8. THE TERRESTRIAL FAUNA (EXCLUDING BIRDS AND INSECTS) OF LITTLE CAYMAN

M.V. Hounsome

Abstract

Terrestrial animals were collected and observed by members of the Royal Society and Cayman Islands Government expedition to Little Cayman in July and August of 1975. A fauna list has been compiled and analysed with reference to the various habitat types. The sand beach ridge, with its associated human disturbance, and the marl facies with tall scrubland are by far the richest habitats, the latter being worthy of the special attention of conservationists.

Introduction

Stoddart (chapter 6) has described the terrestrial habitats of Little Cayman, which may be summarised as follows:-

1. Pool Lagoon
2. Sandbeach Ridge
3. Marl Facies with scrub
4. Marl Facies with tall scrub
5. Dwarf Mangrove
6. Tall Mangrove
7. *Sesuvium* Marsh
8. Dissected Bluff
9. *Evolvulus* Heath
10. Ironshore

The Pool Lagoon, *Sesuvium* Marsh and Ironshore and largely aquatic habitats were not intensively sampled for terrestrial animals, but the remaining seven habitat types were visited and the animals collected or recorded. The invertebrates were preserved in alcohol and the vertebrates were killed by an excess of narcotic ('Nembutal') and subsequently preserved in alcohol. The identifications were carried out, as far as possible at Manchester University, but many specimens

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had to be passed on to the British Museum (Nat. Hist.) for identification or confirmation; the pseudoscorpions and one species of crab (*Sesarma angustipes* Dana) had to be sent to Austria and the United States respectively for expert opinions. The specimens have all been retained by the Manchester Museum, or have been deposited in the British Museum (Natural History).

Methods

Collections of animals were made on daily visits to the various localities on Little Cayman (see appendix). Preliminary sorting and preservation was carried out after each visit. A record of grid references was made and likely sites identified on the map. Most of the collecting visits were made together with other members of the expedition, so that a wide variety of sites were covered. Notes of sightings in the field were made so as to supplement the records from collected specimens; this was especially useful for the reptiles and the most common molluscs.

Results

A complete list of the species found is given in table 7. Our knowledge of the molluscs of Little Cayman has been summarised by Clench (1964), and that of the amphibians and reptiles by Williams (1964, 1969) and Schwartz & Thomas (1975), but none of the other groups has received such a systematic treatment. Of the previously recorded reptiles, the gekko *Aristelliger praesignis* Boulenger, the snake *Tropidophis caymanensis parkeri* Grant and the crocodile *Crocodilus acutus* Cuvier were not seen in 1975. Of the molluscs the following five species on Clench's list were not found in 1975: *Acadia lewisi* Pilsbry, *Gastrocopta rupicola marginalba* (Pfeiffer), *G.pellucida* (Pfeiffer), *Pupoides albilabris* (Adams), and *Cecilioides iota* (Adams). On the other hand, three species of gastropod were added to Clench's list, viz. *Drepanotrema lucidum* (Pfeiffer), *Geomelania (Merrilliana) alemon* Pilsbry, and *Lamellaxis micrus* (d'Orbigny).

Discussion

Of the eighty one species recorded fifty six (69%) were present in only one of the seven habitat types, and seventy two (89%) were present in only one or two habitats. There were only five (6%) species (Mollusca: *Helicina fasciata* and *Cerion pannosum*; Amphibia: *Osteopilus septentrionalis* Reptilia: *Anolis maynardi* and *A.sagrei*) recorded from four or more habitats (appendix 2). This situation can be interpreted as meaning that most of the species are habitat specific, although insufficient sampling could produce similar figures, and negative records do not necessarily imply the absence of a species from a certain habitat. Several further visits would be needed before firm conclusions as to habitat specificity could be drawn.

From table 8 it may be seen that only three of the habitat types supplied more than ten different species. Of these, the dissected

Bluff was by far the most extensive and was consequently the most sampled. The number of recorded species per site (1.83) in this habitat type was only average, and it is possible that few further species remain to be discovered. By contrast, the two other types (the sandbeach ridge and the tall scrub) show a far greater diversity and probably harbour many more species than were recorded in 1975 (fig. 23).

