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**OBSERVATIONS ON THE BIRDS OF DIEGO GARCIA, CHAGOS
ARCHIPELAGO, WITH NOTES ON OTHER VERTEBRATES**

by A. M. Hutson

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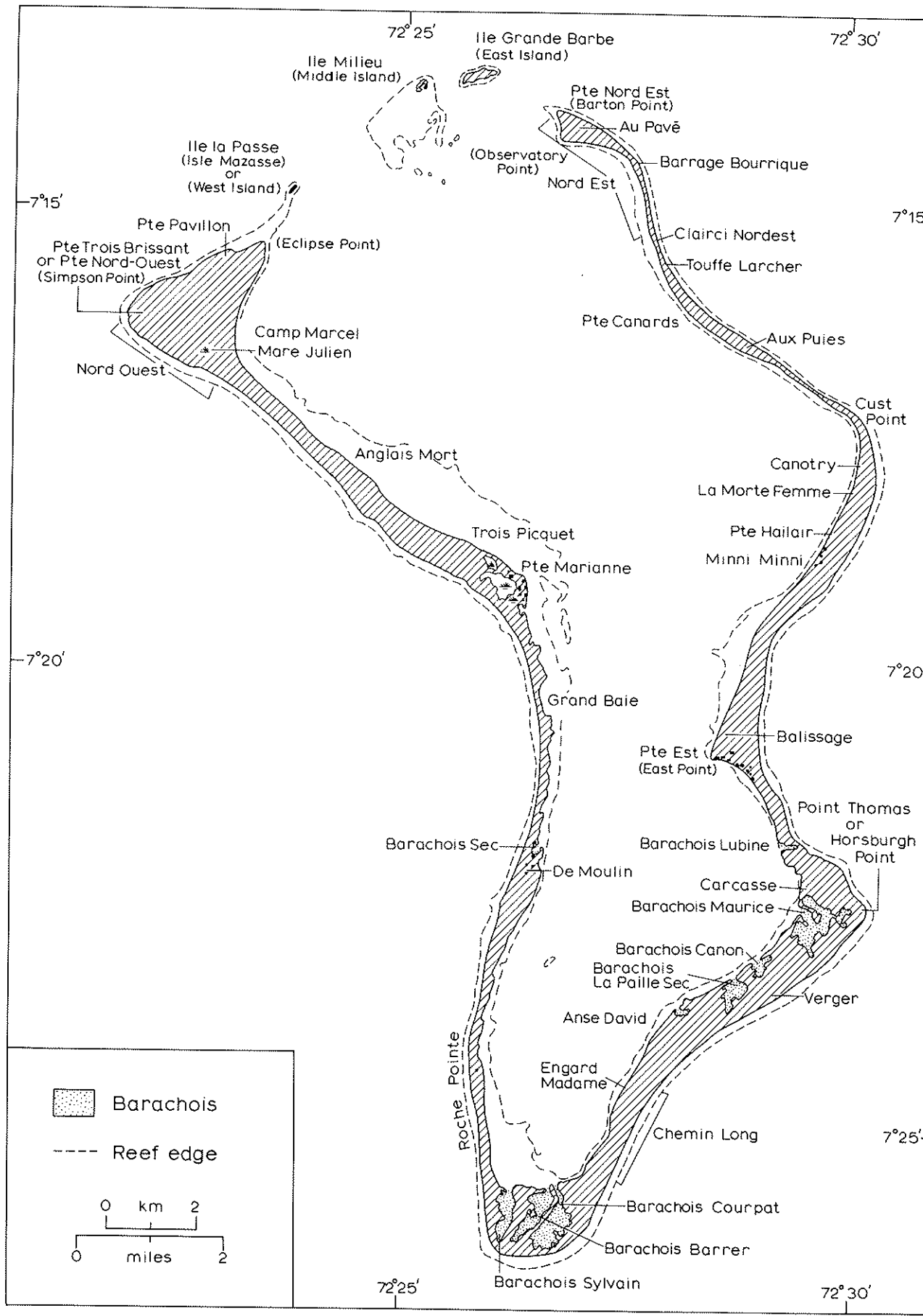


Fig. 1. The atoll of Diego Garcia

OBSERVATIONS ON THE BIRDS OF DIEGO GARCIA, CHAGOS ARCHIPELAGO, WITH NOTES ON OTHER VERTEBRATES

by A. M. Hutson^{1/}

INTRODUCTION

Diego Garcia (Fig. 1) is the southernmost atoll of the Chagos Archipelago, central Indian Ocean. Detailed descriptions of the island and its fauna and flora are given by Stoddart & Taylor (1971). W.R.P. Bourne (1971) therein thoroughly reviewed the rather scant and scattered previous knowledge of the birds. Since the preparation of that work the atoll has been briefly visited by Mr. J. Frazier (in July 1970) but apart from a few observations included in Bourne's paper his findings have not yet become available.

This report gives details of the birds of Diego Garcia from observations made during the course of entomological work on the atoll between March 19 and May 23, 1971. The information given here consists mainly of sight records, supplemented with data from a small number of birds trapped, and information from Seychellois who have been resident on the island for many years. It was found impractical to collect specimens, despite the need for particular species such as the Little Green Heron (Butorides striatus) and the Turtle Dove (Streptopelia picturata), both of which have been described as endemic subspecies, on rather little evidence. The sea birds, waders and well established land birds (Fody and Turtle Dove) that were trapped were ringed and released. Except where otherwise stated, all reference to previous knowledge is from Bourne (1971). Comparison with the Maldives is from Phillips (1963) and with Aldabra from Penny (1971).

Thirty-five species are discussed, four of which were not seen by the author. Twelve species which have not previously been recorded from the Chagos are marked by ** and one species previously recorded from elsewhere in the Chagos, but not Diego Garcia, with *. The status of each species is discussed in as full detail as possible to facilitate comparison with observations at different times of year and in different years. The visit was made in the first two months of construction work involved in the establishment of a communications facility on the island. It is felt important to consider the status of

^{1/}Department of Entomology, British Museum (Natural History)
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each species in some detail to determine any effects brought about by changes in the environment. To this end counts are given as often as possible and for this to be meaningful it has been necessary to use rather more locality names than have been previously published (Stoddart & Taylor, 1971). A revised placename map incorporating the names that were in use by the Seychellois resident at the time of my visit is given in Fig. 1; some of these names differ from those given by Stoddart & Taylor (1971, Figs. 1 and 34).

A very few migrant land birds have been recorded from the Chagos, but none was seen during the present visit. Phillips (1963) lists many land migrants for the Maldives and puts forward a strong case for the likelihood of many species reaching the Chagos. This is probably true for a more suitable time of year, although relatively few are likely to reach Diego Garcia.

