

The ecology and conservation of Aride island, Seychelles

Aride Island Research Group

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Abstract: The history and ecosystems of the Aride Island Special Reserve are described. A summary of the recorded fauna and flora is given. Aride supports one of the world's largest concentrations of breeding seabirds and supports an important fauna and flora of species largely associated with the tern colony.

Key words: biodiversity, conservation, Aride

Introduction

Since its designation as a Special Reserve the island of Aride, Seychelles has been protected as an important site for the conservation of seabirds. The principal reason for its protection is the colony of breeding terns. The significance of this colony has been known since the late 1800s when the island was managed for the production of eggs for human consumption. Other taxa of significance include the Wright's gardenia *Rothmannia annae* which has been restricted to the island since 1905. Research has concentrated on the seabirds until recently. Since 1987 there has been regular monitoring of the bird populations and the flora, with increasing numbers of studies of reptiles, invertebrates and ecosystem processes. The island is managed by the Royal Society for Nature Conservation.

This paper summarises the current status of knowledge of the ecology and conservation of Aride island, drawn from published papers and the reports compiled by the island's wardens (Warman 1978; Bullock 1989; Castle & Mileto 1991; Lindstone-Scott 1993; Carty & Herzig 1995; Carty & Carty 1996; Betts 1997 & 1998; Bowler & Hunter 1999). Authorities for the taxa mentioned are given in the Aride species list (Appendix I).

Physical geography

Aride is a small island (73.2ha). It comprises a small plateau and a rocky hill rising to 134m (Fig. 1). It has a granite base covered by leaf-and-guano derived soils. The plateau has some areas of phosphate sandstone (coral sand concreted by leached guano), loose wind-blown coral sand and quartz-grain sand from hill outwash. The low altitude and comparative isolation of the island result in sparse cloud cover and relatively low rainfall 1103-2430mm. Temperatures remain in the range experienced by nearby islands (23.9-35.5°C), an equable oceanic climate, humid, warm with few extremes.

There is a small marshy area, flooding to open water after heavy rain.

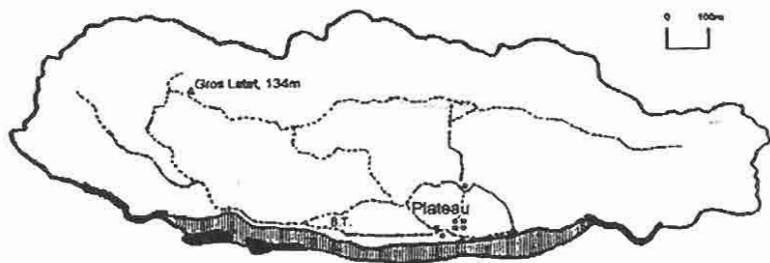


Fig. 1. Map of Aride

Marine life

The marine life of Aride has only recently been investigated. Lists of fish observed around the island have been maintained since 1987 and a total of 380 species have now been recorded. The seabed around Aride is deep (>20m), and this, combined with frequent storm damage, results in relatively restricted coral growth. Coral distribution may also have been affected by soil erosion after forest clearance in the late 1800s and early 1900s. 5 marked coral reef transects conducted in May 1997 and again in December 1998, revealed a 92% loss of living hard coral from the southern reef in the intervening period.

Inter-tidal molluscs include a minimum of 25 species (Dahms in Bowler & Hunter 1999) and 23 species of cowrie and 174 species of cone shell have been identified from shells deposited on the beach (Jackson in Carty & Carty 1996). 29 species of decapod crustacean have been recorded (Anderson 1994).

Flora

Of the 95 Angiosperm species recorded on Aride, 9.5% are believed to be introduced. Of the 86 native species 1% are Seychelles endemics. There are no species naturally restricted to Aride although the Seychelles population of *Peponium vogelii* is now restricted to the island and by 1905 *Rothmannia annae* only survived on Aride. The habitat of Aride is classified as dry lowland *Pisonia grandis* forest (Gerlach 1998a). From the 1800s until 1970 the plateau on Aride was maintained as a coconut (*Cocos nucifera*) plantation and the hill woodland coppiced to maximise nesting areas for sooty terns (*Sterna fuscata*). Since 1980 management has aimed to restrict coconuts to their natural ecological niche on the strand line and to restore the plateau woodland to a natural state. At the same time coppicing ceased except for limited management to release specific native plants. This has resulted in the regeneration of natural habitats on the island. The process of regeneration continues although there have been suggestions that a natural climax is now being approached in the hill woodland (Ayrton in Carty & Carty 1996).

The terrestrial habitats of Aride can be divided into 8 types, the areas currently

occupied by each of these is summarised in Table 1. In the hill woodland regeneration has resulted in the dominance of *Pisonia grandis*, available data indicate that this is the second most abundant species but it dominates the canopy (Table 2.). *P. grandis* grows in guano rich soils and obtains additional nutrients through mycorrhizal associations (Ashford & Allwayw 1985) and through an abundance of dead seabirds. This species has sticky seeds which become entangled in bird feathers, ensuring the dispersal of the seeds. Seabirds frequently become entangled in large seed-heads and die, forming a nutrient store for the germinating seeds. The tern colonies in *P. grandis* woodland do derive some benefit from the presence of this species as its branches provide good nesting platforms and its leaves are a favoured nesting material for the lesser noddy (*Anous tenuirostris*).

Hill woodland species such as *Rothmannia annae* may have been encouraged by the practice of coppicing as this species was retained during coppicing as its narrow growth form is ideal for providing cover without being an obstacle to egg-collection. There are suggestions that *R. annae* species may be declining due to overshadowing by *P. grandis* and *Ficus* spp., although there is no empirical evidence to support this.

Within woodland areas open glades exist. Many of the glades may have been created by clearance and soil loss during coppicing. These are mainly on areas of open rock or very shallow soil where tree growth is reduced. These glades are characterised by a low growth of herbs, grasses and sedges. Many glades are being invaded by *Asystasia* sp.

