenna distinctly filiform; or submoniliform and pronotum with single pair of lateral setae; and/or other character states different from above . . . . .		41
41	(40') Elytron with internal plica . . . . .		42
41'	Elytron without internal plica . . . . .		43
42	(41) Penultimate labial palpomere plurisetose . . . . .	ZABRINI, <i>Amara</i> Bonelli	
42'	Penultimate labial palpomere bisetose . . . . .		
		PTEROSTICHINI (part), p. 382	
43	(41') Pronotum narrow, distinctly longer than wide, at apex as wide as posterior part of head . . . . .		44
43'	Pronotum not distinctly longer than wide, and/or wider at apex than posterior part of head . . . . .		47
44	(43) Terminal maxillary and/or labial palpomere trianguloid. Tarsomere 4 notched, bilobed . . . . .		45
44'	Terminal maxillary and labial palpomeres cylindrical, normal. Tarsomere 4 bilobed or entire . . . . .		46
45	(44) Terminal labial palpomere trianguloid. Antenna with scape and antennomere 3 of about same length. Tarsal claws pectinate . . . . .		
		LEBIINI, <i>Agra</i> Fabricius	
45'	Terminal maxillary and labial palpomeres trianguloid. Scape of antenna very large, longer than antennomere 3. Tarsal claws smooth . . . . .		
		DRYPTINI, <i>Neodrypta</i> Basilewsky	
46	(44') Tarsomere 4 deeply notched at apex, bilobed, lobes more than 0.5 length of tarsomere 5. Elytra entire, abdominal terga completely covered . . . . .		
		CTENODACTYLINI, p. 392	
46'	Tarsomere 4 simple or only slightly emarginate apically. Elytron with apex truncate . . . . .	ODACANTHINI, p. 395	
47	(43') Posterior tibia with inner spur more than 0.5 length of hind basitarsus inner spur longer than outer spur. Tarsal claws pectinate or not . . . . .		48
47'	Posterior tibia with spurs more or less equal and shorter than 0.5 length of hind basitarsus . . . . .		50
48	(47) Labrum elongate, length more than 0.5 width at base. Head markedly constricted posteriorly, in form of neck. Pronotum widest at base, narrowed anteriorly . . . . .	LEBIINI, <i>Nemotarsus</i> LeConte	
48'	Labrum average, length less than 0.5 width at base. Head not constricted posteriorly in form of neck. Pronotum either widest anteriorly, with sides slightly sinuate before base, or base and apex about equal, and sides rounded . . . . .		49
49	(48') Pronotum with sides sinuate posteriorly. Dorsum of elytra variegated, or predominantly dark with pale spots. Spurs of middle and hind tibia with serrate margins, each tibia with spines of average length. Each mandible with dorsal and ventral margins basally projected laterally about equally. Antenna with each of flagellomeres 5-10 about twice as long as wide . . . . .	CYCLOSOMINI, p. 394	
49'	Pronotum with sides rounded or nearly straight, not sinuate. Dorsum of		

- elytra uniformly rufous, rufo-piceous, or piceous, same color as head and pronotum. Spurs of middle and hind tibia with margins smooth. Each mandible basally with dorsal margin extended laterally as broad, shelf-like projection. Flagellomeres 5-10 each not more than 1.25 times as long as wide ..... MASOREINI, p. 394
- 50 (47') Labrum appearing elongate (actually about quadrate). Head with one pair of setae ventrally, posterior to submentum. Elytron with penultimate umbilicate seta nearer margin than those adjacent ..... LEBIINI, *Pericalina*, p. 397
- 50' Labrum transverse, distinctly wider than long. Head without or with one pair of setae ventrally, posterior to submentum. Elytron with penultimate umbilicate seta in various positions ..... 51
- 51 (50') Elytron with apical margin truncate ..... 52
- 51' Elytron with apical margin entire, sinuate or not ..... 58.
- 52 (51) Tarsal claws pectinate ..... LEBIINI (part), p. 395
- 52' Tarsal claws with inner margins smooth, not pectinate ..... 53.
- 53 (52') Dorsal surface glabrous, except for normal fixed setae. Antennomeres 1-3 glabrous, except one long seta on scape, and ring of setae near apex of antennomeres 2 and 3 ..... 54
- 53' Dorsal surface finely pubescent. Antennomeres 1-3 pubescent ..... 56
- 54 (53) Labial palpomere 3 acuminate apically. Elytron with dorsal surface markedly iridescent. Legs flavous ..... LACHNOPHORINI, *Eucaerus* LeConte, p. 394
- 54' Labial palpomere 3 subtruncate to truncate apically, not acuminate. Elytron with dorsal surface iridescent or not. Legs flavous or darker ..... 55
- 55 (54') Pronotum approximately pentagonal in shape, with sides sharply constricted posteriorly. Head markedly constricted posteriorly. Mentum and submentum fused, mental suture not evident ..... PENTAGONICINI, *Pentagonica* Schmidt-Goebel,
- 55' Pronotum with sides not markedly constricted posteriorly. Head markedly constricted or not posteriorly. Mentum and submentum fused or separated by distinct suture ..... LEBIINI (part), p. 395
- 56 (53') Size small, length of body about 6.0 mm., or less. Scape of antenna longer than combined length of antennomeres 2 plus 3 ..... ZUPHIINI, p. 390
- 56' Size larger, length of body 10.0 mm or more. Antennal scape shorter or longer than combined length of antennomeres 2 plus 3 ..... 57
- 57 (56') Antennomeres 5-11 more or less flattened, finely pubescent, central area each side generally triangular and more or less glabrous ..... HELLUONINI
- 57' Antennomeres 5-11 not flattened, uniformly pubescent ..... GALERITINI, p. 391
- 58 (51') Clypeus sloped downward, surface more or less concave, emarginate anteriorly. Labrum deeply notched ..... LICININI, p. 387
- 58' Clypeus plane, not sloped, anterior margin straight or slightly emarginate. Labrum with anterior margin truncate or slightly concave ..... 59
- 59 (58') Elytron with interneur 8 impressed and obliquely extended almost to apical

	sutural angle. Posterior trochanter almost 0.5 length of posterior femur . . .	
	..... PERIGONINI, p. 393	
59'	Interneur 8 normal. Length of posterior trochanter various . . . . .	60
60 (59')	Dorsal surface glabrous, except for some scattered setae . . . . .	36
60'	Dorsal surface more or less pubescent . . . . .	61
61 (60')	Elytron with odd-numbered intervals setose . . . . .	
	..... PTEROSTICHINI, Agonina (part), p. 383	
61'	All elytral intervals setose . . . . .	62
62 (61')	Elytral interneurs more deeply impressed on anterior half; and-or anterior half of interneurs coarsely punctate and poster half finely punctate or impunctate. Setae erect and at least a few longer, as on scape . . . . .	
	..... LACHNOPHORINI (part), p. 393	
62'	Elytron with interneurs equally punctate, impressed or not. Body with short, dense and decumbent, pubescence . . . . .	
	..... PTEROSTICHINI, Agonina (part), p. 383	

#### A. SUBFAMILY CARABINAE

Van Emden (1942), following older authors, accepted the traditional division of Carabidae into the Carabinae and Harpalinae, and within the latter studied and redefined the tribes with a seta in the mandibular scrobe ("Harpalinae Piliferae", as opposed to the "Harpalinae Impilae", with glabrous mandible). In his characteristically thorough study, van Emden defined the taxonomic position of several inadequately known genera. Crowson (1955:5,6) who also distinguishes these two groups, and gives subfamilial rank to a third, the Scaritinae, considers the Brachinini, normally placed as a distinct subfamily, in Harpalinae; he does not mention the pseudomorphines.

Lindroth (1961:13; 1969b:xii) fused the classically accepted subfamilies Carabinae and Harpalinae. Lindroth (1969b:xvii-xxi) justified his action well enough, and there is no need to go into details here. However, it should be mentioned that, in a general way, the Carabinae correspond to the "Caraboidea Simplicia", and the Harpalinae to the "Caraboidea Limbata" of Jeannel's system (1941, 1942a) which was followed by Ball (1960:91-92).

Herein only those anisochaetes with glabrous, styliiform parameres or a derivation of such a paramere are considered Carabinae. In some groups, like the Carabini, the distance between the two spurs is very small, thus the Carabinae excludes most tribes of Carabidae. Based on a system proposed by Kryzhanovskiy (1976) and Erwin (1979, 1984, 1985) and several new ideas presently under discussion by carabidologists, a provisional classification into Divisions, Subfamilies, Supertribes, and Tribes is used here.

The Nebriiformes include phylogenetically some groups of water beetles, but we have followed tradition and not covered those groups here (see Erwin, 1985), restricting our comments to only the Subfamily Carabinae.

#### SUPERTRIBE CARABITAE

This subtribe presently contains four tribes, only one of which is found in the West Indies.



## TRIBE CARABINI

In South America, carabines are included in two genera, *Calosoma* Weber and *Ceroglossus* Solier, each with few species. In temperate regions of the Northern Hemisphere, the tribe is represented by many species, most of which are included in *Calosoma sensu lato*, and *Carabus* Linné. Adults of most species are large, and many are elegant in form and color. This elegance has attracted the attention of unskilled commercially oriented amateurs who have caused substantial confusion at generic, specific and subspecific levels by "playing" with the taxonomy, often for their own profit.

Lapouge (1929b-1931) recognized five subtribes: Ceroglossina, Aplothoracina (a monobasic subtribe for an endemic genus of Saint Hélène [see Basilewsky, 1972]), Calosomina, Carabina, and Cychrina. The last-named group is generally ranked now as a tribe.

Larvae of both Neotropical genera are known (van Emden, 1942:22-23).

**Key to Genera of West Indian Carabini**

- 1        Antennomeres 2 and 3 carinate. Mandibles at least basally with transverse ridges. Labrum black. Elytra with humeri well developed (hind wings normally developed), or sloped (hind wings reduced) ..... *Calosoma* Weber, p. 365
- 1'       Antennomeres 2 and 3 cylindrical, not carinate. Mandibles smooth, or finely punctate. Labrum black or metallic. Elytra with humeri sloped (hind wings reduced) ..... *Carabus* Linné, p. 365

*Calosoma* Weber, 1801. A genus worldwide in distribution, with many named species, subspecies, varieties, and aberrations. The genus has been the subject of two important world revisions: Breuning (1927-1928b) and Jeannel (1940). The Nearctic and Neotropical species were treated also by Gidaspow (1959, 1963). The genus was handled very differently by these authors, thus a universally accepted system has not been adopted. Breuning recognized 20 subgenera; Jeannel recognized 20 genera. Gidaspow recognized a single genus, with the Neotropical species arrayed in five subgenera.

Lindroth (1961:42 and following), in his study of the Canadian fauna, eliminated the subgenera of *Calosoma*, recognizing informal taxa designated as "species groups". In part, these coincide with the subgenera of previous authors.

Larvae and adults of *Calosoma* are predators of lepidopterous larvae. According to Lindroth (1961:44), most adults are strong fliers, coming from great distances at the time of mass eclosion of caterpillars. Two species have been recorded from the West Indies.

*Carabus* Linné, 1758. This is a Holarctic genus, with maximum divergence and richness in eastern Asia. It is represented in mesic mountain forests of México by two species whose adults are brachypterous: *C. forreri* Bates, confined to the Sierra Madre Occidental and the Chiricahua Mountains of southeastern Arizona, and *C. hendrichsi* Bolivar, Rotger and Coronado, confined to several peaks in the Sierra Madre Oriental. *Carabus basilicus* Chevrolat of Puerto Rico, the only *Carabus* listed for the islands, is a doubtful record and needs confirmation.

## SUPERTRIBE CICINDELITAE

The systematic position of the Cicindelitae among the family Carabidae has been very much discussed. In spite of some exceptions, such as Mandl (1971:507-508) who suggests returning the group to the status of a distinct family, most modern authors have considered tiger-beetles a subfamily of Carabidae. Crowson (1967:109, 1981:694), who had originally (1955) considered the 'Cicindelinae' as a subfamily of Carabidae, suggested that the absence of urogomphi and ligula in larval tiger-beetles, adult labrum usually with more than six setae, and position of the front tibial spurs in adults support familial status for tiger beetles. Although not as yet published, Kavanaugh (pers. comm.) and other sources (e.g. Jeannel, 1946:106) indicate that numerous structural features suggest that the Cicindelitae is the sister group of Carabidae, that the complex is very old, and that the tiger beetle lineage became highly adapted to the hunt through specialization of mouthparts and ambulatory parts, and of course the larvae have adapted a unique prey capture technique and acquired or modified those features necessary for this. Here the group is considered part of the Carabidae, within present day usage of that taxon. A reclassification, potentially splitting Carabidae into many families, must await considerable amounts of study.

Horn (1910) proposed arrangement of the 'Cicindelinae' in two groups, Alocosternales (=Collyrinae Csiki, 1906) and Platysternales (=Cicindelinae Csiki, 1906). The genera of Alocosternales were arranged in two tribes, Ctenostomatini (=Ctenostomini auct.) and Collyrini. Of these only Ctenostomatini have Neotropical representatives: Collyrini are Oriental and Australian. The genera of Platysternales were arranged in the tribes Mantichorini (a small group of deserticolous species from southern Africa), Megacephalini, and Cicindelini. Each of these tribes was divided into subtribes. Many species, especially of *Cicindela*, have numerous "varieties" and "subspecies", which certainly are not more than individual variants or population ecophenotypes.

The West Indian fauna is comprised of 2 genera and 18 species.

## TRIBE MEGACEPHALINI

*Megacephala* Latreille, 1802. This is a diverse, worldwide genus with numerous Neotropical species. Horn (1910:130ff) arranged the species in several groups, which might be used as subgenera. Basilewsky (1966:13-14) suggested, in a revision of the African species, that at present it is not possible to divide the genus. Three species of *Megacephala* occur in the West Indies.

## TRIBE CICINDELINI

*Cicindela* Linné, 1758. This is a highly diverse, worldwide genus, with nearly 700 species. In Horn's concept, the genus is quite homogeneous, but more recently authors (especially of the "French school" and followed by the American amateurs) have split the genus. Jeannel (1946:43ff) was the first author to propose the splitting, limiting himself to the species of Madagascar. In a series of papers, Rivalier (1950:217ff; 1954:250ff; 1961:121ff; 1963:30ff), dismantled *Cicindela*, recognizing 55 genera, most of which he described as new. Schilder (1953:539-576), recognized 17 genera, synonymizing several of the names previously proposed by Rivalier (1950). Rivalier's work is based exclusively on structure of the internal sac of the

aedeagus; Schilder's system is presently without any morphological basis. Rivalier (1954) studied the Neotropical species (including several species from southeastern United States) placing them in the following "genera" which should be regarded perhaps as species groups to bring them in line with the rest of the carabids, providing thus a more balanced system.

*Cylindera* Westwood, 1831. Thirty species, (eight in Brazil) placed in two subgenera: *Cylindera s. str.* and *Plectographa* Rivalier, 1954.

*Cicindelidia* Rivalier, 1954. Forty-six species distributed from the United States, Mexico, through Central America to the west of South America.

*Habroscelimorpha* Dokhtoureff, 1883. Ten species ranging from the United States to Venezuela and the Antilles.

*Eunota* Rivalier, 1954. A single species in the United States.

*Microthylax* Rivalier, 1954. Three species in Mexico and Cuba.

*Opilidia* Rivalier, 1954. Five species whose aggregate range extends from Central America to Colombia and Venezuela.

*Brasiella* Rivalier, 1954. Twenty-three species distributed from Mexico to Argentina, of which 11 are recorded from Brazil. Rivalier (1955:77ff) revised the *argentata* group of this "genus", describing three new species and several new subspecies.

*Ellipsoptera* Dokhtoureff, 1883. Restricted to the United States, with nine species.

*Dromochorus* Guérin-Ménéville, 1845. With two Texan species.

The species of *Cicindela s. lat.* typically inhabit open area, especially river margins and sea beaches, however numerous of them may also be found in tall grass. Adults fly readily. A total of 15 species, arrayed among some of the genera above, have been recorded from the West Indies.

#### SUPERTRIBE OMOPHRONITAE

This supertribe contains a single tribe, the Omophronini.

#### TRIBE OMOPHRONINI

The single genus of this tribe is *Omophron* Latreille, 1802. Most of the species are in the Holarctic Region, a few are in the Oriental Region. Several species, included in the subgenus *Stenomophron* Semenov-Tian-Shanskij, 1922, occur in Mexico; three occur in Central America, but are typical Nearctic elements; there is no Neotropical lineage. A single species, *Omophron dominicensis* Chaudoir, 1868a, was described from Santo Domingo, in the Greater Antilles, however Nichols (pers. comm.) informs us that this probably is a South African species that was mislabelled and that no *Omophron* species is indigenous to the West Indies.

Adults are distinctive in appearance because the body is so rotund. Larvae and adults live in bare sandy areas, near bodies of either standing or flowing water. During the day, adults hide in burrows in soil, or under stones near the water's edge. They are easily dislodged by splashing their hiding places with water.

Bänninger (1921) and Semenov-Tian-Shanskij (1922) revised the world fauna of this subtribe. Benschoter and Cook (1956) revised the species of North America. Nichols (MS) using modern methods has studied the entire genus, especially those species of the New World.

## SUBFAMILY SCARITINAE

The new contents of this subfamily are based on studies of Erwin and Stork (1984) and Erwin (1985).

## SUPERTRIBE SIAGONITAE

Only one tribe of this group occurs in the New World. Specimens of *Siagona* in the Museum in Paris labelled Venezuela and seen by one of us (TLE), appear to be mislabelled.

## TRIBE ENCELADINI

Erwin (1978b) regarded this tribe as part of the Sigonitae based on both adult and larval characteristics, but maintained a tribal status for *Enceladus* based on larval features, recognizing full well that the genus *Luperca* appears to be intermediate in adult structures. Members of the single species of *Enceladus* are found under bark of large trees in South America. Recently, a single specimen was collected on Montserrat, B.W.I., thus the tribe is now known from the West Indies.

*Enceladus* Bonelli, 1813, which includes the single species *E. gigas* Bonelli (1813:460).

## SUPERTRIBE PSEUDOMORPHITAE

This predominantly Australian supertribe (five genera), also has one genus in the Oriental Region, one in Africa, and one in the Western Hemisphere. Notman (1925) published a worldwide revision of the group, in which the genera are clearly defined, however the relationships among these are poorly understood and a modern revision is sorely needed. Erwin (1985), based on newly discovered characteristics, hypothesizes that this group belongs in the Scaritinae.

## TRIBE PSEUDOMORPHINI

Most authors have considered the Pseudomorphini as a distinct subfamily, because of its very special characteristics. In recent years, only Crowson (1955:5, 6) did not give them such special status, apparently including them in the Harpalinae, together with Brachininae and thus following Jeannel (1941). The Harpalinae are considered a distinct subfamily by most authors.

Little is known about habits of Pseudomorphitae. Moore (1964), who described the first larva of the subtribe (of the Australian genus *Sphallomorpha*), described also the habits of adults of certain Australian genera, frequently found in association with ants. The larvae he described were collected in brood chambers of *Iridomyrmex*. There are few references about species of *Pseudomorpha*. Ogueta (1967:230) refers to a specimen of *P. lacordairei* (Dejean & Boisduval, 1829) collected in a termite nest, and Lenko (1972) collected larvae (in cocoons), pupae, and adults of *P. laevissima* Chaudoir, 1852 in nests of the ant species *Camponotus rufipes*. The larva of *Pseudomorpha*, only briefly described by Lenko, is similar to that of *Sphallomorpha*. Erwin (1981), in a synopsis of the supertribe, described larvae of *Pseudomorpha* and discussed all that is presently known of the group. According to Moore

(1964:246), larval characters of this group stress separation of Brachininae and Pseudomorpha in Balteifera, as originally suggested by Jeannel (1942a:1102). However, Erwin (1981) discussed phylogenetic relationships based on adult characteristics and believed the group should be classified near the Scaritini.

*Pseudomorpha* Kirby, 1825 (= *Heteromorpha* Kirby, 1825; = *Axinophorus* Dejean & Boisduval, 1829; = *Drepanus* Dejean, 1831), which includes 20 species in the United States and Mexico, one in Haiti and six in Brazil and Argentina.