Details of weight (in g), wing length (in mm) and moult of wing primaries (outer primary first) are given for trapped birds. The notation of wing moult is as follows: 0 = old feather, 1 = new feather in pin, 2-4 are degrees of development of new feathers, to N = a fully developed new feather.

Local Creole names for some species were noted and are given after the scientific names.

Appendix I lists birds seen during the sea voyages between Mauritius and Diego Garcia. Appendix II gives notes on other vertebrates made during the 1971 survey. Other observations, especially on insects, will be published elsewhere.

Mr. S. Rickard and Mr. J.R.C. Bashall were stationed on the island in 1945. Rickard (pers. comm.) says that they were not particularly interested in birds at the time, but I am grateful to them for allowing me to incorporate their memoirs into this report. Their activities were largely confined to the north-west area and to the Minni Minni area. They do not remember any large colonies of sea-birds on the mainland of the island.

SYSTEMATIC LIST

Shearwater (Puffinus sp.)

The only evidence of shearwaters was a wailing call, heard at night, which was almost certainly a species of shearwater. About 10 were heard at Point Marianne from 12-18 April and 21 April. At De Moulin one was heard on the nights of 23 April (to north), 24 April (to north), 26 April (at village) and 27 April (to south west). At Roche Point one was heard to NW of the house on 30 April. In all cases calling started at about

19.00 and continued until 20.00. On one night at Point Marianne they were calling until at least 02.00. At Point Marianne they were seen on several of the early evening sessions and the early morning session, but the light was too poor to confirm the species involved, merely enough to say that they had a wing span of about 2 feet and that the wings were rather narrow. It is extraordinary that these were only heard at settlement areas; they were not heard during many night excursions to sites away from the settlements. Those at De Moulin and Roche Point were apparently flying around coconut trees, indeed the one at De Moulin on 26 April could only have been around, if not in, the quite isolated coconut palms (3) in the village clearing. At Point Marianne, where most observations were obtained, they were curiously confined to the tops of fruit trees in the area behind the village; around the Bread Fruit (Artocarpus altilis), Mango (Mangifera indica) and Takamaka (Calophyllum inophyllum) trees and in the coconut palms in the main village area. Mist nests placed up to a height of 25' amongst the fruit and these coconut trees failed to catch anything. That they were confined to this area was confirmed by taking observations from various points around and outside the village area. It is difficult to explain this kind of behaviour from a shearwater. They were not heard from the eastern limb of the atoll. No shearwaters were seen during several watches between sunset and light failure from the ocean coast at De Moulin and Roche Point. From my description the Seychellois knew of its occurrence here. They called it the "Riga" and described it as a bird of the ocean that rarely comes to land and then only at night. In the Seychellois "Riga" is Audubon's Shearwater (P. lherminieri).

Audubon's and Wedge-tailed Shearwater (P. pacifica) have been recorded from Diego Garcia and elsewhere in the Chagos.

White-tailed Tropic Bird (Phaethon lepturus)

Regularly seen down the western rim of the island with 3 or 4 over the coconuts in open areas to the north of Point Marianne. Four were frequently seen over Roche Point between 29 April and 2 May. The heaviest concentration was around the fresh-water pool area of Simpson's Point, where about 3 pairs were flushed on 2 April while others could be heard calling overhead. The only one seen on the eastern arm was one at Barachois Canon on 13 May.

Among those seen at Simpson's Point were ones flushed from ground level on the mounds around the bases of coconut trees with a dense covering of ferns, etc.

Although the Red-tailed Tropic Bird (P. rubricauda) has been reported from Diego Garcia and in nearby seas, none was seen during the present visit.

Red-footed Booby (Sula sula) "Fou"

Only seen on Ile Grande Barbe on 15 May. Circa 100 were in a large bare Hernandia tree with many nests. This number included many immature birds and non-fully fledged young were visible in some nests. Circa 50 boobies flew from a nearby Hernandia tree that was well foliated, but heavily limed. It was not possible to ascertain whether there were any nests in this tree. Although most of the birds in the latter tree were typical white-phase Red-footed Boobies, some were thought to be of a different kind, probably a different colour phase of Sula sula, but views were unsatisfactory for identification. Some Seychellois believe that three species occur on this islet, but descriptions were vague and could not be satisfactorily identified with any definite forms. It seemed possible that there was some confusion with immature birds, but it is true that at least three species are known to occur in the region.

The only Boobies seen at sea were 3 seen at c.15°S 63°E in the afternoon of 18 March. They were probably Red-footed.

Frigates (Fregata sp.) "Fregat"

Apart from 2 of unknown species seen flying north over Barachois Sec on 23 April, Frigates were only seen at Ile Grande Barbe. All identified birds were Lesser Frigates (F. ariel). From suitable viewpoints on the mainland, about 10 were usually visible circling over the islet and more were to be seen on trees. During a visit to this islet on 3 May 13 birds were seen. On a visit on 15 May about 30 were seen, mainly at the N.E. tip of the islet where they were sitting in bare trees or on coconut trees. These birds included a large percentage showing variable degrees of white. Many were apparently young, but there was no evidence of breeding.

Rickard and Bashall remember seeing a few frigates over the lagoon regularly in 1945. It is possible that they were more widespread around the atoll up to that time than they have been in recent years.

One adult male Lesser Frigate was seen at sea at 17.00 on 25 May at c.14°30'S 64°E (see Appendix I).

Cattle Egret (Bubulcus ibis) "Madam Paton"

According to the Seychellois resident in 1971, 9 cattle egrets were released in 1953 from the Seychelles. Loustau-Lalanne (1962) (who states that the species was introduced in 1955) found a colony of 27 nests at East Point in 1960. In 1971 they were still nesting as a colony by the manager's house, although they had moved in recent years from their earlier site to a large mango tree. Due to the thick growth of this tree it was not possible to tell how many nests were

occupied, but it was probably not much more than 10. At this time (5-16 May) several nests contained nestlings, varying from very young downy chicks to well feathered birds. In earlier years this was the only colony and birds would perform daily travel from all parts of the atoll to roost here (teste the manager). In consideration of the fact that this daily movement no longer occurs and of the large number of birds around the island (particularly in the N.W. area), it seems likely that other colonies have been established, although none was found.

