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**LIVING AND LATE HOLOCENE FOSSIL VERTEBRATES,  
AND THE VEGETATION OF THE COCKPIT COUNTRY, JAMAICA**

**BY**

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LIVING AND LATE HOLOCENE FOSSIL VERTEBRATES,  
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The Cockpit Country of west central Jamaica encompasses more than 500 km<sup>2</sup> of luxuriant forest that blankets a spectacular terrain of conical hills, valleys, caves, and escarpments (Fig. 1). These karst features are developed in the White Limestone Formation of mid-Eocene to mid-Miocene age (Arden, 1975). The extent of the Cockpits is approximately 20 miles east-west and 10 miles north-south, and is more or less centered in Trelawny Parish. Portions extend briefly into St. James Parish (west) and into St. Elizabeth and Manchester parishes to the south. As yet, no roads transect the central Cockpits and, for the most part, even the periphery is sparsely settled. Consequently, the forest is remarkably pristine for the West Indies and stands in sobering contrast to Jamaica's largely crowded, cultivated and eroded landscape. Although endemic species of invertebrates and amphibians are known from the Cockpits, the region remains poorly explored biologically.

In June 1983, we entered the southern Cockpits near the village of Quickstep, Trelawny Parish, with two goals in mind: to excavate cave sediments for vertebrate fossils and to describe the region's predominant species of plants and vertebrates. Our fossil locality was a large

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cave that had been located by Crombie in 1971 during his herpetological reconnaissance of the Cockpits (Crombie, 1977, 1986). Unlike many large caves in Jamaica that lost their paleontological potential to phosphate or bauxite mining during and since WWII, the cave found by Crombie was undisturbed. Known as Marta Tick Cave, it is isolated deep in the forest amid steep, inhospitable terrain approximately 8 km WNW of Quickstep. The cave is reached by an obscure 2 km trail that begins on the Cockpit Road 6 km north of Quickstep. Because daily trips to and from the village were not feasible, we established camp in the cave itself.

For three weeks we excavated sediment within the cave, while for the entire four weeks of our stay we also pursued our second goal, to make observations and collections of the plants and animals of the surrounding forest. Such a survey would allow interpretation of the fossil fauna as well as document the current status of the local biota. Specimens of fossil and living vertebrates were deposited in the collections of the National Museum of Natural History, Smithsonian Institution, and the San Diego Natural History Museum. Plant specimens were deposited in the herbaria of the University of the West Indies, Kingston, Jamaica, and the Department of Biological Sciences, University of California, Santa Barbara.

Considering that very few areas of undisturbed forest remain in Jamaica, or elsewhere in the Caribbean, our inventory of this relatively undisturbed portion of the Cockpits should be a reliable baseline for future comparisons. As seems to be the case for Amazonia (Roberts, 1988), the natural areas that are not saved in Jamaica within the next decade may be so damaged by the turn of the century that many species will be lost. With this in mind, we hope that the results of our survey of the very rich biota of the Cockpits will contribute to its preservation in a natural state.