#### SUPERTRIBE SCARITITAE

According to Erwin (1985), the Scarititae is presently composed of three tribes, two of which reach the West Indies. Both the Scaritini and Clivinini are found as soil burrowers or at least running on top of the ground. The Morionini, a group of carabids found in decaying logs, have often been placed in this taxon. However, members of Morionini have closed middle coxal cavities, glabrous parameres, and the larva has an inner lobe (setiferous) on the maxilla, thus Erwin (1985) placed it in the Pterostichitae as a separate tribe and we follow that placement here. Larval characteristics need to be evaluated phylogenetically for the family in order to determine apotypy, thus the placement is still provisional.

#### Key to Tribes of West Indian Scarititae

- |    |   |                   |
|----|---|-------------------|
| 1  | Tarsomere 5 with unguitactor plate extended as setiform process between claws ..... | Clivinini, p. 371 |
| 1' | Tarsomere 5 with unguitactor plate not extended as setiform process .....           | Scaritini, p. 370 |

#### Key to Subtribes of West Indian Scarititae

- |        |   |   |
|--------|---|---|
| 1      | Antennal scape with single preapical setigerous puncture .....  | 2   |
| 1'     | Antennal scape asetose .....  | 3   |
| 2 (1)  | Elytron with lateral series of umbilicate punctures reduced to two groups of 0-3 punctures behind humerus and before apex .....   |   |
|        | ..... <i>Dyschiriina</i> , <i>Dyschirius</i> Bonelli, p. 371  |   |
| 2'     | Elytron with lateral series of umbilicate punctures either not interrupted or at least not markedly so .....  | Clivinina (= <i>Ardistomina</i> ), p. 371 |
| 3 (1') | Mentum with median tooth longer than lateral lobes, extended obliquely dorsad almost to ventral surface of labrum. Mandibles edentate, falcate, slender. Head with one or more pairs of supraorbital setigerous punctures ..... | Forcipatorina, p. 373                     |
| 3'     | Mentum with tooth subequal in length to lateral lobes, not extended dorsad. Mandibles with large teeth basally. Head with single pair of supraorbital setigerous punctures .....  | Scaritina, p. 370                         |

### TRIBE SCARITINI

Scaritini occur in all major zoogeographical regions; genera are numerous, and several genera are rich in species. There are no recent revisions of the Neotropical Scaritini as a whole, except for Bänninger's world monograph of the Scaritina (see below). Even the subdivisions of the tribe are not well established; many genera have not been critically studied in recent years, so their position herein must be considered provisional. Members of the Scaritini are generally large to very large beetles; the males have multisetiferous parameres, and the unguitactor plate of the terminal tarsal segment is not setiform.

One subtribe of Scaritini in the old sense, the Scapterina, has usually been listed for the Neotropical Region with one genus, *Listropus* Putzeys, 1863. However, *Listropus* is now regarded as a subgenus of *Schizogenius* Putzeys (Whitehead and Reichardt, 1977), thus they are in the following tribe, Clivinini. The Scapterina are thus not represented in the New World (see also Jeannel 1946:220).

### SUBTRIBE SCARITINA

A large, cosmopolitan subtribe, with usually large members, many of fossorial habits, and with brachypterous or apterous adults. One genus, with several subgenera, has been recorded in the West Indies.

#### Key to Subgenera of West Indian *Scarites*

- 1 With ventral "strigae". Clypeus of most specimens with one pair of setigerous punctures. Pronotum with postangular seta and at least one anterior. Metasternum of most specimens with one or more setigerous punctures . . . . . 2.
- 1' Without ventral "strigae". Metasternum of most specimens asetose . . . . . 3
- 2 (1) Metasternum, behind middle coxae, as long or longer than hind coxae. Frontal sulci not narrow and deep in most specimens, confused with the longitudinal rugosity between eyes . . . . . *Distichus* Motschulsky, p. 370
- 2' Metasternum of most specimens much shorter than hind coxae. Head with frontal sulci shallow, between supra-orbital setae usually with coarse punctures and longitudinal rugae. Prosternal process of most specimens punctate and setose. Middle tibia of most specimens with second tooth more or less developed . . . . . *Taeniolobus* Chaudoir, p. 371
- 3 (1') Mandibles with dorsal surface striate . . . . . *Scarites s. str.* Fabricius, p. 370
- 3' Mandibles with dorsal surface smooth . . . . . *Antilliscaris* Bänninger, p. 371

*Scarites* Fabricius, 1801. This is a highly diverse, cosmopolitan genus, whose species are arrayed in several subgenera. Only four of these occur in the Neotropical Region, all of which have West Indian representation. Seven species in total are known to occur in the West Indies.

*Distichus* Motschulsky, 1857 (= *Lophogenius* Motschulsky, 1857; = *Scaritodes* Chaudoir, 1879; = *Adialampus* Gozis, 1882; = *Dischistus* Portevin, 1929). Species of this subgenus occur in the Old World and in the Neotropical Region from Mexico to Argentina, including the West Indies). There are 17 Neotropical species (revision: Bänninger, 1938).

*Taeniolobus* Chaudoir, 1855 (= *Pleurogenius* Motschulsky, 1857; = *Stigmaterus* Motschulsky, 1857; = *Scarites* Chaudoir, 1879). This subgenus includes African, Oriental, and Neotropical species (including a Cuban species).

*Scarites* s. str. (= *Parallelomorphus* Motschulsky, 1850; = *Pharamecomorphus* Motschulsky, 1857). Species of *Scarites* live in almost all zoogeographical regions; in the New World there are species from the United States to Argentina, and also in the West Indies (revision: Bänninger, 1938).

*Antilliscaris* Bänninger, 1949. The three species of this endemic West Indian subgenus are known only from Puerto Rico (Hlavac, 1969; Darlington, 1970).

#### TRIBE CLIVININI

The subtribe Ardistomina is here combined with Clivinina, because relationships among their respective genera are not known. Kult (1950) limited the Ardistomina to *Ardistomis*, *Aspidoglossa* and *Neoreicheia*, as genera with dilated male protarsi, but this probable plesiotypic characteristic is not stable even among these lineages; also, the key characteristics used to distinguish *Neoreicheia* (reduced eyes and enlarged genae) occur in various *Ardistomis* s. str. These three genera along with *Oxydrepanus* and such Old World genera as *Reicheia*, *Syleter*, and allies probably do form a monophyletic radiation, but even if that is so its precise relationship to other Clivinina is not known. Some workers have assigned *Schizogenius* and *Solenogenys* to the Ardistomina, but the former is a clivinine and the latter a salcediine (= Forcipatorina, see below).

The isolated position of *Dyschirius* and allies, usually assigned to the Clivinina, was discussed by Bruneau de Miré (1952) and Whitehead (1969), with the conclusion that they belong to a separate subtribe, Dyschiriina, of unclear affinity. We choose here to include them in the Clivinini and note that they may constitute a separate tribe.

#### SUBTRIBE DYSCHIRIINA

See Whitehead (1969) for discussion of contents, characteristics, and general distribution of this subtribe. Kult (1950) recognized two genera for the Neotropical species that he studied: *Akephorus* LeConte and *Dyschirius* Bonelli. Lindroth (1961:137) treated the two groups as congeneric, but they probably should be regarded as distinct genera. South American species referred to *Akephorus* by Kult (1950) belong to *Dyschirius*, subgenus *Dyschiridius* Jeannel (Whitehead, 1969).

*Dyschirius* Bonelli, 1813. Primarily of Megagaean distribution, most of the species of this diverse genus are in the Nearctic and Palaearctic Regions. However, 18 described species are represented in the American tropics, with a known aggregate range extending as far southward as the Pampas of Argentina. No satisfactory subgeneric classification has been proposed. Members of *Dyschirius* live on bare clay or sand, often near water. Adults and larvae, so far as known, prey on staphylinids of the genus *Bledius*, and on heterocerids (Lindroth 1961:137).

#### SUBTRIBE CLIVININA

This is a highly diverse subtribe, with numerous genera and species. The group was studied by Putzeys (1846; 1863; 1866), but there is no general recent revision. Several genera

recognized by Putzeys have not been studied since their description, thus identification is difficult. Though some of these genera may prove invalid, it is probable that careful study will show many more that are new.

#### Key to the Genera of West Indian Clivinina

- 1      Frons with six to eight longitudinally directed carinae between eyes ..... 2
- 1'     Frons without carinae, but with two deep frontal furrows, or rugose and tuberculate, or with transverse grooves ..... 3
- 2 (1) Gula narrow, about equal in width to distance between inner pair of paramedian submental setae; lacinia setose only on outer margin; ovipositor of female plurisetose ..... *Schizogenius* Putzeys, p. 372
- 2'     Gula broad, nearly equal in width to distance between outer pair of submental setae; lacinia setose or inner and outer margins; ovipositor of female unisetose ..... *Halocoryza* Alluaud, p. 372
- 3 (1') Pygidium with dorsolateral projection fitted between well developed elytral plica and end of elytral epipleuron ..... 4
- 3'     Pygidium without projection; elytral plica short and toothlike or absent ..... 5
- 4 (3) Clypeus with prominent paramedian lobes; frons with pair of shallow grooves (in addition to frontal furrows) in form of flaring 'V'; mandible of average proportions, decussate at anterior margin of labrum ..... *Aspidoglossa* Putzeys, p. 373
- 4'     Clypeus without prominent paramedian lobes; frons smooth, with only normal frontal furrows; mandibles long and slender, decussate beyond anterior margin of labrum ..... *Ardistomis* Putzeys, p. 373
- 5 (3') Apical palpomere acuminate ..... 6
- 5'     Apical palpomere not acuminate ..... *Clivina* Latreille, p. 372
- 6 (5) Male anterior tarsal articles dilated ..... *Neoreicheia* Kult
- 6'     Male anterior tarsal articles not dilated ..... *Oxydrepanus* Putzeys, p. 373

*Clivina* Latreille, 1802 (*Ceratoglossa* MacLeay, 1866). A markedly diverse, worldwide genus, of which 83 species occur in the Neotropical Region, from México to northern Argentina, including eight in the West Indies. Kult (1947) recognized four subgenera having Neotropical species: *Paraclivina* and *Semiclivina* Kult, *Clivina s. str.*, and *Eupalamus* Schmidt-Goebel (= *Eupalamus*, Motschulsky, 1861). The name *Eupalamus* was previously used in Hymenoptera by Wesmael, 1845, and later in Diptera by Jaenicke, 1867, and this subgenus was renamed *Reichardtula* Whitehead (in Reichardt, 1977). Kult (1959) regarded *Paraclivina* as a distinct genus, perhaps with good reason, but this action is not followed here; the four subgenera recognized by Kult seem clearly to represent distinct lineages, but at best they represent only a small portion of the Neotropical *Clivina* fauna and hence are not further discussed here.

*Halocoryza* Alluaud, 1919. A genus whose members occur in the intertidal zone (Whitehead, 1966 and 1969), with four species: two African, one in the Antilles, southern Florida, Yucatan, and Panama's north coast, and one on the west coast of México. Whitehead (1966) provides a key to species.

*Schizogenius* Putzeys, 1846. Whitehead (1972) revised North and Central American species and partially treated South American species. Whitehead and Reichardt (1977) treated



species of subgenus *Listropus*. One species has been recorded from the West Indies.

*Oxydrepanus* Putzeys, 1866. A genus of minute members, exceedingly diverse in aedeagal structure, doubtless related to *Neoreicheia*, and probably belonging to the ardistomine radiation. Two species have been recorded from the West Indies.

*Ardistomis* Putzeys, 1846 (with subgenera *Ardistomis s. str.* and *Semiardistomis* Kult, 1950. *Ardistomiellus* Kult, 1950, is a junior synonym of *Semiardistomis*). *Ardistomis* is exclusively American, with 11 species occurring in the Antilles.

*Aspidoglossa* Putzeys, 1846. A New World genus with 25 Neotropical species (distributed from southeastern United States to northern Argentina and Antilles), of which three have been recorded from the West Indies.

#### SUBTRIBE FORCIPATORINA (=OXYSTOMINA)

This is a small subtribe of Clivinini which occurs predominantly (and possibly exclusively) in the Neotropical Region. Two Oriental genera have to be restudied before their inclusion in the group is warranted. The species of the subtribe, placed in six genera (Jorge de Silva, MS) are exclusively South American, with a single species of *Stratiotes* Putzeys, known from the Lesser Antilles (Martinique and Dominica). Recent studies by Erwin and Stork (in prep) have shown that the members of Salcediina constitute the sister group of *Stratiotes*, thus the two subtribes, Forcipatorina and Salcediina, will be merged.

#### SUBFAMILY PAUSSINAE

At present it is well established that paussids are true Carabidae (the first author to verify the fact seems to have been Burmeister, 1841:76). Kolbe (1927:205; 1930:16) definitively related the Paussini to Ozaenini, having been followed by more recent authors (Darlington, 1950; Crowson, 1955; Basilewsky, 1962; Lindroth, 1969b:xxi). Other authors, e.g. Jeannel (1941:89; 1946:45, 46), even though accepting the relationships between the two, continued to consider the Paussidae as a distinct family, thus accepting a polyphyletic classification. Crowson (1955:6; 1981:694) considered the group at family level, including in it the "Ozaeninae".

Recent work on defense chemicals, and structure of the defense mechanism (Eisner *et al.*, 1977, Moore 1979) and reanalysis of data in Erwin 1970 (Erwin 1979) show that the bombardier beetles, Brachinidae, have a sister group relationship with the Ozaenine/Paussine lineage. Erwin (1979) included the Metriitae and Nototylini in the Paussinae, however, neither of these groups occur in the West Indies.

#### SUPERTRIBE PAUSSITAE

Darlington (1950) arranged the paussids in three tribes, the Protopaussini, Paussini and Ozaenini. Protopaussini, of which very little is known, is a primitive tribe restricted to the Oriental Region. Paussini are myrmecophiles. Each species apparently occurs with a different species of ant, and the hosts are known to belong to the tribes Myrmicini or Camptonotini. Carvalho (1959) records several African species of *Paussus* in *Pheidole* nests (Myrmicini). Jeannel (1946) found no relationship between the classification systems of these ants and carabids, although this should be restudied with modern methods. In South America, only one

species has been found thus far in an ant nest (*Monacis*, Dolichoderini). Very little is known about the life history of the third tribe, the Ozaenini, but *Physea* adults and larvae have been collected from nests of *Atta* (Attini), the leaf-cutting ants. Adults of other genera have been collected from beneath bark of fallen trees or, at night, on logs.

Wasmann (1929) described 20 fossil species from Baltic amber (end of Eocene or beginning of Oligocene), which he placed in seven genera, of which only *Arthropterus* is present in the recent fauna (of Australia). Darlington (1950:85) suggested that Wasmann exaggerated the number of both genera and species (all based on single specimens). Unfortunately, a restudy of these fossils has not been undertaken.

#### TRIBE OZAENINI

This tribe includes 14 genera (Bänninger, 1927) which occur in the Australian, Oriental, Ethiopian (including Madagascar) and Neotropical Regions (a few species occur in southwestern United States). Only the genus *Pachyteles* has been recorded in the West Indies.

Little is known about the habits of Ozaenini. Adults of some genera of the Oriental Region were collected in decaying wood: at least one species of *Physea* (possibly *Physeomorpha* as well), has myrmecophilous habits. Larvae are only known of *Physea* and *Pachyteles* (van Emden, 1942:24-25). Adults of several genera occurring in Central and South America are "bombardiering" beetles. All aspects of this activity are like those of *Brachinus* and *Pheropsophus*, except the droplets are released from side turrets (flange of Coanda) rather than a medial one.

*Pachyteles* Perty, 1830. This is the richest and most diverse Neotropical genus of the tribe, with at least 50 species (plus two in the southern United States); two have been recorded from the West Indies. There is no revision of the genus, and identification of the species is nearly impossible. A larva of one species from Guatemala was collected from beneath bark (van Emden, 1942:59).

#### SUPERTRIBE BRACHINITAE

This group is usually separated from the rest of the carabids because of the number of normally visible abdominal sterna of adults. All other carabids have six, but brachinine females have seven and males have eight. This structure is correlated with the "bombarding" mechanism, i.e., the capacity to eject volatile substances through a small opening in front of tergum IX. The larger number of exposed segments permits more mobility of the abdomen, permitting the droplets of volatile substance to be aimed toward a target (Eisner, 1958).

Because of this defense mechanism of adults, Brachinitae are known as "bombardier beetles". This behaviour is not restricted to this supertribe, having been recorded for other tribes as well (e.g. *Galerita*, see below; *Agra*, see Erwin, 1979; Ozaenini, see above), however the unique structures are restricted. There is also an old reference that helluonine adults have the capacity to bombard, but this has not been confirmed in recent years (Reichardt, 1974b:221-222). Reichardt (1971a) recorded bombarding behaviour for *Pheropsophus aequinoctialis* and *P. rivieri*, and it is known that both *Pheropsophus* and *Brachinus* adults are true bombardiers.

Erwin (1970), following Ball (1960), considered this supertribe as a division, Brachinidae, with the genera arranged in two tribes, Crepidogastrini (restricted to the southern parts of

Africa and India) and Brachinini (worldwide in distribution). However, in the last decade much information has come forth and Erwin (1985) now considers the Brachinitae a sister group of the Pausitae.

#### TRIBE BRACHININI

This is the only tribe of Brachinitae represented in the New World. Erwin (1970) recognized four subtribes, of which the Mastacina and the Aptinina are Old World. Pheropsophina and Brachinina have Neotropical representatives as well as Old World ones, each with a single genus.

Larvae and pupae of three Old World species are known. For the New World, Erwin (1967, 1972) described the way of life and development of *Brachinus pallidus* Erwin from California, and summarized what is known about the life history of members of the genus. *B. pallidus* larvae develop on pupae of Hydrophilidae (genera *Tropisternus* and *Berosus*). According to Erwin (1970), "ectoparasitoidism" is obligatory for post-embryonic development, at least in the North American species of *Brachinus*.

#### Key to Genera and Subgenera of West Indian Brachinini (from Erwin, 1970)

- 1 Mandibular scrobe plurisetose . . . . .  
 . . . . . *Brachinus* (*Neobrachinus*) Erwin, p. 375
- 1' Mandibular scrobe unisetose . . . . .  
 . . . . . *Pheropsophus* (*sensu stricto*) Solier, p. 375

*Brachinus* Weber, 1801 (= *Brachynus* auct.). A cosmopolitan genus, with many species, placed in several subgenera. All Western Hemisphere species have been placed in subgenus *Neobrachinus* Erwin, 1970. This subgenus ranges from Canada to Argentina (but seems to be absent from Chile). Several of the Mexican species occur in the United States as well, and vice versa. Very few of the typically South American species occur in Central America. The South American fauna is very poorly known, and the status of the described species is uncertain. A revision of these species would be welcome. Twenty-four named species are known from South America, many from Argentina and Uruguay; 11 have been recorded from Brazil. Sixty-eight species are known from North and Middle America. Only two species are recorded from the West Indies.

*Pheropsophus* (*sensu stricto*) Solier, 1833. According to Erwin (1970), this genus is endemic to the Neotropical Region, with most species occurring in South American (one species is known only from México, and one of the South American species occurs as far north as southern México on the Yucatan Peninsula). Erwin (1971a) discussed nomenclatorial problems relative to genera and subgenera. At present, the group includes six species (and 12 varieties); only two of these have not been recorded from Brazil. *P. aequinoctialis* (Linné) has the broadest range (from Argentina to southern México and the Greater Antilles), and adults are highly varied in color (most known "varieties" belong to this species). *P. platycephalus* Reichardt from northeastern and eastern Brazil, is the only known apterous species. Externally, adults resemble those of *P. biplagiatus*, but do not belong to subgenus *Protopheropsophus*.

## SUBFAMILY PSYDRINAE

The Psydrinae as defined by Erwin (1985) contain all those tribes in which members possess conjunct mesocoxae and males have setiferous parameres.

## SUPERTRIBE RHYSODITAE

At present this supertribe contains one tribe with numerous genera.

The inclusion of rhysochids as a tribe of Carabidae rather than a family of its own (which previously was even placed among the Polyphaga, near Colydiidae), has been advocated in recent years by Bell & Bell (1962) and Bell (1970). Hlavac (1975), in his paper on the prothorax of Coleoptera, includes the Rhysochini as a tribe of Carabidae. According to these authors the Rhysochini have typical caraboid characters, even though the larva is quite aberrant, and it might be added that if such groups as Cicindelidae, Omophronini, and Paussinae, among others, are included in Carabidae, the same treatment should be given the rhysochids.