As already stated, the egret is now common around the island, particularly so in the well vegetated marsh areas of Point Marianne and Mare Julien, but not in the tidal barachois. It was also common in clearings around settlements such as De Moulin and East Point and in open coconut areas such as the N.W. area. In drier, more thickly wooded areas such as south of De Moulin to and including the southern barachois, it was almost absent. Although most usually seen on the green marshlands of Point Marianne, the open water area attached to the north end of this part of the marsh was also favoured and by far the highest total seen together (c.50) was seen here on 18 May. One other notable locality was in the areas being cleared of coconut woodland by the U.S. Navy. The egrets took advantage of the felling of these trees and their subsequent removal and would stay dangerously close to bulldozers, etc., to feed on larger arthropods and geckoes that were exposed.

Most birds were in a plain white non-breeding plumage. The breeding plumes of those that showed them generally seemed to be a rich sandy golden colour, though some were seen that suggested a more cinnamon colour and some that could not be satisfactorily assigned to either group. It is feasible, then, as postulated in Bourne (1971), that visiting birds of the Asiatic form, B. i. coromandus, such as those seen by G.C. Bourne (Saunders, 1886) have taken up residence and mixed with birds introduced from the Seychelles.

Little Green Heron (Butorides striatus) "Manique"

Abundant and widespread around the whole island. Although more common around inland water systems (e.g. Simpson's Point) and the barachois areas, it was also regularly seen in dry areas, such as under rather open 'Cocos Bon Dieu' areas. It was also very common around the shores of both the lagoon and ocean sides. Ten were on the wet marsh area of Mare Julien on 3 April, but only 4 on 22 April; c.3 were in Barachois Sec on 23-28 April; c.15 on the southern barachois on 1 May; 8 on B. Maurice on 10 May, most of them being on the inner reaches of the barachois. No count was made, but the largest concentration was on the marsh at Point Marianne. On the non-permanent inland water areas and in the dry habitats it was generally only individuals or two's that were seen. Two were on the shore of Ile Grande Barbe on 3 May.

Birds seen included some young birds, but no information on breeding was obtained.

Three adults were trapped and ringed at Point Marianne:

Ring No.	Date	Weight	Wing Length	Primary moult
EF43901	14.iv.	202	168	00012NNNNN
02	15.iv.	194	168	00ONNNNNNN
03	15.iv.	195	176	0000000011

One of the birds at Mare Julien on 22 April had only one leg and was too weak to fly. It was an adult weighing only 105 gm. This specimen was collected and the skin is now in the British Museum (Natural History). The stomach contents were as follows, but judging from the disability and general poor condition of the bird it cannot be assumed that this bears any relation to a normal diet:

large number of Paratettix chagonsensis Bolivar (Orthoptera; Tetrigidae) (det. J. Huxley)
a few ? Labidura riparia (Pallas) (Dermaptera; Labiduridae)

The measurements given here, photographs and plumage notes, etc. add little to the discussion on the taxonomic status of the subspecies B.s. albolimbatus, described from the Chagos (see Bourne, 1971).

**Flamingo (Phoenicopterus sp.)

Rickards (pers. comm.) was informed that there was a colony of flamingoes at the south end of the island, but there is no other report of these from Diego Garcia.

Francolin (Francolinus pondicerianus) "Perduit"

Although reported as recently as 1964 (Bourne, 1966), this species was not noted in 1971. The Seychellois reported that it had been common in the north west and felt that it was still there, but this was the area that received the most attention by the present author, both by night and by day. None of the construction workers who were questioned had seen it either. That this was the region receiving the most disturbance by construction activities, etc., may have had the effect of either bringing it to notice or of forcing it into deep hiding. It is possible, then, that the species has recently suffered a sharp decline in numbers, even to the point of extinction.

Waterhen (? Amauornis phoenicurus) "Poule d'eau"

A moorhen was reported to Loustau-Lalanne (1962) and to Odling-Smee in 1964 (Bourne, 1966), but resident Seychellois questioned about this bird in 1971 knew nothing about it. No

such bird had been known to them to occur on the island since at least the 1940's--they could not speak for periods prior to this. All water systems on the western arm were thoroughly investigated and there was no sign of any such bird here or in such areas as were investigated on the eastern arm. It is perhaps questionable whether any such bird has been resident on the island--if it were present, it must surely be extinct now.

Turnstone (Arenaria interpres)

Ubiquitous and common, but rarely forming large flocks. C.100 were on the Point Marianne marsh on 5 April, but at other times there was only about 20 seen here (1 April, 12 April, 14 April, 5 May). At Barachois Sec there were c.15 on 23-24 April. At the southern barachois area, c.12 were in B. Sylvain on 30 April and c.80 in the whole area on 1 May; c.15 in B. La Paille Sec on 13 May; 20 in B. Cannon on 13 May; 20 on the NW limits of B. Maurice on 8 May, c.20 on the whole main barachois area on 10 May and 10 on a connected arm to the south of this barachois on 13 May; c.8 in and around B. Lubine on 7 May. Small numbers occurred in many inland pools including those deep in thickly forested areas: the inland pool near B. Lubine held about 20 on 1 April, 3 on 8 May and c.12 on 10 May; small numbers in pool areas, particularly near Eclipse Point, Point Marianne and elsewhere, especially after rain had left standing water. They were also frequently encountered (often in small parties of up to ten) in dry areas, in thickly wooded as well as open areas, where they were probably roosting rather than feeding. Around both the ocean and the lagoon shores they were commonly seen, either singly or in small parties of up to c.10. C.6 were on the shores of Ile Grande Barbe on 3 May, and 20 on the pools of Ile Milieu (+6 on the shore) on 3 May and c.30 here on 15 May.

No individuals were in an obviously breeding plumage.

One caught and ringed at Point Marianne on 14 April had a wing length of 151 mm, weight of 100g and no wing moult was apparent. One found almost dead from unknown causes at Point Marianne on 5 April was collected; this bird showed no wing moult.

**Greater Sand Plover (Charadrius leschenaultii)

Present in small numbers in the major barachois. Records as follows: 1 on beach by Point Marianne on 5 April; 5 on mud flats at Point Marianne between causeway and lagoon on 12 April; 1 (showing some red on chest) at Point Marianne on mud flats on 17 April; 1 at Barachois Sec on 23 April, 24 April (seen to catch a fiddler crab, Uca sp.) and 27 April; 1 at B. Barrer on 30 April; c.15 in the whole of the southern barachois system on 1 May; 1 at Point Marianne on 5 May; 9 (1 in breeding plumage) in B. Maurice on 10 May; 1 in B. La Paille Sec on 13 May.

This species has not previously been recorded from the Chagos, but is to be expected. It is quite common in the Maldives during the northern winter with a few remaining through the rest of the year.

