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## The Dynastinae (Coleoptera: Scarabaeidae) of the Cayman Islands (West Indies), with descriptions of *Tomarus adoceteus*, new species (Pentodontini) and *Caymania nitidissima*, new genus and species (Phileurini)

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(West Indies), with descriptions of *Tomarus adoceteus*, new species  
(Pentodontini) and *Caymania nitidissima*, new genus and species  
(Phileurini)

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The Dynastinae (Coleoptera: Scarabaeidae) of the Cayman Islands (West Indies), with descriptions of *Tomarus adoceteus*, new species (Pentodontini) and *Caymania nitidissima*, new genus and species (Phileurini)

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**Abstract.** The five genera and eight species of dynastine scarabs occurring in the Cayman Islands in the West Indies are reviewed. Two new, endemic species are described from Little Cayman, with supporting illustrations: *Tomarus adoceteus* Ratcliffe and Cave (Pentodontini), **new species**, and *Caymania nitidissima* Ratcliffe and Cave (Phileurini), **new genus and species**.

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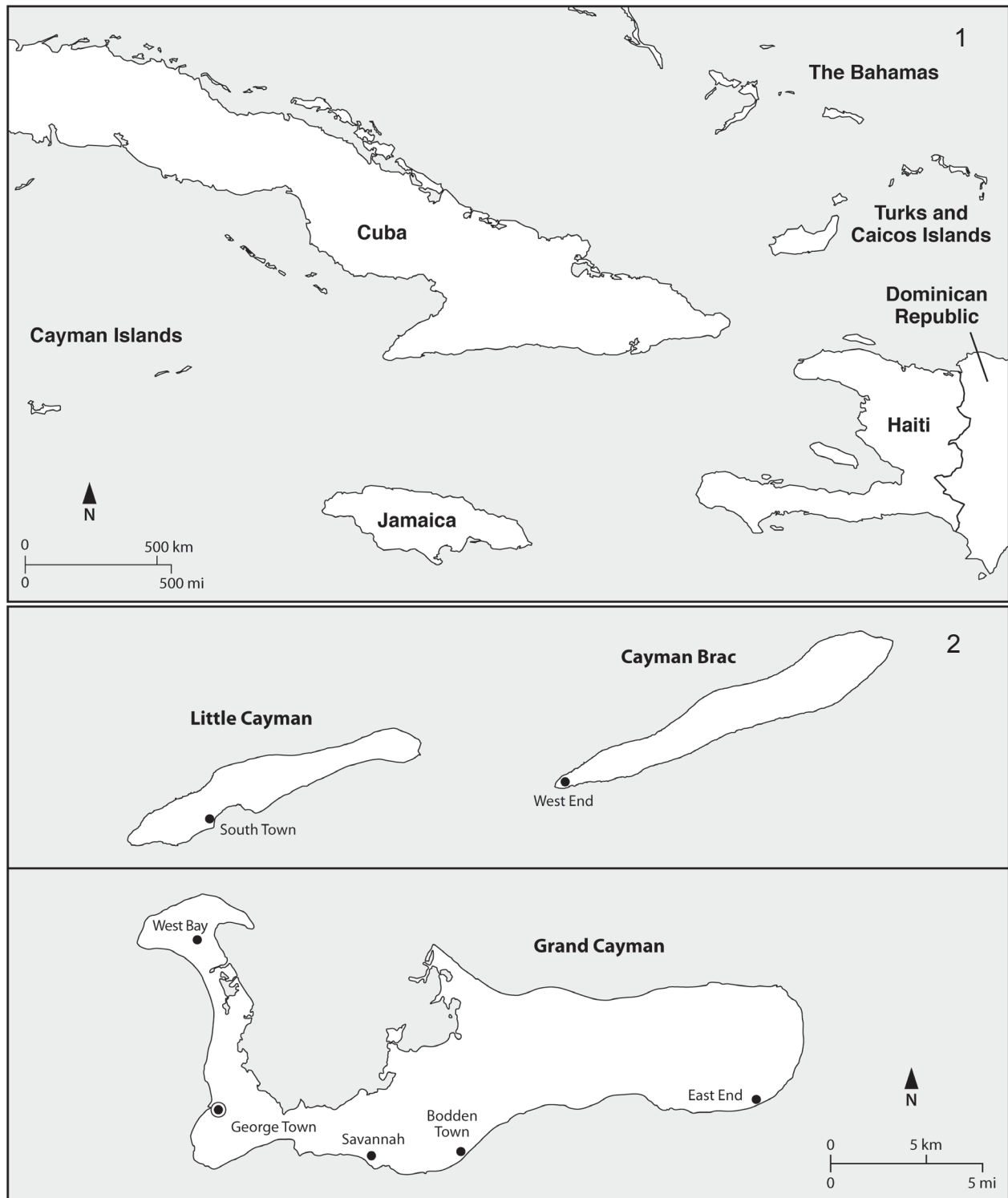
*O, wonder! How many goodly  
creatures are there here!*  
— W. Shakespeare  
The Tempest, Act V, Scene 1

## The Cayman Islands

The Cayman Islands (Fig. 1) are a British overseas territory comprised of a three-island group (Grand Cayman, Little Cayman, and Cayman Brac) in the Caribbean Sea (Fig. 2). The islands are 240 km south of Cuba and 290 km northwest of Jamaica. The three islands are low-lying limestone outcrops of the Cayman Ridge, a Pleistocene range of submarine mountains extending west southwest from the Sierra Maestra range in the southeastern Cuba to the Misteriosa Bank in the direction of Belize. The total area of the three islands is about 264 km<sup>2</sup> (Encyclopedia Britannica 2010). The islands have never been connected to any adjacent land masses (Davies and Brunt 1994). The climate is warm marine with warm, rainy summers (May to October) and cool, dry winters (November to April) (CIA 2006).