According to Bell (1970), the closest relatives of Rhysochini among Carabidae seem to be the Scaritini, and perhaps closest to the subtribe Salcediina, whose adults have a superficial resemblance to those of Rhysochini, and also have the widely separated hind coxae, with a large intercoxal piece. The salcediinas have, however, as typical Scaritidae, the transverse suture in front of the hind coxae, which is absent from rhysochine adults. Until such time as the primitive Pterostichini (*Cratocerus* and company), Psydrinae, and Morionini are analysed phylogenetically (groups which are thought pivotal in placing the rhysochines), we follow Erwin (1985), in placing the rhysochines at the base of the Psydrinae.

## TRIBE RHYSODINI

This tribe is relatively small with worldwide distribution, and a total of about 130 species. Bell (1970) revised the North and Middle American, and Antillean fauna.

The Rhysochini are adapted to life in rotting wood and eat fungal mycelia, a habitat shared by both adults and larvae. Larvae of Neotropical species are thus far undescribed; Böving (1929:69, pl. 15) described the larva of the North American *Clinidium sculptile* Newman; Burakowski (1975:271ff) described that of the European *Rhysochus sulcatus* (Fabricius).

## Key to Genera of West Indian Rhysochini

- 1 Minor setae of antennomeres (except 11) ring-like and near apex .....  
..... *Plesioglymmius* Bell and Bell, p. 377
- 1' Minor setae of antennomeres (except 11) tuft-like and on ventral surface,  
or absent ..... *Clinidium* Kirby, p. 376

*Clinidium* (*sensu lato*) Kirby, 1835. A worldwide genus, whose species are arrayed in several subgenera. The classically accepted subgenus *Clinidium s. str.* was subdivided by Bell (1970); Vulcano & Pereira (1975) continue to use *Clinidium s. str.* in this classical sense. Three of the subgenera of *Clinidium* thus occur in the Neotropical Region.

*Clinidium s. str.* This subgenus is well represented in the Neotropical Region, with 11 species endemic in the Antilles (most described as new by Bell, 1970).

*Plesioglymmius* Bell and Bell, 1978. The range of this genus is disjunct, with one area including the Greater Sunda Islands and Mindanao, and the other Brazil and Cuba. There are a number of undescribed species (Bell, pers. comm.). One species has been reported from the West Indies.

#### SUPERTRIBE TRECHITAE

This supertribe is comprised of several tribes, all of which have rather small members. The groups are diverse in habitat and structure and occur in most habitable areas of the world.

#### TRIBE TRECHINI

This is a tribe of small carabids of worldwide distribution, but with predominance of genera and species in the cold and temperate parts of the World (distribution similar to that of *Bembidion*). In features of life history, the taxa are organized in two groups, one with subterranean habits (usually cavernicolous species with reduced eyes) and a terricolous group (with well-developed eyes). A small subgroup of the latter are marine species, which live among rocks in the intertidal zone. In the Neotropical Region, marine species are only known from southern South America. In the tropical parts of the continent relatively few species are known, possibly because they occur in habitats rarely adequately collected, i.e. deep humus and soil.

Larvae of Neotropical species are unknown; those from the Old World are well known (van Emden, 1942:28-30).

#### SUBTRIBE PERILEPTINA

*Perileptus* Schaum, 1860a. A genus of Old World origin, perhaps African, characterized by pubescent eyes of adults. Only four Antillean species are known.

#### TRIBE POGONINI

This is a tribe of eight genera according to Csiki (1928), especially of the Old World, with halophilous species whose members are encountered along sea shores or at the margins of salt lakes. Chaudoir (1871b) studied the whole group; the two genera occurring in the Neotropical Region were recently studied by Reichardt (1974a). Immature stages are only known for Old World species (van Emden, 1942:17).

*Diplochaetus* Chaudoir, 1871b. Two species in the United States, one in México and one in the Antilles and northern South America (also recorded from Brazil). Members live on coastal and lowland saline beaches. Adults are nocturnal.

#### TRIBE BEMBIDIINI

A tribe of worldwide distribution and predominant in all regions of both hemispheres. The tribe is well represented in southern South America, especially by *Bembidion*; Central America and the Antilles have many species, some with clear Nearctic relationships. The tropical species of South America have not been studied in recent years and are rarely found in collections. In recent years this fauna, especially the Tachyina, has been studied by Erwin (1971b, 1973,

1974a, 1974b, 1975, 1978a). *Bembidion*, with fewer tropical species and more temperate ones has been studied by Erwin and Kavanaugh (1980, 1981) and Erwin (1982). Jeannel (1962) studied the fauna of the southern parts of South America; unfortunately he recognized too many genus-group taxa without clear affinities. Thus, this fauna is still in need of a thorough revision.

The habits of Bembidiini are varied. Members of Bembidiina are mostly riparian or seabeach species; a few occur near inland ponds and at the edges of wet alkalie sloughs. Anillina includes tiny endogean, anophthalmous individuals which live in deep humus in upland habitats. Several new species were recently discovered in Guatemala using sifting and berlese methods; many more will doubtless be found throughout the Neotropical Region. Tachyina are the most diverse of the tribe. These rather small beetles occur as arboricoles, in wood and under bark, epigeal and hypogean, near water of all kinds, on sea beaches, and near other salt deposits. Several live among epiphytes in the forest canopy. Larvae are known for *Tachyta* and *Mioptachys* (Erwin, 1975) and probably for *Xystosomus* (Erwin, 1973; van Emden, 1942).

#### Key to Subtribes of West Indian Bembidiini

- |    |  |   |
|----|--|---|
| 1  | Front tibia truncate, not notched apico-laterally  | 2   |
| 1' | Front tibia obliquely and markedly notched apico-laterally   | 3   |
| 2  | (1) Abbreviated scutellar interneur present; recurrent groove of elytral apex absent   | Bembidiina, p. 381  |
| 2' | Abbreviated scutellar interneur absent; recurrent groove of elytron present  | Tachyina, in part ( <i>Xystosomus</i> and <i>Mioptachys</i> ), p. 380 |
| 3  | (1') Body pale and generally pubescent; with or without eyes, If with eyes, then head somewhat withdrawn into pronotum   | 4   |
| 3' | Body pale or dark, with fixed tactile setae only; eyes present; head not withdrawn into pronotum   | Tachyina, p. 379  |
| 4  | (3) Labrum deeply notched and covering mandibles; elytral apices soft, separated at suture, and more or less truncate; flight wings and eyes present in most adults      | Tachyina, in part ( <i>Lymnastis</i> and <i>Micratopus</i> ), p. 381  |
| 4' | Labrum entire and not covering mandibles; elytral apices normal, not soft, held together at suture (in adults of many species) and rounded; flight wings and eyes absent | Anillina, p. 378  |

#### SUBTRIBE ANILLINA

Jeannel (1937, 1963) published two monographs on this group. Although mostly occurring in temperate zones, few representatives are in the Neotropical Region. Taglianti (1973) studied the Mexican species and Erwin (1982) reviewed the Central American species. It is most probable that the paucity of the tropical fauna is due to the lack of collections from suitable habitats.

*Stylulus* Schaufuss, 1882 (= *Petrocharis* Ehlers, 1884). A monobasic genus from the Virgin Islands and southeastern United States, originally described in Colydiidae. It is highly likely that several species are extant, but have not been collected. We doubt that the species from the Virgin Islands is conspecific with the mainland United States form(s).

## SUBTRIBE TACHYINA (INCLUDING MICRATOPINA, =LIMNASTINA)

A diverse subtribe which, until very recently, was chaotic from the taxonomic point of view. Most authors have considered Micratopina (=Limnastina) a distinct group, but Erwin (1974a) united this assemblage with Tachyina. Jeannel (1962) studied the Tachyina (*sensu stricto*) of the southern tip of South America and described a few new genera. Erwin (1974b) redefined the genera, synonymizing some names proposed by Jeannel, and published revisions of several genera (Erwin, 1973, 1974b, 1975). Most new World genera occur in the West Indies, therefore a complete key is given below.

**Key to Genera of Neotropical Tachyina (modified from Erwin, 1974a; see Erwin, 1974b, for elytral setal codes)**

- |        |  |                                       |
|--------|--|---------------------------------------|
| 1      | Elytron impunctate, with eight longitudinal carinae extended from base to apex. Pronotum with five carinae. Head with three carinae. ....  |                                       |
|        | .....  | <i>Costitachys</i> Erwin              |
| 1'     | Elytra, pronotum and head non-carinate or, elytra carinate-punctate. ....  | 2                                     |
| 2 (1') | Mentum without deep foveae, with or without shallow depressions on each side .....   | 3                                     |
| 2'     | Mentum with two deep foveae, each circular or horseshoe-shaped .....   | 8                                     |
| 3 (2)  | Front tibia almost or perfectly truncate at apex .....   | 4                                     |
| 3'     | Front tibia markedly oblique apico-laterally .....   | 5                                     |
| 4 (3)  | Elytral disc without setae Ed2-6. Specimen convex .....  |                                       |
|        | .....  | <i>Xystosomus</i> Schaum              |
| 4'     | Elytral disc with setae Ed3 and 5 Convex or depressed, with markedly reflexed pronotal margins .....   | <i>Mioptachys</i> Bates, p. 380       |
| 5 (3') | Elytra and abdominal sterna sparsely pubescent, remaining parts of body of most adults also pubescent: Color testaceous or flavo-testaceous. Head slightly or markedly retracted into pronotum. Recurrent stria of elytron absent or indistinctly marked ..... | 6                                     |
| 5'     | Elytra and abdominal sterna not pubescent. Testaceous or black. Head not retracted into pronotum. Recurrent stria distinctly marked .....  | 7                                     |
| 6 (5)  | Sternum VI of both sexes with four long setae along posterior margin, lateral setae falciform .....  | <i>Micratopus</i> Casey, p. 381       |
| 6'     | Sternum VI with long, erect setae: male with two, female with four .....   | <i>Lymnastis</i> Motschulsky, p. 381  |
| 7 (5') | Recurrent stria of elytron short, curved, closer to suture than to lateral margin. Form convex or subdepressed .....   |                                       |
|        | .....  | <i>Elaphropus</i> Motschulsky, p. 380 |
| 7'     | Recurrent stria elongate, straight, very close to lateral margin. Form usually depressed .....   | <i>Tachyta</i> Kirby, p. 380          |
| 8 (2') | Recurrent stria elongate, extended anteriorly beyond seta Ed6, and from there curved backward, hook-shaped .....   | 9                                     |
| 8'     | Recurrent stria short, curved, not extended beyond seta Ed6, or elongate, and near lateral margin .....  | 10                                    |
| 9 (8)  | Elytral interneur 8 subsulcate beyond middle, with apical portion of sulcus  |                                       |

- curved medially behind setae Ed5 and 6. Recurrent stria in form of hook around Ed6 ..... *Paratachys* Casey, p. 381
- 9' Elytral interneur 8 subsulcate, but not curved medially next to Ed5 and 6. Recurrent stria in form of hook around Ed6 or erased near Ed6 .....  
..... *Tachys* Stephens, p. 381
- 10 (8') Pronotum without posterior angles. Form pedunculate. Interneur 8 externally absent ..... *Liotachys* Bates
- 10' Pronotum with posterior angles, or at least not with pedunculate form. Interneur 8 complete, or at least present anteriorly and/or posteriorly ..... 11
- 11 (10') Elytral interneurs erased or indistinctly striate. Form small and depressed or subdepressed. Testaceous or flavous ..... *Polyderis* Motschulsky, p. 381
- 11' Elytral interneurs punctate or sulcate-striate ..... 12
- 12 (11') Elytral interneur 8 of most adults with post-humeral fovea(e) in basal fourth or in middle: or elytra with eight completely punctate interneurs .....  
..... *Pericompsus* LeConte, p. 380
- 12' Elytral interneur 8 non-foveolate, nor elytron with more than five interneurs externally visible ..... *Meotachys* Erwin

*Mioptachys* Bates, 1882 (= *Tachymenis* Motschulsky, 1862, junior homonym of *Tachymenis* Wiegmann, 1835. For details, see Erwin, 1976). A predominantly Neotropical genus (12 named species, four in Brazil), with a single species in the Nearctic Region. Three species have been recorded in the West Indies.

*Tachyta* Kirby, 1837. A Holarctic genus. *T. hispaniolae* Darlington, 1934, occurs in the Antilles and *T. nana inornata* Say, 1825 ranges south to Belize. Revised by Erwin (1975).

*Elaphropus* Motschulsky, 1839 (= *Tachylopha* Motschulsky, 1862; = *Tachyura* Motschulsky, 1862; = *Barytachys* Chaudoir, 1868b; = *Sphaerotachys* Müller, 1926; = *Trepanotachys* Alluaud, 1933; = *Tachyphanes* Jeannel, 1946). A predominantly Holarctic genus, with numerous species in the Old World, several in the Nearctic, and 10 or so in the Neotropics. Two species have been recorded in the West Indies.

*Pericompsus (sensu lato)* LeConte, 1851 (= *Tachysops* Casey, 1918a = *Tachysalia* Casey, 1918a = *Leiotachys* Jeannel, 1962 = *Leptotachys* Jeannel, 1962). In his recent revision of the genus, Erwin (1974b) arranged *Pericompsus* in three subgenera, two Neotropical and *Upocomsus* Erwin in the Australian Region. Three species have been recorded in the West Indies.

The two Neotropical subgenera are distinguished as follows:

- 1 Interneur 8 with deep almost perforate fovea, in middle of elytron or slightly in front of middle. Each elytron also with two subhumeral, variously placed foveae. Setae Eo4 in position "d" .....  
..... *Pericompsus (sensu stricto)*, p. 380
- 1' Interneur 8 without fovea in or near middle. Foveae posterior to humeri shallow, each with seta, or small, perforated, in basal 0.25, next to seta Eo4c; or foveae absent ..... *Eidocompsus* Erwin, p. 380

*Eidocompsus* Erwin, 1974b. With 13 Neotropical species, of which one is known from the West Indies.

*Pericompsus (sensu stricto)*. With 46 species, of which 6 are known from the West Indies.



*Tachys* Stephens, 1828b (= *Isotachys* Casey, 1918a). A Nearctic genus, with several species in México, Guatemala, and Antilles. Three species have been recorded on the West Indies.

*Paratachys* Casey, 1918a (= *Eotachys* Jeannel, 1941). A worldwide genus, with hundreds of Neotropical species, almost totally undescribed. These are predominantly from México, Central America, and Antilles, but several are known from Brazil and other countries. Nine species have been recorded in the West Indies.

*Polyderis* Motschulsky, 1862 (= *Microtachys* Casey, 1918a = *Neotachys* Kult, 1961 = *Polyderidius* Jeannel, 1962). Worldwide, with four species in Central America and one in the Antilles.

*Lymnastis* Motschulsky, 1862 (= *Limnastis* auct. = *Paralimnastis* Jeannel, 1932). With most of its species in the Old World, this genus is represented in the New World by a single species, *L. americana* Darlington, from Cuba.

*Micratopus* Casey, 1914a (= *Blemus* LeConte, 1848, not Stephens). As redefined by Erwin (1974a), this New World genus includes two Antillean species.

#### SUBTRIBE BEMBIDIINA

A highly diverse subtribe and taxonomically complex. This group needs to be restudied and Erwin and Kavanaugh (1980, 1981) and Erwin (1982) have begun their monographic treatment of the subtribe.

Very few species are known from tropical parts of the Neotropical Region, however many species do occur in the tropical highlands, especially in the West Indies.

*Bembidion* (*sensu lato*) Latreille, 1802 (= *Bembidium* auct.). A worldwide genus, subdivided in a large number of subgenera, with 10 described species known from the West Indies. The *vernale* group (Erwin, 1982) has undergone radiation on the mountain systems of the larger islands just as it has in the highlands of Central America.

#### SUBFAMILY HARPALINAE

This subfamily is here defined as those groups whose members possess conjunct mesocoxae and conchiferous male parameres without setae (as an apotypic state).

#### SUPERTRIBE PTEROSTICHITAE

This supertribe must surely be the largest and most disparate of the family. Not only have many groups been dumped here based on gross similarity, but many other groups, rather non-similar in appearance, have been included. The group as a whole is inadequately known systematically.

#### TRIBE MORIONINI

This is a tribe of about 10 genera (Csiki, 1929:479), mostly of the tropics of the Old and New Worlds. Most authors have considered the Morionini as a subtribe of Pterostichini (an action even maintained by Straneo, *in litt.*), but more recently it has been considered as a distinct tribe, of uncertain relationships. Whitehead & Ball (1975), discussing relationships of

the groups within Pterostichini, exclude Morionini and Catapiesini from the tribe. Here it is regarded as a tribe, following Erwin (1984), somewhat intermediate between the psydrines and *Cratocerus* and company of Pterostichini. Larval characteristics indicate strong relationship with the pterostichines, even though some features tend to resemble those of certain scaritine larvae (cf. Thompson, 1977, 1979; Jorge-Silva and Costa, 1983).

As far as known, adults and immatures of Morionini live in fallen logs and adults have well developed wings. Van Emden (1953b:51-54) described and discussed the presumed larva of *Morion orientale* Dejean, comparing it to a larva which he earlier (1942:27) had referred to the scaritine genus *Scarites*, subgenus *Distichus*, but in reality was that of *Morion cordatum* Chaudoir, (cited as *Morion georgiae* Palisot). Reichardt reared the larva of *Morion brasiliense* Dejean. Two genera occur in the New World, only one of which is found in the West Indies.

*Morion* Latreille, 1810 (= *Morio* auct.). A genus of worldwide distribution, with several Neotropical species (one from the Antilles).

#### TRIBE PTEROSTICHINI (INCLUDING AGONINI)

The Pterostichini is one of the most diverse groups of Carabidae and likely the last of an old stock which gave rise to many of the higher carabid groups. It has many taxa which are typically cold-temperate (in South America represented in the southern part of the continent) and others tropical. It seems that Pterostichina are commoner in colder and more temperate climates, being replaced by Agonina in the tropics.

The Neotropical fauna is taxonomically difficult. One of the problems is divergence in generic concepts, e.g. the Jeannel (splitting) *versus* the more conservative (lumping) concept. Many monobasic or very small genera have not been properly studied and compared with each other, and their status and systematic position remains unsettled. On the other hand, there are markedly diverse worldwide "genera" such as '*Pterostichus*' and '*Colpodes*', both of which are paraphyletic, if not polyphyletic.

Part of the confusion arises from Csiki's world catalog of Carabidae (Csiki, 1929; 1930; 1931). Several of the groups included in the tribe have already been eliminated from it by subsequent authors. These are:

(1) The subtribe Morionini (Csiki, 1929:474-484), at present considered a distinct tribe by many authors and here included as such.

(2) The subtribes Meonidi (Csiki, 1929:484), Melisoderi (*ibidem*:485-486), Tropicoptera (*ibidem*:486-491) and Psydri (*ibidem*:494), were all fused to form the tribe Psydrini, and the Nomiini are considered a separate tribe. Although none of these are present in the West Indies, the included checklist ranks these groups as full tribes after Erwin (1984).

(3) The subtribe Catapiesi (Csiki, 1929:492-493), is now also considered a distinct tribe of Lebiitae.

With these groups eliminated, there still remains the bulk of genera in the tribe, and the confusion is great; it is impossible to identify the natural system now.

A second problem is arrangement of genera in subgroups or even limits of the tribe. One of the highly diverse groups within this tribe is the Agonina, which has been accorded very different status by different authors. Csiki (1931:739) considered them as a subtribe of his Pterostichini, and has been followed by such authorities as Lindroth (1966:441). Ball (1960:129) preferred to consider the Agonini as a distinct tribe, but in a more recent paper (Whitehead & Ball, 1975:595) returned the agonines to Pterostichini, and did the same with

another group here considered as a distinct tribe (the Lachnophorini). Their action, in relation to the Agonina, was justified by the fact that they fused a genus of true Pterostichini with a genus normally considered agonine (see the subtribe Cyrtolaina).

Lindroth's (1966) arrangement of the Pterostichini is restricted to the Nearctic fauna, not including the several tropical groups. Here, Whitehead & Ball (1975) are followed, with the inclusion of Caelostomina and the exclusion of the Lachnophorini.