Table 1. Area of habitats on Aride

Habitat	Area covered (hectares)	Habitat	Area covered (hectares)
Beach crest	1.4	Rock	15.8
Plateau woodland	2.6	<i>Euphorbia</i> scrub	1.6
Plantation	0.9	Glade	2.0
Wetland	0.3	<i>Pisonia</i> hill woodland	44.8

Table 2. Woodland composition in 1998 (trees >2m high listed in order of abundance, other species are also present in low numbers)

Species	Plateau - trees/ha (%)	Species	Plateau - trees/ha (%)
<i>Pisonia grandis</i>	75.5 (41)	<i>Euphorbia pyrifolia</i>	0.4 (0)
<i>Terminalia catappa</i>	38.5 (21)	<i>Xylocarpus moluccensis</i>	0.4 (0)
<i>Morinda citrifolia</i>	33.4 (18)	Total	184.0
<i>Cordia subcordata</i>	7.5 (4)		
<i>Ficus lutea</i>	5.4 (3)	Species	Hill (%)
<i>Thespesia populnea</i>	4.7 (3)	<i>Euphorbia pyrifolia</i>	38
<i>Calophyllum inophyllum</i>	5.0 (3)	<i>Pisonia grandis</i>	35
<i>Carica papaya</i>	5.0 (3)	<i>Rothmannia annae</i>	15
<i>Hernandia nymphaefolia</i>	2.9 (2)	<i>Cocos nucifera</i>	4
<i>Ficus reflexa</i>	2.5 (1)	<i>Ficus lutea</i>	2
<i>Musa</i> sp.	1.4 (1)	<i>Ficus reflexa</i>	2
<i>Phyllanthus casticum</i>	0.7 (0)	<i>Phyllanthus casticum</i>	2
<i>Barringtonia asiatica</i>	0.4 (0)	<i>Morinda citrifolia</i>	1
<i>Citrus</i> sp.	0.4 (0)	<i>Premna serratifolia</i>	1

As this species has not been identified (Friedmann 1994), it is not known whether it is native. Historically it is probable that giant tortoises maintained the low growth of the herb layer by grazing on the fast growing *Asystasia* sp.

Monitoring of the hill vegetation since 1976 has shown that the woodland has been encouraging into glade areas, resulting in decreases in the overall abundance of glade herbs and sedges such as *Mariscus ligularis* and *Asystasia* sp., and a decrease in diversity at woodland margins. Within the woodland it has been suggested that *Ficus* spp. replace *Pisonia grandis* although recent analysis suggests that such changes are insignificant at present. Successional changes suggested by available data are shown in Fig. 2.

On the plateau, a more widespread coastal forest type is believed to have existed in historical times. The regenerating woodland on the plateau has rapidly acquired some of the characteristics of marshy lowland forests throughout the granitic islands of Seychelles. It is probable that the natural habitat of the area would be mixed lowland forest. In this habitat no species forms more than 80% of the trees over 2m high (Gerlach 1998a). Existing examples support *Terminalia catappa* at 12-40%, *Calophyllum inophyllum* at 6-30%, *Heritiera littoralis* 0-17%, *Barringtonia asiatica* 0-60% and *Cocos nucifera* 10-15% (although this is artificially increased by planting). Aride's plateau supports all these species although the abundance of other species means that all except *T. catappa* are under-represented (espe-

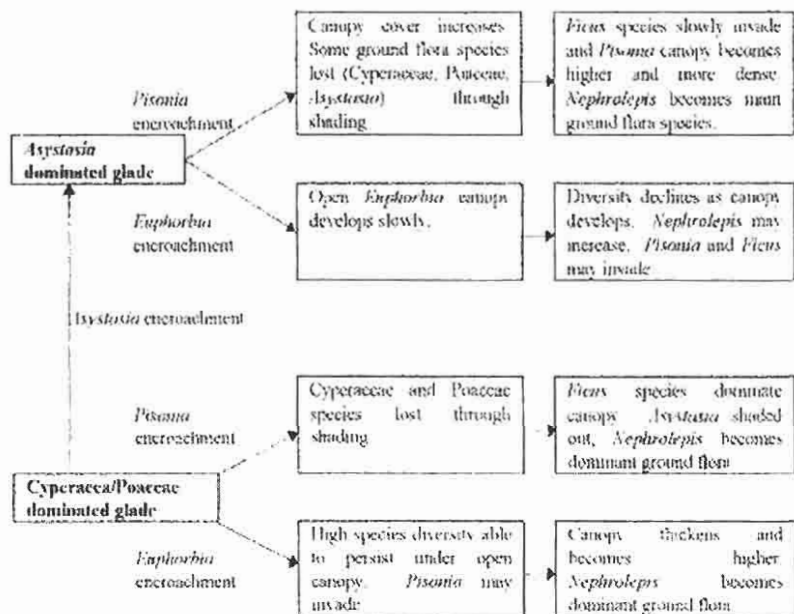


Fig. 2. Hill vegetation succession (after Ayrtton in Carty & Herzig 1995)

cially *H. littoralis* and *C. inophyllum* (Table 2). Total tree density is also relatively low. Changes recorded between 1997 and 1998 are largely due to the removal of coconut trees from the plateau. Germinating seeds of several tree species on the beach crest indicate that other plants would have been common in the Aride plateau woodland in the past as these are abundant on neighbouring islands.

Fauna Of the Aride fauna only the vertebrates have been studied in any detail. Current species lists are relatively poor for invertebrates and observations suggest that invertebrate life is generally sparse except around the edges of the marsh. To date 239 species have been recorded, of which 223 are native. 59 Seychelles endemics have been recorded (27% of natives) (see appendix).

Of the invertebrates, flying Diptera appear to be the most abundant, especially those associated with *Morinda citrifolia*. The significance of the fauna is not known at present. The most notable records are the vulnerable millipede *Spiromanes seychellarum* which is exceptionally abundant at the edges of the marsh. The giant millipede *Sechelleptus sechellarum* is also highly abundant. Other important records include the endangered water stick-insect *Ranatra grandoculata* and the robber crab *Birgus latro* (both first recorded in 1998-9). The terrestrial mollusc fauna is very poor as would be expected in dry habitats.