Brunt (1994) observed that the Cayman Islands support two distinct types of vegetation: evergreen thicket and woodland, and seasonal swamp. Evergreen thicket dominates the eastern sections of Grand Cayman, and is found on the northern slope of Little Cayman and on higher ground on Cayman Brac. The thicket has a discontinuous, two-story canopy with occasional emergents. Dominant species include *Bursera simaruba* (L.) Sarg. (Burseraceae), *Swietenia mahagoni* (L.) Jacq. (Meliaceae), *Picrodendron baccatum* (L.) Krug and Urb. (Euphorbiaceae), *Sideroxylon salicifolium* (L.) Lam. (Sapotaceae), *Calyptrothrix pallens* Grisebach (Myrtaceae), and *Chionanthus caymanensis* Stearn (Oleaceae). Palms (*Coccothrinax proctorii* Read and *Thrinax radiata* Martius; Arecaceae) are common, and climbing cacti (*Selenicereus* spp.; Cactaceae) are well represented.

Grand Cayman (Fig. 3) is approximately 35 km long and varies from 1.6-13.0 km at the widest point. The highest elevation is about 18 m above sea level. Grand Cayman is the largest and most populated of



**Figure 1-2.** Maps of the Cayman Islands.

the three islands. The habitat on Grand Cayman in particular is greatly disturbed, and the dry evergreen woodland that used to occur on the island has been destroyed when the wood was used for building and fuel. Most of the uplands support dry evergreen thicket (Brunt 1994; Cayman Islands Government 2005).

Little Cayman (Fig. 4-5) is 8 km west of Cayman Brac and is 16 km long and 3.2 km at its widest point. It is the flattest of the three islands with its highest elevation only 4 m near Pirate's Point (Stoddart





**Figure 3-5.** Habitat illustrations. **3)** Grand Cayman, near East End, with Byrd Dozier. **4-5)** Little Cayman. **4)** North coast, near Spot Bay. **5)** Coot Marsh, with George Ball. Photos courtesy of Mike Thomas.

1980), the type locality for one of the two new species described herein. Like the other islands, Little Cayman is dotted with mangrove forests, salt ponds, littoral thickets, and bushland hedge (Brunt and Davies 1994).

Cayman Brac (Fig. 6-8) lies 145 km east northeast of Grand Cayman. It is about 19 km long and almost 2 km wide. The Bluff is the Brac's most outstanding feature, rising along the length of the island and reaching a height of 42 m at the eastern end and abruptly falling in a sheer cliff to the sea (Cayman Islands Government 2005).





**Figure 6-8.** Cayman Brac, illustrating habitats. **6)** Burned woodland on the bluff. **7)** South side of bluff. **8)** East end of island along south shore. Photos courtesy of Mike Thomas.

### The Scarab Beetles

World Wildlife Fund (2001) reported generally low levels of endemism in the Cayman Islands, probably due to the proximity of other islands and the strong trade winds that assist over-water dispersal. Of the 601 vascular plant species found on the island, only 21 are endemic (Davies 1994). Similarly, most of the bird species are shared with neighboring islands or are migrants from North and South America. The vegetation has strong affinities with both Cuba and Jamaica, as does the breeding landbird fauna and the butterfly community (Bradley 1994). In contrast to these groups, 75% of the herpetofauna and 30 of the 48 species of non-marine molluscs are endemic to the Caymans (Seidel and Franz 1994), a reflection of their more limited over-water dispersal abilities. Pregill and Olson (1981) concluded that during the Wisconsin glaciation about 17,000 years ago, sea levels fell to approximately 120 m *lower* than at present, which allowed distance relationships between the islands to decrease, thus favoring over-water dispersal.

In 1938, an Oxford University Biological Expedition spent 13 days collecting on Little Cayman. In 1975, a Royal Society-Cayman Islands Government Expedition spent about six weeks on Little Cayman and several days on the other two islands. Askew (1994) spent a further four weeks collecting on Grand Cayman in 1985. In spite of all of these efforts, few scarabs were collected (Askew 1994).

The Cayman Islands have an insect fauna that is surprisingly diverse considering the small size of the islands. Askew (1980, 1994) reported on the insects of the Caymans with particular detail to the butterflies. After analyzing the numbers and diversity of insects collected during the 1938 and 1975 expeditions to the Caymans, Askew (1980) observed that much of the insect fauna of Little Cayman was shared with Cuba and Jamaica and concluded that the low incidence of endemism was probably due to a short sea distance (about 200 km) separating Little Cayman and Cuba/Jamaica and winds and currents that favored dispersal from those islands to Little Cayman. Iturralde-Vinent and MacPhee (1999) concluded that the effect of surface-current flow as a dispersal agent, while generally from the southeast to the northwest in the present-day Caribbean Sea, has not always been so, because surface-current patterns have changed radically with the formation of the islands of the West Indies and the closure of the

isthmus of Panama. The short distance between Cuba and the Caymans, hence the brief over-water dispersal time, would favor survival of rafting, salt-intolerant animals.