#### Key to the Subtribes and Genera of West Indian Pterostichini

- |    |   |  |
|----|---|--|
| 1  | Scutellar interneur absent .....  | 2  |
| 1' | Scutellar interneur present .....   | 4  |
| 2  | (1) Anterior tibia markedly dilated apically; antennomeres 4-10 quadrate, about as wide as long .....   | Caelostomina, <i>Caelostomus</i> MacLeay, p. 384         |
| 2' | Anterior tibia not dilated much apically; antennomeres 4-10 longer than wide, filiform .....  | 3  |
| 3  | (2') Dorsal surface metallic blue, copper, or green .....   | Euchroina, <i>Dyschromus</i> Chaudoir, p. 384            |
| 3' | Dorsal surface not metallic, piceous or rufous, often spotted and/or iridescent .....   | Loxandrina, <i>Loxandrus</i> LeConte, p. 385             |
| 4  | (1') Elytron with internal plica near apex .....  | Pterostichina, <i>Pterostichus (sensu lato)</i> , p. 384 |
| 4' | Elytron without internal plica near apex .....  | 5  |
| 5  | (4') Anterior tibia externally canaliculate and male aedeagus basally melanistic .....  | <i>Glyptolenus</i> Bates, p. 384                         |
| 5' | Anterior tibia not canaliculate; male aedeagus melanistic or not .....  | 6  |
| 6  | (5) Tarsomere 4 of anterior tarsus emarginate; male aedeagus melanistic (except in some depigmented species); head not constricted behind eyes .. | <i>Agonum</i> Bonelli, p. 384                            |
| 6' | Tarsomere 4 of anterior tarsus lobate; male aedeagus not melanistic; head somewhat constricted behind eyes .....                                  | <i>Platynus</i> Bonelli, p. 384                          |

#### SUBTRIBE AGONINA (=ANCHOMENINA; =PLATYNINA)

This is a markedly diverse group of predominantly temperate distribution. As discussed above, some authors prefer to consider the Agonina as a tribe distinct from the Pterostichini, but recent studies indicate close relationship to the extent they must be considered as members of the same tribe.

Whitehead & Ball (1975), considering the agonines as a subtribe of Pterostichini, separate the Agonini (in the old sense) in three subtribes, the Agonina, Sphodrina, and Pristosiina. The Sphodrina include mainly troglobites, and are restricted to the Holarctic Region and New Zealand. Barr originally described the genus *Mexisphodrus* (Barr, 1965:66) as a Neotropical representative of the Sphodrina, but later concluded that the genus is better placed among the true Agonina (Barr, 1970, 1973).

The Agonina have numerous tropical representatives. The group is not well understood, and only in a few recent papers has Whitehead started to settle the status of the Mexican (and other Neotropical) species. The neotropical species are very inadequately known, their immature

stages not at all.

*Platynus (sensu lato)* Bonelli, 1810. Whitehead (1973) studied the Mexican species formerly placed in *Colpodes* and *Agonum* (as well as in other smaller genera), and resurrected *Platynus* Bonelli from synonymy with *Agonum* Bonelli, 1810, for the Mexican forms. Nonetheless, classification of Mexican *Platynus* is far from settled, much less that of other Neotropical species; according to Whitehead (*l.c.*:214) there are more than 100 undescribed species from México. Presently, it is the largest genus in the West Indies with 55 species recorded.

*Agonum* Bonelli, 1810. Also a highly diverse, cosmopolitan genus, predominantly in temperate areas. Possibly it is not in the Neotropical Region; subgenera and species groups are numerous in other faunas. Excluding *Rhadine*, *Hemiplatynus*, *Stenoplatynus* and *Platynella*, (see *Platynus*, above) from *Agonum*, there remain only species placed in *Agonum (sensu stricto)*: five evidently Nearctic species which reach into México and the Antilles, as well as 37 species which occur in México (nine) and the Antilles (one), as also in South America-Chile (nine), tropical parts (18), of the latter six in Brazil. Of the subgenus *Anchomenus* Bonelli, (also a predominately temperate group), there are four Nearctic species which also occur in México and the Antilles, three exclusively Mexican and two from Colombia.

*Glyptolenus* Bates, 1878 (= *Glyptogenus* Bertkau, 1878). Originally a predominantly Central American genus, *Glyptolenus* was recently studied by Whitehead (1974), who included in it several species formerly placed in *Colpodes* or *Platynus*, and which now includes 17 species, predominantly South American, of which six are recorded from Brazil, one from Jamaica and two from the Lesser Antilles.

#### SUBTRIBE EUCHROINA

A small Neotropical subtribe (which also includes the Australian *Setalis* Laporte) of metallic-colored adults, some of large size. Four genera are currently placed in this subtribe.

*Dyschromus* Chaudoir, 1835. Restricted to México (five species) and the Antilles (five species).

#### SUBTRIBE PTEROSTICHINA

This subtribe, which includes most genera and species of Pterostichini, is taxonomically complex and not understood. One of the great problems is the highly diverse, worldwide genus *Pterostichus* Bonelli, with many subgenera (frequently considered genera, e.g. by Straneo (1979), who considers some the Neotropical subgenera as genera, and excludes *Pterostichus* from the Neotropical Region).

*Pterostichus* Bonelli, 1810. This is a very large Holarctic genus, comprised of many subgenera and species groups. Species of *Pterostichus s. str.* may or may not occur in the West Indies. Two are listed as such, one of which is a *Poecilus* species and the other may be incorrectly assigned to this genus.

#### SUBTRIBE CAELOSTOMINA

*Caelostomus* MacLeay, 1825. This predominately African and Oriental genus is represented in the West Indies by a single introduced species, *C. punctifrons* Chaudoir, from

West Africa.

#### SUBTRIBE LOXANDRINA

*Loxandrus* LeConte, 1852 (= *Megalostylus* Chaudoir, nec Schoenherr). This predominately Nearctic/Neotropical genus is also represented in Australia (see Lindroth, 1966:537). In the Neotropical Region, there are 77 described species, predominantly South American. Allen (1972) revised the North American and Mexican species. Allen and Ball (1980) rerevised the Mexican species. Seven species have been recorded from the West Indies.

#### SUPERTRIBE PANAGAEITAE

This supertribe has several tribes, some well delimited, but others not. Taxonomy at the higher levels is necessary and would likely be a rewarding project. Only one tribe occurs in the West Indies.

#### TRIBE PANAGAEINI

A tribe of worldwide distribution with 17 genera (Csiki, 1929:347). In the New World there are five genera, of which two are in the West Indies.

Nothing is known about the habits and way of life of the South American species. Immature stages have been described for Old World species only (van Emden, 1942:45-46). Both genera of the West Indies have been collected at lights at nights.

#### Key to Genera of West Indian Panagaeini

- 1 Elytra concolorous, black. Lateral margins of pronotum with long spines  
..... *Coptia* Brullé, p. 385
- 1' Elytra bicolored black and orange. Lateral margins of pronotum regularly  
curved ..... *Panagaeus* Latreille, p. 385

*Coptia* Brullé, 1835b. This genus includes four species: two described from the Antilles, and two described from mainland localities of the Neotropical Region. For a key to the species, see Reichardt (1971b). Members of a mainland species, *C. armata* Laporte, inhabit palm forests, where adults are found in wet places, under fallen palm fronds.

*Panagaeus* (*sensu lato*) Latreille, 1804. This is essentially a Holarctic genus, with six Palaearctic species (subgenus *Panagaeus, sensu stricto*) and six described from the Americas (subgenus *Hologaeus* Ogueta). Of the described species of subgenus *Hologaeus*, three are known from the United States; one from the Antilles; México has two species (one shared with the southwestern United States, one with the Antilles); and one species *P. panamensis* Laferté-Sénéctère, is known from Panama and Ecuador. One undescribed species is known from southeastern Texas and Chiapas, México (Ball, *in litt.*). Members of these species occur in open areas, such as open woodlands, natural grasslands, and pastures.

## SUPERTRIBE CALLISTITAE

This supertribe has several tribes, some well delimited, but others not. Taxonomy at the higher levels is necessary and would likely be a rewarding project. Three tribes occur in the West Indies.

## TRIBE CALLISTINI

A very homogeneous group of Carabidae, frequently united with the Oodini. Here, Lindroth (1969a:969) is followed by ranking callistines as a tribe, especially because the Oodini themselves appear to represent a heterogeneous group. Van Emden (1942:43-44), who described Old World larvae, considered the Oodina a subtribe of 'Chlaeniini'.

Callistini are widely distributed in the Old World, in tropical and in temperate areas. The taxonomic treatment has varied much with authors. Chaudoir (1876a) placed most species in *Chlaenius*; recent authors of the "french school" have split the group. Basilewsky (1953:119), considering it a subfamily (as Callistinae), reached the extreme of recognizing 10 tribes and numerous genera.

The Neotropical fauna is small, as already mentioned by Chaudoir (1876a:6-7) and has been taxonomically neglected; most authors included the species in *Chlaenius* Bonelli, in the subgenera *Chlaenius* (*sensu stricto*) and *Eurydactylus* Laferté-Sénéctère. At present, only the former, with seven species, is known to occur in the West Indies, although Davidson (*in litt.*) informs us that for the present, one of those species must be listed in *Aulacosomus*.

Key to Subgenera of Neotropical *Chlaenius*

- 1 Pronotum with single seta at each posterior angle .....  
 ..... *Chlaenius* (*sensu stricto*), p. 386
- 1' Pronotum with four or more setae along each lateral margin .....  
 ..... *Eurydactylus* Laferté-Sénéctère, p. 386

*Eurydactylus* Laferté-Sénéctère, 1851 (= *Glyptoderus* Laferté-Sénéctère), apparently restricted to the New World, with a single species, *Chlaenius menevillei* Chaudoir, recorded from Panamá and Bolivia.

*Chlaenius* Bonelli, 1810 (with numerous synonyms in other faunas), includes numerous New World species, of which six are known from the West Indies.

*Aulacosomus* Grundmann, 1955, a new proposed genus for *Chlaenius gundlachi* Chaudoir, but done so on the principle of splitting.

## TRIBE OODINI

This is a moderately divergent, but small, tribe with species distribution mostly in temperate zones of the World, but also occurring in the tropics in both Old and New Worlds. The Oodini frequently have been united with the preceding tribe (e.g. Ball, 1960:151). Considering, however, the heterogeneity within the Oodini, it seems more realistic to consider it as an independent tribe, with perhaps two or more subtribes. Lindroth (1969a:995) writes, "there is no doubt, confirmed also on larval characters, that this group is related to Chlaeniini...", and he considers the group a distinct tribe, as has also been done by Erwin (1974c:184) for certain

exotic Oodini.

At the generic and specific level, the "Oodides" were monographed in a posthumous work of Chaudoir (1882a, 1882b). In this work, there was no inclusion of keys to genera, only characterizations of the latter and placement of the species in different groupings.

Very little is known about the Neotropical species of Oodini. Members of the tribe live in swamps and marshes, along water courses, and on the forest floor, in leaf litter, in the lowlands. Larvae are known for few exotic species (van Emden, 1942:43-44).

#### Key to Genera and Subgenera of West Indian Oodini

- |        |   |   |
|--------|---|---|
| 1      | Clypeus with pair of setigerous punctures antero-laterally  | 2 |
| 1'     | Clypeus without setigerous punctures  | 3 |
| 2 (2)  | Labrum with three setae along anterior margin   |   |
|        | ..... <i>Anatrichis</i> , subgenus <i>Oodinus</i> Motschulsky, p. 387                                 |   |
| 2'     | Labrum with six (or five) setae along anterior margin   |   |
|        | ..... <i>Oodes</i> Bonelli, p. 387  |   |
| 3 (1') | Labrum with six setae along anterior margin. Size small, length of body ca. 7.0 mm                    |   |
|        | ..... <i>Anatrichis</i> ( <i>sensu stricto</i> ) LeConte, p. 387                                      |   |
| 3'     | Labrum with three setae along anterior margins. Size various, but length of body not less than 9.0 mm |   |
|        | ..... <i>Stenocrepis</i> Chaudoir, p. 387   |   |

*Oodes* Bonelli, 1810. This is a moderately diverse and probable polyphyletic genus, with species in most zoogeographic regions. The New World fauna is small; three species occur in the United States, and possibly three in the Neotropical Region, one of which was recorded from the West Indies.

*Stenocrepis* (*sensu lato*) Chaudoir, 1857. This is a moderately diverse temperate-tropical New World endemic genus, with Nearctic, Middle, and South American species. Members are associated with streams, large rivers, and in marshes in open areas. The species are arranged in three subgenera, with seven species recorded from the West Indies:

*Stenocrepis* (*sensu stricto*). This subgenus includes 16 Neotropical species which range from Mexico and the West Indies to Brazil.

*Stenous* Chaudoir, 1857. The distribution pattern is similar to that of *Stenocrepis*, with 12 species.

*Crossocrepis* Chaudoir, 1857. This subgenus includes two species: one in México, and one in the West Indies.

*Anatrichis* (*sensu lato*) LeConte, 1853. This genus includes seven Neotropical species, whose collective ranges extend from Brazil to northern México. The species are arrayed in two subgenera, *Oodinus* Motschulsky and *Oodiellus* Chaudoir, at present. Possibly, these groups should be ranked as genera. Two species have been recorded from the West Indies.

#### TRIBE LICININI

This is a moderately diverse and divergent tribe, distributed in all of the major zoogeographical regions of the world, each region with one or more endemic genera. In the New World, the group is represented by two elements: a Holarctic temperate-tropical component, including *Diplocheila* Brullé, *Dicaelus* Bonelli, and *Badister* Clairville; and a southern hemisphere component represented by *Eutogeneius* Solier. Ball (1959) revised the Nearctic

species, providing a firm foundation on which to study the world fauna.

*Diplocheila* Brullé, 1834a. This wide-ranging Megagean genus is represented in the New World by the endemic *straitopunctata* group of subgenus *Isorembus* Jeannel. Of the eight Nearctic species, one, *D. major* LeConte, inhabits also the northern fringe of the Neotropical Region, but only on the island of Cuba.

#### SUPERTRIBE HARPALITAE

This supertribe contains at present only the following tribe.

#### TRIBE HARPALINI

This is one of the more highly diverse tribes of the family (as are Pterostichini and Lebiini), and also much in need of taxonomic revision. Although the tribe seems not well represented in the South American tropics, species of some genera are numerous. Some genera, as in the stenolophines, are more diverse and divergent in the Palaearctic areas, and for these groups South America is zoogeographically marginal.

The supra-generic classification is not yet settled. A first attempt at a reclassification was that of van Emden (1953a), which was followed later by various authors. Noonan (1973) revised the genera of Anisodactylina, and in 1976, he presented a synopsis of the genera of Harpalini of the world, grouping them in four subtribes. This scheme is used here, though it is recognized that some of the subtribes may not be monophyletic.

Little is known about life histories and immature stages of Neotropical species. Van Emden (1942:39-43) described larvae of *Anisotarsus* (at present considered a subgenus of *Notiobia*), *Trichopselapus*, *Barysomus*, and *Acupalpus*. Nègre (1963:210) refers to larvae of *Polpochila* (described by Chu, 1945).

#### Key to Subtribes of West Indian Harpalini

- 1 Penultimate labial palpomere bi- or trisetose . . . . . Stenolophina, p. 388
- 1' Penultimate labial palpomere plurisetose . . . . . Harpalina, p. 389

#### SUBTRIBE STENOLOPHINA (=CRATOCARINA, BRADYCELLINA OF AUTHORS)

A subtribe of more temperate distribution, and represented in the tropics by only a few genera. Noonan (1976) gave the tribe a new definition, including in it elements of various different groups.

#### Key to Genera of West Indian Stenolophina

- 1 Mentum with tooth . . . . . 2
- 1' Mentum without tooth . . . . . 3
- 2 (1) Head with frontal impressions deep, long, extended posteriorad of hind margin of eye; elytron without sutural interneur; pronotum with posterior margin with complete transverse groove . . . . . *Pogonodaptus* Horn, p. 389
- 2' Head with frontal impression shallower, shorter; if extended laterad,



- groove terminated near front margin of eye ..... *Bradycellus* Erichson, p. 389
- 3 (1') Elytron with posterior series of umbilicate punctures not divided into two groups of four punctures each ..... *Acupalpus* Latreille, p. 389
- 3' Elytron with posterior series of umbilicate punctures divided into two groups of four punctures each ..... *Stenolophus* Stephens, p. 389

*Bradycellus (sensu lato)* Erichson, 1837 (= *Acupalpus* Thomson, not Latreille). Of the eight subgenera cited by Ball (1960:86), only two have Neotropical representatives. However, the species are not well understood, and many remain to be described. Further work might reveal previously unrecognized species groups. Four species have been recorded in the West Indies.

*Acupalpus* Latreille, 1829. A markedly diverse, worldwide genus, whose species are arranged in several subgenera. The Neotropical species (including those of West Indies) have not been properly studied, and their subgeneric position is uncertain. Two species have been recorded in the West Indies.

*Stenolophus* Stephens, 1827. Also a markedly diverse, worldwide genus. Csiki (1932a:1259) considered it to be a subgenus of *Acupalpus*: more recent authors give it generic rank. Thirteen described Neotropical species are included, distributed from Middle to South America, but only two of these have been recorded in the West Indies.

*Pogonodaptus* Horn, 1881. A genus with only three species, one ranging from Central America to Texas, one in Panamá, and one in Haiti. At least two of these species live in marshes and swamps.

#### SUBTRIBE HARPALINA

This is the most diverse of the harpaline subtribes, and also the most diverse of the Neotropical groups. According to van Emden (1958), only the Selenophori, whose males have the ostium of the aedeagus located dorsally, are represented in South America. Noonan (1976) places the Neotropical genera in two groups, the Selenophori and the Amblystomi.

#### Key to Genera of West Indian Harpalina

- 1 Elytron with interneurs 2, 5, and 7 impunctate ..... *Harpalus* Latreille
- 1' Elytron with at least interneur 2 with several small setigerous punctures ..... 2
- 2 (1') Elytron with interneur 7 impunctate on discal portion, interneur 5 with or without setigerous punctures ..... *Stenomorphus* Dejean, p. 390
- 2' Elytron with setigerous punctures in interneurs 2, 5, and 7 ..... 3
- 3 (2') Head enlarged, clypeus with anterior margin distinctly concave, basal membrane of labrum narrowly exposed; elytra iridescent ..... *Amblygnathus* Dejean, p. 390
- 3' Head average, anterior margin of clypeus straight or only very slightly concave; luster of elytra various, iridescent or not ..... 4
- 4 (3') Elytral intervals more or less densely setigerously punctate, or rugulose ..... *Athrostictus* Bates, p. 390
- 4' Elytral intervals impunctate, smooth ..... *Selenophorus* Dejean, p. 390

### The Harpali Group

Primarily a Megagean group with two genera represented in México, but not in the Neotropical Region. Of these, *Euryderus* LeConte, a monobasic genus, containing *E. grossus* Say, is known in México only from northern Sonora. *Harpalus* Latreille is represented in the deserts and mountains of northern México, in the Trans-Volcanic Sierra, and in the mountains of Oaxaca. About 15 species are in Mexico, several of which are undescribed. The group in México is maximally diverse and divergent in the Sierra Madre Occidental. One species of *Harpalus* is known from the West Indies, but in light of the above this species may be mis-assigned.

### The Selenophori Group

*Selenophorus* Dejean, 1829 (= *Gynandropus* Dejean; = *Hemisopalus* Casey; = *Celiamorpus* Casey; = *Selenalius* Casey). A markedly diverse Nearctic and Neotropical genus, much in need of revision. Nearctic species were arrayed in subgenera by Casey (1914b); Noonan (MS) synonymized *Gynandropus*. In the Neotropics there are 142 described species, of which 28 are known from the West Indies; the 'group' *Gynandropus* Dejean has 12 species in Middle and South America, two of which are known from the West Indies. The species of the genus inhabit a wide variety of habitats, such as grassland and deserts. A few species are synanthropic occurring in tropical gardens, yards, and under sidewalks.

*Amblygnathus* Dejean, 1829. A genus comprising about 20 species (nine described) from the West Indies (one species), Middle America, and northern South America. Mexican members inhabit the environs of *Sagittaria* and *Typha* marshes. The group is close to *Selenophorus*, and perhaps should be treated as a subgenus.