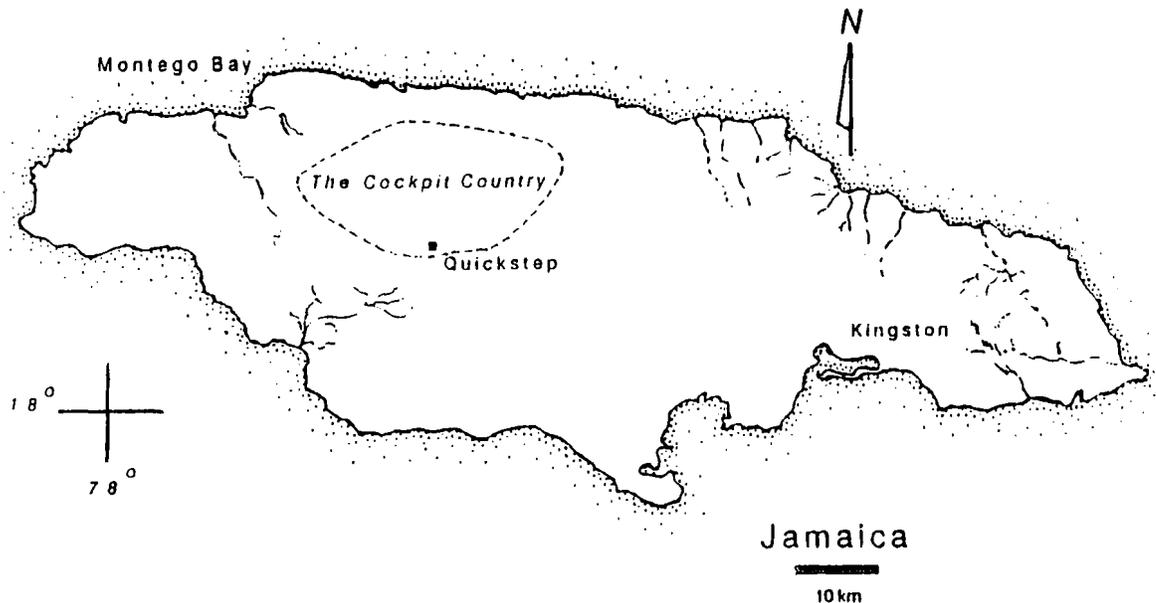


Figure 1. Jamaica, showing the general extent of the Cockpit Country.

## THE CAVE

The entrance of Marta Tick Cave is a large, semicircular opening, 11.3 m wide, on the southern face of a steep slope. The opening empties into a roughly circular main chamber about 15.5 m in diameter. At its highest, the ceiling reaches 7 m, and is scarred with shallow cavities that serve as roosting sites for Cave Swallows, *Hirundo fulva*. To the left (WSW) of the main chamber is a broad ledge approximately 1 m above the cave floor, 13 m wide, 8 m deep, and partially divided by a large flowstone pillar. To the right (NNE) is a massive, floor-to-ceiling flowstone wall that terminates near the entrance in a large pile of rock and rubble. The rear wall of the main chamber forms from the gradually sloping ceiling; to the west and north two main passages lead into the deep recesses of the cave. After our visit in 1983, the cave was mapped in detail by a party from the National Speleological Society, and most of the 800 m of passage are now known (Baker et al., 1986).

## CAVE EXCAVATION

After an extensive search for surface remains, six test pits were dug in selected areas of the main chamber where dry sediment had accumulated. Test pits measured 1' x 3' and were excavated to varying depths depending on the quality and thickness of the sediment. Sediment was passed simultaneously through 1/4" and 1/16" mesh screens. The deepest test pits were near the middle of the chamber floor. They were poorly stratified with an upper layer 10-12" thick of powdery reddish brown sediment, below which was 18-24" of dense, yellowish brown loam that rested on bedrock or breccia. Most of the test pits did not yield great numbers of fossils. The most productive fossil-producing areas of the cave were several pockets at the back of the broad ledge that extends northwest from the main chamber against the north wall. One of these pockets was packed with bone in a crystalline sandy matrix, 15-20 cm thick, about 7' wide, and cemented with countless aggregates of osteoderms--the bony scales of diploglossine lizards. This site produced over 200 lbs of screened, concentrated matrix. The second most productive site was another pocket at the back of the same ledge, about 6 m west of the first pocket. Radiocarbon ages on charcoal were obtained from both of these deposits.

## SAMPLING PLANTS AND VERTEBRATES

Our 1983 excursion into the Cockpits coincided with the advent of summer rains, which produced conditions ideal for vertebrate activity, especially amphibians. At this time of year, however, the rugged limestone terrain is muddy and difficult to traverse, and the forest abounds in mosquitoes and biting insects.

We collected plant specimens along transects that radiated from the cave entrance, and at five other sites within the forest at distances of 70 to 300 m from the cave. At six sites within 150 m of the cave, we erected one or two 12 m mist nets to capture birds and bats. The nets were monitored hourly during daylight hours, and from four to five times after dark. Bats were also netted at the cave entrance during twilight.

Amphibians and reptiles were collected during the day and at night, usually by turning rocks and logs, examining bromeliads, and systematically searching perch sites and leaf litter adjacent to the trails and transects.

## RESULTS

### 1. Vertebrate Fossils

In the laboratory, thousands of bones and fragments were recovered from the concentrated matrix. Radiocarbon ages on wood charcoal were obtained from the University of Arizona Laboratory of Isotope Geochemistry, as follows: pocket 1)  $770 \pm 70$  years BP (A-4087), pocket 2)  $20 \pm 70$  years BP (modern; A-4088). Although most of the fossil bones are well mineralized, the composition of species represented by them further suggests that the bones were deposited within late Holocene times and accord with the radiocarbon ages. For example, there are no species of heptaxodontid rodents, which are known from late Pleistocene sites elsewhere in Jamaica (MacPhee, 1984), nor are there flightless ibises, which have been associated with the extinct primate *Xenothrix* at Long Mile Cave, Trelawny Parish (Olson and Steadman, 1977). Practically all of the fossils represent species that can be found in or about the southern Cockpits today, and no further comment on them is made here (Table 1). There are, however, a few interesting exceptions.