The vertebrate fauna is well known. Litter inhabiting skinks are highly abundant, with the world's highest lizard densities recorded for the populations of Seychelles skink *Mabuya seychellensis* and Wright's skink *M. wrightii* (maximum estimates of $2,126 \pm 628/\text{ha}$ and $648 \pm 481/\text{ha}$ respectively). The burrowing skink *Pamelascincus gardineri* is also present. All three feed on invertebrates, fallen eggs and chicks, dead birds and on fish dropped by the breeding terns and the high level of nutrient input provided by the tern colony is the primary cause of the high lizard population densities. Geckos are similarly abundant in the form of the gecko *Ailuroonyx seychellensis*. Three other species are also present but apparently less numerous, including the sucker-tailed gecko *Urocotyledon inexpectata* which is very rarely recorded. This lizard fauna supports a notable population of the lizard and bird eating Seychelles wolf snake *Lycognathophis sechellarum*.

The historical presence of terrapins on Aride has been reported but not substantiated (Bour 1984). The small marsh area would probably have been suitable for a small population of *Pelusios subniger*. In addition, tortoises were recorded in 1787 (Fauvel 1909), again the species is not known. Aldabran tortoises *Dipsochelys dussumieri* were introduced to the island in the early 1900s but were removed to Cousin and Curieuse in the 1960s and 1979 respectively. It is probable that the tortoises contributed to keeping the marsh area open by eating the emergent vegetation and excavating wallows in the dry season. Hawksbill *Eretmochelys imbricata* and green *Chelonia mydas* turtles nest on the island's beaches. The effectively protected breeding ground is important and numbers of laying turtles have increased significantly during the years of protection (Fig. 3).

The marsh area also supported the endemic freshwater fish *Pachypanchax playfairii*. This was only recorded in 1975-6 and it has been suggested to be an introduction (Beaver in Betts 1998), however it is a successful colonist of brackish pools; the eggs are probably dispersed by wading birds.

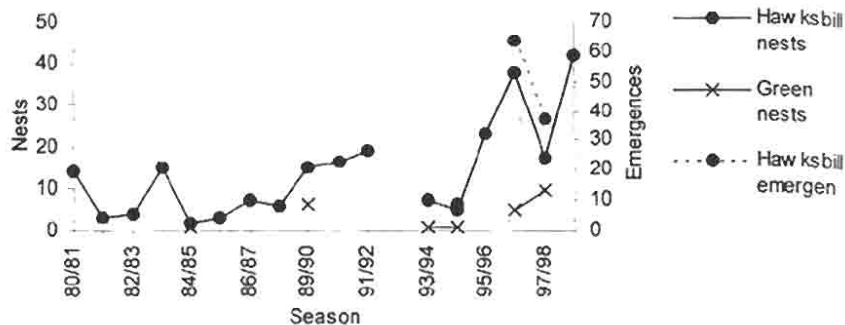


Fig. 3. Turtle numbers recorded on Aride

The most notable feature of the island is the bird life. 18 species are currently resident and there are historical records of a further 4, in addition 63 species have been recorded as migrants or vagrants. At the peak of the sea-bird breeding season there are estimated to be 746,882 pairs of birds nesting on the island (Table 3). In addition some 4,300 lesser and greater frigatebirds *Fregata ariel* and *F. minor* visit the island each year as non-breeding visitors. Of particular significance are the roseate tern *Sterna dougallii* as Aride supports the last significant breeding population in the Indian Ocean. This species appears to be particularly vulnerable to the failure of food supplies during the breeding season as complete breeding failure has occurred in several years.

Resident land birds recorded from the island include species currently absent. The black paradise flycatcher *Terpsiphone corvina* was probably lost with the historical clearance of the plateau woodland. It is doubtful whether black parrots *Coracopsis nigra* ever bred on the island as nesting trees would presumably be naturally scarce. Seychelles sunbird (*Nectarinia dussumieri*) and Seychelles blue pigeon (*Alectroenas pulcherrima*) have recolonised the island during the last 10 years with the restoration of the plateau woodland. Magpie robins *Copsychus seychellarum* were recorded for many years although recent attempted reintroductions have failed, this may be due to food shortage and/or disease. One female bird was still present in 1999.

Fruit bats visit the island regularly but are not known to breed there. The only breeding mammals are house mice (*Mus musculus*) which are highly abundant. Research is currently being carried out into the ecology of this alien species.

Table 3. Pairs of breeding sea-birds recorded on Aride in 1998.

Species	Number	Species	Number	Species	Number
Audubon's shearwater	57,000*	Roseate tern	1,264	Lesser noddy	166,400
Wedge-tailed shearwater	195,000*	Bridled tern	89	Fairy tern	4,900
White-tailed tropicbird	624**	Sooty tern	313,400		
Red-tailed tropicbird	5	Brown noddy	8,200	Breeding total	746,882

* Shearwater population estimated are from 1997 data.

** Census methodology is not suited to this species - 624 is believed to be an under-estimate

Conservation

From the late 1800s until 1974 the sea-bird colonies on Aride were cropped for eggs and birds. In 1973 the island was bought by Christopher Cadbury in order to secure its future as a reserve. Since this date it has been managed by the British conservation organisation, the Royal Society for Nature Conservation. In 1979 the waters around the island were declared a Marine Reserve, affording protection for the island to 200m off-shore.