The sandbeach ridge has been subject to much human disturbance in the form of house and road building, and coconut planting. The high diversity of the fauna can in large measure be attributed to this disruption, together with the introduction of species such as the rat (*Rattus rattus*) and the black widow spider (*Latrodectus mactans*). Further development of the sandbeach ridge would probably not greatly affect its faunistic nature, which may be regarded as artificial and of little intrinsic interest. This situation may be contrasted with that of the 'central forest', or marl facies with tall scrub, where the number of species is high for such faunistical impoverished island, and where sixteen species are found which do not occur in the other habitats. This area may be regarded as unique and of great biological value. It is to be hoped that this will be taken into account in any proposed developments on the island. In many ways Little Cayman may be regarded as an impoverished outpost of Cayman Brac, but this central forest area is of particular importance, and plans for its conservation should be made before any developments get under way.

The other important conservation area is the *Evolvulus* heath centred around grid 958746 north east of the airstrip. This is because of the unique occurrence of the snail *Cerion nanus* rather than the general faunistic importance of the area. This snail must be one of the rarest animals in the world, with only 87 individuals found in 1975, and a world distribution covering an area of about 600 sq. metres on the western end of Little Cayman (Hounsome & Askew, 1979). It is found only on the plant *Evolvulus arbuscula* which is not found on the other Cayman islands but which grows on Jamaica, Hispaniola, the Cuban Keys and the Bahamas. *Cerion nanus* is vulnerable to any developments in its area of Little Cayman and particular efforts should be made for its conservation. In the last resort, transporting the population to another island with *Evolvulus arbuscula* might have to be carried out, even though such a translocation is unlikely to be successful.

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Table 7. Terrestrial Fauna of Little Cayman, July and August 1975
(excluding birds and insects)

(Numbers refer to habitat type)			
	Mollusca		
	Gastropoda		
	Prosobranchia		
	Mesogastropoda		
1		Cerithididae	*Cerithidea costata* Da Costa
2,4,6,8		Pulmonata Helicinidae	*Helicina fasciata substriata* Grey
8			*Lucidella caymanensis* Pilsbry
3,6,8		Chondropomidae	*Chondropoma caymanbracense parvicaymanense* Pilsbry
8		Truncatellidae	*Geomelania (Merrilliana) alemon* Pilsbry
4,8		Planorbidae	*Drepanotrema lucidum* (Pfeiffer)
		Succineidae	*Succinea latior* Adams (GRAND CAYMAN)
4,8		Strobilopsidae	*Strobilops (Discostrobilops) hubbardi* (Brown)
		Subulimidae	*Lamellaxis micrus* (d'Orbigny)
4		Oleacinidae	*Varicella caymanensis* Pilsbry
4			*Melaniella gracillima* (Pfeiffer)
			? *Spiraxis* sp.
4		Sagdidae	*Lacteoluna caymanbracensis* Pilsbry
4,6,8			*Proserpinula lewisi* Pilsbry
2,3,4,5,6,8,9		Cerionidae	*Cerion pannosum* (Maynard)
9			*Cerion nanus* (Maynard)
9		Urocoptidae	*Microceramus caymanensis* Pilsbry
4			*Brachypodella caymanensis* Pilsbry
3,8		Fruticolidae	*Hemitrochus streatori* Pilsbry
	Arthropoda		
	Chilipoda		
	Epimorpha		
	Geophilomorpha		
8		Geophilidae	*Leptophilus caribeanus* Chamberlin
	Scolopendromorpha		
4		Scolopendridae	*Cormocephalus* cf *impressus*
4		Cryptopidae	*Cryptops* sp.
	Anamorpha		
	Scutigeromorpha		
2		Scutigeridae	? *Pselliophora* sp.