Nearly 90% of the paleofauna consists of squamate reptiles, the majority of which are lizards. Noteworthy is a giant galliwasp represented by cranial and postcranial elements which possibly is referable to *Celestus occiduus*. This lizard presumably has become extinct within this century. When he wrote *The Herpetology of Jamaica* with W. Gardner Lynn in 1940, Chapman Grant insisted that they still existed, a view opposed by other authors (Barbour, 1910; Cousens, 1956; Schwartz, 1970, 1971). Grant offered no locality information. In the Marta Tick paleofauna, the large *Celestus* is abundant, although the minimum number of individuals and frequency relative to other taxa have not been calculated.

Few preserved specimens of *Celestus occiduus* exist in museum collections (only three in North America), and the species' original distribution on Jamaica is unclear. Barbour (1910) discussed three specimens that supposedly came from Mandeville, and Gosse (1851) noted only that they were to be found in the Great Morass of Westmoreland Parish, where they provoked fear and disgust among locals. Males of *C. occiduus* collected in the 19th century attained a snout-vent length of 305 mm (Schwartz, 1971). Many of the fossils from Marta Tick Cave represent individuals at least this size.

A second fossil lizard of interest from Marta Tick Cave is the extinct tropidurid *Leiocephalus* cf. *L. jamaicensis*. This species was known previously only by fossils from Dairy Cave and Montego Bay Airport Cave on the north coast, and from the Portland Ridge Caves southwest of Kingston (Etheridge, 1966). More than one species, however, may be represented by these fossils (Pregill, in press), including *L. jamaicensis*. We found scattered remains of *Leiocephalus* in various layers of sediment, but of more interest were the unmineralized bones recovered from

the cave floor. These essentially contemporaneous skeletal remains suggest that *Leiocephalus* survived until very recently, probably historically, but was never detected by the early European naturalists that explored Jamaica. Such was the case for other extinct species of *Leiocephalus* that are known from Holocene deposits in the Lesser Antilles (Pregill et al., 1988; Pregill, in press).

Because *Leiocephalus* was a recent resident of the Cockpits, we might infer that the species itself (be it *jamaicensis* or something else) was much more mesophytic than most other species of the genus. Although it is highly unlikely that the humid climate and lush vegetation of the southern Cockpits have changed significantly in the past few hundred years, *Ameiva dorsalis*, another open-country species of lizard, also occurs in the Marta Tick deposits but is found nowhere near the Cockpits today. Hence, there is some faunal evidence to suggest that the presently dense primary forest of the Cockpits might in fact be of recent origin.

The scant fossil record of birds from Jamaica includes an extinct flightless ibis (*Xenicibis xympithecus*), an extinct or extirpated large hawk (Accipitridae sp.), the extirpated Burrowing Owl (*Athene cunicularia*), and the extinct nightjar *Siphonorhis americana* (Olson and Steadman, 1977, 1979). Only ten avian fossils were recovered from Marta Tick Cave. They represent at least five species, as follows: a manus phalanx of *Geotrygon versicolor* (Crested Quail Dove), a carpometacarpus of *Columba inornata* (Plain Pigeon), a tarsometatarsus of *Turdus auran-tius* (White-chinned Thrush), a humerus of *Turdus jamaicensis* (White-eyed Thrush), a mandible of *Loxigilla violacea* (Greater Antillean Bullfinch), and five unidentified postcranial bones of passerines (a humerus the size of *Euneornis campestris*, a coracoid and two humeri the size of *Icterus leucopteryx*, and a carpometacarpus the size of *Spindalis zena*). Each of the five fossil species still occurs in the vicinity of the cave except *Columba inornata*, which we were unable to locate in April 1978 or June–November 1983.

Mammalian fossils from Marta Tick Cave consist of rodents and bats. The rodent material includes cranial and postcranial elements of the Jamaican cony, *Geocapromys browni*, a caviomorph rodent apparently now uncommon in the Cockpits, and bones of an extinct rice rat, *Oryzomys palustris*. Fossils of bats were present in limited numbers and, though not fully identified, most likely represent species currently inhabiting the cave and other nearby habitats (Table 4).

## 2. Modern Vertebrates

The amphibian fauna in the vicinity of Marta Tick Cave (Table 2), as discussed by Crombie (1977, 1986), consists of hylid and eleuthero-dactyline frogs. Of the former, *Osteopilus brunneus* was calling commonly from the forest canopy. *Eleutherodactylus cundalli* and *E. grabhami* were common on rocks and saplings, whereas *E. pantoni* was more abundant near the ground. There are two species of tiny leaf-litter frogs endemic to the area, *E. griphus* and *E. sisypodemus*. Both were described by Crombie (1977, 1986) with *E. griphus*, based in part on material we obtained in 1983.

