

14. TERRESTRIAL FAUNA OF DIEGO GARCIA AND OTHER CHAGOS ATOLLS

D. R. Stoddart

The terrestrial fauna of Diego Garcia, and indeed of all the Chagos atolls, is less well known than either the land flora or the marine fauna and flora. Apart from the collections made by G. C. Bourne and Bourne's brief discussions of the fauna of Diego Garcia itself (Bourne 1886a, 1886b), knowledge of the terrestrial fauna of the group derives almost entirely from the collections made by J. S. Gardiner and his colleagues, notably T. B. Fletcher, during five weeks in the Chagos Archipelago in 1905. Some further collections have been made since, for example of land mollusca and crustacea, and these are noted below. The collections of terrestrial fauna made in 1967 were very partial, and in some groups, especially the insects, were very small indeed.

In any discussion of the terrestrial fauna of the Chagos islands, therefore, two points must be stressed. First, the collections, which are few in number, have all been made rapidly, and can hardly be considered representative of the complete fauna. This is, however, also true of collections from most of the other western Indian Ocean islands, and comparisons are thus not entirely meaningless. It is probable that the collections adequately reflect the general character of the land faunas of such small and isolated islands. Second, because of the smallness of the collections from individual islands in the Chagos group, it would be unwise to place too great an emphasis on records for particular islands: a better impression of the land fauna is certainly obtained in the case of the Chagos by grouping the records from all the constituent islands.

Gardiner (1936b) has compared the fauna and flora of the Chagos atolls as a group with those of the Maldives and other western Indian Ocean coral islands, and Scott (1933) has made similar comparisons in greater detail for the Insects. Peake (1971) has recently discussed faunal sizes of many western Indian Ocean islands, including the Chagos, for a variety of taxa. In this chapter, attention is drawn particularly to those groups not treated elsewhere in this volume and for which data are available, mainly in the reports of the Percy Sladen Expedition. Special comparisons are made between the faunas of the Chagos atolls and those of the southern Maldives, though too little is known of individual Maldivian atolls, other than Male and Addu, to discuss faunal gradients with any confidence. The main introduced birds and mammals are also noted.

A. Annelida

Four species of megascolecoid earthworms are described in this volume by R. Sims, from Diego Garcia; no earthworms are known from the other Chagos atolls. Of these species, Lampito mauritii has also been recorded from the Maldives (as Megascolex mauritii), where Gardiner collected a total of three species (Beddard 1903).

B. Mollusca

Gardiner (1936b) noted only three species of land mollusca from the Chagos, compared with 40 species from the Seychelles. Madge (1946) listed many additional species from Diego Garcia, and Peake in this volume increases the recorded number of Diego Garcia species to 24, all of them small and inconspicuous. Madge's list also includes species from Salomon. It is of interest that the Giant African land snail Achatina fulica is not present on Diego Garcia or the other Chagos atolls, though it was numerous on Addu Atoll by 1964.

C. Arthropoda

1. Crustacea

Borradaile (1907) has listed the Percy Sladen Expedition land Brachyura, and Table 7 shows the distribution of these and other Crustacea, mainly marine, on the various Chagos atolls visited by this expedition. J. Morin collected at Diego Garcia in 1936, and his specimens are listed by Ward (1942). In this volume, Taylor includes these and also the Valdivia collections with those made in 1967. Budde-Lund (1912) lists six species of terrestrial isopods from the Chagos, two of which are recorded from Diego Garcia.

Among the land Crustacea, particular mention may be made of the coconut crab Birgus latro, which extends across the Indian Ocean to the Aldabra group and Zanzibar but is absent from the Maldivian Islands. Other conspicuous "crabs" include Cardisoma carnifex and hermit crabs.

2. Arachnida

Hirst (1911) lists nine species of spiders from the Chagos (two from Egmont, three from Diego Garcia, five from Peros Banhos and six from Salomon). This compares with 23 species from the Maldivian Islands (Pocock 1906). There is a widespread species of scorpion, Isometrus maculatus, on Diego Garcia and also in the Maldives.

Table 7. Crustacea recorded by the Percy Sladen Expedition in the Chagos Archipelago

Order	Reference	Peros Banhos	Salomon	Egmont	Diego Garcia	Total for Chagos Archipelago
ISOPODA	Budde-Lund 1912	5*	3	5	2	6
DECAPODA						
Anomura	Laurie 1926	6	12	4	1	15
	Borradaile 1910	-	2	-	-	2
Reptantia	Borradaile 1910	-	-	-	-	1
Natantia	Borradaile 1910	-	1	-	-	1
Brachyura	Rathbun 1911	27	58	34	13	85
STOMATOPODA	Borradaile 1907	2	3	-	1	5

* Figures indicate number of species.