	Diplopoda		
	Chilognatha		
	Spirobolida		
3,4		Rhinocricidae	*Eurhynocricus* cf *fissus* Verhoeff
	Crustacea		
	Malacostraca		
	Peracarida		
	Isopoda		
8		Orchestiadae	*Orchesta* sp.
	Amphipoda		
2		Ligiidae	*Ligia baudiniana* (Milne Edwards)
4		Oniscidae	*Philoscia brevicornis* Budde Lunde
8			*Philoscia* sp.
			gen. incertum
	Eucarida		
	Decapoda		
	Reptantia		
2		Geocarcinidae	*Cardisoma guanhumi* Latreille
2,4		Coenobitidae	*Coenobita clypeatus* (Herbst)
1,2		Grapsidae	*Sesarma angustipes* Dana
2,6,8		Ocypodidae	*Uca speciosa* (Ives)
2			*Ocypode quadrata* (Fabricus)
	Arachnida		
	Scorpiones		
3,4		Diplocentridae	*Diplocentrus scaber* Pocock
2		Buthidae	*Centuroides nitidus* (Thor.)
	Pseudoscorpiones		
8		Neobisiidae	*Ideobisum simile* (Balzan)
8		Olpiidae	*Pachyolpium furculiferum* (Balzan)
8			*Apolpium longidigitatum* (Ellingsen)
4		Sternophoridae	*Garyops depressa* Banks
4		Chernetidae	*Byrsochernes caribicus* Beier
	Amblypygi		
2,4		Tarantulidae	*Tarantula marginemaculata* Koch
	Solifugae		
4		Ammotrechidae	? *Ammotrechella* sp.
	Opiliones, Laniatores		
4		Phalangodidae	*Stygnomma spinifera* (Packard)
	Araneae		
4		Dinopidae	*Dinopis* sp.
2		Scytodidae	*Scyctodes fusca* Walckenaer
2,8		Sicaridae	*Sicarius* sp.
2		Pholcidae	*Pholcus phalangoides* (Fuesslin)
2,8			*Physocyclus globosus* Taczanowski
4			gen. incertum

2,8		Gnaphosidae	*Drassodes* or *Haplodrassus* sp.
2		Clubionidae	*Clubiona* sp.
8			gen. incertum
8		Thomisidae	*Xysticus* sp.
8			*Misumenops* sp.
2,8			*Misumena* sp.
2			gen. incertum
4		Salticidae	*Habrocrestum splendens* Emerton
8			*Marpissa* or *Hyctia* sp.
4			gen. incertum
8		Lycosidae	*Lycosa* sp.
2		Agelenidae	*Agelenopsis* or *Tegenaria* sp.
2			*Agelena* or *Agelenopsis* sp.
2			gen. incertum
2		Zodariidae	*Storena* sp.
2		Theridiidae	*Theridion* sp.
2,8			*Latrodectus mactans* (Fabricus)
2			*Spinarthus flavidus* Hentz
4		Ctenizidae	*Bothriocyrtum* or *Ummidia* sp.
		Araneidae	*Argiope argentata* (Fabricus) (CAYMAN BRAC)
2,8			*Araneus* sp.
8			*Meta* sp.
			Cyclosa sp.
2,4,6			*Nephilia clavipes* (Lin)
8			*Gasteracantha cancriformis* (Lin)
	Chordata		
	Amphibia		
	Salienta		
	Procoela		
1,2,8,9		Hylidae	*Osteopilus septentrionalis* (Duméril & Bibron)
	Reptilia		
	Squamata		
	Sauria		
2,4		Gekkonidae	*Sphaerodactylus argivus bartschi* Cochran
2,3,4,5,6,8,9		Iguanidae	*Anolis maynardi* Garman
2,3,4,5,6,8,9			*Anolis sagrei sagrei* Duméril & Bibron
			Anolis sagrei luteosignifer Garman (CAYMAN BRAC)
2,3,9			*Cyclura nubila caymanensis* Barbour & Noble
2			*Leiocephalus carinatus granti* Rabb
4		Anguidae	*Diploglossus crusculus maculatus* Garman
	Serpentes		
2		Colubridae	*Alsophis cantherigerus ruttyi* Grant

			Alsophis cantherigerus fascicauda Garman (CAYMAN BRAC)
	Mammalia		
	Theria		
	Chiroptera, Microchiroptera		
2		Phyllastomidae	*Macrotus waterhousi minor* Gundlach
		Molossidae	*Molossus tropidorhynchus* Gray (GRAND CAYMAN)
	Rodentia, Myomorpha		
2		Muridae	*Rattus rattus* L.

Table 8. Species Diversity in each of the habitat types

Habitat	No of species	No of sample sites	No of species per sample site
2. Sandbeach ridge	37	6	6.17
3. Marl with scrub	9	5	1.80
4. Marl with tall scrub	32	3	10.67
5. Dwarf Mangrove	3	1	3.00
6. Tall Mangrove	6	3	2.00
8. Dissected bluff	33	18	1.83
9. Evolvulus heath	6	4	1.50

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Appendix. Grid references to collecting localities