Four species of *Anolis* were collected near Marta Tick Cave (Table

2), but only *A. opalinus* and *A. lineatopus* were conspicuously present. But for a few leaf-litter geckos (*Sphaerodactylus goniorhynchus*), no ground-dwelling lizards were found in 1983.

We recorded 60 species of birds from the Quickstep region of the Cockpits (Table 3). Although many species that inhabit the primary forest also occur in second-growth forests, most of these species seldom or never nest in second-growth habitats, being dependent upon primary forest for long-term survival. The diversity of fruiting trees in the primary forest is exploited by various pigeons and doves (Davis et al., 1985) as well as parrots and thrushes, some of which also feed seasonally on fruiting trees in disturbed habitats. The avifauna of the primary forest region near Marta Tick Cave differs qualitatively from that of disturbed habitats near the Quickstep road. For example, primary forest species such as *Geotrygon versicolor*, *Columba caribaea*, *Vireo osburni*, and *Nesopsar nigerrimus* are absent or very rare near the road, whereas near the cave we never found *Zenaida aurita*, *Columbina passerina*, *Crotophaga ani*, *Anthracothorax mango*, *Tyrannus dominicensis*, *Mimus polyglottos*, or *Tiaris olivacea*. Before people cleared much of the forest along the Quickstep road, probably all of the species that prefer fields and/or second growth were uncommon or absent north of Quickstep village. North American migrant birds, in particular six species of parulid warblers, were absent from the Cockpits in June 1983, but comprised 14 of 48 birds netted during 22-25 November 1983.

Seven species of bats were collected within the study area, three of which were netted at the mouth of Marta Tick Cave (Table 4). *Pteronotus p. parnelli* was easily the most numerous of the cave residents.

### 3. Vegetation

The flora of the Cockpit Country is rich and includes a large proportion of endemic species, yet there are few published studies on the floristics and vegetation (Asprey and Robbins, 1953; Harvey et al., 1988; Kelly et al., 1988). In fact, there is no reliable list of vascular plants of the region, and important records undoubtedly await discovery. For example, in 1985 we found several fruiting trees that fit the description of *Ocotea martinicensis*, a species collected only once from Jamaica in 1907, and for which Adams (1972) found no other evidence of its occurrence on the island.

Marta Tick Cave is situated on a heavily forested, nearly vertical hillside. Within a 300 m radius of the cave we collected or identified 103 species of plants representing 45 families (Adams, 1972; Table 5). The forest is structured as a mature, closed canopy with a relatively sparse understory. Here and there are patches of second-growth trees with semi-open canopies. The height of the closed canopy ranges from 9 to 12 m with emergent species to 32 m. Among the predominate canopy species are *Oxandra lanceolata* ("Lancewood"), *Bauhinia divaricata* ("Moco john"), *Terminalia latifolia* ("Broadleaf"), *Nectandra antillana* ("Sweetwood"), *Micropholis rugosa* ("Beefwood"), *Trichilia* spp. ("Bloodwood"), and *Guarea swartzii* ("Mosswood"). Typical successional species consist of *Miconia rigida*, *M. laevigata* ("Johnny Berry"), *Piper amalago* ("Black giant"), *Eugenia* spp. ("Rodwood"), and *Fagara martinicensis* ("Prickly yellow"). Common vines include *Vitis tiliifolia* ("Water withe"), *Cissus*

*sicyoides* (" pudding withe"), and *Syngonium auritum* ("Five finger"). Of ferns, *Thelypteris* spp. is common.

#### SUMMARY

Throughout the West Indies very few large tracts of undisturbed habitat remain. Thus, it is important to tabulate what we have learned about the flora and fauna of the Cockpit Country, a unique relict of West Indian forest habitat. As field biologists, we are heartened by those governments and policy makers who recognize that tropical biotas can no longer tolerate exploitation at the rate that has gone on during the past two centuries. That human encroachment is affecting the Cockpits as well can be seen in the differences between the avifauna near the village of Quickstep and the Quickstep Road versus that of the primary forest near the cave.

The fossil record of vertebrates from the West Indies has demonstrated how rapidly prehistoric human settlement of the islands can affect an indigenous flora or fauna (e.g., Steadman et al., 1984; Pregill et al., 1988). The fossil fauna from Marta Tick Cave did not reveal the antiquity or diversity of species that one would hope for in a glimpse of the late Pleistocene or early Holocene, thousands of years prior to human settlement of Jamaica. Yet the bones from Marta Tick Cave show that some elements of the vertebrate fauna have been lost in the past 100 years--giant diploglossines, *Ameiva* cf. *A. dorsalis*, *Leiocephalus* cf. *L. jamaicensis*, *Columba inornata*, and *Oryzomys palustris*. Whatever the causes, their disappearance underscores the delicate complexity of the Cockpit flora and fauna, about which much remains to be learned.