*Grey Plover (Charadrius squatarola)

An uncommon species at the time of this visit, but quite widely spread around the atoll. Recorded as follows: 1 on ocean beach at Tamil on 5 May; 1 at B. Sec on 25 April; heard at B. Barrer on 30 April; 5 in the southern barachois on 1 May; 3 in B. La Paille Sec on 13 May; 4 in B. Maurice on 10 May; 1 on Isle Milieu on 15 May. All were in non-breeding dress.

This is the first record for Diego Garcia, but it has been previously recorded elsewhere in the Chagos. In the Maldives it is plentiful in the winter with smaller numbers lingering all year round.

**Great Snipe (Gallinago media)

Eight snipe, almost certainly this species, were seen at Mare Julien on 3 April, but could not be found when this marsh was revisited on 22 April. This marsh consists of a large area of very lumpy ground with dense fern on the mounds and mud in the hollows, except for an area to the NW which is lower and flat. This latter area was wet and covered with a thick turf of sedge with some Bacopa. The fern area was largely dry during the period of this visit. The snipe were flushed several times from the edge of the sedge area, but they quickly resettled without giving long clear views in flight and they were not seen on the ground. They were larger and heavier than Common Snipe (Gallinago gallinago) with a shorter bill, they flew straight and gave a single alarm note, less forceful than that of Common Snipe. Any bar on the trailing edge of the wings was not very apparent. Prominent white outer tail feathers were not observed, nor was prominent white edging in the coverts.

While there may be some doubt about this identification, it is a species that has been seen in the Seychelles by Crook (Loustau-Lalanne, 1963) and it is a common migrant to the south-central African mainland (Benson, pers. comm.). It has not previously been recorded from either the Chagos or the Maldives. Gardiner and Cooper (1907) saw "a few snipe" on Diego Garcia in 1905 in barachois, but these may well have been another wader species.

Whimbrel (Numenius phaeopus) "Corbijou"

Ubiquitous in small numbers. Unfortunately no full counts were recorded at Point Marianne marsh, but from odd counts for various sections, it is likely that there were 20-30 in this area. Similarly no counts were recorded for B. Sec, although

several were always present. At the southern Barachois, 6 were in B. Sylvain on 30 April and c.30 in the whole area on 1 May. C.6 were in B. La Paille Sec on 13 May; c.4 in B. Cannon on 13 May; 10 on the N.W. edge of B. Maurice on 8 May and 24 on the whole of B. Maurice, except for the southern inland arm, on 10 May; 1 or 2 were generally around B. Lubine (e.g. 7 May, 8 May). They were also frequently seen on the small barachois. Secluded inland pools were also highly favoured, but only one was seen in Mare Julien (22 April). The pools along the N. coast of the N.W. area between Eclipse Point and Simpson's Point often had small numbers on them as did pools around Point Marianne area. They would frequently occur on dry land, often deep in woods. Thus c.7 were generally in the clearing at De Moulin (23-28 April) and 16 were flushed when travelling by jeep between here and East Point on 1 April. They were frequently flushed from the ocean shore and often from the lagoon shore too. One was on the shore of Ile Grande Barbe on 3 May and 7 on the shore of Ile Milieu on the same date.

Loustau-Lalanne (1962) reports shooting a Curlew in December, but no definite records of this species were obtained during this visit. Individuals were seen that had all the appearance of N. arquata, but the only calls heard from such birds were that of N. phaeopus. N. arquata is likely to occur in very small numbers, as it does in the western Indian Ocean, for example on Aldabra.

**Bar-tailed Godwit (Limosa lapponica)

Two in B. Courpat on 1 May are the first record for the Chagos. It is recorded from the western Indian Ocean by Penny (1971) and Loustau-Lalanne (1963). The wintering range extends as far as the west coast of India and it is recorded from the Maldives. Most of these records are of small numbers.

**Wood Sandpiper (Tringa glareola)

Two together and later a single at the Point Marianne marsh on 5 April and 1 there on 15 April are the first records for the Chagos, but it is recorded from the Maldives as a regular winter visitor, with some summer records.

**Common Sandpiper (Tringa hypoleucos)

Seen only at Point Marianne by the lagoon shore or flying along the lagoon past the village. Records were as follows: 1 between 20 and 24 March; 2 on 1 April; 1 on 13 April; 2 on 15 April.

These are the first records for the Chagos, although it occurs in moderate numbers in the Maldives.

**Terek Sandpiper (Xenus cinereus)

Two seen at B. Sec on 23 and 24 April are the first record for the Chagos. It is recorded from the Maldives.

**Greenshank (Tringa nebularia)

One seen three times at Point Marianne marsh on 5 April is the first record for the Chagos, but it is a frequent visitor to the Maldives.

Sanderling (Crocethia alba)

Regularly seen in small numbers with other waders, particularly Curlew Sandpiper.

At Point Marianne there were 3 on 1 April, 10 on 5 April, 10 on 12 April, 1 on 26 April; 2 on 26 April at B. Sec; 1 on 13 May at B. Canon; 1 on 10 May and 4 on 13 May at B. Maurice; c.10 on 1 April and 1 on 10 May on the inland pool by B. Lubine.

Loustau-Lalanne's record of 2 in December 1960 is the only other record of this species from the Chagos. Small numbers are recorded from the Maldives.

Curlew Sandpiper (Calidris testacea)

A common wader in barachois areas and some inland pools, outnumbered only by Turnstones.

The highest number seen was c.70 on 1 April and c.60 on 10 May in a small inland pool to the N.E. of B. Lubine. On both occasions the tide was high and, since at other times ten was the most seen here, it is likely that they congregated here due to the flooding of the nearby tidal barachois. At a time when the Bacopa-covered part of the Point Marianne marsh was fairly dry and considerable areas of mud were exposed, c.60 were seen (5 April), but otherwise, although always present here, their numbers did not exceed c.15. The open water and mud section of the Point Marianne marsh adjacent to, and to the north of the main Bacopa area, was quite popular in the early part of April, but as this area became drier from towards the end of April, it became less attractive to waders. Curlew Sandpipers were usually present in other barachois: 4 in B. Sec on 23 April and 24 April and 5 here on 27 April; c.5 in the small barachois between B. Sec and the southern barachois area on 25 April; 3 in B. Sylvain on 30 April and c.25 in the whole of the southern barachois on 1 May; c.10 in B. La Paille Sec on 13 May; c.22 in B. Canon on 13 May; 2 on the N.W. edge of B. Maurice on 8 May with over 10 in the main barachois area as a whole on 10 May and 13 May with a further 15 in a mudded area to the south of the main barachois on 13 May.