Although the Scarabaeidae have not been specifically surveyed, Askew (1994) recorded ten species of Scarabaeidae from Little Cayman, including three *Aphodius* Illiger species (Aphodiinae), one *Phyllophaga* Harris species (Melolonthinae), and one *Dyscinetus* Harold species (Dynastinae). Blackwelder (1944) reported several species of Dynastinae from the West Indies but none from the Cayman Islands. The composition of the dynastine fauna of the Caymans remains uncertain, because some of the species collected in the 1938 and 1975 British expeditions have not been collected since, while some species collected in 2008–2009 by scientists from the Florida State Collection of Arthropods were not collected previously. Clearly, additional collecting is needed to ascertain the faunal composition and to determine if populations are dynamic, with some dying out while others become introduced (established?) from neighboring islands. The large amount of commerce at ports with brightly lit docks could facilitate island hopping by nocturnal species such as Dynastinae.

Members of the subfamily Dynastinae (Coleoptera: Scarabaeidae) occur in all the major biogeographic regions of the world. About 1,500 species of dynastines are known, although the actual world fauna may reach 2,000 species (Endrödi 1985; Ratcliffe and Cave 2006). More species are found in the New World tropics than in any other realm. By our count, the West Indies has 18 genera and approximately 68 species of Dynastinae.

## Methods

Herein we describe a new species of *Tomarus* Erichson and a new phileurine genus and species, both of which are endemic in the Cayman Islands. For these species hypotheses, we adhere to the phylogenetic species concept as outlined by Wheeler and Platnick (2000). This concept defines species as the smallest aggregation of populations diagnosable by a unique combination of character states. Not all species are equally diagnosable. Some are easily recognized by examining one individual with a unique set of characters (*e.g.*, the new species described herein), while others are recognized only after many individuals from different populations are examined because of intraspecific variation. The parameres of male *Tomarus* and the new phileurine species are diagnostic, and they are figured here. Label data for the new species are quoted *verbatim*; different lines of a label are separated by a diagonal slash (/); different labels are distinguished from one another by a double slash (//).

The specimens listed below from the Cayman Islands are housed in several research collections, and the collections containing material in each species treatment are indicated. The collections and their acronyms (as given in Arnett et al. 1993), when available, are as follows:

<b>AMNH</b>	American Museum of Natural History, New York, NY, USA
<b>BCRC</b>	Brett C. Ratcliffe Collection, Lincoln, NE, USA
<b>BMNH</b>	The Natural History Museum, London, England
<b>CASC</b>	California Academy of Sciences, San Francisco, CA, USA
<b>CNCI</b>	Canadian National Collection of Insects, Ottawa, Canada
<b>CMNC</b>	Canadian Museum of Nature, Ottawa, Canada
<b>FMNH</b>	Field Museum of Natural History, Chicago, IL, USA
<b>FSCA</b>	Florida State Collection of Arthropods, Gainesville, FL, USA
<b>MNHN</b>	Museum National d'Histoire Naturelle, Paris, France
<b>RHMC</b>	Ronald H. McPeak Collection, Battle Ground, WA, USA
<b>RHTC</b>	Robert H. Turnbow Collection, Enterprise, AL, USA
<b>UCDC</b>	University of California, Davis, CA
<b>UNSM</b>	University of Nebraska State Museum, Lincoln, NE, USA
<b>USNM</b>	U. S. National Museum, currently at University of Nebraska State Museum, Lincoln, NE, USA



## The Dynastinae of the Cayman Islands

The following list represents all of the dynastine records for the Caymans known to us. Some of these are previously unpublished records, and because of this and the relative rarity of records for the Caymans, we provide basic collecting data.

### Tribe Cyclocephalini

#### *Dyscinetus* Harold, 1869

*Dyscinetus* is comprised of 15 species (Chalumeau 1982; Endrödi 1966, 1985; Ratcliffe 1986). Species of *Dyscinetus* occur from the central United States to Argentina. There are five species recorded from the West Indies (Chalumeau 1982; Endrödi 1985; Ratcliffe 1986). *Dyscinetus* species are characterized by the presence of a larger, inner claw with split apex on the protarsus in males (the 5th tarsomere may or may not be enlarged); a short, trapezoidal clypeus; 10-segmented antenna with a short club; and black coloration often tinged with green. Most species of *Dyscinetus* are similar in external appearance, but certain characters of surface sculpturing, protarsus development in the males, and especially the form of the male parameres will serve to distinguish the species.

The biology of most of species remains unknown. They have occasionally been implicated in injury to agricultural crops. The larvae are possibly general detritus or root feeders. Adults are attracted to lights at night.



Figure 9. *Dyscinetus imitator* Ratcliffe, habitus.

#### *Dyscinetus imitator* Ratcliffe, 1986

*Dyscinetus imitator* (Fig. 9) is known only from Grand Cayman island. The specimens listed below were collected during 1965-2009. Specimens were seen from AMNH, BMNH, CASC, CMNC, CNCI, FMNH, FSCA, MNHN, RHMC, UCDC, UNSM, USNM.

**Grand Cayman:** Bodden Town: February 1982 (7), March 1982 (4), April 1981 (11), October 1981 (1), November 1981 (1); Georgetown: March 1973 (2), April 1981 (4), December 1980 (1), December 1981 (16); Botanic Garden: May 2009 (19), June 2008 (23); Hutland (1.5 km S): February (2); Mastic Trailhead South: May 2009 (10); Prospect: February 1982 (4), March 1982 (2), March 1981 (1), April 1981 (4), May 1981 (6); Savannah: February 1981 (1), March 1982 (4), May 1982 (1), November 1981 (6), December 1980 (1); West Bay: March 1965 (2), May 1970 (1), May 1976 (1), June 1966 (1), September 1968 (1); No locality: February 1990 (1), March 1982 (2), June 1991 (7), July 1992 (7), August 1990 (3), November 1981 (1), December 1980 (1).