#### ACKNOWLEDGEMENTS

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Table 1. Late Holocene Fossil Vertebrates from Marta Tick Cave, Trelawny Parish, Jamaica.

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ANURA

Hylidae

*Osteopilus brunneus*

*Hyla* spp.

Leptodactylidae

*Eleutherodactylus* spp.

SAURIA

Anguidae

*Celestus* cf. *C. occiduus*

*Celestus* species A

*Celestus* species B

Gekkonidae

*Aristelliger* sp.

*Sphaerodactylus* sp.

Polychridae

*Anolis* sp. A

*Anolis* sp. B

*Anolis* sp. C

Tropiduridae

*Leiocephalus* cf. *L. jamaicensis*

Teiidae

*Ameiva* cf. *A. dorsalis*

OPHIDIA

Typhlopidae

*Typhlops* sp.

Tropidophidae

*Tropidophus* cf. *T. haitianus*

Colubridae

*Arrhyton* sp.

AVES

Columbidae

*Geotrygon versicolor*

*Columba inornata*

Turdidae (Muscicapidae)

*Turdus aurantius*

*Turdus jamaicensis*

Fringillidae

*Loxigilla violacea*

MAMMALIA

Chiroptera

≥ three species

Capromyidae

*Geocapromys browni*

Cricetidae

*Oryzomys palustris*

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Table 2. Amphibians and Reptiles of the Cockpit Country, Trelawny Parish, Jamaica.

- \* = forest species (i.e., resident but not necessarily restricted)  
 ? = unconfirmed or distribution unclear

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ANURA

Bufonidae

*Bufo marinus* (margins only)

Hylidae

\* *Osteopilus brunneus*

\* *O. crucialis*

\* *O. new sp.*

\* *Hyla marianae*

\* *H. wilderi*

Leptodactylidae

\* *Eleutherodactylus cundalli* (semi-arboreal; also caves and rocks)

? *E. fuscus* (paratype from Quickstep, but see Crombie [1986])

? *E. gossei* (mostly margins, but some heard calling in Cockpits)

\* *E. grabhami* (mostly petricolous)

\* *E. griphus* (endemic to central Cockpits; leaf litter)

\* *E. jamaicensis* (calling commonly in deep forest)

*E. johnstonei* (margins only)

\* *E. junori* (crown lands of SE Cockpits)

*E. luteolus* (Quickstep road only; leaf litter)

\* *E. pantoni* (leaf litter)

\* *E. sisypodemus* (endemic to central Cockpits; leaf litter)

SAURIA

Gekkonidae

? *Aristelliger praesignis* (peripheral)

*Sphaerodactylus argus* (Quickstep)

\* *S. goniorhynchus*

? \* *S. oxyrhinus* (bromeliads)

? \* *S. semasiops* (endemic to cockpits; bromeliads)

Polychridae

\* *Anolis garmani*

*A. grahami* (Quickstep and margins)

\* *A. "lineatopus"* (*A. l. neckeri*-like; possibly distinct)

\* *A. opalinus*

*A. sagrei* (Quickstep and margins only)

*A. valencienni* (Quickstep)

Anguidae

\* *Celestus barbouri*

? *C. crusculus*

? *C. hewardi*

*C. fowleri* (Windsor endemic)

Table 2. Amphibians and Reptiles (Continued)

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SERPENTES

Typhlopidae

*Typhlops jamaicensis* (marginal, possible records near Windsor)

Boiidae

\* *Epicrates subflavus*

Tropidophiidae

? *Tropidophis haetianus*

Colubridae

? *Alsophis ater*

? *Arrhyton funereus*

TESTUDINES

*Trachemys terrapen* (margins; in streams and rivers of western Cockpits, but probably also near Balaclava near S. edge)

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Table 3. Birds of the Quickstep Region of the Cockpits, Jamaica, June and November 1983. Many fewer observations and collections were made in November than in June.