Inland, one was on Mare Julien on 3 April and small numbers were frequently seen on pools flooded by heavy rain, even in dense forest, as around Point Marianne on 13 April. One was on the pools at the S.W. end of Ile Milieu on 3 May.

It did not occur on the ocean shore or on the lagoon shore away from barachois areas.

One trapped and ringed at Point Marianne on 14 April showed no active moult and had a wing length of 132mm. All birds were in non-breeding dress.

Previously recorded as in Bourne (1971) and in the Maldives.

Crab Plover (Dromas ardeola)

Small numbers only in the two largest barachois areas as follows: 7 (3 adults, 4 immatures) in B. Barrer on 30 April; 20 (c.10 adults, c.10 immatures) in southern barachois on 1 May; 1 at N.W. edge of B. Maurice on 8 May and 6 in B. Maurice on 10 May.

A species that was not as common at the time of this visit as is suggested by previous reports. It is common on islands of the western Indian Ocean such as Aldabra and is recorded regularly from the Maldives. The only definite breeding area is the coast of Somalia. Loustau-Lalanne (1963) thought it may breed in the Seychelles and Gadow and Gardiner (1907) were told that it bred on Diego Garcia. Breeding has not been confirmed at either of these localities and there was certainly no evidence of it on Diego Garcia during this visit.

*Roseate Tern (Sterna dougalli)

Birds that were, without doubt, this species were mixed with flocks of Crested Tern. C.15 were at Point Marianne on April, 12 April and 17 April, but were not seen on any visit to this area in May. Five were in the southern barachois (Courpat) on 1 May.

When seen they were not identified, but were described as much smaller than Crested, but slightly larger than Black-naped tern. The bill appeared uniformly dark, a narrow white forehead, black cap extending narrowly down the nape. Rest of head and belly white. Upper wings and mantle uniformly grey and rump and tail white in apparent adults; apparent young birds seen to have dark (black) along lesser coverts, this is visible in resting birds. Generally a very slim, sleek species." Later (17 April) it was noted that the legs were black. The apparent young birds were undoubtedly in their first year and the apparent adults would appear to be adults in winter plumage.

First record for Chagos, but reported from, and possibly breeding in, Maldives.

**Little Tern (Sterna albifrons)

Only seen on two occasions, both at the southern mud section of the marsh at Point Marianne. A party of 15 flew rapidly out of the marsh into the lagoon on 12 April. Although they gave a rather brief view, they called and there can be little doubt but that they were this species. Two that were subsequently seen here on 15 April gave better views.

First record for Chagos and not recorded from Maldives.

Black-naped Tern (Sterna sumatrana)

Generally not a very common species around most of the island, they were regularly seen in small numbers at the entrance to the barachois at Point Marianne and Sec. One was seen while passing through Point Marianne on 1 April and five were here with other terns on a shingle bar exposed by low water on 5 April. The same number were present on 12 April, but numbers subsequently dropped. Four to six were present at the entrance to B. Sec between 23 April and 28 April, generally seen at low tide sitting on an exposed tree trunk. These were still present on 19 May. At neither of these sites was there any evidence of breeding. Definite breeding was observed at Ile Milieu on 3 May where about 30 pairs were present. Four nests of two eggs each were seen and many young to flying stage. The birds were nesting on the beach ridge to the south (lagoon side) of the island and within the beach ridge on the south west edge of the pool area. The same number was present on 15 May. One pair was seen on Ile Grande Barbe on 3 May, but there was no evidence of breeding and no birds were seen there on 15 May. On 3 May there were about 8 including two each with flying young on Ile La Passe, but no nests were seen.

These reports confirm other recent observations. Phillips found this the most abundant and widespread tern in the Maldives.

Sooty Tern (Sterna fuscata)

Numbers seen only at the lagoon mouth islets: c.10 on Ile Milieu and c.30 on Ile La Passe on 3 May. In neither case was any evidence of breeding seen and there was none on Ile Milieu on 15 May. While crossing the lagoon on 10 April one was seen flying westward over the lagoon. See appendix I for records of birds seen on sea crossings.

This may not have been the best season for this species, but it seems likely that if this bird does still breed on Diego Garcia, it does so only in small numbers. It breeds in large numbers elsewhere in the Chagos, but is rare in the Maldives.

Crested Tern (Thalasseus bergii) "Goeland Sardine"

Very common around the atoll either feeding in the lagoon or roosting on exposed sand or mud in the major barachois.

At Eclipse Point 4-6 were feeding along the lagoon coast on most days and similar numbers were seen at Roche Point and East Point. A few were seen on sea crossings between Eclipse Point and East Point. C.80 were with Lesser Crested Terns (T. bengalensis), Black-naped Terns and Roseate Terns on the southern entrance to the Point Marianne marsh on 5 April. C.100 were here on 12 April, but from this date numbers began to drop here: c.20 on 17 April, c.70 terns including other species on 23 April, c.30 including other species on 5 May, 10 on 18 May, c.20 were in the southern barachois on 1 May, c.80 in B. Maurice including three in the most inland reaches on 10 May. C.10 were on the sand bore to the S.W. of Ile Milieu on 3 May. None of these birds was in a markedly immature plumage, and nowhere was any evidence of breeding observed.

Two were caught at Point Marianne on 14 April. Both were adults in primary moult. One (weight 260g) had primary 10 (outer) old, 9 missing, 8 $\frac{2}{5}$ grown, 7 $\frac{4}{5}$ grown, 6-1 new. The other (weight over 260g) had primaries 10 and 9 old, 8 missing, 7 $\frac{4}{5}$ grown, 6-1 new.

This species has been recorded as a possible breeding species elsewhere in the Chagos, but there was no evidence of this on Diego Garcia during the time of this visit, at a time when they would be likely to do so. However, many adults showed a clear black crown, typical of breeding birds. Present in Maldives.

**Lesser Crested Tern (Thalasseus bengalensis)

Only seen in the company of Crested Terns where this species flocked on the exposed mud of major barachois. The bright orange bill was used to distinguish this species from F. bergii with its yellow or greenish-yellow bill.

One was with Crested Terns at Point Marianne on 5 April, three at this same site on 12 April and 17 April and one on 18 April. Three were in the southern barachois on 1 May, five were on Ile Milieu on 3 May.

The first definite records of this species from the Chagos, although Odling-Smee thought that they may have been present in 1964 (Bourne, 1966). Present in Maldives.