### Tribe Pentodontini

#### *Tomarus* Erichson, 1847

The genus *Tomarus* contains 27 species (Endrödi 1985; Dechambre and Lumaret 1985; Escalona and Joly 2006). Species in the genus occur from north-central United States south to Argentina. Eleven species are found exclusively in South America, and another ten species are found exclusively in North

and Central America. Seven species are shared between Central and South America. Three species are recorded from the islands of the West Indies.

Species of *Tomarus* can be recognized by an attenuate clypeus that is bidentate and relatively narrow at the apex, mandibles usually visible from above and with two or three lateral teeth, frontoclypeal region with two tubercles or a transverse carina, and pronotum with or without an apical tubercle and subapical fovea.

Life history information for most of the species is sparse. Adults are nocturnal and attracted to lights. In general, larvae are found in soil rich in organic matter where they feed, sometimes on the roots of living plants.

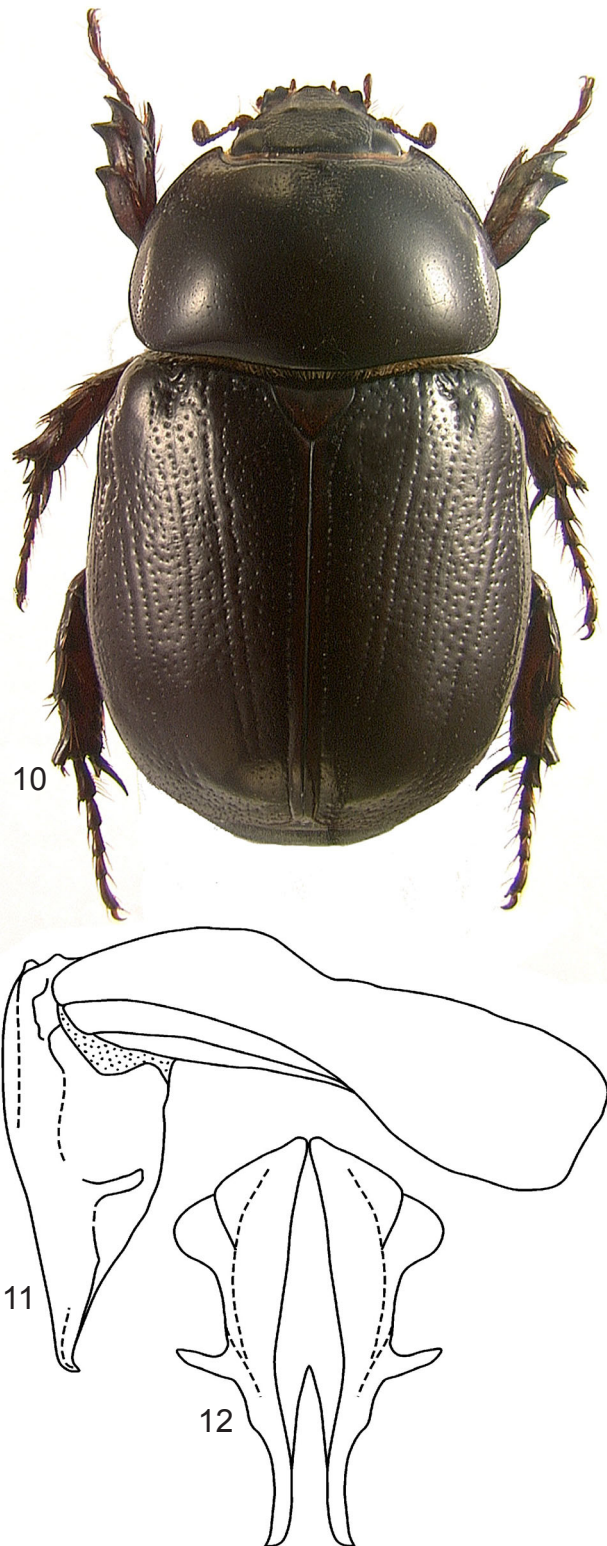
Considerable reliance must be placed on the form of the male parameres for identification. The parameres are usually extremely fragile (almost parchment-like) and break or tear easily. Great care should be taken when extracting the parameres from the abdomen for study.

The genus *Tomarus* was previously referred to in the literature as *Ligyris* Burmeister, but *Ligyris* was placed in junior synonymy with *Tomarus* by Ratcliffe (2002, 2003).

***Tomarus adoceteus* Ratcliffe and Cave,  
new species**  
(Fig. 10-12)

**Type Material.** Holotype male, labeled “Roy Soc-CIG Expdn./Little Cayman, BWI/Pirates’ Point/house light/31.7.1975. R. R. Askew//BM 1981/342” (hand written)/ our red holotype label. Allotype female with same data but date of 9.8.1975 and our red allotype label. Single male paratype and single female paratype with same data as allotype and with our yellow paratype labels. Female paratype labeled “WEST INDIES: Cayman Is./Grand Cayman/VI-1992 coll. P. Fitzgerald/blacklight trap” and with our yellow paratype label. Female paratype labeled “Grand Cayman Is. B. W. I./Georgetown/16 Sept. 1973/E. J. Gerberg//at black light” and with our yellow paratype label. Holotype and allotype deposited at The Natural History Museum, London (BMNH). Paratypes deposited in the Florida State Collection of Arthropods, Gainesville, FL (FSCA) and the B. C. Ratcliffe collection, Lincoln, Nebraska (BCRC).