3. Insecta

89 species of insects in eight orders were recorded by the Percy Sladen Expedition in the Chagos Archipelago as a whole; of these, 28 species were in Lepidoptera, 14 each in Orthoptera and Diptera, and 13 each in Coleoptera and Hymenoptera. The systematic papers on the Chagos insects collected on each atoll are keyed in Table 8. Scott (1933) has made general comments on the fauna, which is mainly of Oriental character and thus similar to the insect faunas of the Maldives and the Seychelles. Bourne (1886b, 391) considered the insect fauna to be poor in species but rich in individuals: flies, cockroaches (the common cockroach Pycnoscelus surinamensis (L.)), mosquitoes and ants were then, and now, conspicuous to the visitor. Of the orders present, the Coleoptera are poorly represented, though this may possibly be the result of inadequate collecting. The rhinoceros beetle Oryctes rhinoceros has been present on Diego Garcia for some decades and is a major pest in the coconut plantations. Mamet (1941) has also listed coccids of economic importance from Diego Garcia and other Chagos islands. A small collection of insects was made in 1967 by H. A. Fehlmann, and this is being worked up by Dr R. E. Crabill of the U. S. National Museum.

Gardiner (1936b, 453) gives the following comparison of the insect faunas of the Chagos and Maldivian archipelagoes in terms of number of genera in each order:

	Chagos	Maldives
Orthoptera	12	24
Odonata	3	6
Hemiptera	3	20
Lepidoptera	26	67
Coleoptera	15	61
Hymenoptera	12	25

Table 8. Insects recorded by the Percy Sladen Expedition in the Chagos Archipelago.

Order	Reference	Peros Banhos	Salomon	Egmont	Diego Garcia	"Chagos"	Total for group	Total species per order
HEMIPTERA	Distant 1913	-	-	-	-	1*	1	2
	Green 1907	-	-	-	1	1	1	
ORTHOPTERA	Bolivar 1912	4	5	2	3	-	7	14
	Bolivar 1924	2	3	-	2	-	5	
	Burr 1910	-	-	1	-	1	2	
COLEOPTERA	Arrow 1922	-	-	1	-	-	1	13
	Aurivillius 1922	-	1	-	1	-	1	
	Bernhauer 1922	-	-	-	1	-	1	
	Champion 1914	1	1	1	-	1	2	
	Fleutiaux 1922	1	-	1	-	-	2	
	Grouvelle 1913	-	-	-	1	-	1	
	Scott 1912	1	-	2	1	-	4	
	Sicard 1912	1	1	-	1	-	1	
	Esben-Petersen 1927	1	1	-	-	-	1	1
LEPIDOPTERA	Fletcher 1910a	12	17	5	8	-	26	28
	Fletcher 1910b	-	-	-	-	1	1	
	Meyrick 1911	-	-	-	-	1	1	
ODONATA	Campion 1913 and Laidlaw 1907	2	1	-	3	-	4	4
	Bezzi 1923	2	2	-	-	1	5	14
DIPTERA	Lamb 1912	-	1	-	-	-	1	
	Lamb 1914	-	2	-	1	-	2	
	Lamb 1922	3	2	-	2	-	4	
	Stein 1910	-	-	-	-	1	1	
	Theobald 1912	1	-	-	-	-	1	

HYMENOPTERA

Cameron 1907, Meade
 Waldo 1912, Marley
 1912
 Forel 1907
 Turner 1911

5	4	3	3	-	8	13
-	-	-	-	3	3	
-	-	-	-	2	2	

TOTALS

36	41	16	28	13	89
----	----	----	----	----	----

* Figures indicate number of species

(In the original Gardiner quotes 22 genera for Chagos Hymenoptera, but this must be in error). This comparison clearly indicates the smaller size of the Chagos fauna, with particularly low relative representation in the Hemiptera and the Coleoptera. The insect faunas of both archipelagoes are, however, very inadequately known.

1. Pisces

One semi-freshwater fish was collected on Peros Banhos by Gardiner and was listed by Boulanger (1909) as Chanos salmoneus. This species, together with one species of true freshwater fish and four other species of semi-freshwater fish, is also recorded from the Maldive Islands (Regan 1903).

2. Amphibia

No amphibians are known on Diego Garcia or on other Chagos islands. The toad Bufo melanostictus is, however, common on Addu Atoll in the Maldives and was collected by Gardiner on this atoll and on Malé (Laidlaw 1903, Phillips, 1958b).