*Athrostictus* Bates, 1878 (= *Arthrostictus* auct.). This is a moderately divergent group, with some 16 species, one of which is known from the West Indies. The species inhabit lowlands; in México and Central America, individuals are found in drier, open forests. Some are synanthropic.

*Stenomorphus* Dejean, 1831 (= *Agaosoma* Ménétrés). Revised by Darlington (1936), it comprises 10 species, most of which are in mainland Middle and northern South America. Two species (*S. manni* Darlington and *S. cubanus* Darlington) occur in the West Indies.

## SUPERTRIBE DRYPTITAE

This supertribe has three tribes, Dryptini, Zuphiini, and Galeritini, all of which are circumtropical and partially temperate as well. One species of dryptine has been found in the Amazon Basin, the only member of the tribe in the New World. Both of the other two tribes have numerous species in the western hemisphere, including the West Indies.

### TRIBE ZUPHIINI

As delimited in Csiki (1932b:1562-1571), this is a very heterogeneous tribe. *Planetes* MacLeay belongs in the Galeritini; the Neotropical species of *Polystichus* Bonelli actually belong to a distinct genus, *Dailodontus* Reiche, which together with *Helluomorpha* Laporte has been removed to Helluonini (Reichardt, 1974b). *Pseudaptinus* Laporte, *Thalpius* LeConte, and *Mischocephalus* Chaudoir, have been transferred from "Dryptini" to Zuphiini (Reichardt, 1972b), and *Metaxidius* Chaudoir, placed traditionally among the Helluonini, actually belongs

in the Zuphiini (Reichardt, 1972b:265).

Adult zuphiines are small-sized carabids, which apparently live in humus. Only Old World larvae are known.

Of the three known subtribes, only the Leleupidiina are not represented in the Neotropics. The tribe is worldwide in distribution, but is apparently predominant in the New World.

#### Key to Subtribes and Genera of West Indian Zuphiini

- 1 Maxillary palpomeres similar to labial palpomere . . . . Zuphiina, *Zuphium* Latreille, p. 391
- 1' Maxillary palpomeres long and thick, with large terminal article; labial palpomeres short and thin, with small apical article . . . . Patriziina . . . . . 2
- 2 (1') Pronotum without spine or sharp basal angles . . . . . *Pseudaptinus* Laporte, p. 391
- 2' Pronotum with sharp basal angles . . . . . *Thalpius* LeConte, p. 391

#### SUBTRIBE PATRIZIINA

This subtribe is composed of two genera with a total of 11 species known from the West Indies.

*Pseudaptinus* Laporte, 1835 (= *Diaphorus* Dejean). Exclusively American, with a few species in the United States, and a total of 16 Neotropical species. Liebke (1934:372-388) presented a key to the species (including *Thalpius*).

*Thalpius* LeConte, 1851 (= *Enaphorus* LeConte; = *Zuphiosoma* Laporte). Frequently considered a subgenus of *Pseudaptinus*, *Thalpius* has a disjunct distribution, with one Australian species (for which Laporte proposed the genus *Zuphiosoma*), and the remaining species in the New World, ranging from the southern United States to Argentina, including the West Indies.

#### SUBTRIBE ZUPHIINA

*Zuphium* Latreille, 1806 (= *Zophium* Gistel; = *Zoyphium* Motschulsky). A genus with pantropical distribution, including Australia (56 species in the Old World, according to Csiki, 1932b:1562). In the New World, the genus ranges from the United States to Argentina, 20 Neotropical species being known of which only four are recorded from the West Indies. Identification of the species is difficult in spite of Liebke's key (1933:461-463). Mateu has studied the genus and revisions have started to appear (Mateu, 1981).

#### TRIBE GALERITINI

This is a moderately diverse, pantropical tribe. It was segregated from the Dryptini by Jeannel (1949:1057), but this action was not accepted by all recent authors (Darlington, 1971, uses Dryptini in the old sense).

The Western Hemisphere Galeritini were studied by Reichardt (1967). In this hemisphere, the tribe is predominantly Neotropical, only the subgenus *Progaleritina* occurring as far north as southern Canada. Eight species of *Galerita* are known from the West Indies.

Larvae of Neotropical forms (van Emden, 1942:51-52, 80) are very active, having been captured in forests, usually under leaves or stones. Reichardt (1971a) recorded "bombarding" habits in *Galerita corumbana* Liebke; the same habit was more recently observed in *Galerita collaris* Dejean. *Galerita occidentalis* (Olivier), however, does not show this habit.

Basilewsky (1963:23), considered the group as a subfamily, and arranged the species in two tribes. Both groups are represented in the Neotropics, but only *Galerita* has been found in the West Indies.

#### Key to Subgenera of West Indian Galeritini

- 1 Elytron with flat or evenly convex intervals . . . . . *Progaleritina* Jeannel  
 1' Elytron with costate or multicarinate intervals . . . . . *Galerita* Fabricius

#### SUPERTRIBE CTENODACTYLITAE

At present this supertribe includes the Old World Hexagoniini and the New World Ctenodactylini and Calophaeniini (Stork, pers. comm.), however the taxonomy is inadequate and needs complete revision on a worldwide basis. There are still parts of Odacanthini that belong here according to Stork (in litt.).

#### TRIBE CTENODACTYLINI

Delimitation of this small tribe of carabids has been relatively difficult, especially because of the confusion created by Liebke, who in a final revision of the group (1938) fused the Ctenodactylini and Odacanthini, as well as other groups which are actually unrelated (see also comments under Odacanthini and Lachnophorini).

Liebke (1928a and 1928b) revised this "subfamily", describing new genera and species. Later (1931), he presented a new key for identification of genera and descriptions of new genera and species. Finally, in the 1938 revision, the group was revised on a worldwide basis.

The tribe, as considered here, is predominantly Neotropical, but some genera may occur in the Old World, having been placed by Jeannel (1948:759) in the Hexagoniini.

Practically nothing is published about way of life of the Neotropical species, however, they are usually collected at lights and by sweeping emergent vegetation or stands of *Heliconia*-like broad leaf plants; adults are also semi-arboreal in low vegetation at the edge of water bodies. Larvae are known to pupate in the hollow culms of grasses. Van Emden (1942: 51) described the larva of *Leptotrachelus*.

Identification, even of genera, is presently difficult, and it is probable that many of Liebke's genera will not survive a careful study.

*Leptotrachelus* Latreille, 1829 (= *Rhagocepis* Eschscholtz; = *Odacantha* Perty; = *Sphaeracra* Say). With 32 Neotropical species, of which only one is from the West Indies.

#### SUPERTRIBE LEBIITAE

This supertribe approaches the pterostichites in size and diversity; however, recent studies by Ball (1975, 1983), Ball and Shpeley (1983), and Ball and Hilchie (1983) have begun to clear the complexities of earlier classifications. The arrangements of taxa presented here is

based on Erwin (1985) and is somewhat provisional, however all the groups included have highly developed bilateral turrets as a means of delivery for their chemical defence.

#### TRIBE PERIGONINI

This is a tribe of very few species included in four genera (Csiki, 1931:894-899), of which three are Neotropical, and *Perigona* Laporte, 1835, which is worldwide in distribution, with nearly 80 species. Jeannel (1942a:577) considered the tribe as a subfamily of Perigonidae, together with Anchonoderinae, Omphreinae, and Lachnophorinae. Because of the structure of the defence mechanism, Erwin (1979, 1984) regarded this group as part of the Lebiitae.

Adults and larvae of *Perigona* live under bark of wet trees and in decaying leaf litter at low and middle altitudes. Many adults are attracted to fermenting sap and pulp of pithy tree species (especially certain palms). During dry season, adults of *Perigona* and *Diploharpus* are found in deep leaf piles beneath crowns of fallen trees. *Mizotrechus* members are found under deeply embedded stones in cloud forests at middle elevations and have been repeatedly taken in light traps in Panamá.

*Perigona* Laporte, 1835. Jeannel (1951) included the Neotropical species in *Perigona s. str.*, together with other species from the Old World tropics. Five species have been recorded from the West Indies.

#### TRIBE LACHNOPHORINI

This is a weakly characterized group of still uncertain position and constitution and in some ways is linked to Agonini via genus *Anchonoderus*. However, Liebherr (1983) showed that female genitalia are more lebiine-like than agonine-like. Several of the lachnophorine genera were included in Colliurini by Liebke (1938). Jeannel (1942a:577) included Lachnophorini, together with Anchonoderini, both as subfamilies, in Perigonidae. Later (1948:742) he erected the family Lachnophoridae for the two subfamilies. For his Lachnophoritae, Jeannel erected two tribes, Lachnophorini and Selinini, based on misinterpretation of the terminal article of the maxillary palps, as discussed by Reichardt (1975).

Ball (1960:136, 137) considered Anchonoderini and Lachnophorini distinct tribes. Lindroth (1966:422) united Anchonoderini and Agonini, retaining them as a subtribe of Pterostichini, and considered Lachnophorini as a distinct tribe (Lindroth, 1969b:xxii). Whitehead & Ball (1975:595) considered Lachnophorina a subtribe of Pterostichini. Recently, Ball and Hilchie (1983) have concluded that the generic complex centered around *Eucaerus* belongs to this subtribe and this was substantiated by Liebherr (1983).

Immature stages of Neotropical species are unknown, however, Liebherr (1983) has amply described the larva of *Chalybe sallei*. Most species are riparian, living on river beaches, and others live in clearings in lowland and upland forests, including the red lateritic clays thrown up by leaf-cutter ants of the genus *Atta*. Adults seem to be good flyers and are frequently collected at light.

#### Key to Genera of West Indian Lachnophorini

- 1      Body densely pubescent or setiferous ..... 2  
 1'     Body glabrous (except for usual fixed setae) ... *Eucaerus* LeConte, p. 394

- 2 (1) Maxillary palp with ultimate article nearly filiform, apically truncate . . .  
 . . . . . *Anchonoderus* Reiche, p. 394
- 2' Maxillary palp with ultimate article fusiform or ovoid and apically  
 subulate . . . . . 3
- 3 (2) Apical palpomeres fusiform; integument black; dorsal setae erect, sparse,  
 some as long as scape . . . . . *Euphorticus* Horn, p. 394
- 3' Apical palpomeres ovoid, apically subulate and pointed; integument pale;  
 dorsal surface densely pubescent with several thick and long black setae  
 sparsely arranged . . . . . *Lachnophorus* Dejean, p. 394

*Anchonoderus* Reiche, 1843. With 24 Neotropical species, of which only two are known from the West Indies. Its systematic position has also been discussed by a variety of authors.

*Lachnophorus* (*sensu lato*) Dejean, 1831 (= *Stigmaphorus* Motschulsky, 1862). Liebke (1936) recognized three subgenera, and presented keys to species. One species has been recorded from the West Indies.

*Euphorticus* Horn, 1881. The range of this genus extends from northwestern South America to southern United States. One species has been recorded from the West Indies.

*Eucaerus* LeConte, 1853. With 11 Neotropical species, of which eight are known from Brazil. One species occurs in southern United States. Two species have been described from the West Indies by Darlington.

#### TRIBE CYCLOSOMINI (=TETRAGONODERINI; MASOREINI *AUCT.*, in part)

The name Tetragonoderini is a junior synonym of Cyclosomini, recent usage to the contrary notwithstanding. This tribe is pantropical, and is most speciose in Africa and South America. This tribe and the Masoreini seem to be closely related, and Jeannel (1949) and Ball (1983) combined the two as a single group. Only one genus of Cyclosomini is known from the New World.

*Tetragonoderus* Dejean, 1829. (= *Peronoscelis* Chaudoir). This genus is pan-tropical, ranging in the New World from Chile to southeastern Ontario, in Canada. Adults live among dry leaves, on sand, along water courses. Many adults are taken at light, at night. Although only one species has been reported from the West Indies (Bahamas), at least two others occur in the Greater Antilles.

#### TRIBE MASOREINI (=ANAULACINI)

Like the Cyclosomini, the limits of this pan-tropical tribe are not clear. Ball (1983) defines the problems that must be solved to clarify limits of the group and ranks of included taxa.

#### Key to Genera of West Indian Masoreini

- 1 Pronotum with base narrowed, sides markedly but evenly constricted  
 posteriorly. Microsculpture of elytron with meshes only slightly elongate,  
 nearly isodiametric, surface dull. . . . . *Aephnidius* MacLeay, p. 395
- 1' Pronotum with base wide, only slightly narrower than maximum width.  
 Elytron with microsculpture meshes elongate, surface  
 iridescent . . . . . *Macracanthus* Chaudoir, p. 395

*Macracanthus* Chaudoir, 1846a (= *Masoreus*, in part, *auct.*). The species of this endemic New World group seem to be related to those of the Old World genus *Anaulacus* MacLeay. In fact, these groups may be congeneric. Six species are known from the Neotropical Region, only one of which, *M. brevicillus* (Chevrolat) is known from the Greater Antilles.

*Aephnidius* MacLeay, 1825: 33 (= *Masoreus* in part, *auct.*). This is a pantropical group, comprising of 16 described species, of which two are known from the Neotropical Region. One of these, *A. ciliatus* Mutchler, occurs in the Greater Antilles, only.

#### TRIBE PENTAGONICINI

This tribe is of cosmopolitan distribution, but with predominance in Asia, southeast Asian islands, and Australia-New Zealand. Two genera are endemic to Australia and New Zealand; *Scopodes* Erichson and *Actenonyx* White. All remaining species, including the Neotropical ones, are included in *Pentagonica* Schmidt-Goebel (= *Rhombodera* Reiche, *nec* Burmeister; = *Didetus* LeConte).

Liebke (1939a:129) described a monobasic genus, *Thoasia*, which he placed in Pentagonicini in spite of bilobed tarsomere 4 and pectinate claws (bilobed and smooth claws characterize pentagonicine adults). Reichardt (1968:147) maintained the genus in that tribe, but it seems now that its correct position is in Lebiini.

Reichardt (1968) published a preliminary revision of the New World species, of which 27 are recorded from the Neotropical Region, five from the West Indies.

Larvae and habits of *Pentagonica* members are unknown. Moore (1965:161-162, fig. 8-9) described the larva of *Scopodes simplex*. According to Moore, larval characteristics indicate relationship between Pentagonicini and Odacanthini.

#### TRIBE ODACANTHINI (=COLLIURINI)

A tribe of small, predaceous carabids, usually found inhabiting forests and marshes, or river banks, and world-wide in distribution. Liebke (1930) revised the American species of the tribe and later (1938), the world fauna, however, including in it the Ctenodactylini (an action already made by Csiki, 1932b:1517-1547). Here more recent authors are followed, who consider the Odacanthini as distinct from Ctenodactylini. Van Emden (1942:51), who described Old World larvae, also united the two tribes in one.

Excluding Ctenodactylini, the tribe is of limited diversity, with a large cosmopolitan genus, *Colliuris* Degeer, and another 15 less diverse genera. Only three are known from the Neotropical Region, and the species of *Colliuris* are arranged in many subgenera.

*Colliuris (sensu lato)* Degeer, 1774 (= *Casnonia* Latreille & Dejean; = *Ophionea* Klug). A worldwide genus, with about 100 Neotropical species, seven of which occur in the West Indies. Adults of all species are small, winged, and most live in forests on vegetation, or in marshes. In two revisions, Liebke (1930, 1938) recognized many subgenera, most of which will probably have to be suppressed when they are better studied.

#### TRIBE LEBIINI

This is a markedly diverse tribe, especially numerous in the tropics, with some genera, such as *Lebia*, *Agra*, and *Calleida*, with hundreds of species. About 60 genera with nearly 1,000

species are known already from the Neotropical Region; no doubt these are provisional numbers. Recent revisions show that the number of undescribed species is extensive.

Because of its diversity, the taxonomic state of the tribe in some areas is chaotic, especially because it has not been studied as a whole in the Neotropics. Even the suprageneric classification is not yet definitely established. Most groupings have been proposed for restricted faunas, e.g. for France (Jeannel, 1942a); Madagascar (Jeannel, 1949); Africa (Basilewsky, 1953); United States (Ball, 1960); Japan (Habu, 1967); and Canada (Lindroth, 1969a). Unfortunately there is no generally accepted system. The Neotropical genera deviate in certain characters, and do not fit easily into other systems. Many genera are monobasic, and have not been re-studied in recent years. Other genera, like those of the Calleidina, proposed by Liebke, are probably not natural, and are based on characters of difficult verification (mostly mouthparts).

Ball's recent revisions of the subtribe Pericalina (1975), "Euchelini" (and Shpeley, 1983), and Cymindina (and Hilchie, 1983), clearly show the previous chaotic state of the tribe. In Ball's sense, this subtribe includes groups such as the Mormolycini and other groups segregated by Jeannel.

It also seems better to include here, even though provisionally, the genus *Nemotarsus*, which has been variously placed in Masoreini by several authors, but has been returned to Lebiini by Ball (1960:157). The whole suprageneric system used here, however, is to be considered provisional. Many of the genera are placed in certain subtribes only because they have been placed there in catalogs (Csiki, 1932b). Their final position depend on future studies.

Patterns of life of members of Lebiini are most interesting, but little is known about the Neotropical representatives of the tribe. Adults are normally diurnal, brightly colored, frequently with metallic colors. Most members are small, but a few are relatively large (adults of *Agra* and *Chelonodema*, for example). Representatives of *Agra*, *Lebia*, and *Calleida* are planticolous, living on herbs, shrubs and trees, and even on flowers; *Lebia* species (adults and larvae) are frequently associated with species of Chrysomelidae. Larvae of species of *Lebia* are ectoparasitoids on pupae of Chrysomelidae. Larvae and adults of species of *Calleida* are predators, some specialized on caterpillars of Noctuidae and Pyralidae. *Cyminidis* and some *Apenes* adults are nocturnal, xerophytic species of sandy areas and sparse vegetation, and during the day, they hide under stones and under layers of vegetation. Van Emden (1942:47-51) described larvae of some genera, but very few from the Neotropical Region.

#### Key to Subtribes of West Indian Lebiini

- |        |  |   |
|--------|--|---|
| 1      | Ventral surface of head behind mentum with one or more pairs of "suborbital" setigerous punctures, each seta about as long as supraorbital setae .....     | 2 |
| 1'     | Ventral surface of head without suborbital setae .....   | 4 |
| 2 (1)  | Antennomeres 5 to 11 each with ventral pit with many short sensory setae .....   |   |
|        | ..... Calleidina, <i>Euproctinus</i> Leng and Mutchler, p. 399   |   |
| 2'     | Antennomeres without sensory pits .....  | 3 |
| 3 (2') | Labrum elongate, at least as long as wide. Elytron with penultimate umbilical puncture closer to margin than those adjacent; apex obliquely truncate ..... |   |
|        | ..... Pericalina, p. 397   |   |
| 3'     | Labrum transverse, wider than long. Elytron with penultimate umbilicate  |   |



- puncture same distance from margin as adjacent punctures; apex rounded  
 ..... Lebiidiina, p. 398
- 4 (2') Elytron with three umbilicate punctures at outer apical angle in form of  
 triangle ..... Lebiina, p. 399
- 4' Elytron with umbilicate punctures aligned linearly or nearly so ..... 5
- 5 (4') Tarsomere 4 bilobed ..... Calleidina, p. 398
- 5' Tarsomere 4 at most emarginate ..... 6
- 6 (5') Total length less than 6.0 mm ..... Dromiina, p. 397
- 6' Total length more than 6.0 mm ..... Apenina, p. 397

#### SUBTRIBE APENINA

The subtribe was recently recognized by Ball (1983), and the genus-group taxa mostly at the generic level were revised by Ball and Hilchie (1983). One genus is represented in the Neotropical Region.

*Apenes (sensu lato)* LeConte, 1852. A genus of extensive distribution in the Western Hemisphere, but predominantly Neotropical where 60 species are known, with 14 of these occurring in the West Indies.

#### SUBTRIBE DROMIINA

The genera which constitute this subtribe are better represented in temperate than tropical zones. In the Neotropical Region, they are in México, Central America, the West Indies, and Chile. The classification is not well understood and there are only revisions of a few genera.

#### Key to Genera of West Indian Dromiina

- 1 Base of pronotum broadly lobed ..... *Microlestes* Schmidt-Goebel, p. 397
- 1' Base of pronotum truncate ..... *Apristus* Chaudoir, p. 397

*Apristus* Chaudoir, 1846b. A cosmopolitan genus, with five Middle American species and one from the West Indies.