1. Pool Lagoon	005761, 000783
2. Sandbeach Ridge	943739, 951757, 963739, 977771, 020767, 045778
3. Marl Facies with Scrub	045780, 005775, 061785, 062785, 062786
4. Marl Facies with Tall Scrub	002775, 003775, 041778
5. Dwarf Mangrove	965763
6. Tall Mangrove	960740, 985758, 042789
7. *Sesuvium* Marsh	078794
8. Dissected Bluff	943740, 94997555, 961743, 974763, 974766, 975755, 978754, 001778, 001780, 008779 028781, 041788, 04457842, 045785, 075798, 07757825, 078797, 087792
9. *Evolvulus* Heath	95877460, 959743, 960743, 958743

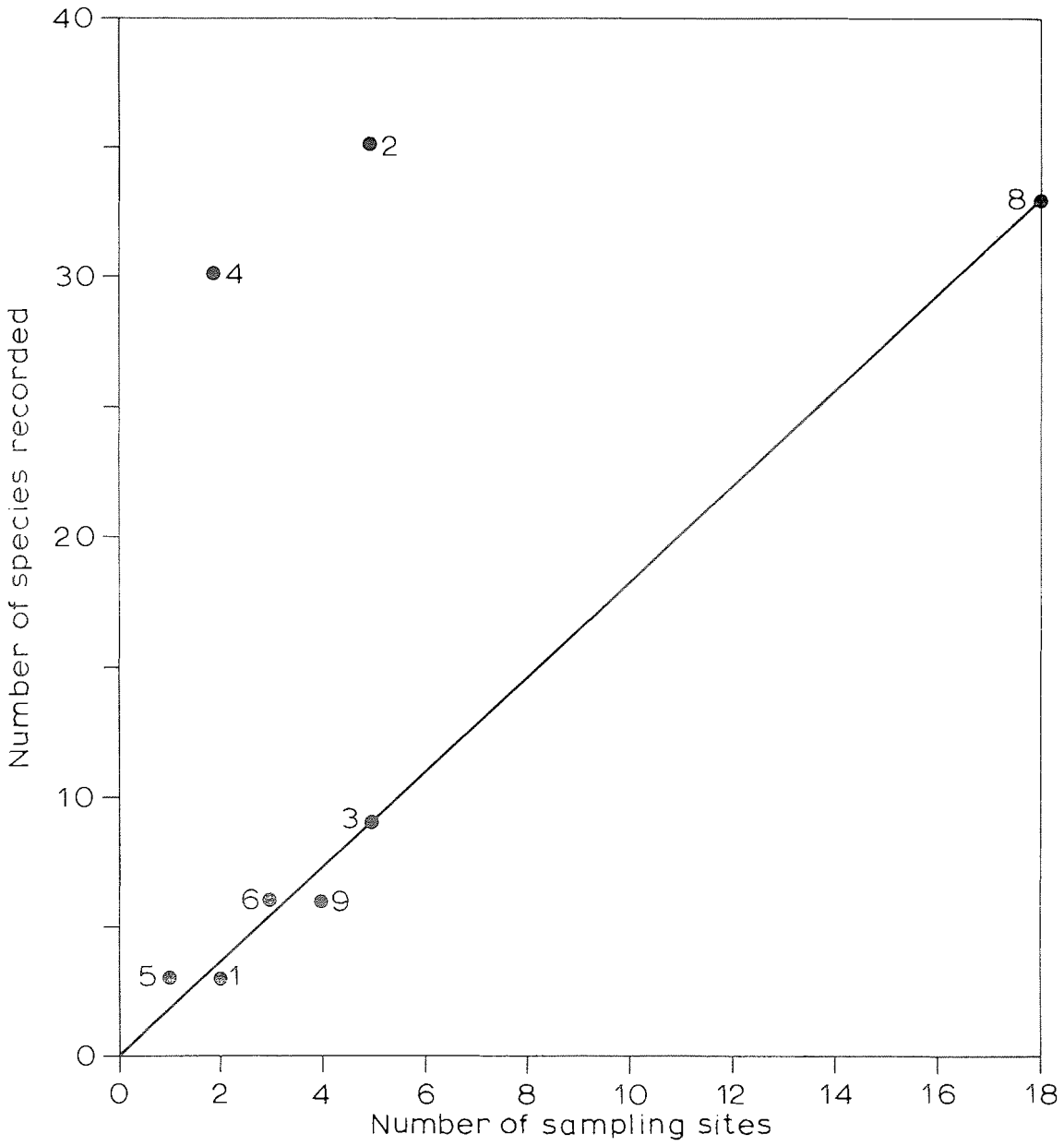

Figure 23. Number of species (other than insects and birds) and sampling sites, Little Cayman, 1975