Introduced plants have been controlled as part of intensive conservation management since 1987. The majority of alien plants have been controlled or eradicated. Current problem species include *Ipomoea aquatica* spreading across the marsh area and *Alocasia macrorrhiza* in the developing plateau woodland. Although *Asystasia* sp. may be native (Gerlach 1996), it is controlled in glades in order to maintain an open nesting habitat for roseate terns. A small number of introduced animals have been identified. It is not known whether any of these represent significant conservation problems. Barn owls (*Tyto alba*) are controlled to minimise predation on the important seabird colonies and Indian mynahs (*Acridotheres tristis*) have been eradicated to prevent predation of eggs and chicks of endemic landbirds. House mice may be important invertebrate or seed predators; data are currently being collected. Measures are taken to prevent other alien species colonising the island, the risk of rat invasion is a major cause for concern. These measures have proved to be successful with the location and removal of the alien snail *Achatina fulica*. Aride is one of a small number of tropical islands to remain free of this species.

Poaching of terns and their eggs is a major problem. During the main tern breeding season night patrols are made and have had some success in discouraging poachers. The first successful prosecution of a poacher took place in 1998, however poaching continues.

Management aims to restore the island to as near a natural state as possible. This involves the management of vegetation and reintroduction of plants and animals. Two reintroductions have been carried out to date. The Seychelles warbler *Acrocephalus sechellensis* was reintroduced in 1988. This has been highly successful and Aride now supports some 75% of the world population of this species and numbers continue to rise (Fig. 4). There have been several attempts to reintroduce the Seychelles magpie robin *Copsychus sechellarum*, but so far without success, further attempts await research into food availability and disease factors. Future reintroductions may include the Seychelles black paradise flycatcher *Terpsiphone corvina*, terrapins *Pelusios* sp., giant tortoises *Dipsochelys* sp. and the freshwater fish *Pachypanchax playfairi*. Most of these are associated with the marsh restoration project currently being implemented.



Fig 4. Population growth of Seychelles warblers on Aride from 1988 to 1997.

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This lists all species recorded as breeding, or suspected to breed, on Aride islands. Only wild terrestrial and fresh-water species are listed. For all species the distribution outside the central (granitics plus Bird and Denis) islands of Seychelles is summarised with the following abbreviations:

End. = endemic	Ald. = Aldabra	Ami. = Amirantes	Masc. = Mascarenes
Mad. = Madagascar	Com. = Comoros	Afr. = Africa	Palaeotrop. = Palaeotropics
Pantrop. = Pantropical	Cosmo. = Cosmopolitan		

The Seychelles islands on which they have been recorded are listed in the standard order of islands used in other *Phelsuma* publications, abbreviations as follows:

M. = Mahé	SA. = St. Anne	Cerf	Moy. = Moyenne
L. = Long	Cach. = Cahée	Anon. = Anonyme	Ro. = Round (Mahé)
Sou. = Souris	Isl. = Islette	V. = Vaches Marins	Con. = Conception
Ther. = Thérèse	Mam. = Mamelles	S. = Silhouette	N. = North
P. = Praslin	Cur. = Curieuse	CS. = Chauve Souris	R. = Round (Praslin)
Co. = Cousin	Coe. = Cousine	A. = Aride	Coco. = Cocos
GS. = Grande Soeur	PS. = Petite Soeur	Alb. = Albatross	Fel. = Félicité
Mar. = Marianne	LD. = La Digue	F. = Fregate	Rec. = Recifs

Only references to Aride records are cited. These are the first references to specimens or observations, the aim of this publication is to summarise specific records and not to list all citations. No citations are given for Araneae; all data for this group are from ongoing studies by M.I. Saaristo of material collected since 1974.

Species and families are listed in a standard order if a recent monographic treatment is available, otherwise all taxa are listed alphabetically.

PLANTAE

BRYOPHYTA - MUSCI

Family LEUCOBRYACEAE *Octoblephorum albidum* Hedw. - Afr.; M., P. & A. (Betts 1996).Family HYPNACEAE *Isopterygium argyroleucum* Besch. - A. (C. Townsend pers. comm.).

PTERIDOPHYTA

Family ADIANTACEAE *Achrosticum aureum* Willd. - W. Indian Ocean; M., S., P., A. (Betts 1998) & BirdFamily DAVALLIACEAE *Nephrolepis 'biserrata'* - M., L., S., P., A. (Castle & Mileto 1994), LD. & Bird.Family PARKERIACEAE *Ceratopteris cornuta* (Pal.) Lepr. - Palaeotrop., M., S., P. & A. (Castle & Mileto 1994)Family POLYPODIACEAE *Phymatosorus scolopendria* (Burm. f.) Pic.Ser. - Palaeotrop.; M., L., S., P., Co. (Castle & Mileto 1994 as 'Fern A. '), LD. & Bird.

Table 1. Terrestrial & freshwater species recorded on Aride

Group		Species		% natives endemic to		
		Total	Native	Seychelles	Aride	
PLANTAE	Bryophyta	2	2	0	0	
	Pteridophyta	4	4	0	0	
	Angiospermae	95	86	1	0	
ANIMALIA	Platyhelminthes	1	1	?	?	
	Annelida					
		Oligochaeta	1	?	?	?
	Mollusca					
			7	5	0	0
	Chelicerata					
		Schizomida	1	1	100?	?
		Arachnida	38	37	42	3
		Pseudoscorpiones	1	1	0	0
		Scorpiones	1	0	0	0
		Amblypygi	1	1	0	0
		Acari	2	2	0	0
	Crustacea					
		Decapoda	12	12	0	0
		Isopoda	3	3	100	0
		Amphipoda	1	?	?	?
	Myriapoda					
		Diplopoda	5	4	50	0
		Chilopoda	5	5	0	0
		Symphyla	1	1	?	?
	Apterygota					
		Collembola	1	?	?	?
		Thysanura	1	?	?	?
	Insecta					
		Odonata	8	8	0	0
		Orthoptera	3	3	33	0
		Dictyoptera	4	1	0	0
	Isoptera	2	2	50	0	
	Dermaptera	2	0	0	0	
	Hemiptera	18	17	35	0	
	Neuroptera	2	2	0	0	
	Lepidoptera	46	44	20	0	
	Diptera	31	31	45	3?	
	Thysanoptera	1	1	?	?	
	Hymenoptera	19	15	7	0	
	Coleoptera	22	20	45	0	
Chordata						
	Pisces	1	1	100	0	
	Reptilia	11	10	90	0	
	Aves	23	20	30	0	
	Mammalia	1	0	0	0	

ANGIOSPERMAE (full records are given in Robertson 1989 only summary records are repeated)

Family HERNANDIACEAE *Hernandia nymphaeifolia* (Prest) Kubitzki - Indo-Pacific; M., S., P., A. (Castle & Mileto 1994) & LD.