*Microlestes* Schmidt-Goebel, 1846 (= *Blechrus* Motschulsky; = *Bomius* LeConte; = *Dromius* Sloane). A cosmopolitan genus, with many Nearctic species, but few in the Neotropics. Mateu (1974) studied the five Mexican species, some of which also occur in the United States; one species is also known from Cuba.

#### SUBTRIBE PERICALINA (=COPTODERINA, =CATASCOPINA, =THYREOPTERINA; INCLUDING MORMOLYCINI)

According to Ball (1975) in his revision of the subtribe, Pericalina includes some genera of previously uncertain position (like *Mormolyce* Hagenbach, in the past considered a distinct subfamily or tribe) and other genera previously distributed in different subtribes of Lebiini (or even other tribes, like Agonina of Pterostichini).

The Neotropical species are included mostly in endemic genera, some with a few species which range into southern United States. *Catascopus* and *Coptodera* are worldwide genera, with a few Neotropical representatives.

Little is known about habits of the Neotropical species; the only known larva apparently known is that of *Eurycoleus*, which preys on cryptogramivorous endomychids (Erwin and Erwin, 1976).

According to Ball (*ibid*), *Stenognathus chaudi* Ball was collected under bark of trees, together with adults of several species of *Coptodera*, in tropical mountain forests in México, at altitudes above 1,000m. *Ochropisus concolor* Ball and *Phloeoxena geniculata* Bates occur in similar habitats; several individuals of the former species were collected by fogging the tree crown of *Luehea seemannii* in low seasonal forest in Panamá (Erwin, pers. obs.). Mexican members of *Catascopus* were also found under bark of dead or partially dead trees. Adults of the Neotropical species of *Catascopus* seem to be nocturnal, while their Old World counterparts are diurnal. Adults of *Lelis* and adults and larvae of *Eurycoleus* are associated with fungi, on bark of trees.

#### Key to Genera of West Indian Pericalina

- 1      Mentum with median tooth ..... 2
- 1'     Mentum without median tooth ..... *Coptodera* Dejean, p. 398
- 2 (1) Dorsal surface of body setulose. Pronotum with posterior margin lobulate  
.....*Somotrichus* Seidlitz, p. 398
- 2'     Dorsal surface glabrous (with few long tactile setae, only). Pronotum with  
posterior margin truncate ..... *Phloeoxena* Chaudoir, p. 398

*Somotrichus* Seidlitz, 1887. Monobasic, its single species is cosmopolitan, and has been recorded from Guadeloupe and Brazil in the Neotropical Region.

*Phloeoxena (sensu lato)* Chaudoir, 1869. With 16 species arrayed in three subgenera (Ball, 1975). Seven species are found in the West Indies.

*Coptodera* Dejean, 1825. According to Ball (1975), the Neotropical species belong to the nominotypical subgenus. There are about 40 South and Central American species, two of which are found in the West Indies.

#### SUBTRIBE LEBIDIINA (=GALERUDICIINA)

A group whose adults have a characteristic habitus, resembling galerucine chrysomelids. Distribution is discontinuous: the genus *Lebidia* Morawitz, 1862 includes species from northern India, Taiwan and Japan; *Galerucidia* includes Neotropical species. Habu (1967) includes *Lebidia* in Calleidina, without mentioning the separate status given this genus (together with *Galerucidia*) by most authors. Ball and Hilchie (1983) follow Habu in regarding this group as being related to the Calleidina, but study is needed before final placement can be determined.

*Galerucidia* Chaudoir, 1872a. With five Neotropical species, one of which is known from the West Indies.

#### SUBTRIBE CALLEIDINA (=CALLIDINA)

This is also a highly diverse subtribe of Lebiini (with 28 Neotropical genera), taxonomically complex in spite of a revision by Liebke (1935) who also provided a key to genera. Mateu (1954) commented about many of the mistakes in Liebke's revision, and others have also been noted by other authors.

**Key to Genera of West Indian Calleidina**

- 1 Head with one pair of suborbital setigerous punctures. Mentum without tooth ..... *Euproctinus* Leng & Mutchler, p. 399
- 1' Head without suborbital setigerous punctures. Mentum with tooth ..... 2
- 2 (1') Ligula with four apical setae. Tarsomere 4 deeply emarginate, but not bilobed ..... *Plochionus* Latreille & Dejean, p. 399
- 2' Ligula with two apical setae ..... *Calleida* Dejean, p. 399

*Calleida* Dejean, 1825 (= *Callida* auct.). A markedly diverse, cosmopolitan genus, with 171 Neotropical species, of which six are recorded from the West Indies. Chaudoir (1872b) revised the species known at the time, but many were described later, especially by Liebke. Some authors consider *Spongoloba* Chaudoir, 1872b congeneric with *Calleida*; others (Lindroth, 1969a:1058) consider it a subgenus, apparently restricted to Nearctic species. *Philophuga* Motschulsky, has also been considered a distinct genus, for two Nearctic species of México, but Lindroth (1969a) considers it a subgenus of *Calleida*.

*Euproctinus* Leng & Mutchler, 1927 (= *Euproctus* Solier, nec Gene; = *Andrewesella* Csiki). A Neotropical genus which ranges into United States. There are 17 Neotropical species, of which one has been recorded from the West Indies. This group should probably be placed in a separate subtribe.

*Plochionus* (*sensu lato*) Latreille & Dejean, 1824. With few species, mainly restricted to the Western Hemisphere, including two species from the West Indies.

**SUBTRIBE LEBIINA**

In number of species this is the most diverse subtribe (about 500), more than 450 in the cosmopolitan genus *Lebia* (*sensu lato*) alone. Chaudoir (1870, 1871a) monographed the group, arranging the species in several genera which are usually accepted by the "French school". In a study of the Nearctic fauna, however, Madge (1967) placed most of Chaudoir's generic names in synonymy. This concept has been accepted in more recent years, e.g. by Lindroth (1969a) and Reichardt (1972a).

The taxonomic position of the South American "genera" thus depends on further studies.

*Cryptobatis*, *Alkestis*, *Hyboptera* and *Aspasiola* have been placed in Physoderina by Csiki (1932b:1946). Jeannel (1949:882) restructured the groups, and restricted Physoderina to Indo-Malayan species. It seems, however, that *Cryptobatis* and *Hyboptera* are true Lebiina; *Alkestis* and *Aspasiola* are inadequately known genera, but should probably be placed here as well.

*Lebia* Latreille, 1802. Probably one of the largest genera of Carabidae, is of worldwide distribution, as has been seen above, and is also very numerous in the Neotropics. Only five species have been recorded in the West Indies, but surely this is from lack of collecting in their habitat or lack of study of collected material.

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## APPENDIX A: CHECKLIST OF THE SPECIES OF THE WEST INDIES

## I. CARABIDAE Latreille, 1810

Agridae Kirby 1837; Anchomenidae Laporte, 1834c; Anthiidae Hope, 1838; Apotomidae Jacquelin du Val, 1857; Bembidiidae Westwood, 1838; Brachinidae Bonelli, 1810; Broschidae Hope 1838; Callistidae Jeannel, 1941; Calpohaenidae Jeannel, 1942a; Chlaeniidae Westwood, 1838; Cnemacanthidae Lacordaire, 1854; Ctenodactylidae Laporte, 1834c; Cyclosomidae Hope, 1838; Cymbionotidae Jeannel, 1941; Dryptidae Laporte, 1834c; Elaphridae Stephens, 1827; Feronidae Laporte, 1834c; Gehringiidae Darlington, 1933; Glyptidae Horn, 1881; Harpalidae MacLeay, 1825; Hiletidae Lacordaire, 1854; Lebiidae Bonelli, 1810; Licindae Bonelli, 1810; Loroceridae Bonelli, 1810; Masoreidae Chaudoir, 1876b; Melanodidae Jeannel, 1942b; Metriidae LeConte, 1861; Migadopidae Chaudoir, 1861; Nebriidae Laporte, 1834c; Odacanthidae Laporte, 1834c; Omophronidae Latreille, 1810; Orthogoniidae Chaudoir, 1871c; Ozaenidae Hope, 1838; Panagaeidae Bonelli, 1810; Patrobidae Kirby, 1837; Paussidae Latreille, 1806; Peleciidae Horn, 1881; Pentagoniidae Bates, 1873; Pericalidae Hope, 1838; Perigonidae Horn, 1881; Pseudomorphidae Horn, 1881; Psydridae LeConte, 1861; Pterostichidae Erichson, 1837; Scaritidae Bonelli, 1810; Siagonidae Bonelli, 1810; Thyreopteridae Chaudoir, 1869; Trechidae Bonelli, 1810; Zuphiidae Jeannel, 1941.

## SUBFAMILY CARABINAE

## SUPERTRIBE Carabitae

## TRIBE Carabini

**Calosoma** Weber 01–20

*Castrida* Motschulsky 65–300  
*Callistriga* Motschulsky 65–307  
*Calamata* Motschulsky 65–307  
*Acampalita* Lapouge 29a–9  
*Catastriga* Lapouge 29a–9  
*Callipara* Motschulsky 65–309  
*Syncalosoma* Breuning 27–144  
*Calodrepa* Motschulsky 65–310  
*Acamegonia* Lapouge 24–38  
*Camedula* Motschulsky 65–303  
*Carabosoma* Gehin 85–32  
*Camegonia* Lapouge 24–38  
*Chrysostigma* Kirby 37–19  
*Tapinosthenes* Kolbe 95–56  
*Lyperostenia* Lapouge 29a–3  
*Callitropa* Motschulsky 65–300  
*Paratropa* Lapouge 29a–3  
*Paracalosoma* Breuning 27–141  
*Blaptosoma* Gehin 85–33  
*Microcalosoma* Breuning 27–146  
*Neocalosoma* Breuning 27–146

- Aulacopterus* Gehin 85–34  
*Carabomimus* Kolbe 95–57  
*Calopachys* Haury 80–164  
*Eutelodontum* Gehin 81–82  
*Callisthenes* Fischer von Waldheim 21–10  
*Microcallisthenes* Apfelbeck 18–161  
*Isotenia* Lapouge 29a–2  
*Callistenia* Lapouge 29a–2  
sayi Dejean 26–198. West Indies, C. Am., No. Am., Puerto Rico  
*armatus* Laporte 35–156  
*abdominale* Gehin 85–58  
*virginicum* Casey 97–344  
*cuprascens* Roeschke 00–71  
splendidum Dejean 31–558. (2) GA, FL; Cuba, Dominican Republic  
**Carabus** Linné 58–413  
*Megodontus* Solier 48–58  
*Diocarabus* Reitter 96–185  
*Hemicarabus* Gehin 85–19  
*Oreocarabus* Gehin 85–26  
*Cryocarabus* Lapouge 31–575  
*Eucarabus* Gehin 76–19  
*Neocarabus* Lapouge 31–569  
*Archicarabus* Seidlitz 87–6  
*Tanaocarabus* Reitter 96–135  
*Homoeocarabus* Reitter 96–144  
*Paracarabus* Lapouge 32–630  
*Neocarabus* Hatch 49a–144  
*Autocarabus* Seidlitz 87–7  
*Lichnocarabus* Reitter 96–161  
basilicus Chevrolat 36–169. Puerto Rico  
  
SUPERTRIBE Cicindelitae  
TRIBE Megacephalini  
  
**Megacephala** Latreille 02–79  
*Metricheila* Thomson 57a–50 (Subg)  
*Phaeoxantha* Chaudoir 50a–7 (Subg)  
*Tetracha* Hope 38–6  
acutipennis Dejean 25–13. Cuba, Hispaniola, Puerto Rico  
*adonia* Laporte 34a–83  
*cyaneo-nigra* Chaudoir (Leng & Mutchler 16–685)  
*laportei* Chevrolat 34a–83  
*virginica* Olivier 90–30  
carolina Linné 66–657. BJ, MX Guatemala, Nicaragua, Cuba,  
Grand Cayman, USA  
*boisduvali* Gistel 37–7

- carolinensis* Latreille 06–175  
*maculicornis* Laporte 34b–29  
*mexicana* Gray 32–263  
*occidentalis* Klug 29–11  
*splendida* Dokhtouroff 82–46  
*virgula* Thomson 57a–31  
*rutilans* Thomson 57a–35. Brazil  
   s. *confusa* Chaudoir 65–63. Colombia, Venezuela, Curaçao, Anegada,  
     St. Martin, Antigua  
     *antiguana* Leng & Mutchler 16–684  
   s. *infusca* Mannerheim 37–6. Cuba, Hispaniola, Puerto Rico, St. Thomas,  
     St. John, St. Croix, St. Martin, St. Barthélemy, USA  
*obscurata* Chaudoir 44–454

TRIBE Cicindelini

**Cicindela** Linné 58–407

- Pentacomia* Bates 72b–265. (Subg)  
*acuniae* Mutchler 24–1. Cuba  
*argentata* Fabricius 01–242. MX, Guatemala, Costa Rica, Panamá, Colombia,  
   Venezuela, Br. Guiana, Fr. Guiana, Brazil, Bolivia, Argentina, Haiti,  
   Guadeloupe, Argentina, Haiti, Guadeloupe  
*egaensis* Thomson 57b–130  
*guerin* Gory 33–178  
*lucorum* Gistel 37–71  
*misella* Chaudoir 54–121  
*pallipes* Fleutiaux & Sallé 89–359  
*taitenis* Boheman 58–1  
*boops* Dejean 31–258. Cuba, Hispaniola, Puerto Roco  
*cardini* Leng & Mutchler 16–689. Cuba  
*cubana* Leng & Mutchler 16–689. Cuba  
*dorsalis* Say 17–20. MX, Cuba  
*p. castissima* Bates 84–260  
*p. venusta* Laferté-Senectère 41–37  
*saucyi* Schaupp 83–99  
*longilabris* Say 24–268. ID, UT, ID, IL, NY, NF, AK, CA, NE, WY, OR;  
   Canada, Bermuda?  
*marginata* Fabricius 75–226. Bahamas Is, Cuba, USA  
*variegata* Dejean 25–84  
*olivacea* Chaudoir 54–118. Cuba, USA  
*rufiventris* Dejean 25–102. Hispaniola, USA  
*collusor* Casey 13–15  
*schaefferi* Horn 03–213. MX, Haiti  
*suturalis* Fabricius 98–62. S. Am., Hispaniola, Puerto Rico, St. Thomas,  
   St. John, St. Martin, St. Barthelemy, Barbuda, Antigua, Guadeloupe,  
   Martinique, Barbados, St. Vincent, Grenada

- p. *hebraea* Klug 34–20. S. Am., Dominican Republic, Puerto Rico, Antigua  
*chlorocephala* Mannerheim 37–17  
*hieroglyphica* Klug 34–30  
*trifasciata* Dejean 25–85  
*tropicalis* Motschulsky (Horn 26–173)
- p. *nocturna* Steinheil 75–96. S. Am., Guadeloupe  
*guadeloupensis* Fleutiaux & Sallé 89–358
- trifasciata* Fabricius 81–286. Bahamas, Cuba, I. de Pinos, Grand Cayman,  
 Jamaica, Hispaniola, Puerto Rico, St. Thomas, St. John, St. Martin,  
 Barbuda, Antigua, Guadeloupe, St. Barthélemy, Anguilla, St. Croix,  
 St. Domingo, Haiti, Virgin Is.  
*tortuosa* Dejean 25–87  
*hebraea* Putzeys 74–117
- s. *ascendens* LeConte 51–172. MX, Bahamas Is., USA  
*serpens* LeConte 51–173  
*sigmoidea* Chaudoir 54–113  
*tortuosa* LeConte 51–172  
*trifasciata* LeConte 48–181
- f. *sigmoidea* LeConte 51–172. MX?, St. John, USA  
*viridicollis* Dejean 31–265. Cuba  
*viridiflavescens* Horn 23–329. Dominican Republic  
*s. originalis* Horn 36–23. Haiti

## SUBFAMILY SCARITINAE

## SUPERTRIBE Siagonitae

## TRIBE Enceladini

**Enceladus** Bonelli 13–460

*gigas* Bonelli 13–460. Brazil, Colombia, Surinam, French Guiana, Montserrat

## SUPERTRIBE Pseudomorphytae

## TRIBE Pseudomorphini

**Pseudomorpha** Kirby 25–98

*Heteromorpha* Kirby 25–109

*Axinophorus* Dejean & Boisduval 29–60

*Drepanus* Dejean 31–434

*caribbeana* Darlington 35b–214. Haiti

## SUPERTRIBE Scarititae

## TRIBE Scaritini

**Scarites** Fabricius 01–123

*Scallophorites* Motschulsky 57–95

*Antilliscaris* Bänninger 49–136

*Taeniolobus* Chaudoir 55–30

- cubanus* Bänninger 37–321. Cuba  
*danforthi* Darlington 39–80. Puerto Rico  
*darlingtoni* Bänninger 35–159. Haiti  
*mutchleri* Bänninger 39–149. Puerto Rico  
*megacephalus* Hlavac 69–4. Puerto Rico  
*subterraneus* Fabricius 75–249. ON, PA, DE; (2) SC, FL; (3) CA, MX; (5) SD;  
     Cuba  
     *fosser* Degeer 74–350  
     *spinipes* Sulzer 76–62  
     *interruptus* Herbst 84–133  
     *subterraneus* Bonelli 13–466  
     *beckwithi* Stephens 27–37  
     *denticollis* Chaudoir 43–729  
*s. patruelis* LeConte 45–207. (2) GA, FL; Cuba  
*s. alternans* Chaudoir 43–729. (2) ?FL, Cuba  
*montana* Mutchler 34a–1. Puerto Rico  
**Stratiotes** Putzeys 46–522  
     *iracunda* Putzeys 63–9. Dominica, Martinique

TRIBE Clivinini

- Dyschirius** Bonelli 13–483  
     *Akephorus* LeConte 51–194  
     *Dyschiridius* Jeannel, 41–264  
*erythrocerus* LeConte 57–78. (1) NF, ON, IN, OH, DE, NY; (2) FL; (5) SD,  
     (3) MX; Cuba  
*coamensis* Mutchler 34a–2. Puerto Rico  
*sublaevis* Putzeys 46–562. (1) NY; (3) TX, MX; (5) MB; Cuba  
     *rubiventris* LeConte 57–79  
     *dentiger* LeConte 57–79  
**Clivina** Latreille 02–96  
     *Eupalamus* Schmidt-Goebel 46–pl. 3  
     *Isoclivina* Kult 59–117  
     *Paraclivina* Kult 47–31  
     *Semiclivina* Kult 47–31  
*dentipes* Dejean 25–415. (1) DE; (2) SC, GA, FL; (3) TX, AZ, CA; Cuba  
*bipustulata* Fabricius 01–125. (1) ON, PA, DE; (2) SC, FL; (3) AZ, MX;  
     (5) SD; West Indies, Cuba  
     *quadrifasciata* Palisot de Beauvois 05–107  
*addita* Darlington 34–67. Puerto Rico  
*biguttata* Putzeys 66–155. Cuba  
     *bisignata* Leng & Mutchler 14–395  
*cubae* Darlington 34–68. Cuba  
*insularis* Jacquelin du Val 57–13. Cuba, Puerto Rico  
*limbipennis* Jacquelin du Val 57–16. Cuba, Puerto Rico  
     *simplex* Chevrolat 63–192

- marginipennis Putzeys 46–619. (3) MX; “USA”; Guadeloupe  
**Halocoryza** Alluaud 19–100  
 arenaria Darlington 39–84. (2) FL; (3) MX; Dominican Republic  
**Schizogenius** Putzeys 46–649  
     *Genioschizus* Whitehead 72–144  
     *Listropus* Putzeys 63–3  
 arimao Darlington 34–71. Cuba  
**Oxydrepanus** Putzeys 66–103  
 rufus Putzeys 46–564. (2) FL; Cuba, Guadeloupe  
     *brevicarinatus* Putzeys 46–571  
 reicheoides Darlington 39–83. Dominican Republic  
**Neoreicheia** Kult 50–322  
     [See *Oxydrepanus*]  
**Ardistomis** Putzeys 46–636  
     *Semiardistomis* Kult 50–301  
     *Ardistomiellus* Kult 50–303  
 atripennis Putzeys 66–202. Guadeloupe  
 cyaneolimbatus Chevrolat 63–194. Cuba  
     *gundlachi* Leng & Mutchler 14–395  
 elongatulus Putzeys 66–208. Cuba  
 laevistriatus Fleutiaux & Sallé 89–363. Guadeloupe  
 mannerheimi Putzeys 46–645. Puerto Rico  
 nigroclarus Darlington 39–83. Dominican Republic  
 nitidipennis Darlington 34–70. Cuba  
 ramsdeni Darlington 37a–120. Cuba  
 rufoclarus Darlington 39–82. Dominican Republic  
 guadeloupensis Kult 50–307. Guadeloupe  
 alticola Darlington 35b–173. Haiti  
**Aspidoglossa** Putzeys 46–626  
 aerata Putzeys 46–635. West Indies  
 semicrenata Chaudoir 43–735. Guadeloupe  
     *guadeloupensis* Putzeys 46–632  
 vulnerata Putzeys 46–633. Puerto Rico Cuba, S. Am.  
     *comma* Putzeys 46–634

SUBFAMILY PAUSSINAE  
 SUPERTRIBE Paussitae  
 TRIBE Ozaenini

- Pachyteles** Perty 30–3  
 delauneyi Fleutiaux & Sallé. 89–362 Guadeloupe  
 gyllenhali Dejean 25–436. Cuba, S. Am.  
     *pallida* Chevrolat 63–190

## SUPERTRIBE Brachinitae

## TRIBE Brachinini

**Brachinus** Weber 01–22*Brachynus auctorum**Neobrachinus* Erwin 70–47

brunneus Laporte 35–59. Cuba, Dominican Republic, Haiti, Puerto Rico,

Virgin Is., Costa Rica, French Guiana

*gilvipes* Mannerheim 37–41

adustipennis Erwin 70–81. (1) MI, NY, MA, IL, IN; (2) TN, GA, FL, AL, AR,

MS, LA; (3) OK, TX, NM, MX; (5) KS, MO; Panamá, Cuba

**Pheropsophus** Solier 33–463*Pheropsophidius* Hubenthal 11–547*Protopheropsophus* Hubenthal 11–548

aequinotialis Linné 63–395. (3) MX; Nicaragua, Costa Rica, Panamá,

Trinidad, Hispaniola, S. Am.