Joddy Tern (Anous stolidus)

Large numbers breed in the crowns of coconut trees. The main mainland breeding area, at the time of my visit seemed to be from the north west area to just north of Point Marianne, where there was often more than one pair in a tree. They did not appear to breed in the area of Point Marianne itself or in the area of shorter coconut trees to the south. They were then very common again in the tall "Cocos Bon Dieu" areas to the

north and south of De Moulin, but while still plentiful were not as numerous nearer the south end of the island. They were virtually absent from the southern tip up the eastern arm of the island to Minni Minni, but some were present in the barachois areas to the south of East Point and occasionally chicks were heard calling in this area on 13 May. The area north of Minni Minni was not well investigated, but from two trips to N.E. Point it seemed that they were virtually absent until the N.E. area itself, where they were again common.

Several hundred were on Ile Grande Barbe on 3 May and 15 May. It is likely that some of these were breeding in Hernandia as well as coconut trees. There was no evidence of breeding on Ile Milieu on 3 May or 15 May. On Ile La Passe on 3 May about 100 birds were present, breeding in coconut trees and down to ground level. On the ground, four well grown chicks with some downy remnants were found as well as about 30 nests each with a single egg. The ground nests were mostly under Scaevola bushes with some around the buttress roots of Hernandia. One nest in the crown of a coconut tree also contained a single egg. The nests were all rather rough simple nests of dead leaves and a few twigs, although the nest in the crown of a coconut tree was a little more substantial.

With the clearing of a large part of the north west area, this species must have suffered quite considerably and several young birds were brought to the main camp. On 4 April one young, with a trace of down which it soon lost, could fly well by 20 April; on 6 April one with a general covering of down and flight feathers not fully grown; one well grown chick on 7 April; one very small downy chick on 7 April; one just flying was found at De Moulin on 25 April. Young were heard calling from the coconut trees during the entire visit.

Few birds seemed to use the lagoon for feeding, but there were usually some, particularly by the coast where they were frequently seen to collect leaves of Cymodocea, presumably for nest building. On the ocean side, large shoals of small fish moving along the coast with incoming tides would attract numbers of Noddy Terns. It is likely that most birds feed well out to sea and on evening sea-watches on the ocean side, at De Moulin and Roche Point, numbers could be observed returning to the island. From these points many birds were moving northwards up the coast presumably to the major breeding centres on the north-west from feeding areas to the south of the atoll.

Visitors to the atoll at the end of the last century referred to large colonies on the mainland (on the ground and in trees), but visitors in the 1960's refer to them as only occurring on the lagoon mouth islets. Predation by humans and other animals undoubtedly discouraged ground nesting on the mainland, but the very large numbers now breeding in trees on the mainland are unlikely to have recently re-acquired the practice.

It breeds in large numbers elsewhere in the Chagos, but rarely in the Maldives.

Lesser Noddy (Anous tenuirostris) has been recorded by several earlier visitors, but was not seen during this visit.

Fairy Tern (Gygis alba) "Goeland Blanc"

Common and breeding around the entire island. For breeding they seemed to favour Casuarina, where this was common, such as around Eclipse Point. Taking the atoll as a whole, Hernandia was probably by far the most used tree. Certainly in the areas that were predominantly coconut, there were usually isolated single or small groups of Hernandia and these were generally occupied by one or more pairs. In areas of more mixed woodland, or areas of predominantly broad-leafed woodland, Hernandia was again the tree most frequently used for breeding, although Calophyllum was often used where it occurred. Occupied trees were generally within ready reach of the ocean or lagoon, but the proximity of water of any sort seemed sufficient stimulus for Fairy Tern occupation, thus it was only areas with a wide land rim and absence of a water system such as the central region of the N.W. area and parts of the eastern land rim where this species was not apparently breeding. There were about 50 pairs on Ile Grande Barbe, c.5 pairs on Ile Milieu and 2 pairs on Ile La Passe, on 3 May.

In most cases referred to above, breeding is assumed from the agitation of adult birds which would hover very close to the intruder giving a repeated "Doink, Doink" call, even at night. Positive breeding was recorded from several such instances. One downy chick was seen about 30' up in a Casuarina near the ocean coast to the west of Eclipse Point on 30 March. On 31 March a young bird, mainly white, but with some down, was reported by one of the construction battalion. On Ile Grande Barbe one egg was seen on a branch of a Hernandia by the lagoon beach and many young birds of a complete size range were seen in Hernandia up to a height of at least 60'. One deserted chick was found at the base of a Casuarina at Eclipse Point on 3 April. At this time it was well grown, but still with quite a lot of down; it weighed 55g. It would take small fish or fish pieces readily from the hand, would drink water by itself and preened actively. It was quiet until joined by young Noddy Terns, when it gave a repeated "See, see" call for prolonged periods, keeping well away from its black cousins. By 19 April this bird could fly quite well and weighed 84g, but still had some down around the neck and on the belly. It had lost all its down and was flying quite strongly before it mysteriously died on 25 April.

The status of this species seems unchanged since previous reports.

Indian Barred Ground Dove (Geopelia striata) "Turtur cocos"

According to resident Seychellois, 16 birds were brought to Diego Garcia nine years previously (1962). They were kept in captivity initially, but after 4 died the remaining 12 were released. The year of release is apparently incorrect, since Loustau-Lalanne (1962) found them present in 1960 after their release earlier in that year. Assuming the other information to be correct, they have now successfully spread from the release point at East Point around the island, but are nowhere particularly common. They occur along the whole of the eastern arm of the atoll and up the western arm as far as Point Marianne. On a trip round the whole island on 1 April, only one was seen on the western arm (at Roche Point). It was quite frequently seen on the eastern arm, particularly near the settlement areas of East Point and Minni Minni. During a brief stay at Roche Point one was again seen on 30 April. During 7 days at De Moulin at least two were regularly seen to the south of the village clearing, and a flock of between 5 and 10 in a clear area by the ocean coast to the north west of the village. Twelve were seen between the latter area and Point Marianne (Tamil) on 5 May. In the area of Point Marianne, itself, only single birds were seen on 8 April and 15 April, both in the same area near the ocean coast to the N.W. of the marsh.

Turtle Dove (Streptopelia picturata) "Turtur des iles"

Common around the entire land rim, but probably more common on the eastern half, both in densely forested areas of more or less pure coconut or of mixed broad-leafed woodland, and in relatively open areas. It was particularly abundant at the south end of the island in the tall Hernandia forest area between the barachois and the ocean and up the western arm in the tall dense broad-leafed woodland areas (30 April). But by far the densest population was on Ile Grande Barbe (3 May and 15 May). The high density on this islet was well known to the Seychellois, but they stated that, in fact, the numbers here had dropped markedly in recent years. The species was not seen on either of the other two lagoon mouth islets. It was particularly common on areas cleared for development, such as the airstrip. Large numbers of individuals would collect, sometimes forming loose flocks of up to 20, to feed on these areas after their initial clearance.