Family PIPERACEAE *Peperomia pellucida* (L.) B.K. - Introduced; M., A. (Castle & Mileto 1994) & F.

Family MORACEAE *Ficus benghalensis* L. - Introduced; A. (Castle & Mileto 1994) & F. *F. lutea* Vahl - Afr., Mad., Comoros, Aldabra, widespread - (Castle & Mileto 1994 as *F. nautarum*). *F. reflexa* Thunb. - Afr.; widespread (Castle & Mileto 1994).

Family CASUARINACEAE *Casuarina equisetifolia* J.R. & G. Forster - SE Asia; widespread - (Castle & Mileto 1994).

Family NYCTAGINACEAE *Pisonia grandis* R.Br. - Indo-Pacific; M., S., Co., Coe., A. (Castle & Mileto 1994), Bird & Denis. *Boerhavia repens* L. - Palacotrop.; A. (Castle & Mileto 1994), Co. & Denis.

Family AIZOACEAE *Glinus oppositifolia* (L.) DC. - Pantrop.; A. (Castle & Mileto 1994), Co., LD. & F.

Family AMARANTHACEAE *Achyranthes aspera* L. - Pantrop.; widespread (Castle & Mileto 1994).

Family AMARANTHACEAE *Achyranthes aspera* L. - Pantrop.; widespread (Castle & Mileto 1994). *Achyranthes sessilis* (L.) DC. - Introduced; M., S., P., A. (Castle & Mileto 1994) & F. *Amaranthus*

- dubius* Thell. - Introduced; widespread (Castle & Mileto 1994).
- Family GUTTIFERAE *Calophyllum inophyllum* L. - Indo-Pacific; widespread - (Castle & Mileto 1994).
- Family MALVACEAE *Abelmoschus moschatum* Medik. - Introduced; A. (Friedmann 1994, Bowler & Hunter 1999). *Hibiscus tiliaceus* L. - Indo-Pacific; widespread (Castle & Mileto 1994). *Sida cordifolia* L. Asia; M., A. (Castle & Mileto 1994) & Co. *Thespesia populnea* (L.) Soland. ex Correa - Indo-Pacific; widespread (Castle & Mileto 1994).
- Family LECYTHACEAE *Barringtonia asiatica* (L.) Kurz - Indo-Pacific; widespread (Castle & Mileto 1994).
- Family CUCURBITACEAE *Peponium vogelii* (Hook.f.) Engl. - Afr.; M. & A. (Castle & Mileto 1994 as *Peponium* sp., Friedmann 1994).
- Family CAESALPINIACEAE *Intsia hijuga* (Colebr.) O.Kuntze - Indian Ocean; widespread - (Castle & Mileto 1994). *Senna occidentalis* (L.) - Introduced; widespread (Castle & Mileto 1994).
- Family MIMOSACEAE *Paraserianthes falcataria* (L.) Niels. - Introduced; widespread (Bowler & Hunter 1999).
- Family PAPILIONACEAE *Abrus precatorius* L. - Afr.-Asia; widespread (Castle & Mileto 1994). *Cunavillea cathartica* Thouars - Indo-Pacific; M., S., N., P., A. (Castle & Mileto 1994) & Co. *Sesbania sericea* (Willd.) Link - Introduced; A. (Friedmann 1994, Castle & Mileto 1994) Bird & Denis. *Vigna maritima* (L.) Merr. - Pantrop.; widespread (Castle & Mileto 1994).
- Family MYRTACEAE *Eucalyptus camaldulensis* Dehnh. - Introduced; M., A. (Castle & Mileto 1994, Friedmann 1994) & Co. *Ludwigia erecta* (L.) Hara - Introduced; M., N. & A. (Castle & Mileto 1994). *Syzygium cumini* (L.) Druce - Introduced; widespread (Castle & Mileto 1994).
- Family COMBRETACEAE *Terminalia catappa* L. Asia; widespread (Castle & Mileto 1994).
- Family EUPHORBIACEAE *Acalypha indica* L. - Introduced; widespread (Castle & Mileto 1994). *Euphorbia hirta* L. - Introduced; widespread (Castle & Mileto 1994). *E. pyriformis* Lam. - Mad., Masc.; widespread - (Castle & Mileto 1994). *E. thymifolia* L. - Introduced; M. & A. (Castle & Mileto 1994). *Pedilanthus tithymaloides* (L.) Poit. - Introduced; widespread (Castle & Mileto 1994). *Phyllanthus amarus* Schumacher & Thonn. - Introduced; widespread (Castle & Mileto 1994). *P. pervilleanus* (Baillon) Müll. Arg. - Mad.; widespread (Castle & Mileto 1994 as *P. casticum* and *P. nummularifolius*).
- Family MELIACEAE *Xylocarpus moluccensis* (Lam.) Roem. - Indo-Pacific; widespread (Castle & Mileto 1994).
- Family APOCYNACEAE *Catharantus roseus* (L.) G. Don - Introduced; widespread (Castle & Mileto 1994). *Ochrosia oppositifolia* (Lam.) K.Schum. - Indo-Pacific; widespread (Castle & Mileto 1994).
- Family ASCLEPIADACEAE *Sarcostemma viminale* (L.) Aiton f. - Afr.; widespread (Castle & Mileto 1994).
- Family SOLANACEAE *Datura metel* L. - Introduced; S., P. & A. (Castle & Mileto 1994). *Physalis peruviana* L. - Introduced; widespread (Castle & Mileto 1994). *Solanum americanum* Mill. - Introduced; widespread (Castle & Mileto 1994).
- Family CONVULVULACEAE *Ipomoea pes-caprae* (L.) R.Br. - Pantrop.; widespread (Castle & Mileto 1994). *macrantha* Roem. & Schult. - Indo-Pacific; widespread (Castle & Mileto 1994). *I. venosa* (Desr.) Roem. & Schult. - Masc.?, M., Anon., S., Co., Coe. & A. (Castle & Mileto 1994). *I. aquatica* Forssk. - Introduced; M., S., N., Cur. & A. (Castle & Mileto 1994).
- Family BORAGINACEAE *Cordia myxa* L. - Introduced; M. & A. (Castle & Mileto 1994). *C. subcordata* Lam. - Indo-Pacific; widespread (Castle & Mileto 1994). *Heliotropium indicum* L. - Introduced; widespread (Castle & Mileto 1994). *Tournefortia argentea* L.f. - Indo-Pacific; widespread (Castle & Mileto 1994).
- Family VERBENACEAE *Premna serratifolia* L. - Indo-Pacific; widespread - (Castle & Mileto 1994).
- Family LABIATAE *Plectranthus amboinicus* (Lour.) Spreng. - Asia; M., S., N., P., Co. & A. (Bullock 1989). *Coleus subfrutescens*, Castle & Mileto 1994, Friedmann 1994).
- Family ACANTHACEAE *Asystasia* sp. B. - ?, widespread (Castle & Mileto 1994 as *A. gangetica*).
- Family GOODENACEAE *Scuevola sericea* Vahl - Indo-Pacific; widespread (Castle & Mileto 1994).
- Family RUBIACEAE *Morinda citrifolia* L. - Indo-Pacific; widespread (Castle & Mileto 1994). *Pentandrus pentandrus* (Schumacher & Thonn.) Vatke - Afr.; widespread (Castle & Mileto 1994). *Rothmannia annua* (Wright) Keay - End.; M., S., P., A. (Castle & Mileto 1994) & Fel.
- Family COMPOSITAE *Vernonia cinerea* (L.) Less. - Introduced; widespread (Castle & Mileto 1994).
- Family AGAVACEAE *Agave sisalana* (Perr. ex Engelm.) Drumm. & Prain - Introduced; widespread (Castle & Mileto 1994).
- Family MARANTACEAE *Maranta arundinacea* L. - Introduced; M., N., A. (Robertson 1987). F. & Bird.
- Family CANNACEAE *Canna indica* L. - Afr.; M., A. (Robertson 1987) & Bird.
- Family BRONNACEAE *Ananas comosus* (L.) Merr. - Introduced; widespread (Castle & Mileto 1994).
- Family AMARYLLIDACEAE *Hymenocallis littoralis* (Jacq.) Salisb. - Introduced; widespread (Castle & Mileto 1994). *Scadoxus multiflorus* (Martyn.) Raf. - Introduced; A. (Castle & Mileto 1994).