*complanatus* Fabricius 75–242*planus* Olivier 95–62*obliquus* Brullé 34a–251

## SUBFAMILY PSYDRINAE

## SUPERTRIBE Rhysoditae

## TRIBE Rhysodini

**Clinidium** Kirby 35–6*Mexiclinidium* Bell & Bell 78–63*Protainoa* Bell & Bell 78–63*Tainoa* Bell & Bell 78–64*Arctoclinidium* Bell 70–308

xenopodium Bell 70–316. Dominican Republic

darlingtoni Bell 70–317. Jamaica

curvicosta Chevrolat 73–215. Cuba

incis Bell 70–319. Puerto Rico

guildingi Kirby 35–8. St. Vincent, Cuba, Guadeloupe

planum Chevrolat 44–58. Guadeloupe

humeridens Chevrolat 73–215. Cuba

boroquense Bell 70–321. Puerto Rico

haitiense Bell 70–322. Haiti

jamaicense Arrow 42–181. Jamaica

chiolinoi Bell 70–323. Jamaica

**Plesioglymmius** Bell & Bell 78–70*Ameroglymmius* Bell and Bell 79–435

compactus Bell &amp; Bell 79–437. Cuba



## SUPERTRIBE Trechitae

## TRIBE Trechini

**Perileptus** Schaum 60a–663

- columbus Darlington 34–86. Cuba  
 dentifer Darlington 35b–177. Haiti, Puerto Rico  
 jeanneli Darlington 34–87. Jamaica  
 minutus Darlington 35b–178. Jamaica, Haiti

## TRIBE Pogonini

**Diplochaetus** Chaudoir 71b–43

- rutilus Chevrolat 63–197. Cuba, S. Am.

## TRIBE Bembidiini

**Miopotachys** Bates 82–144

- Tachymenis* Motschulsky 62–27 (not Weigmann)  
 autumnalis Bates 82–137. (3) MX; Guatemala, Nicaragua, Panamá, Cuba,  
 Montserrat, Guadeloupe  
 insularis Darlington 39–86. Dominican Republic  
 noctis Darlington 35b–174. Haiti

**Tachyta** Kirby 37–56

- hispaniolae Darlington 34–77. Haiti

**Elaphropus** Motschulsky 39–73

- Tachylopha* Motschulsky 62–27  
*Tachyura* Motschulsky 62–27  
*Barytachys* Chaudoir 68b–213  
*Sphaerotachys* Müller, 26–95  
*Trepanotachys* Alluaud 33–17  
*Tachyphanes* Jeannel 46–362  
 tritax Darlington 35b–175. Haiti  
 yunax Darlington 39–87. Dominican Republic, Cosmop.

**Pericompsus** LeConte 51–191

- Tachysops* Casey 18a–171  
*Tachysalia* Casey 18a–173  
*Leiotachys* Jeannel 62–616  
*Eidocompsus* Erwin 74b–21  
*Leptotachys* Jeannel 62–615  
 immaculatus Bates 71b–246. (3) MX; Honduras, Costa Rica, Panamá, Cuba,  
 S. Am.  
 reichei Putzeys 45–415. (3) MX; Guatemala, Honduras, Costa Rica, Panamá,  
 Jamaica, S. Am.  
 jamcubanus Erwin 74b–57. Jamaica, Cuba  
 elegantulus Laferté-Sénéctère 41–46. Puerto Rico  
*blandulus* Schaum 60b–202

macrodentra Chevrolat? (Wolcott 36–187) Puerto Rico  
 morantensis Erwin 74b–61. Jamaica, Haiti, Dominican Republic  
 philipi Erwin 74b–62. Haiti

**Tachys** Stephens 28b–4

*Isotachys* Casey 18a–204

bradycellinus Hayward 00–224 (2) LA; Cuba, Haiti, Jamaica

translucens Darlington 34–123. Cuba

vittiger LeConte 51–193. (3) CA; Puerto Rico, Antigua, Galapagos

*ensenadae* Mutchler 34a–3

**Paratachys** Casey 18a–174

*Eotachys* Jeannel 41–426

abruptus Darlington 34–80. Guadeloupe

albipes LeConte 63–20. (2) LA: Guadeloupe

*putzeysi* Fleutiaux & Sallé 89–363

carib Darlington 35b–176. Haiti, Puerto Rico

cubax Darlington 34–78. Cuba

dominicanus Darlington 34–81. Dominica

filax Darlington 34–83. Cuba

paulax Darlington 34–80. Cuba

piceolus Laferté-Sénéctère 41–48. Puerto Rico

striax Darlington 34–82. Cuba

**Polyderis** Motschulsky 62–27

*Microtachys* Casey 18a–210

*Neotachys* Kult 61–2

*Polyderidius* Jeannel 62–611

ridiculus Schaufuss 79–552. St. Thomas, Virgin Islands, Guatemala, Cuba

*capito* bates 84–287

**Lymnastis** Motschulsky 62–27

*Paralimnastis* Jeannel 32–176

*Limnastis auctorum*

americana Darlington 34–83. Cuba

**Micratopus** Casey 14a–42

*Blemus* LeConte 48–473

insularis Darlington 34–86. Puerto Rico

parviceps Darlington 34–85. Cuba

**Stylulus** Schaufuss 82–46

*Petrocharis* Ehlers 84–36

nasutus Schaufuss 82–46. St. Thomas

*eggersi* Ehlers 84–36

**Bembidion** Latreille 02–82

*Chrysobracteon* Netolitzky 14a–166

*Parabracteon* Notman 29–157

*Bracteon* Bedel 79–27

*Odontium* LeConte 48–452

*Ochthedromus* LeConte 48–453

*Hydrium* LeConte 48–453

- Eudromus* Kirby 37–55  
*Eurytrachelus* Motschulsky 46–tab. 5  
*Pogonidium* Ganglbauer 92–149  
*Bracteomimus* Lindroth 54–144  
*Metallina* Motschulsky 46–tab. 5  
*Actedium* Motschulsky 64–182  
*Lionepha* Casey 18a–18  
*Trechonepha* Casey 18a–19  
*Plataphodes* Ganglbauer 92–152  
*Plataphus* Motschulsky 64–184  
*Micromelomalus* Casey 18a–37  
*Melomalus* Casey 18a–37  
*Blepharoplataphus* Netolitzky 20–96  
*Trichoplataphus* Netolitzky 14b–51  
*Trachelonepha* Casey 18a–37  
*Liocosmius* Casey 18a–43  
*Leuchydrium* Casey 18a–46  
*Pseudoperyphus* Hatch 50–100  
*Bembidionetolitzkya* Strand 29–25  
*Daniela* Netolitzky 10–210  
*Peryphus* Stephens 28b–2  
*Hydriomicrus* Casey 18a–87  
*Eupetedromus* Netolitzky 11–190  
*Notaphus* Stephens 28b–51  
*Peryphodes* Casey 18a–85  
*Furcacampa* Netolitzky 31–158  
*Lopha* Stephens 28b–2  
*Cyclolopha* Casey 18a–144  
*Semicampa* Netolitzky 10–217  
*Diplocampa* Bedel 96–70  
*Parabopha* Casey 18a–153  
*Trepanedoris* Netolitzky 18–24  
*Amerizus* Chaudoir 68b–216  
*Philochthus* Stephens 28b–7  
*Cylindrobracteon* Netolitzky 42–50  
*Litorebracteon* Netolitzky 42–51  
*Argyrobracteon* Netolitzky 42–53  
*Conicibracteon* Netolitzky 42–53  
*Stylobracteon* Netolitzky 42–53  
*Foveobracteon* Netolitzky 42–54  
*Desarmatocillenus* Netolitzky 42–39  
*Peryphophila* Netolitzky 42–64  
*Chinocillenus* Netolitzky 42–41  
*Philochthemphanes* Netolitzky 42–82  
*Hirmoplataphus* Netolitzky 42–107  
*Aureoplataphus* Netolitzky 42–108

- Synechoperyphus* Netolitzky 42–122  
*Lymneops* Casey 18a–168  
 cubanum Darlington 37a–121. Cuba  
 jamaicense Darlington 34–76. Jamaica  
 portoricense Darlington 39–86. Puerto Rico  
 rucillum Darlington 39–86. Puerto Rico  
 turquinum Darlington 37a–122. Cuba  
 sparsum Bates 82–151. (3) MX; Nicaragua, Guatemala, Cuba, Puerto Rico,  
 S. Am.  
 spretum Dejean 31–70. (3) MX; Haiti, Puerto Rico, Antigua  
*fastidiosus* Laferté-Sénéctère 41–49  
*apicale* Jacquelin du Val 56–23  
*chevrolati* Gemminger & Harold 68–409  
 viridicolle Laferté-Sénéctère 41–48. (2) FL; (3) TX, MX; (4) AZ; (5) NW, AB,  
 SA, MB, SD; Cuba, Puerto Rico  
*hamiferum* Chaudoir 68b–244  
*apicale* Jacquelin du Val 56–23  
*chevrolati* Gemminger & Harold 68–409  
*particeps* Casey 18a–124  
 affine Say 25–86. (1) ON, MI, DE; (2) SC, AL, Cuba; (3) TX; (5) SD  
*decipiens* Dejean 31–159  
*fallax* Dejean 31–189  
*thespis* Casey 18a–128  
 darlingtoni Mutchler 34a–3. Puerto Rico, Cuba

SUBFAMILY HARPALINAE  
 SUPERTRIBE Pterostichitae  
 TRIBE Morionini

- Morion** Latreille 10–159  
*Morio auctorum*  
 costigerus Darlington 34–90. Jamaica

TRIBE Pterostichini

- Agonum** Bonelli 10–syn. tab.  
*Anchomenus auctorum*  
*Paranchomenus* Casey 20a–30  
*Anchomenus* Samouelle 19–106  
*Pseudanchus* Casey 20a–45  
*Taphranchus* Casey 20a–52  
*Stictanchus* Casey 20a–54  
*Idiochroma* Bedel 02–216  
*Deratanchus* Casey 20a–70  
*Circinalia* Casey 20a–72  
*Circinalidia* Casey 20a–78

- Micragonum* Casey 20a–80  
*Stereagonum* Casey 20a–80  
*Tetraleucus* Casey 20a–88  
*Platynomicrus* Casey 20a–90  
*Leucagonum* Casey 20a–99  
*Melanagonum* Casey 20a–111  
*Paragonum* Casey 20a–123  
*Punctagonum* Grey 37–311  
*Europhilus* Chaudoir 59a–124  
*Tanystola* Motschulsky 50–69  
*Anchus* LeConte 54–38  
*Oxypselaphus auctorum*  
 coptoderoides Darlington 37a–134. Cuba  
 extensicolle Say 25–54. (1) NS, PA, DE; (3) MX; (5) MB, SD  
*proximum* Harris 28–132  
*obscuratum* Chaudoir 43–763  
*viride* LeConte 48–222  
*gaudens* Casey 20a–55  
*clientulum* Casey 20a–55  
*vigilans* Casey 20a–56  
*elongatulum* auctorum  
*simplex* LeConte 54–46  
*cyanescens* Motschulsky 59–159  
 s. cubanum Darlington 34–97. Cuba  
 laetificum Darlington 35b–200. Haiti  
**Platynus** Bonelli 10–syn. tab.  
*Anchomenus auctorum*  
*Colpodes auctorum*  
*Dyscolus* Dejean 31–347  
*Metallosomus auctorum*  
*Stenocnemus* Mannerheim 37–29  
*Rhadine* LeConte 48–218  
*Ophryodactylus* Chaudoir 50b–382  
*Limodromus* Motschulsky 64–316  
*Comstockia* Van Dyke 18–179  
*Platynidius* Casey 20a–4  
*Macragonum* Casey 20a–4  
*Hemiplatynus* Casey 20a–15  
*Stenoplatynus* Casey 20a–15  
*Anacolpodes* Casey 20a–17  
 acuniai Darlington 37a–133. Cuba  
 agonella Darlington 35b–187. Haiti  
 alternans Chaudoir 78b–348. Guadeloupe  
 altifluminis Darlington 35b–198. Haiti  
 amone Darlington 35b–190. Haiti  
 aequinoctialis Chaudoir 50b–383. (3) MX, West Indies, S. Am.

baragua Darlington 35b–197. Cuba  
 biramosa Darlington 39–89. Dominican Republic  
 s. transcribao Darlington 39–91. Dominican Republic  
 s. uniramosa Darlington 39–90. Dominican Republic  
 bromeliarum Darlington 37b–122. Jamaica  
 bruesi Darlington 35b–196. Jamaica  
 bruneri Darlington 37a–132. Cuba  
 bucheri Darlington 37a–130. Cuba  
 calathina Darlington 39–92. Dominican Republic  
 carabiai Darlington 37a–129. Cuba  
 chalybaea Dejean 31–720. Guadeloupe, S. Am.  
 christophe Darlington 35b–191. Haiti  
 cinchonae Darlington 34–93. Jamaica  
 constricticeps Darlington 35b–194. Haiti  
 cubensis Darlington 37a–132. Cuba  
 cuprascens Motschulsky 64–305. Hispaniola  
 cychrina Darlington 35b–192. Haiti  
 dejeani Chaudoir 59b–359. Guadeloupe  
     *brunnea* Dejean 31–440  
 elliptica Chaudoir 78b–312. Guadeloupe, Martinique, S. Am.  
 elongata Chaudoir 78b–344. Guadeloupe  
 estriata Darlington 39–96. Puerto Rico  
 faber Darlington 35b–185. Jamaica  
 fractilinea Darlington 34–96. Haiti  
 fratrorum Darlington 37a–129. Cuba  
 jaegeri Dejean 31–728. Hispaniola  
 laeviceps Darlington 39–91. Dominican Republic  
 latelytra Darlington 35b–199. Jamaica  
 l'herminieri Chaudoir 42–838. Guadeloupe  
 macer Darlington 34–94. Jamaica  
 mannerheimi Chaudoir 59b–360. Hispaniola  
     *jaegeri* Mannerheim 37–30  
 marca Darlington 35b–180. Haiti  
 media Darlington 37a–130. Cuba  
 medioptera Darlington 37a–130. Cuba  
 memnonia Dejean 31–439. Guadeloupe  
 pavens Darlington 35b–188. Haiti  
 pinarensis Darlington 37a–128. Cuba  
 puncticeps Darlington 39–94. Dominican Republic  
 s. compacta Darlington 39–95. Dominican Republic  
 punctus Darlington 35b–195. Jamaica  
 ramoni Darlington 39–92. Dominican Republic  
 roysi Darlington 37b–124. Jamaica  
 scripta Darlington 39–93. Dominican Republic  
 scriptella Darlington 39–94. Dominican Republic  
 sellensis Darlington 37b–122. Haiti

subangusta Darlington 37a–131. Cuba  
 subcordens Darlington 35b–192. Haiti  
 subovalis Darlington 35b–186. Jamaica  
 tipoto Darlington 35b–193. Haiti  
 turquinensis Darlington 37a–131. Cuba  
 vagepunctata Darlington 34–95. Jamaica  
 visitor Darlington 35b–195. Haiti  
 wolla Darlington 35b–189. Haiti

**Glyptolenus** Bates 78–595

*Glyptolenus* Bertkau 78–428  
 simplicicollis Darlington 34–97. Dominica  
 chalybaeus Dejean 31–720. Nicaragua, Costa Rica, Panamá, Guadeloupe,  
 Dominica, S. Am.  
*lebioides* Bates 78–599

**Dyschromus** Chaudoir 35–429

centralis Darlington 39–88. Dominican Republic  
 cupripennis Chaudoir 74–18. Hispaniola  
 opacus Chaudoir 35–430. Hispaniola  
 perezi Darlington 39–88. Dominican Republic  
 tiburonicus Darlington 35b–179. Haiti

**Pterostichus** Bonelli 10–syn. tab.

*Platysma* Bonelli 10–syn. tab.  
*Feronia* Latreille 17–101  
*Cylindrocharis* Casey 18b–326  
*Holciophorus* LeConte 52–249  
*Hypherpes* Chaudoir 38–8  
*Brachystilus* Chaudoir 38–10  
*Haplocoelus* Chaudoir 38–8  
*Gonoderus* Motschulsky 59–149  
*Monoferonia* Casey 18b–322  
*Leptoferonia* Casey 18b–321  
*Gastrellarius* Casey 18b–321  
*Orsonjohnsonus* Hatch 33–119  
*Steropus* Stephens 28a–116  
*Steroderus* Motschulsky 50–tab. 9  
*Derus* Motschulsky 50–50  
*Derulus* Tschitschérine 96a–112  
*Poecilus* Bonelli 10–syn. tab.  
*Leconteus* Lutschnik 15–414  
*Parapoecilus* Jeannel 42a–751  
*Bothriopterus* Chaudoir 38–9  
*Dysidius* Chaudoir 38–8  
*Parargutor* Casey 18b–324  
*Euferonia* Casey 18b–322  
*Omaseidius* Jeannel 42a–784  
*Refonia* Casey 18b–323