**Holotype.** Male. Length 22.1 mm; width 12.1 mm. Color black. **Head:** Frons coarsely rugose, rugae transversely curved; vertex at center with small,



**Figure 10-12.** *Tomarus adoceteus* Ratcliffe and Cave, new species. 10) Habitus. 11-12) Parameres.



subtriangular, smooth, shining area. Frontoclypeal region with low, transverse tubercle either side of middle, tubercles broadly separated, laterad of clypeal teeth. Clypeus with surface sparsely, transversely rugose; apex broadly truncate, with 2 small teeth, teeth weakly reflexed. Interocular width equals 3.5 transverse eye diameters. Antenna 10-segmented, club subequal in length to segments 2-7. Mandibles with 2 apical teeth and a rounded lobe at base. **Pronotum:** Surface on disc with sparse, small punctures; punctures becoming moderate in size and density on sides and anterior fourth. Anterior margin with small, median tubercle. A small, longitudinally oblong fovea present behind tubercle, fovea about as wide as distance between frontoclypeal tubercles, surface within fovea rugose. Base lacking marginal bead. **Elytra:** Surface shagreened, with moderate to large, weakly ocellate punctures, punctures becoming larger laterally; 3 pairs of double rows of punctures poorly defined. **Pygidium:** Surface on center third nearly smooth, with small, sparse punctures; surface elsewhere densely rugopunctate. In lateral view, surface convex. **Legs:** Protibia tridentate, basal tooth slightly removed from others. Protarsus simple, not enlarged. Apex of metatibia subtruncate, with 10 stout, short spinules (some broken off, sockets visible). Apex of first tarsomere of metatarsus subtruncate. **Venter:** Prosternal process long, thick, columnar, setigerous at apex, apex longitudinally oval; setae long, reddish brown. **Parameres:** Fig. 11-12. The combination of narrow form, a long tooth projecting laterally at the midpoint of the shaft, and a narrowly elongate apex is unique among *Tomarus* species.



Figure 13. *Tomarus cuniculus* (Fabricius), habitus.

**Allotype.** Female. Length 21.7 mm; width 11.7 mm. Color dark reddish brown. As holotype, except in the following respects: **Head:** Entire surface transversely rugose. Occiput at center lacking smooth, shiny area. **Pronotum:** Fovea reduced to a shallow, short, longitudinal depression. **Pygidium:** Surface on center third with sparse, large punctures. In lateral view, surface nearly flat. **Legs:** Protibia with trace of fourth, basal tooth. Left posterior leg missing.

**Variation.** Males (1 paratype). Length 22.5 mm; width 12.4 mm. The male paratype does not differ significantly from the holotype.

Females (3 paratypes). Length 20.0-22.4 mm; width 10.3-12.2 mm. The female paratypes do not differ significantly from the allotype.

**Etymology.** From the Greek *adoketus*, meaning surprising or unusual. Used here as a noun in apposition, hence, *Tomarus*, the surprising one.

**Distribution.** *Tomarus adoceteus* is known only from Grand and Little Cayman Islands.

**Diagnosis.** *Tomarus adoceteus* is distinguished from other *Tomarus* species by the bidentate mandibles, simple protarsus in the males, first elytral interval sparsely punctate, apex of the metatibia with



about ten short spinules, and form of the male parameres which are especially distinctive. While other species may have parameres with one or two character states of narrow form, long tooth projecting laterally at the midpoint of the shaft, or narrowly elongated apex, none have this combination. This species is also slightly larger than the other three species of *Tomarus* that occur in the West Indies, and is the only one of the Caribbean species with bidentate, as opposed to tridentate, mandibles.

### ***Tomarus cuniculus* (Fabricius, 1801)**

*Tomarus cuniculus* (Fig. 13) is broadly distributed in the Caribbean region. It is recorded from Cuba, Hispaniola, Puerto Rico, Jamaica, St. Thomas, Barbados, Trinidad, and northeastern South America (Endrödi 1985); the Bahamas (Ratcliffe and Cave 2008); and southern Florida (Peck and Thomas 1998). The following specimens were collected between 1983 and 2009. Specimens were seen from FSCA.

**Grand Cayman:** Boatswain Point (Lime Tree Estate): September 1983 (1); Botanic Garden: June 2008 (1); Mastic Trailhead South: May 2009 (1); No data: September 1990 (1).

**Little Cayman:** Coot Marsh: May 2009 (2); Sandy Point: May 2009 (1); North Coast Road (0.1 km W jct. Olivine Kirk Drive): May 2009 (1).

## **Tribe Oryctini**

### ***Strategus* Kirby, 1828**

The genus *Strategus* contains 33 extant species (Ratcliffe 1976; Delgado 1997; Morón and Nogueira 2008). Fourteen species are indigenous to the West Indies, five species occur in the United States, 11 species in Mexico, five species in Central America, and nine species are found in South America extending as far as central Argentina.

*Strategus* species are distinguished from species in other genera in the tribe Oryctini by the following combination of characters: mandibles exposed with apex bidentate and with a prominent basal lobe; head lacking horns; pronotum usually foveate and at least tuberculate subapically and with horns or prominent bosses in males; protibia quadridentate; and apex of metatibia with three teeth. Ratcliffe (1976) provided a revision of the genus.

Life history information for most *Strategus* species is lacking. Adults are nocturnal and attracted to lights. A few species have, historically, been minor pests of coconut and oil palms, especially in areas of new cultivation that had recently replaced natural forest habitat. The larvae live in the wood of rotting trees and in concentrations of rich organic debris in the soil.