- Family PALMAE: *Cocos nucifera* L. - Indo-Pacific; widespread (Castle & Mileto 1994).
- Family PANDANACEAE *Pandanus balfourii* Mart. - Ind.; widespread (Castle & Mileto 1994).
- Family ARACEAE *Alocasia macrorrhiza* (L.) G. Don - Introduced; widespread (Robertson 1987, Castle & Mileto 1994). *Amorphophallus paeoniifolius* (Dennst.) Nicolson - Introduced; M., S., P. & A. (Castle & Mileto 1994).
- Family PORTULACACEAE *Portulaca oleracea* L. - Cosmo.; widespread (Robertson 1987)
- Family CYPERACEAE *Cyperus alopecuroides* Rothb. - Afr.; M., S., A. (Robertson 1987) & Co. *C. compressus* L. - Pantrop.; M., N., F & A. (Robertson 1987). *C. distans* L. - Pantrop.; M. & A. (Castle & Mileto 1994). *Fimbristylis complanata* (Retz.) Link - Pantrop.; widespread (Robertson 1987). *Kyllinga polyphylla* Willd. Ex Kunth - Afr.; widespread (Robertson 1987). *Marticus dubius* (Roth) Fischer - Palaeotrop.; widespread (Robertson 1987). *M. ligularis* (L.) Urb. - Pantrop.; widespread (Robertson 1987). *M. pendunculatus* (R.Br.) Koyama - Pantrop.; M., P., A. (Robertson 1987) & F. *Pycneus polystachyos* (Rothb.) P.Beauv. - Pantrop.; widespread (Robertson 1987).
- Family POACEAE *Bambusa vulgaris* Schrad. Ex Wendl. - Introduced; P., A. (Robertson 1987, Castle & Mileto 1994) & F. *Chloris barbata* (L.) Ws. - Introduced; M., L., N., A. (Carty & Carty 1996) & F. *Cynodon dactylon* (L.) Pers. - Pantrop.; widespread (Robertson 1987). *Dactyloctenium aegyptium* (Steud.) Bosser - Pantrop.; widespread (Robertson 1987). *Digitaria horizontalis* Willd. - Pantrop.; widespread (Robertson 1987). *Elusine indica* (L.) Gaertn. - Pantrop.; widespread (Robertson 1987). *Enteropogon sechellensis* (Baker) Dur.&Schinz - Palaeotrop.; widespread (Robertson 1987). *Eragrostis tenella* (L.) P.Beauv. - Pantrop.; widespread (Castle & Mileto 1994). *Panicum brevifolium* L. - Palaeotrop.; widespread (Robertson 1987). *P. maximum* L. - Afr.; widespread (Robertson 1987). *Pennisetum polystachyon* (L.) Schult. - Palaeotrop.; widespread (Robertson 1987). *Setaria barbata* (Lam.) Kunth - Introduced; M., S., N., A. (Robertson 1987) & F. *Sporobolus virginicus* (L.) Kunth - Pantrop.; widespread (Robertson 1987). *Stenotaphrum dimidiatum* (L.) Brongn. - Palaeotrop.; widespread (Robertson 1987). *S. micranthum* (Desv.) C.E.Hubb. - Indo-Pacific; widespread (Robertson 1987).