\* = North American migrant; status based on November observations only  
 C = common (seen or heard virtually every day)  
 U = uncommon (seen or heard less than every day)  
 af = aerial soarer or feeder, generally above canopy  
 f = inhabits fields  
 pf = inhabits primary forest  
 sg = inhabits second-growth forest or edges of primary forest

<i>Species</i>	Common Name	Status
Cathartidae		
<i>Cathartes aura</i>	Turkey Vulture	C,af
Accipitridae		
<i>Buteo jamaicensis</i>	Red-tailed Hawk	U,af
Falconidae		
<i>Falco sparverius</i>	American Kestrel	U,af
Columbidae		
<i>Zenaida aurita</i>	Zenaida Dove	U,sg,f
<i>Leptotila jamaicensis</i>	White-bellied Dove	U,pf,sg
<i>Geotrygon montana</i>	Ruddy Quail Dove	C,pf,sg
<i>Geotrygon versicolor</i>	Crested Quail Dove	U,pf
<i>Columba caribaea</i>	Ring-tailed Pigeon	C,pf
<i>Columba leucocephala</i>	White-crowned Pigeon	U,sg
<i>Columbina passerina</i>	Common Ground Dove	C,f
Psittacidae		
<i>Amazona collaria</i>	Yellow-billed Parrot	C,pf
<i>Amazona agilis</i>	Black-billed Parrot	C,pf
<i>Aratinga nana</i>	Olive-throated Parakeet	C,pf,sg
Cuculidae		
<i>Hyetornis pluvialis</i>	Chestnut-bellied Cuckoo	C,pf,sg
<i>Saurothera vetula</i>	Jamaican Lizard Cuckoo	U,pf,sg
<i>Crotophaga ani</i>	Smooth-billed Ani	C,sg,f
Tytonidae		
<i>Tyto alba</i>	Common Barn-Owl	U,pf,sg,f
Strigidae		
<i>Pseudoscops grammicus</i>	Jamaican Owl	U,pf,sg
Caprimulgidae		
<i>Chordeiles gundlachii</i>	Antillean Nighthawk	U,af
Apodidae		
<i>Streptoprocne zonaris</i>	Collared Swift	U,af
<i>Cypseloides niger</i>	Black Swift	U,af
<i>Tachornis phoenicobia</i>	Antillean Palm Swift	U,af

Table 3. Birds of the Quickstep Region (Continued)

<i>Species</i>	Common Name	Status
Trochilidae		
<i>Anthracothorax mango</i>	Jamaican Mango	U,sg,f
<i>Trochilis polytmus</i>	Streamertail	C,pf,sg
<i>Mellisuga minima</i>	Vervain Hummingbird	U,pf,sg
Todidae		
<i>Todus todus</i>	Jamaican Tody	C,pf,sg
Picidae		
<i>Melanerpes radiolatus</i>	Jamaican Woodpecker	C,pf
Cotingidae		
<i>Platypsaris niger</i>	Jamaican Becard	U,pf,sg
Tyrannidae		
<i>Tyrannus dominicensis</i>	Gray Kingbird	U,f
<i>Tyrannus caudifasciatus</i>	Loggerhead Kingbird	C,sg
<i>Myiarchus stolidus</i>	Stolid Flycatcher	U,pf
<i>Myiarchus barbirostris</i>	Tom Fool	C,pf,sg
<i>Myiarchus validus</i>	Rufous-tailed Flycatcher	C,pf,sg
<i>Contopus caribaeus</i>	Greater Antillean Pewee	U,pf,sg
<i>Myiopagis cotta</i>	Yellow-crowned Elaenia	C,pf,sg
Hirundinidae		
<i>Hirundo fulva</i>	Cave Swallow	C,af
Corvidae		
<i>Corvus jamaicensis</i>	Jamaican Crow	C,af
Turdidae		
<i>Turdus aurantius</i>	White-chinned Thrush	C,pf,sg
<i>Turdus jamaicensis</i>	White-eyed Thrush	C,pf,sg
<i>Myadestes genibarbis</i>	Rufous-throated Solitaire	U,pf,sg
Vireonidae		
<i>Vireo altiloquus</i>	Black-whiskered Vireo	C,pf,sg
<i>Vireo modestus</i>	Jamaican White-eyed Vireo	C,sg
<i>Vireo osburni</i>	Blue Mountain Vireo	C,pf
Parulidae		
* <i>Mniotilta varia</i>	Black-and-White Warbler	C,pf,sg
* <i>Limnothlypis swainsonii</i>	Swainson's Warbler	U,pf,sg
* <i>Helmitheros vermivorus</i>	Worm-eating Warbler	C,pf
* <i>Dendroica caerulescens</i>	Black-throated Blue Warbler	C,pf,sg
<i>Dendroica pharetra</i>	Arrow-headed Warbler	C,pf,sg
* <i>Seiurus aurocapillus</i>	Ovenbird	C,pf,sg
* <i>Geothlypis trichas</i>	Common Yellowthroat	C,sg
<i>Coereba flaveola</i>	Bananaquit	C,sg
Thraupidae		
<i>Euphonia jamaica</i>	Jamaican Euphonia	C,pf,sg
<i>Spindalis zena</i>	Stripe-headed Tanager	U,pf,sg