No details of breeding were obtained.

Five were caught and ringed:

Ring No.	Date	Locality	Wing length	Weight	Moult of primaries
DS96003	17.iv.	Pt.Marianne	164	163	No moult
EF43904	18.iv.	Pt.Marianne	179	198	No moult on rt. wing lt.wing: 0003NNNNNN
EF43905	18.iv.	Pt.Marianne	172	185	No moult
EF43906	10.v.	Pt. East	165	156	No moult
EF43907	11.v.	Pt. East	166	164	No moult

The wing lengths suggest that 03, 06 and 07 were female, and 04 and 05 were male. The head colour, examined from both trapped birds and from field observations, was very variable. Such observations and photographs as were taken do little to help resolve the question of the affinities of this dove, which has been described as a separate subspecies, S. p. chuni. 03 (female) had a blue-grey head; in 04 (male) the crown and forehead are quite blue-grey while the nape and sides of the neck and face are somewhat pink; in 05 (male) the whole head is a clear blue-grey which extends somewhat onto the upper chest and toward the shoulders; in 06 (female) the blue-grey is restricted to the crown and forehead with that on the forehead having a notable suffusion of pink, while the sides of the face carry only a suggestion of grey; 07 (female) has the head almost entirely pink, with only the slightest hint of grey on the crown. The eye is a dark reddish-brown with the surrounding skin a deep purplish-red. The bill has the basal half a deep lilac colour and the apical half pale greyish white. The feet are a deep purple above with soles buffish to grey.

The wing measurement of live birds given here tend towards the figures for nominate picturata rather than for comorensis. These data suggest that further specimens are likely to provide evidence to support the suggestion that the Turtle Dove on Diego Garcia is derived from an artificial introduction of picturata, possibly with some comorensis (Benson, 1970).

**"Le Merle", presumably the Bulbul (Hypsipetes borbonicus olivaceus)

According to the resident Seychellois, this species was introduced at some time from Mauritius. They say it became common by about 1953, but at this time it suddenly died out and was not reintroduced.

This introduction has not been recorded before and the species is not known to have been introduced elsewhere in the Chagos.

Indian Mynah (Acridotheres tristis)

According to resident Seychellois the mynah was introduced in the mid-1950's. Fifteen were brought from Mahé in the Seychelles in 1953, but died before reaching Diego Garcia. In 1954 or 1955, 12 were brought from Agalega and released. It is now the commonest land bird over the whole island and flocks of up to 30 were not uncommon. In the cleared area at De Moulin there were usually about 20 feeding in a loose flock. They were quite common even in such places as the thicker parts of the separating land spits of the southern barachois from where they would make sorties onto the mud to feed. They took advantage of the clearing activities in the northwest, and large numbers collected on the ground that had been turned over and amongst the accumulations of felled trees and other vegetation. Fresh copra laid out to sun-dry at the East Point settlement was also a great attraction and c.150 would concentrate on the copra drying platforms. A further 100 or so would feed around the village areas associated with copra preparation. One was heard on Ile Grande Barbe on 3 May (but none on 15 May) and one was seen on Ile La Passe on 3 May.

According to the Seychellois the peak breeding season is around February, when they nest in holes at the top of rotted coconut trunks and around the crowns of living trees.

Thirteen Mynahs were trapped and examined. Weights, measurements and moult are as the following table:

Locality	Date	Weight	Wing length	Primary Moult
Pt. Marianne	12.iv.	-	-	000000-1NN
"	18.iv.	-	-	00000014NN
East Point	11.v.	128	144	000-4NNNNN
"	"	108	142	00003NNNNN
"	"	102	136	00000014NN
"	"	105	139	00000000NN
"	"	93	138	000000000-
"	"	120	145	00-4NNNNNN
"	"	121	149	-14NNNNNNN
"	"	129	147	00000-3NNN
"	"	114	140	00000000NN
"	"	110	147	00003NNNNN
"	"	94	132	000003NNNN

The moult was symmetrical in all cases.

The white patch of the left wing of the birds trapped at East Point was painted red with a "magic marker" and eight of these were released at Eclipse Point. This marking would be difficult to see in resting birds, but was readily visible in flight. One of these was seen just north of Point Marianne a week later, but none was seen at East Point up to the time of my departure (23 May). Since all these birds were in active primary moult, they would have moulted out most of these red feathers after a fairly short interval. One mynah found dead at De Moulin, 26 April 1971, showed primary moult as follows: OOOO4NNNN.

Forbes-Watson (1969) noted that throughout the Comoro Islands the mynah was frequently seen associated with domestic stock, perching on their backs and feeding in the area disturbed by the "host" or sometimes apparently feeding directly from the animals' backs. No such behaviour was noted on Diego Garcia, either in the main Seychellois settlement where there was a mixture of domestic animals or around the rest of the atoll where feral donkeys were quite common.

It is extraordinary that Loustau-Lalanne (1962) did not see the Mynah in 1960, since it was the commonest land bird by 1964 (Odling-Smee in Bourne, 1966) and is particularly fond of the fresh copra laid out to sun-dry at the main settlement at East Point.

Madagascar Fody (Foudia madagascariensis)

The second commonest land bird, found around the entire atoll. Near the beginning of the present visit, breeding pairs were well distributed in all types of habitat. Two empty nests were seen: one about 20' up in a Casuarina near Eclipse Point on 28 March and apparently made of Casuarina needles; the other one, found recently fallen to the ground just north of Mare Julien on 19 April, was c.2" wide and 3-4" deep inside. It was entirely made of grass, coarse on the outside, with a fine grass fibre lining; the whole structure was rather thin and quite loose with very little suggestion of a porch. Droppings on the outside suggested that young had been recently reared. A fledgling was found by a member of the construction battalion on 31 March and a female was feeding a fledgling at Eclipse Point on 8 April. At this time the breeding season was coming to a close and many males were coming out of breeding plumage (even some of those still attending young), giving a great excess of dull coloured birds. Towards the end of April it was noticeable that there were not so many in the woods and that whereas occasional flocks of six to ten had been noted soon after arrival on the island, flocks of up to 30 were regularly seen in certain clearings of grass, etc. Males in full breeding dress were absent from these flocks. Such flocks were particularly regular at Point Marianne and De Moulin.

They were present in small numbers on Ile Grande Barbe, but were not seen on either of the other lagoon mouth islets (3 May).

Six were caught and ringed from a flock of c.30 feeding amongst mixed herbs in the clearing at De Moulin on 28 April. Weights and measurements of these birds are given in the table on page 21.