### ***Strategus caymani* Ratcliffe, 1976**

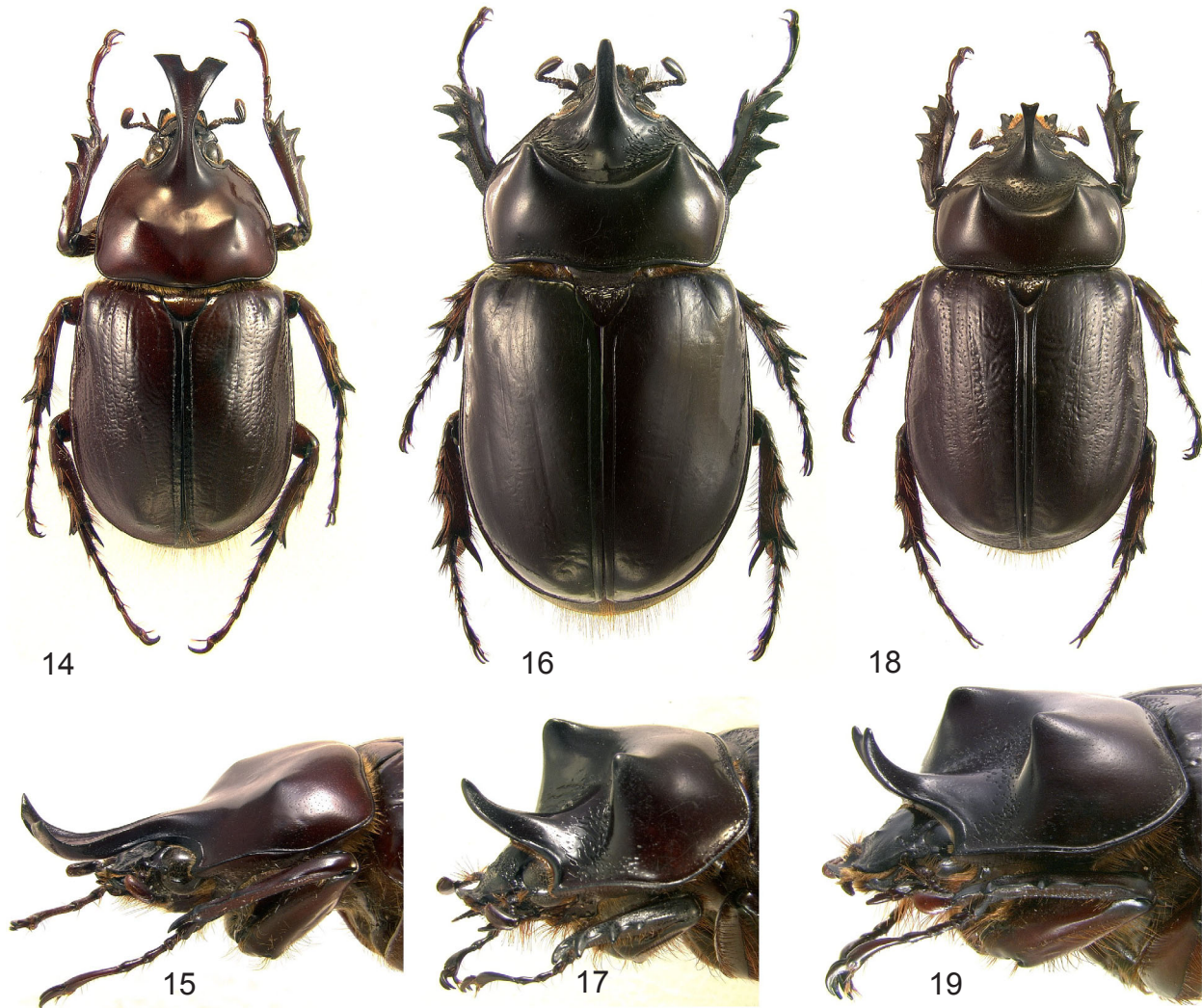
*Strategus caymani* (Fig. 14-15) is known only from Little Cayman and Cayman Brac (Ratcliffe 1976), and most of the specimens listed below were collected in 1938 by the Oxford University Expedition. This species is similar to *S. talpa* (Fabricius), but it lacks a distinct pronotal fovea, whereas *S. talpa* has a fovea. Additionally, the parameres have a pronounced preapical angulation and a narrowly rounded apex in *S. caymani*, but the angulation is nearly obsolete and the apex is broadly rounded in *S. talpa*. Specimens were seen from BCRC, BMNH, CMNC, FSCA, RHTC, USNM.

**Little Cayman:** South coast of South Town: May 1938 (15).

**Cayman Brac:** North coast of Stakes Bay (west end of Cotton-tree land): May 1938 (6); Major Donald Drive (0.6 km E Jct. Ashton Reid Drive): June 2008 (1); Brac Parrot Reserve: May 2009 (1).

### ***Strategus oblongus* (Palisot de Beauvois, 1807)**

*Strategus oblongus* (Fig. 16-17) also occurs on Hispaniola and Puerto Rico. The specimens from Grand Cayman and Cayman Brac are interesting because of the gap in distribution. Some were collected in the 1938 Oxford University expedition. The prevailing winds, currents, and storm paths could account for specimens being transported to Grand Cayman from a Hispaniola source. It is yet uncertain if *S.*



**Figure 14-19.** *Strategus* spp. 14-15) *Strategus caymani* Ratcliffe. 16-17) *Strategus oblongus* (Palisot de Beauvois). 18-19) *Strategus talpa* (Fabricius).

*oblongus* is established in the Caymans, but the recent collection of specimens provides evidence of such. Specimens were seen from BMNH, FSAC, RHTC.

**Grand Cayman:** Botanic Garden: June 2008 (4); West end of Georgetown: May 1938 (1), July 1938 (4); Georgetown: June 2008 (2); Mastic Trailhead South: May 2009 (1).