Table 3. Birds of the Quickstep Region (Continued)

<i>Species</i>	Common Name	Status
Icteridae		
<i>Icterus leucopteryx</i>	Jamaican Oriole	C, pf, sg
<i>Nesopsar nigerrimus</i>	Jamaican Blackbird	U, pf
Emberizidae		
<i>Loxigilla violacea</i>	Greater Antillean Bullfinch	C, pf, sg
<i>Tiaris olivacea</i>	Yellow-faced Grassquit	C, sg, f
<i>Tiaris bicolor</i>	Black-faced Grassquit	U, sg, f
<i>Loxipasser anoxanthus</i>	Yellow-shouldered Grassquit	C, sg, f
<i>Euneornis campestris</i>	Orangequit	C, pf, sg, f

Table 4. Bats Collected in the Vicinity of Marta Tick Cave, Trelawny Parish, Jamaica, June 1983.

† = endemic to Jamaica

‡ = netted at entrance of Marta Tick Cave

‡ <i>Pteronotus p. parnellii</i>	18
‡ <i>Mormoops blainvillii</i>	2
<i>Macrotus waterhousii jamaicensis</i>	3
<i>Glossophaga soricina antillarum</i>	11
‡ <i>Monophyllus r. redmani</i>	5
† <i>Ariteus flavescens</i>	26
† <i>Phyllonycteris aphylla</i>	6

Table 5. Common Woody Plants in the Vicinity of Marta Tick Cave, Trelawny Parish, Jamaica. Nomenclature follows Adams (1972). Common names were provided by Mr. Menocal Stephenson of Quickstep, Jamaica.

<i>Species</i>	Common Name
Smilacaceae	
<i>Smilax balbisiana</i>	Chainy root
Dioscoreaceae	
<i>Dioscorea polygonoides</i>	Bitter jessie
<i>Dioscorea alata</i>	Greater yam, Renta yam
<i>Dioscorea rotundata</i>	Guinea yam
Araceae	
<i>Anthurium grandifolium</i>	Wild coco
<i>Philodendron scandens</i>	
<i>Philodendron lacerum</i>	
<i>Syngonium auritum</i>	Five finger
Palmae	
<i>Calyptronoma occidentalis</i>	Long thatch
Piperaceae	
<i>Piper amalago</i>	Black giant
<i>Piper hispidum</i>	Brown giant
<i>Pothomorphe umbellata</i>	Cow foot
Moraceae	
<i>Chlorophora tinctoria</i>	Fustic tree
<i>Trophis racemosa</i>	Ramoon
<i>Cecropia peltata</i>	Trumpet
<i>Ficus trigonata</i>	Black fig
<i>Ficus perforata</i>	Red fig
<i>Ficus maxima</i>	White fig
<i>Artocarpus altilis</i>	Breadfruit
Urticaceae	
<i>Boehmeria jamaicensis</i>	Doctor Johnson
Polygonaceae	
<i>Coccoloba tenuifolium</i>	Wild grape
<i>Coccoloba longifolia</i>	Long leaved grape
Amaranthaceae	
<i>Chamissoa altissima</i>	Basket withe
<i>Iresine diffusa</i>	Jubba bush
Nyctaginaceae	
<i>Neea nigricans</i>	Saltwood
<i>Pisonia aculeata</i>	Cockspur
<i>Guapira fragrans</i>	Beefwood
Cactaceae	
<i>Hylocereus triangularis</i>	Okra
Annonaceae	
<i>Xylopia muricata</i>	Odorwood
<i>Oxandra lanceolata</i>	Lancewood

Table 5. Common Woody Plants (Continued)