ANIMALIA

PLATYHELINTHES ? sp. - A. (Gerlach in Betts 1998)

ANNELIDA

OLIGOCHAETA ? sp. (Rowley & Warman 1979; Gerlach in Betts 1998)

MOLLUSCA

Family SUBULINIDAE *Allopeas gracile* (Hutton) - Pantrop., most islands - A. (Bullock 1989). *Opeas pumilum* (Pfeiffer) - Pantrop.; most islands - A. (Bullock 1989). *Subulina octona* Bruguière - Pantrop.; most islands - A. (Rowley & Warman 1979 as "*Streptastole* sp.??"; Bullock 1989).

Family PUPILLIDAE *Gastrocopta tripunctata* Morelet - Mad; M., Anon., S., P. A. (Bullock 1989) & F.

Family ASSIMINEIDAE *Syncera nitida* (Pease, 1864) - Indo-Pacific; M., S. & A. (Gerlach in Betts 1998).

Family ELOBIIDAE *Melampus lividus* Deshayes - Indo-Pacific; M., Moy., S., P. & A. (Bullock 1989)

Family TRUNCATELLIDAE *Truncatella guerini* Villa - Indo-Pacific; M., SA., Ro., S., P. & A. (Bullock 1989).

CRUSTACEA

DECAPODA

Family COENOBITIDAE *Birgus latro* (Linnaeus) - Pantrop.; A. (Bowler & Hunter 1999). *Coenobita brevipennis* Dana, 1852 - Indo-Pacific; S. & A. (Anderson 1994). *C. perlatus* (Milne Edwards, 1837) - Indo-Pacific; S. & A. (Anderson 1994). *C. rugosus* (Milne Edwards, 1837) - Indo-Pacific; A. (Anderson 1994).

Family GECARCINIDAE *Cardisoma carnifex* (Herbst, 1784) - Indo-Pacific; M., S., P. & A. (Anderson 1994).

Family OCYPODIDAE *Ocyropsis ceratophthalma* (Pallas) - Indo-Pacific; M., S., P., Co., Cae. & A. (Rowley & Warman 1979; Anderson 1994). *O. cordimana* (Desmarest, 1825) - Indo-Pacific; M., S., Co., A. (Anderson 1994) & Bird.

Family GRAPSIDAE *Geograpsus crinipes* (Dana, 1851) - Indian Ocean; S. & A. (Anderson 1994). *G. grayi* (Milne-Edwards, 1853) - Indo-Pacific; A. (Anderson 1994). *G. stormi* (De Man, 1895) - Indo-Pacific; A. (Anderson 1994). *Grapsus tenuicrustatus* (Herbst, 1783) - Indo-Pacific; M., S. & A. (Anderson 1994). *Metopograpsus messor* (Foskål, 1775) - W. Indian Ocean; M. & A. (Anderson 1994).

ISOPODA

- Family ARMADILLIDAE *Reductioniscus costulatus* Kesselyak, 1930 - End.; M., S., P., A. (Gerlach in Betts 1998) & Cur. *Sphaerillo maculosus* Budde-Lund, 1904 - End.; M., S. & A. (Gerlach in Betts 1998)
- Family IRMAOSIDAE *Irmaos sechellarum* Ferrara & Taiti, 1983 - End.; M., S. & A. (Gerlach in Betts 1998)

AMPHIPODA ? sp. (Gerlach in Betts 1998)

ARACHNIDA

ARANEAE

Suborder ARANEOMORPHA

- Family ARANEIDAE Simon, 1895 *Argiope trifasciata* (Forskål, 1775) - Afr.; P. & A. *Cyclosa cameloides* (Thorell, 1878) - Pantrop.; A. *Cyrtophora citricola* (Forskål, 1775) - Pantrop.; M., S., P., A., Cur., LD. *Drexelia bifida* (Tullgren, 1910) - Afr.; M., S. & A.
- Family CLUBIONIDAE Wagner 1887 "*Clubiona*" *nigromaculosa* Blackwall, 1877 - End.; M., Anon., S., Co. & A. (Saaristo 1995, Betts 1996 as *C. mahensis*)
- Family CORINNIDAE Karsch, 1880 *Oedignatha scrobiculata* Thorell, 1881 - Indo-Pacific; M., S., P., Cu., Co. & A. Genus ign. sp. 1. - End. ? : A.
- Family GNAPHOSIDAE Banks, 1892 (= Drassidae Sundevall, 1833) *Camillina aldabae* (Strand, 1907) - Ald. *C. cordifera* (Tullgren, 1910) - Afr.; M., P., Cu., Co. & A. *Xerophaeus* sp. : End.; M. & A.
- Family PHOLCIDAE *Modisimus culicinus* (Simon, 1893) - Pantrop.; P., Cu., Co., A. & GS. *Micropholcus fautoti* (Simon, 1887) - Indo-Pacific/Palaeotrop.; Co. & A.
- Family LINYPHIIDAE Blackwall, 1859 *Nesioneta benoitii* (van Helsdingen, 1978) - Palaeotrop.; M., S., P., Cu., A., PS & LD.
- Family LYCOSIDAE Sundevall, 1833 *Trochosa urbana* (O. Pickard-Cambridge, 1878) - Afr.; M., S., P. & A. *Bristowiella seychellensis* (Bristowe, 1973) - End.; M., P., Cu. & A.
- Family OONOPIIDAE Simon, 1890 "*Gamasomorpha*" *tirchinalis* (Benoit, 1979) - End; M., P. & A. (Betts 1998). *Brignolia cubana* Dumitresco & Georgesco, 1983 - Introduced; A. *Gamasomorpha* sp. - End; A. (Saaristo pers. comm.). *Ischnothyreus peltifer* (Simon, 1891) [= *I. sechellarum* Benoit, 1979] - Pantrop.; M., P. & A. *Opopea lena* Suman, 1965 - Indo-Pacific/Palaeotrop.; M., P. & A.
- Family OXYOPIIDAE Thorell, 1870 *Oxyopes dumontii* (Vinson, 1863) - Mad.; M., S. P. & A.
- Family SALTICIDAE Blackwall, 1841 *Myrmarachne constrictus* (Blackwall, 1877) - End.; L., S., P., A. & Denis. *Harmochirus* sp. - End; A. *Hyllus acutus* (Blackwall, 1877) - End.; M., Cerf, S., P., A., Den. & P. *Heliophanus activus* (Blackwall, 1877) - End.; M., S., P., Cur., Coe. & A.
- Family SCYTODIDAE Blackwall, 1864 *Scytodes fusca* (Walckenaer, 1837) - Pantrop.; M., P., Cur., Co. & A. (Saaristo 1997) & LD.
- Family SELENOPIIDAE Simon, 1897 *Selenops secretus* Hirst, 1911 - End.; M., S., P., Coe., A. & Frég.
- Family TETRAGNATHIDAE Menge, 1866 *Nephila inaurata* (Walckenaer, 1841) - W. Indian Ocean; M., S., P., Cur., Co., A., LD & Frég. *Dyschiriognatha argyrostilba* O. Pickard-Cambridge, 1876 - Afr.; A.
- Family THERIDIIDAE Sundevall, 1833 '*Acheareana*' *labarda* Roberts, 1983 - End.; A. *Argyrodus rostratus* Blackwall, 1877 - End.; M., S., A., Cur. & LD. *Coleosoma blandum* O. Pickard-Cambridge, 1883 - Pantrop.; M., A. & Cu. *C. floridana* (Banks, 1900) - Pantrop.; M., S., P., Cu., A. & LD. *Diplocephalus spundana* Roberts, 1978 - End.; S., A., Cu., LD. *Anelosimus placens* (Keyserling, 1884) - End.; M., Cu. & A. "*Theridion*" *clabnum* Roberts, 1978 - End.; A.
- Family THOMISIDAE Sundevall, 1833 "*Thomisus*" *stenningi* Pocock, 1900 [= *T. citrinellus*] - Afr.; M., S. & A.
- Family ULOBORIDAE Thorell, 1869 *Uloborus plumipes* Lucas, 1846 - Cosmo.; M., S., P., A. & Cur -