The moult of these individuals was as follows:
 52 (adult male) some red on head, most of rest lost. Primaries: 00000001NN.
 52 (adult female) central tail feathers moulting. Primaries: 00013NNNNN.
 54 (juvenile) no moult.
 55 (adult female) tail moulting: central ones N, outer 2. Primaries: -1234NNNNN.
 56 (juvenile) no moult.
 57 (adult female) central tail feathers moulted. Primaries: 00000013NN. (Feet deformed: only hind claw on both feet, other toes represented by stumps).

It is likely that birds such as those seen by Finsch and by Stoddart in July and August were losing the breeding dress and not coming into this plumage as is suggested in Bourne (1971).

No individuals were seen that suggested F. eminentissima or any atypical colour forms of F. madagascariensis, although the latter, especially, would have been difficult to distinguish from typical madagascariensis in post-breeding moult.

Ring No.	Age/Sex	Weight	Time	Wing	Tarsus	Tail	Bill length	Bill depth	Bill width
BB71352	Adult/m	16.5	07.00	70	17.8	50.5	17	9.1	7.3
53	Adult/f	15.25	09.00	62	17.2	45.3	14.2	8.5	6.9
54	Juvenile	16.5	14.30	65	18.2	40.5	13.8	8.7	7.0
55	Adult/f	16.0	16.00	66	19.0	46.3	15.0	9.0	6.9
56	Juvenile	16.5	16.00	64.5	18.3	still growing	14.2	9.0	6.9
57	Adult/f	17.0	18.00	63.0	19.0	42.3	15.0	8.9	6.8

APPENDIX I

Birds seen on sea-voyages: Mauritius to Diego Garcia
18-19 March, and Diego Garcia to Mauritius 24-26 May

The co-ordinates of sightings are extremely approximate, being calculated from the time of observation assuming the ship to be moving at a constant speed for the whole journey and in a direct line between the two islands, as calculated from a Mercator's projection.

18 March	4 Sooty Tern	15°S, 63°E	
	3 Boobies (? <u>S. sula</u>)	" "	
	These were the only birds seen on the outward crossing.		
24 May	No birds seen.		
25 May	12.30 c.30	Sooty Tern 13°45'S, 64°45'E	
		1 Great Skua (<u>Catharacta skua</u>)	13°45'S, 64°45'E
	15.30	10 Sooty Tern	14°15'S, 64°15'E
	17.00	30 Sooty Tern	14°30'S, 64°E
		1 Adult male Lesser Frigate	14°30'S, 64°E
26 May	10.45-11.15	10.45	1 Sooty Tern 17°S, 61°15'E
		2 "	" " NW
		2 "	" " SW
		11.00	60 " " SE 17°S, 61°E
			1 Tern sp. (White) SE
			5 Sooty Tern SE
		11.15	2 " " NE 17°15'S, 60°45'E
	13.00-15.45	14.00	1 " " N <17°30'S, 60°30'E
		14.30	1 " " S >17°30'S, 60°30'E
		15.00	2 " " N <17°45'S, 60°15'E
		15.30	4 Noddy Tern NW >17°45'S, 60°15'E
	16.45-17.45	17.00	2 Sooty Tern SE < 18°S, 60°E

APPENDIX II

Notes on other vertebratesReptiles

Stoddart (1971, 169) notes old records of two species of gecko from Diego Garcia, but all of the 91 specimens collected by H.A. Fehlmann in 1967 were the common Hemidactylus frenatus Schlegel and none was the other recorded species, Lepidodactylus lugubris Dumeril and Bibron. Three specimens taken in 1971 from fairly natural sites proved to include both species (identified by A.P. Russell):

H. frenatus Schlegel. Eclipse Point. 5 April 1971. In rotting stump of Casuarina.

L. lugubris (Dumeril and Bibron). Eclipse Point. 5 April 1971 and 4 May 1971.

A special effort was made to look for the mud-turtles (see Stoddart 1971, 168) particularly in the wet areas of the western arm, but with no success. Certain of the Seychellois living at East Point said that they still exist in some wet areas near there, but that they are extremely difficult to find outside the very wet periods. Offers of reward for finding specimens produced nothing. The probability that they do occur is supported by the fact that the acting manager of the island settlement, Marcel Moulinié, had two in captivity in his garden when he was last on the island in 1968. It is still uncertain which of the two species that were previously found there still survives.

The only marine chelonian recorded during this visit was the Hawksbill Turtle, Eretmochelys imbricata. On arrival (20 March 1971) the shell of a recently killed specimen was seen at Eclipse Point. On the night of 31 March-1 April one was caught on the ocean side near Roche Point and released at Eclipse Point. It was a female with the following measurements: length of carapace (over the curve) 1'6"; width over carapace 1'4"; length of plastron 1'1½"; width of plastron 1'2".

They were occasionally reported from the lagoon in 1971. The ocean shore offers very few suitable nesting sites for turtles, particularly on the western half and the lagoon mouth islets, but there are suitable sites on the eastern ocean beach, on the lagoon shore of the main land rim and probably on the lagoon shore of Ile Grande Barbe, although it is doubtful whether they ever bred in large numbers on the island.

Mammals

Rats were very common and widespread, but not as common as previous reports have suggested. The acting manager, Marcel Moulinié, also stated that they were nowhere near as common as

they had been at the time of his last stay there in 1968. However, they are still very much in evidence, both around habitations and among the coconut areas. In the latter areas, the damage done in causing the premature drop of the nuts by eating through the base of young nuts to get the milk, was a very common sight. The drop in numbers is unaccountable. It is unlikely to be the result of human effort for the bounties offered at various times. It is perhaps worth noting that the figures quoted for the numbers of rats brought in as a result of these bounties (e.g. 30,000 per year in the 1930's) probably give a very false picture, since the whole animal was not required of the claimant, usually only the tail, and the islanders soon learnt to make several of the required part from one rat! Two rats were collected, both Rattus rattus L.: one from De Moulin, 27 April 1971 and one male (116g) from Roche Point, 29 May 1971.

There are perhaps 200 feral donkeys on the atoll, mainly around the more open dry areas. They were not seen in the NW area itself, but all over the rest of the atoll in parties of up to 13 including young animals.

Cats and dogs were common. Cats did not stray far from settlement areas even when these had been deserted for several months. Dogs were far more numerous and widespread. An extermination campaign, by shooting, was well under way by May, 1972.

Despite intensive observation no bats were seen and none caught in mist-nets set at night in possible likely places. The islanders confirmed that no bats existed on the island.

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