3. Reptilia

Two chelonians have been previously recorded from Diego Garcia. The side-necked turtle Pelusios subniger was collected by Gardiner in 1905 "in one swamp near East Point" (Gardiner and Cooper 1907, 48). Two specimens are in the British Museum (Natural History), and the species was listed by Boulenger (1909) as Sternothaerus nigricans (= Pelusios subniger). This is a widespread species of Africa and Madagascar and is also present in the Seychelles; it was probably introduced to Diego Garcia. G. C. Bourne in 1886 collected a terrapin Geoemyda trijuga thermalis (Lesson). Bourne (1886a, 333) referred to it only as "a mud-tortoise ... abundant in some of the marshy pools" though the specimen in the British Museum was identified by Boulenger. This species is native to Ceylon, India and Burma; it is also present in the Maldives, at many localities (Laidlaw 1903, Phillips 1958b). Both Pelusios subniger and Geoemyda trijuga were presumably introduced, though there is no direct evidence for this, and neither were found on Diego Garcia in 1967. According to local inhabitants, neither has been seen since at least 1945, and it is likely that the Geoemyda had become extinct by the time of Gardiner's visit in 1905.* Rothschild (1915) refers to the pre-

* According to J. Frazier, who visited Diego Garcia in 1970, and Jean-Michel Vinson, the Meteorological Station staff on the atoll report that one or both of these reptiles are still extant though difficult to find during the dry season.

sence in the past of the Giant Land Tortoise Geochelone gigantea in the Chagos Archipelago, but there is apparently no evidence for this: if this tortoise did occur in the Chagos, it was presumably as an introduction which became extinct.

House geckoes are common in the settlements on Diego Garcia. Boulenger (1909) records the widespread species Hemidactylus frenatus Dum. and Beb. and the Malesian species Lepidodactylus lugubris Dum. and Beb. Fehlmann collected 91 specimens of the Hemidactylus in 1967, and these were identified by G. R. Zumi of the Smithsonian Institution. The common gecko noted by Bourne (1886b, 391) was presumably these species. Gardiner also collected the same two species on Salomon, and the Lepidodactylus on Peros Banhos. Three lizards (including H. frenatus) and one skink are recorded from the Maldives (Laidlaw 1903).

There are no snakes recorded from the Chagos Archipelago. By comparison, two snakes (other than sea-snakes), a Typhlops and a colubrid, are recorded from the Maldivian Islands (Phillips 1958b).

Marine turtles are no longer very common at Diego Garcia, though there is no evidence of their past status. According to Bourne (1886b, 392), Green Turtles Chelonia mydas are most numerous during the Southeast Trades and Hawksbill Eretmochelys imbricata during the northwesterlies, when three or four of the latter were taken each week. Hawksbill were seen in the lagoon in July 1967.

4. Aves

Loustau-Lalanne (1962) has given a general survey of the Chagos birds, and Bourne in this volume thoroughly reviews existing information on the birds of the whole archipelago. Whereas when the islands were first described colonies of breeding seabirds, particularly terns, noddies and shearwaters, were important, these have now virtually disappeared on Diego Garcia and possibly on the other larger atolls also. The most conspicuous birds on Diego Garcia are now all introduced land birds: Foudia madagascariensis, introduced before 1844; Streptopelia picturata, described as a subspecies chuni and introduced either from the Seychelles or Mauritius at an early date (Benson 1970); Francolinus pondicerianus; Geopelia striata, introduced from the Seychelles in 1960; and the now very common Mynah Acridotheres tristis, probably introduced between 1960 and 1964. Passer domesticus was also recorded by Gardiner from Salomon and Peros Banhos. There are thus no native land birds. Of the wading birds the Green Heron Butorides striatus is most distinctive (Ripley 1969); the Cattle Egret Ardeola ibis was introduced from the Seychelles in 1955. Bourne lists all the seabird records from the archipelago, but at least at Diego Garcia the seabirds are now inconspicuous, and are practically confined to the lagoon-mouth islets, where noddies, fairy terns and occasional frigatebirds were seen in 1967. Bourne stresses the total lack of ornithological information from the smaller Chagos islands, where there is greater likelihood of survival of seabird colonies and least of the introduction of land birds.

5. Mammalia

There are no native mammals in the Chagos Archipelago, and no records of either insectivorous or frugivorous bats. Pteropus in particular is absent, though the Indian P. giganteus is present in the Maldives (P. g. ariel Allen at Malé and North Malé atolls) and P. hypomelanus maris Allen is numerous at Addu Atoll. Species of Pteropus are also found in the Seychelles and at Aldabra (P. seychellensis), in the Andamans and Nicobars (P. melanotus) and in the Mascarenes (P. niger). Insectivorous bats are also found in the Maldives, at Aldabra, and on the high islands, but not in the Chagos.

Introduced mammals and other domestic animals are now numerous. Bourne (1886a, 332) found the following present in 1885: donkeys, hogs, fowls, rats. Cattle and sheep had also been introduced to Diego Garcia by that time, and Bourne noted that "cattle do not thrive, but sheep have been imported and appear to do well on the herbage which covers the more open spaces; the first consignment was unfortunately destroyed by the donkeys, to whom sheep were utter strangers" (1886a, 332). Bourne also refers (1886b, 387) to goats being destroyed by donkeys. Donkeys, chickens, cats and dogs are now present, and noted in Chapter 18. The common rat on Diego Garcia is Rattus rattus L. All of these introduced mammals are common on other Indian Ocean coral islands (Stoddart, in preparation). The shrew Suncus murinus, common in the Maldives at Malé and Addu, does not appear to have reached the Chagos.