**Cayman Brac:** Brac Paradise Subdivision: May 2009 (1).

### ***Strategus talpa* (Fabricius, 1792)**

*Strategus talpa* (Fig. 18-19) is known from Puerto Rico, the Virgin Islands, Antigua, St. Barthélemy, and probably other islands in the Leeward Islands (Ratcliffe 1976). The specimens reported here were collected in 2009. This species is similar to *S. caymani*, but it has a distinct pronotal fovea, whereas *S. caymani* does not. Additionally, the parameres have only a slight preapical angulation and a broadly rounded apex in *S. talpa*, but the angulation is pronounced and the apex is more attenuate in *S. caymani*. Specimens were seen from FSAC.

**Grand Cayman:** Georgetown: May 2009 (4).

**Tribe Phileurini*****Caymania* Ratcliffe and Cave, new genus**

**Type Species.** *Caymania nitidissima* Ratcliffe and Cave, new species, here designated.

**Description.** Scarabaeidae: Dynastinae: Phileurini. Form elongate-oval, slightly flattened dorso-ventrally, pronotum widest at middle. Length 9.5-11.5 mm. Color dark reddish brown, almost black, strongly shining. **Head:** Surface lacking tubercles, instead with low, transverse carina; carina broadly interrupted at middle. Clypeus triangular, apex acute, reflexed. Eyes small, interocular width equals 9.0 transverse eye diameters. Antenna 10-segmented, antennomeres stout, club subequal in length to segments 2-7. Mandibles arcuate on lateral edge, apex acute. **Pronotum:** Surface evenly convex, lacking median furrow. Base with marginal bead. **Elytra:** Surface with weak rows of minute to small punctures, striae absent. **Pygidium:** Surface with sparse, minute punctures. In lateral view, surface in males weakly convex in basal half, strongly convex (almost protuberant) in apical half, surface in females weakly convex. **Legs:** Protibia tridentate, teeth subequally spaced. Apex of metatibia with upper angle prolonged into sharp tooth. Apex of first tarsomere of metatarsus prolonged into long spine. **Venter:** Prosternal process moderately tall, thick, apex broadly rounded. Last sternite impunctate. **Parameres:** Form symmetrical.

**Diagnosis.** *Caymania* is distinguished from other phileurine genera, especially *Hemiphileurus* Kolbe to which it is probably most related, by mandibles entire (not toothed), clypeus acuminate, absence of tubercles on the frons, absence of a pronotal furrow, absence of elytral striae, presence of transverse carinae on the metatibiae, small size (less than 12 mm), and highly polished surface of the body. There are eight species of *Hemiphileurus* in the West Indies (Ratcliffe and Ivie 1998), but none occur on the Cayman Islands. The species of *Caymania*, along with the two species of *Microphileurus* Kolbe from South America, are the smallest of the New World Phileurini.

**Etymology.** Named in reference to the Cayman Islands, to which it is endemic. The name *Caymania* is feminine.

***Caymania nitidissima* Ratcliffe and Cave, new species**

(Fig. 20-22)

**Type Material.** Holotype male, labeled "Roy Soc-CIG Expdn./Little Cayman, BWI/Central Forest/22-7-1975. R. R. Askew //BM 1981/342" (hand written) and with our red holotype label. Allotype female, labeled "Roy Soc-CIG Expdn./Little Cayman, BWI/Transect 2/under stone/30-7-1975. R. R. Askew //BM 1981/342" (hand written) and with our red allotype label. Single female paratype labeled "Roy Soc-CIG Expdn./Little Cayman, BWI/Mid island ironshore/N of airstrip/27-7-1975. R. R. Askew //BM 1981/342" (hand written) and with our yellow paratype label. Holotype and allotype deposited at The Natural History Museum, London (BMNH). Paratype deposited in the B. C. Ratcliffe collection, Lincoln, Nebraska (BCRC).

**Holotype.** Male. Length 9.8 mm; width 4.87 mm. Color dark reddish brown, almost black, strongly shiny everywhere. **Head:** Surface with small, sparse punctures and with low, transverse carina; carina broadly interrupted at middle. Clypeus triangular, apex acute, reflexed, with small carina extending obliquely from apex on each side to transverse, frontoclypeal carina. Interocular width equals 9.0 transverse eye diameters. Antenna 10-segmented, antennomeres stout, club subequal in length to segments 2-7. Mandibles arcuate on lateral edge, apex acute. **Pronotum:** Surface evenly convex, with moderately dense micropunctures, punctures slightly larger near lateral margins. Base with marginal bead. **Elytra:** Surface with weak rows of minute to small punctures, 2 short rows of moderately sized punctures behind apical umbone. **Pygidium:** Surface with sparse, minute punctures. In lateral view, surface weakly convex in basal half, strongly convex (almost protuberant) in apical half. **Legs:** Protibia tridentate, teeth subequally spaced, apical 2 teeth long. Apex of metatibia with upper angle prolonged into sharp tooth, with 7 stout spinules below tooth. Apex of first tarsomere of metatarsus prolonged into long spine. **Ven-**



**ter:** Prosternal process moderately tall, thick, apex broadly rounded. Last sternite virtually impunctate. **Parameres:** Fig. 21-22. Form symmetrical, apices arcuate, broadly rounded, apices of inner lobes symmetrical and broadly rounded.

**Allotype.** Female. Length 11.2 mm; width 5.5 mm. As holotype, except in the following respects: **Head:** Frons with punctures slightly larger, denser. **Pygidium:** In lateral view, surface weakly convex.

**Variation.** Females (1 paratype). Length 10.6 mm; width 5.0 mm. The single female paratype does not differ significantly from the allotype, except that the punctures of the pygidium are moderately dense and slightly larger.