<i>Species</i>	Common Name
Lauraceae	
<i>Licaria triandra</i>	Pepperleaf sweetwood
<i>Nectandra antillana</i>	Sweetwood
<i>Nectandra patens</i>	Capberry sweetwood
<i>Nectandra coriacea</i>	Fine leaved sweetwood
<i>Ocotea leucoxylon</i>	Sweetwood
Menispermaceae	
<i>Hyperbaena prioriana</i>	Beef bone
Theaceae	
<i>Cleyera theaoides</i>	Damson
Quiinaceae	
<i>Quiina jamaicensis</i>	Mountain bay
Clusiaceae	
<i>Clusia flava</i>	Card gum
<i>Calophyllum calaba</i>	Santa Maria
<i>Mammea americana</i>	Mammee
Papaveraceae	
<i>Bocconia frutescens</i>	Celandine
Rosaceae	
<i>Prunus occidentalis</i>	Prune
<i>Prunus myrtifolia</i>	Goatwood
Caesalpinaceae	
<i>Bauhinia divaricata</i>	Moco John
<i>Peltophorum linnaei</i>	Braziletto
<i>Haematoxylum campechianum</i>	Nickal
Mimosaceae	
<i>Pithecellobium arboreum</i>	Tamarind
Papilionaceae	
<i>Piscidia piscipula</i>	Dogwood
<i>Andira inermis</i>	Wormwood
<i>Flemingia strobilifera</i>	Wild hops
Erythroxylaceae	
<i>Erythroxylum confusum</i>	Greenheart
Rutaceae	
<i>Fagara martinicensis</i>	Prickly yellow
<i>Fagara elephantiasis</i>	Yellow sanders
<i>Fagara flavum</i>	Walkerwood
<i>Spathelia sorbifolia</i>	Bernot
Simaroubaceae	
<i>Picrasma excelsa</i>	Bitterwood
<i>Simarouba glauca</i>	Bitter damson
<i>Picramnia antidesma</i>	Majoe bitter

Table 5. Common Woody Plants (Continued)

<i>Species</i>	Common Name
<b>Meliaceae</b>	
<i>Cedrela odorata</i>	West Indian cedar
<i>Swietenia mahagoni</i>	West Indian mahogany
<i>Trichilia hirta</i>	Wild mahogany
<i>Trichilia moschata</i>	Bloodwood
<i>Guarea swartzii</i>	Mosswood
<b>Euphorbiaceae</b>	
<i>Drypetes ilicifolia</i>	Rosewood (?)
<i>Ricinus communis</i>	Oil nut
<i>Omphalea triandra</i>	Pop nut
<i>Sapium jamaicense</i>	Blind eye
<b>Anacardiaceae</b>	
<i>Mangifera indica</i>	Mango
<i>Comocladia pinnatifolia</i>	Maiden plum
<b>Sapindaceae</b>	
<i>Exothea paniculata</i>	Wild guinep
<i>Blighia sapida</i>	Ackee
<i>Maytayba apetala</i>	Cobywood
<b>Staphyleaceae</b>	
<i>Turpinia occidentalis</i>	Drumwood
<b>Rhamnaceae</b>	
<i>Rhamnus sphaerospermus</i>	Cobo
<i>Ziziphus chloroxylon</i>	Wild cinnamon
<b>Vitaceae</b>	
<i>Vitis tiliifolia</i>	Water withe
<i>Cissus sicyoides</i>	Pudding withe
<b>Malvaceae</b>	
<i>Hibiscus elatus</i>	Mahoe
<i>Hibiscus clypeatus</i>	Congo mahoe
<b>Bombacaceae</b>	
<i>Ceiba pentandra</i>	Cotton tree
<b>Flacourtiaceae</b>	
<i>Caesaria guianensis</i>	Wild coffee
<b>Bixaceae</b>	
<i>Bixa orellana</i>	Anatto
<b>Combretaceae</b>	
<i>Terminalia latifolia</i>	Broadleaf
<b>Myrtaceae</b>	
<i>Pimenta dioica</i>	Pimento
<i>Psidium guajava</i>	Guava
<i>Eugenia</i> spp.	Rodwood
<i>Syzygium malaccense</i>	?

Table 5. Common Woody Plants (Continued)

<i>Species</i>	Common Name
<b>Melastomataceae</b>	
<i>Miconia rigida</i>	Johnny berry
<i>Miconia impetiolearis</i>	Bigleaf Johnny berry
<i>Miconia laevigata</i>	Johnny berry
<i>Clidemia erythropogon</i>	Wild Johnny berry
<b>Sapotaceae</b>	
<i>Manilkara excisa</i>	Sapodilla
<i>Manilkara sideroxylon</i>	Naseberry bullet
<i>Micropholis rugosa</i>	Beef apple
<i>Pouteria multiflora</i>	Galimenta
<b>Verbenaceae</b>	
<i>Lantana camara</i>	Sage
<b>Solanaceae</b>	
<i>Solanum torvum</i>	Gully bean
<i>Solanum erianthum</i>	Wild cucumber
<i>Capsicum frutescens</i>	Bird pepper
<b>Rubiaceae</b>	
<i>Antirhea jamaicensis</i>	Pigeonwood
<i>Faramea occidentalis</i>	Wild coffee
<b>Compositae</b>	
<i>Eupatorium villosum</i>	Bitter bush