- Piesmus* LeConte 48–340  
*Ophryogaster* Chaudoir 78a–59  
*Pristoscelis* Chaudoir 78a–71  
*Lophoglossus* LeConte 52–248  
*Melanius* Bonelli 10–syn. tab.  
*Pseudomaseus* Chaudoir 38–10  
*Metamelanius* Tschitschérine 00–395  
*Lagarus* Chaudoir 38–10  
*Platyderus* Kirby 37–29  
*Pseudargutor* Casey 18b–324  
*Pseudolagarus* Lutschnik 22–70  
*Argutor* Stephens 28a–102  
*Micromaseus* Casey 18b–324  
*Omaseulus* Lutschnik 29–5  
*Americomaseus* Csiki 30–644  
*Cryobius* Chaudoir 38–11  
*Pseudocryobius* Motschulsky 50–9  
*Lyperopherus* Moschulsky 45–156  
*Euryperis* Motschulsky 50–9  
*Stereocerus* Kirby 37–34  
*Boreobia* Tschitschérine 96b–373  
*Hammatomerus* Chaudoir 68b–337  
*Pheryphes* Casey 20b–186  
*Feronina* Casey 18b–222  
*Anilloferonia* Van Dyke 26–115  
*Peristhethus* LeConte 73–305  
*Gastrosticta* Casey 18b–323  
*Paraferonia* Casey 18b–323  
*Allotriopus* Bates 82–81  
*Pseudoferonina* Ball 65–107  
*Melvilleus* Ball 65–110  
*Mayaferonia* Ball & Roughley 82–335  
*cubensis* Darlington 37a–123. Cuba  
*chalcites* Say 25–56. Cuba, USA  
*cupreomicans* Sturm 43–23  
*micans* Chaudoir 43–767  
*sayi* Brullé 35a–277  
**Caelostomus** MacLeay 25–23  
*punctifrons* Chaudoir 50b–430. Jamaica, (W. Africa)  
**Loxandrus** LeConte 52–250  
*Megalostylus* Chaudoir 43–765  
*infimus* Bates 82–87. (3) TX, MX; Haiti  
*mutans* Darlington 35b–180  
*rectangulus* LeConte 78–377. (2) FL; (3) TX, MX; Grand Cayman Island  
*celeris* Dejean 28–246. (2) SC, GA, FL, AL, LA, MS; (3) TX, MS; Bahamas,  
Cuba, Puerto Rico



- cruentatus* Chevrolat 58–209  
*cubanus* Tschitschérine 03–60. (3) MX; Costa Rica, Bahamas, Cuba,  
 Dominican Republic, Haiti, Puerto Rico  
*floridanus* LeConte 78–376. (2) FL, AL, MS, LA; (3) TX; Bimini  
*nocticolor* Darlington 34–91. Cuba  
*crenatus* LeConte 52–252. (2) GA, FL, AL, MS, LA; Cuba

## SUPERTRIBE Panagaeitae

## TRIBE Panagaeini

**Coptia** Brullé 35b–433

- effeminata* Darlington 34–89. Cuba  
*sauricollis* Darlington 34–88. Cuba

**Panagaesus** Latreille 04–291

- Hologaeus* Ogueta 66–5  
*fasciatus* Say 25–70. (1) ON, NY, IN, PA, DE; (2) VA, SC, GA, FL; (5) KS;  
 ? Puerto Rico  
*asuai* Ogueta 66–8. Dominican Republic  
*quadrisignatus* Chevrolat 35–187. (3) MX; Cuba, Puerto Rico, St. Thomas

## SUPERTRIBE Callistitae

## TRIBE Callistini

**Chlaenius** Bonelli 10–syn. tab.

- Pseudanomoglossus* Bell 60–101  
*Eurydactylus* Laferté-Sénéctère 51–255  
*Glyptoderus* Laferté-Sénéctère 51–260  
*Anomoglossus* Chaudoir 56–192  
*Agostenus* Motschulsky 50–tab. 9  
*Pelasmus* Motschulsky 50–tab. 9  
*Brachylobus* Chaudoir 76a–287  
*Chlaeniellus* Reitter 08–185  
*Merochlaenius* Grundmann 55–280  
*Pachychlaenius* Grundmann 55–282  
*Chlaeniopus* Grundmann 55–284  
*Sericochlaenius* Grundmann 55–286  
*Aulacosomus* Grundmann 55–276  
*maxillosus* Horn 76–260. (2) GA, FL, AL; Bahamas  
*niger* Randall 38–34. (1) NF, NS, QU, ON, WI, MI, NY, NH, MA, IL, IN,  
 PA, NJ; (2) TN, SC, FL, AR, AL, LA; (3) TX; (4) WA, BC; (5) NW,  
 AB, MB, MN, IA, KS; Cuba  
*exaratus* Laferté-Sénéctère 51–249  
*ludovicianus* Leng 15–592  
*perplexus* Dejean 31–655, (2) GA, FL, AL, LA; (3) TX, MX; Cuba,  
 Puerto Rico, Haiti, Dominican Republic

*circumcinctus* Say 34–418  
*virens* Chaudoir 43–753  
*poeyi* Chevrolat 63–194  
*cubanus* Chaudoir 76a–238. Cuba  
*gundlachi* Chaudoir 76a–148. Cuba  
*jamaicae* Darlington 35b–201. Jamaica  
*floridanus* Horn 76–263. (2) GA, FL; Bahamas

TRIBE Oodini

**Oodes** Bonelli 10–syn. tab.

*Lachnocrepis* LeConte 53–391  
*amaroides* Dejean 31–674. Cuba, USA

**Stenocrepis** Chaudoir 57–39

*Stenous* Chaudoir 57–39  
*Crossocrepis* Chaudoir 57–48  
*duodecimstriata* Chevrolat 35–173. (2) SC; (3) MX; Guatemala,  
 Nicaragua, Cuba  
*gilvipes* Chaudoir 82b–504. Cuba, S. Am.  
*pallipes* Reiche 43–38  
*insulana* Jacquelin du Val 56–20. Cuba  
*metallica* Dejean 26–379. Cuba, Puerto Rico, S. Am.  
*agilis* Laferté-Sénéctère 51–273  
*palustris* Darlington 35b–202. Jamaica  
*subdepressa* Darlington 34–101. Haiti  
*tibialis* Chevrolat 34b–46. (3) MX; Guatemala, Cuba, Puerto Rico, S. Am.  
*femoralis* Chaudoir 35–444  
*pallipes* Brullé 38–32  
*sulcata* Chevrolat (Leng & Mutchler, 14–395). Cuba

**Anatrichis** LeConte 53–391

*Oodinus* Motschulsky 64–352  
*Oodiellus* Chaudoir 82a–322  
*piceus* Motschulsky 64–353. (2) FL; (3) TX, MX; Guatemala, Panamá,  
 Cuba S. Am.  
*mexicanus* Chaudoir 82a–323

TRIBE Licinini

**Diplocheila** Brullé 34a–407

*Rembus* Dejean 26–380  
*Isorembus* Jeannel 49–771  
*major* LeConte 48–418. (1) ON, WI, MI NY, CT, RI, IN, OH, PA; (2) FL, AL,  
 LA; (3) TX; (5) SD, MN, NK, IA, KS, MO; Cuba  
*expansa* Casey 13–148  
*oblonga* Casey 13–148  
*procera* Casey 20b–200

s. *melissisa* Ball 59–78. (2) FL, AL, LA; (3) TX; Cuba

**SUPERTRIBE Harpalitae**

**TRIBE Harpalini**

**Bradycellus** Erichson 37–64

*Liocellus* Motschulsky 64–207

*Glycerius* Casey 84b–79

*Tetraplatypus* Tschitschérine 97–62

*Catharellus* Casey 14b–242

*Stenocellus* Casey 14b–243

*Liocellus* Tschitschérine 01–247

*Triliarthrus* Casey 14b–220

*festinans* Casey 14b–257. (3) TX; (5) KS, Cuba

*cubanus* Darlington 34–110. Cuba

*selleanus* Darlington 35b–204. Haiti

*velatus* Darlington 34–111. Cuba, Puerto Rico

**Acupalpus** Latreille 29–291

*Philodes* LeConte 61–33

*Goniolophus* Casey 14b–262

*Tachistodes* Casey 14b–286

*Anthracus* Motschulsky 64–207

*Aepus* LeConte 48–413

*convexus* Darlington 34–112. Cuba

*iridens* Motschulsky 64–201. Cuba

**Stenolophus** Stephens 27–67

*Agonoderus* Dejean 29–49

*Agonoleptus* Casey 14b–284

*infuscatus* Dejean 29–54. (1) NY, DE; (2) NC, SC, FL; (3) TX; Cuba

*ochropezus* Say 25–54. BJ, CA, Cuba, Puerto Rico

*convexicollis* LeConte 48–309

*gracilis* Casey 84a–14

**Pogonodaptus** Horn 81–178

*rostratus* Darlington 35b–204. Haiti

**Harpalus** Latreille 02–325

*Ophonus* Stephens 27–67

*Pheuginus* Motschulsky 45–197

*Pseudophonus* Motschulsky 45–196

*Amblystus* Motschulsky 64–209

*Pardileus* Gozis 82–289

*Ephiharpalus* Reitter 00–75

*Lasioharpalus* Reitter 00–75

*Megapangus* Casey 14b–71

*Plectralidus* Casey 14b–72

*Pharalus* Casey 14b–63

*Harpalomerus* Casey 14b–76

- Glanodes* Casey 14b–50  
*Opadius* Casey 14b–63  
*Eupharpalops* Casey 24–116  
*Cordoharpalus* Hatch 49b–87  
*Euharpalus* Hatch 53–170  
 integer Fabricius 01–196. Guadeloupe, Hispaniola  
*grimmi* Sturm 26–148  
**Selenophorus** Dejean 29–80  
*Selenalius* Casey 14b–253  
*Hemisopalus* Casey 14b–135  
*Celiamorphus* Casey 14b–141  
*Gynandropus* Dejean 31–817  
 alternans Dejean 29–86. (3) MX; Cuba Hispaniola, Puerto Rico,  
 Guadeloupe, S. Am.  
*lineatopunctatus* Dejean 29–86  
 beauvoisi Dejean 29–98. Jamaica, Puerto Rico  
*aneocupreus* Dejean 29–99  
 cariniger Putzeys 78a–44. Hispaniola  
 chalybaeus Dejean 29–110. Bahamas, Cuba, Is. Pinos, Jamaica, Hispaniola,  
 Puerto Rico, Antigua, Guadeloupe  
 cinctus Putzeys 78a–45. Cuba  
 cyaneopacus Darlington 34–107. Haiti  
 discopunctatus Dejean 29–92. (2) FL; Cuba, Is Pinos, Hispaniola, Puerto Rico,  
 Antigua, S. Am.  
*chokoloskei* Leng 15–596  
*aeratus* Reiche 43–142  
*cuprinus* Dejean 29–96  
*harpaloides* Reiche 43–142  
 dubius Putzeys 78a–54. West Indies  
 flavilabris Dejean 29–97. Cuba, Puerto Rico  
 s. cubanus Darlington 35b–203. Cuba  
 guadeloupensis Fleutiaux & Sallé 89–365. Puerto Rico, Guadeloupe  
 haitianus Darlington 34–107. Haiti  
 latior Darlington 34–109. Dominican Republic, Puerto Rico  
 lucidulus Dejean 29–85. West Indies  
 macleayi Kirby 37–50. West Indies  
 mundus Putzeys 78a–29. (3) MX; West Indies  
 nonseriatus Darlington 34–109. Jamaica, Dominican Republic  
 parumpunctatus Dejean 29–104. West Indies  
 parvus Darlington 34–105. Puerto Rico  
 propinquus Putzeys 74–118. Antigua, Guadeloupe  
 pubifer Putzeys 78a–69. West Indies, S. Am.  
*puberulus* Putzeys 74–119  
 puertoricensis Mutchler 34a–5. Puerto Rico  
 puncticollis Putzeys 78a–34. Dominican Republic  
 pyritosus Dejean 29–84. (3) MX; Guatemala, Honduras, Nicaragua, Panamá,

- Cuba, Is. Pinos, Puerto Rico  
 ramosi Darlington 29–97. Puerto Rico  
 sinuatus Gyllenhal 06–203. Cuba, Puerto Rico, Antigua, Guadeloupe  
 solitarius Darlington 34–106. Cuba  
 striatopunctatus Putzeys 78a–33. (3) MX; Cuba, Puerto Rico  
 subaeneus Reiche 43–141. Panamá, Guadeloupe, S. Am.  
 subquadratus Putzeys 78b–293. Cuba, Hispaniola  
 thoracicus Putzeys 78a–59. Haiti  
     *excisus* Putzeys 78a–59
- Amblygnathus** Dejean 29–62  
 vitraci Fleutiaux & Sallé 89–364. Guadeloupe, Dominica  
 puncticollis Putzeys 78a–34. Dominican Republic  
 guadeloupensis Fleutiaux & Sallé 89–365. Puerto Rico, Guadeloupe
- Athrostickus** Bates 78–592  
 iridescens Chaudoir 43–783. Guadeloupe
- Stenomorphus** Dejean 31–696  
     *Agaosoma* Ménériés 44–63  
 manni Darlington 34–102. Haiti  
 cubanus Darlington 37a–135. Cuba
- SUPERTRIBE Dryptitae  
 TRIBE Zuphiini
- Pseudaptinus** Laporte 35–56  
     *Diaphorus* Dejean 31–300  
 cubanus Chaudoir 77–252. (2) FL; Cuba  
 deceptor Darlington 34–128. Cuba  
 insularis Mutchler 34a–4. Cuba, Puerto Rico  
 salebrosus Liebke 34–375. Cuba  
 thaxteri Darlington 34–127. Grenada
- Thalpius** LeConte 51–174  
     *Enaphorus* LeConte 51–174  
     *Zuphiosoma* Laporte 67–103  
 apicalis Darlington 34–125. Cuba  
 arrogans Liebke 34–385. Cuba  
 bierigi Liebke 34–387. Cuba  
 dorsalis Brullé 34a–181. Cuba  
 marginicollis Darlington 34–126. Cuba  
 s. fumipes Darlington 35b–212. Haiti  
 pygmaeus Dejean 26–460. (2) FL, LA; Cuba
- Zuphium** Latreille 06–198  
     *Zophium* Gistel 38–112  
     *Zoyphium* Motschulsky 50–t. 8  
 americanum Dejean 31–298. (1) ON, MI; (2) LA, SC; (3) TX; (4) OR;  
     (5) SD, KS; Puerto Rico  
 bierigi Liebke 33–467. Cuba

cubanum Liebke 33–470. Cuba  
 haitianum Darlington 35b–213. Haiti  
 mexicanum Chaudoir 62–314. Cuba

TRIBE Galeritini

**Galerita** Fabricius 01–214

*Galeritula* Strand 36–168  
*Progaleritina* Jeannel 49–1058  
*Diabena* Fairmaire 01–94  
*Galeritiola* Jeannel 49–1059  
*Galericeps* Jeannel 49–1058  
*Galeritella* Jeannel 49–1058  
 lecontei Dejean 31–294. USA; (3) MX.  
 s. tenebricosa Klug 34–65. Dominican Republic, Haiti, Cuba, Cayman Is.  
*vetula* Chevrolat 63–186.  
 ruficollis Dejean 25–191. (3) MX, Panamá, Cuba, Jamaica  
*erthrodera* Brullé 34b–103  
*thoracica* Chevrolat 34b–34  
*humboldti* Gistel 37–11  
*insularis* Laporte 40–36  
 americana Linné 58–415. Guatemala, Costa Rica, Panamá, S. Am., Trinidad,  
 Guadeloupe, St. Martin  
 microcostata Darlington 34–124. Puerto Rico  
 beauvoisi Chaudoir 61–553. Costa Rica, Haiti  
 tristis Reiche 42–273. El Salvador, Costa Rica, Panamá, Guadeloupe, Dominica,  
 Jamaica, S. Am.  
*lugens* Chaudoir 48–65  
*melanaria* Erichson 48–555  
 unicolor Latreille & Dejean 23–117 Cuba, S. Am.  
*porcata* Klug 34–66  
*bahiana* Liebke 39b–477  
 striata Klug 34–66. Haiti  
*montana* Darlington 35b–211

SUPERTRIBE Ctenodactylitae

TRIBE Ctenodactylini

**Leptotrachelus** Latreille 29–371

*Odacantha* Perty 30–2  
*Rhagocrepis* Eschscholtz 29–5  
*Sphaeracra* Say 34–412  
 dorsalis Fabricius 01–220. (1) ON, NY, DE, DC; (2) SC, FL; (3) SC, KS; Cuba

## SUPERTRIBE Lebiitae

## TRIBE Perigonini

**Perigona** Laporte 35–151*Nestra* Motschulsky 51–506*Spathicus* Nietner 58–428*Trechicus* LeConte 53–386*nigriceps* Dejean 31–44. (1) QU, IN, NJ, NH, DC; (2) NC, SC, FL, AL;  
(3) CA; Cuba, Puerto Rico, Guadeloupe, Martinique, (Old World)*pallipennis* LeConte 53–386*umbripennis* LeConte 53–386*testaceolimbata* Motschulsky 62–33*glabella* Motschulsky 62–34*guadeloupensis* Fleutiaux & Sallé 89–367. Guadeloupe*laevigata* Bates 72a–200. MX, C. Am., Cuba*microps* Darlington 34–99. Puerto Rico*picea* Darlington 34–98. Cuba, Haiti, Dominican Republic, Guadeloupe

## TRIBE Lachnophorini

**Anchonoderus** Reiche 43–38*subtilis* Bates 71a–33. (3) MX; Guatemala, Cuba*leucopterus* Chevrolat 63–198. Cuba, Puerto Rico**Lachnophorus** Dejean 31–28*Aretaonus* Liebke 36–461*Stigmaphorus* Motschulsky 62–48*leucopterus* Chevrolat 63–198. Cuba, Puerto Rico**Euphorticus** Horn 81–144*pubescens* Dejean 31–30. (2) NC, GA, FL, AL; (3) BJ, MX; Guatemala, S. Am.*laevicollis* Reiche 43–180*niger* Gory 33–245*s. aeneolus* Bates 83–156. (3) MX; Guatemala, Cuba, S. Am.**Eucaerus** LeConte 53–386*haitianus* Darlington 35b–210. Haiti*insularis* Darlington 34–120. Cuba

## TRIBE Cyclosomini

**Tetragonoderus** Dejean 29–485*Peronoscelis* Chaudoir 76b–29*intersectus* (Germar) 24–28 (2) KY, TN, SC, GA, FL, AL; (3) TX, MX;  
Bahamas

## TRIBE Masoreini

**Macracanthus** Chaudoir 46a–539*Masoreus auctorum*

brevicillus (Chevrolat) 63–189. Cuba, Puerto Rico

**Aepnidius** MacLeay 25–23*Masoreus auctorum*

ciliatus Mutchler 34b–130. Cuba, Puerto Rico

## TRIBE Pentagonicini

**Pentagonica** Schmidt-Goebel 46–47*Rhombodera* Reiche 42–313*Didetus* LeConte 53–377

nigricornis Darlington 34–121. (2) FL; Cuba

flavipes LeConte 53–377. (2) SC, FL, AR, LA, Belize, Costa Rica, Panamá,

Jamaica, Guadeloupe, Cuba, Puerto Rico, S. Am.

s. picipes Darlington 35b–211. Jamaica, Hispaniola, Puerto Rico

*pallipes* LeConte 63–6*americana* Motschulsky 64–224*albipes* Bates 83–218*picea* Fleutiaux & Sallé 89–362

divisa Darlington 34–121. Puerto Rico

*atorufa* Gundlach 93–292*bicolor* Leng & Mutchler 17–195

nigricornis Darlington 34–121. Cuba

vittula Darlington 39–100. Dominican Republic

## TRIBE Odacanthini

**Colliuris** Degeer 74–79*Anaplagiorrhytis* Liebke 30–658*Apiodera* Chaudoir 48–35*Apioderella* Csiki 32b–1532*Apioderma* Csiki 32b–1523*Calocolliuris* Csiki 32b–1522*Casoniella* Csiki 32b–1522*Colliurella* Liebke 30–658*Colliurina* Liebke 30–658*Colliurita* Csiki 32b–1531*Casonia* Latreille & Dejean 22–77*Isocasnonia* Csiki 32b–1532*Mimocasnonia* Csiki 32b–1532*Odacantha* Paykull 98–169*Odacanthella* Liebke 30–658*Odacanthina* Csiki 32b–1522



*Ophionea* Klug 21–298  
*Paracollinus* Liebke 30–653  
*Paracolluris* Liebke 30–658  
*Plagiorrhytis* Chaudoir 48–31  
*Procolluris* Liebke 30–669  
*Pseudocasnonia* Liebke 30–658  
*Pseudoplagiorrhytis* Liebke 30–657  
*gundlachi* Darlington 34–122. Cuba  
*limbata* Waterhouse 78–304. Jamaica  
*noah* Darlington 34–123. Cuba  
*picta* Chaudoir 43–697. (3) AZ, TX, MX  
*suturalis* Chaudoir 72a–405  
*s. concluda* Liebke 30–689. (3) MX; Cuba  
*s. extrema* Liebke 30–689. (3) MX; Cuba  
*portoricensis* Liebke 30–688. Haiti, Puerto Rico  
*rufipes* Dejean 25–172. S. Am.  
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- decolor Chaudoir 72b–131. Martinique
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