**Etymology.** Derived from the Latin word *niteo*, meaning shiny or polished and here used in the superlative form, *nitidissima*, to indicate *very* shiny or polished in reference to the incredibly smooth dorsal surface.

**Distribution.** *Caymania nitidissima* is known only from Little Cayman.

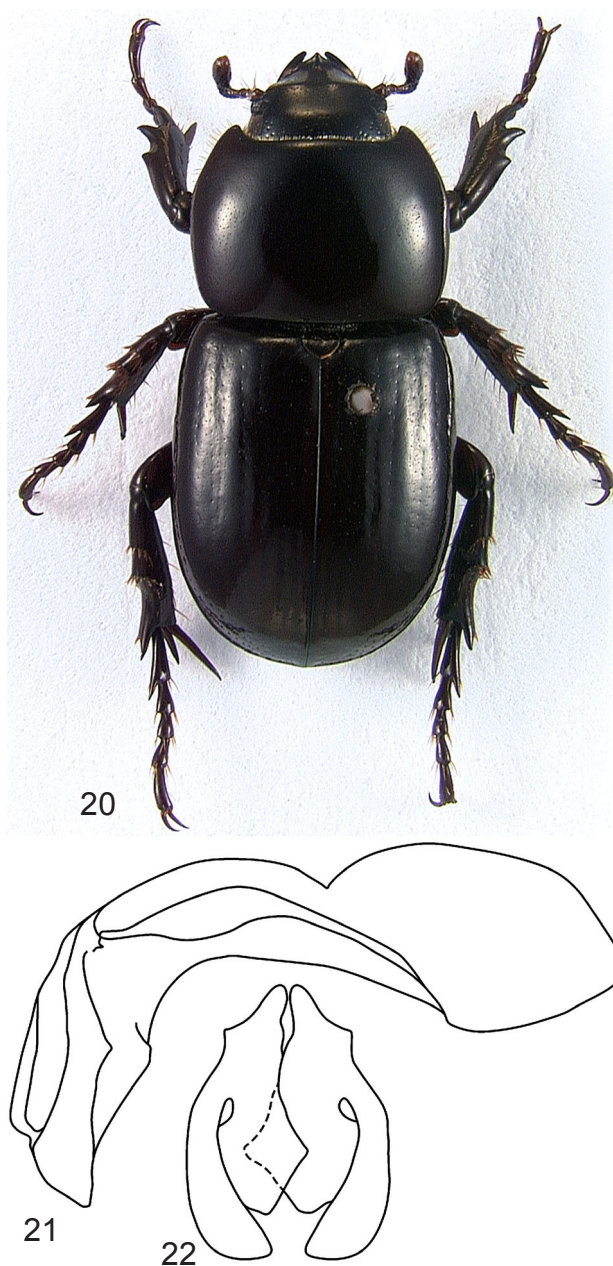
**Diagnosis.** See the generic diagnosis. The parameres resemble those of *Hemiphileurus cubensis* (Chalumeau), but the apices of the parameres in that species are subquadrate and not broadly rounded as in *C. nitidissima*, the body length is twice that of *C. nitidissima*, and the pronotum and elytra are sculptured as opposed to smooth.

### *Phileurus* Latreille, 1807

The genus *Phileurus* has 19 species (Endrödi 1985; Ratcliffe 1988) distributed from southeastern United States south to southern South America. One species, *Phileurus valgus* (Olivier), extends its range to the West Indies.

Species in the genus *Phileurus* are characterized by a sharply acuminate clypeus; outer side of the mandibles lacking teeth; pronotum with a longitudinal furrow, subapical tubercle, and fovea or declivous area; and the apical margin of the metatibia with the dorsal angle spiniformly produced into a large tooth but otherwise lacking teeth (except for *P. valgus* which has a second tooth). Most of the species are moderately large beetles, with only *P. valgus* dropping below 20 mm in length.

The life history for *Phileurus* species is largely unknown. Both adults and larvae have been collected from rotting logs and stumps where they probably feed on decaying wood and/or the fungi associated with it. Species of *Phileurus* are most typically encountered in lowland forests, but they have also been recorded from forests at 1,800 m elevation. The larval stage has been described for only two species in the genus, *P. didymus* (L.) and *P. valgus* (under the name *P. castaneus* [Haldeman]) (Ritcher 1966). Adults are attracted to lights at night. *Phileurus* was reviewed by Endrödi (1985).



**Figure 20-22.** *Caymania nitidissima* Ratcliffe and Cave, new species. **20)** Habitus. **21-22)** Parameres.

***Phileurus valgus antillarum* Prell, 1912**

*Phileurus valgus* (Fig. 23) is an abundant scarab that occurs from southern United States to Argentina and the West Indies (Endrödi 1985; Ratcliffe and Cave 2006). The West Indian population, *P. valgus antillarum*, is a valid subspecies because it is isolated from the nominate subspecies on the mainland. Specimens were seen from BMNH, FSAC, RHTC.

**Grand Cayman:** Botanic Garden: June 2008 (1); Georgetown (UCCI): June 2008 (1); Georgetown: May 2009 (1); Mastic Trailhead South: May 2009 (1); No locality: July 1992 (2).

**Little Cayman:** Central Forest: July 1975 (1).

**Cayman Brac:** Major Donald Drive (0.4 km E Jct. Ashton Reid Drive): May 2009 (2); Major Donald Drive (0.6 km E Jct. Ashton Reid Drive): June 2008 (2); Hemmington Road: May 2009 (1), June 2008 (1); No locality: June 2008 (1).

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**Figure 23.** *Phileurus valgus antillarum* Prell, habitus.

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