ACARI

- Family ARGASIDAE *Ornithodoros capensis* Indo-Pacific; A. (J. Ramos pers. comm.)
- Family IXODIDAE *Amblyomma loculosum* Neumann, 1907 - Indo-Pacific; A. (Warman 1978). Co. & Bird

AMBLYPYGI

- Family TARANTULIDAE *Phrynictus scaber* (Krapelin, 1898) - Masc.; Co., Coe., A. (Betts 1998) & F.

PEDIPALPI

- Family HUBBARDIIDAE Sp. ? - ?; A. (Gerlach in Betts 1998 as *Schizomus similis*).

PSEUDOSCORPIONES

Family WITHIIDAE *Withius piger* (Simon) - A. (M. Harvey, pers. comm.).

SCORPIONES

Family SCORPIONIDAE *Isometrus maculataus* (Geer, 1777) - Introduced; M., S., Co., A. (Rowley & Warman 1979 as "Scorpionida indet"; Hunter & Bowler pers. obs.) & F.

**UNIRAMIA
SYMPHYLA**

Symphyla sp. - ?; A. (Gerlach in Betts 1998).

**MYRIAPODA
CHILOPODA**

Family GEOPHILIDAE *Mecistocephalus angusticeps* (Ribaut, 1914) - Afr.; S., P., Cur. & A. (NPTS U1999.1).
Nesogeophilus leptochilus (Brölemann, 1931) - Asia; M., P., Cu. & A. (NPTS U1999.2). *Tyggarup javanicus* Attems, 1907 - Asia; M., P. & A. (Gerlach in Betts 1998).

Family SCOLOPENDRIDAE *Cryptops philannus* Attems, 1900 - Afr.; M., S., P., Cur. & A. (Gerlach in Betts 1998 as *Lithobius* sp.; NPTS U1999.3). *Scolopendra subspinipes* Leach - Pantrop.; M., S., P., A. (Rowley & Warman 1979 as "*Scolopendrium* sp.") & F.

DIPLOPODA

Family PACHYBOLIDAE *Spiromanes seychellarum* Saussure & Zehntner, 1902 - End.; S. & A. (Gerlach in Betts 1998). *Trigoniulus corallinus* (Eydoux & Souleyet, 1841) - Pantrop.; M., S., P., A. (Gerlach in Betts 1998 as *T. goesti*) & Fel.

Family PARADOXOSOMIDAE *Orthomorpha gracilis* (Koch, 1847) - Pantrop.; M., S. & A. (Gerlach in Betts 1998).

Family PSEUDOSPIROBOLELLIDAE *Pseudospirobolellus avernus* (Butler, 1876) - Pantrop.; M., Co., A. (Gerlach in Betts 1998 as *Eucardia alluaudi*) & Fel.

Family SPIROSTREPTIDAE *Sechelleptus seychellarum* (Desjardins, 1834) - End. gen.; SA., V., S., Co., Coe., A. (Gerlach in Betts 1998), Fel., LD. & F.

HEXAPODA

APTERYGOTA

COLLEMBOLA ? sp. (Gerlach in Betts 1998).

THYSANURA ? sp. (Rowley & Warman 1979).

INSECTA

ODONATA

Family AESCHNIDAE *Anax guttatus* (Burm., 1839) - Asia; M., S. & A. (Carty & Carty 1996, Bowler & Hunter 1999). *Hemianax ephippiger* (Burmeister, 1839) - Palaeotrop.; M., A. (Carty & Carty 1994, Bowler & Hunter 1999 - non breeding) & F.

Family AGRIONIDAE *Ceriagrion glabrum* (Burm., 1839) - Afr.; S., P. & A. (Bullock 1989, Carty & Carty 1996, Bowler & Hunter 1999). *Ischnura senegalensis* (Rambur, 1842) - Afr.; M., N., P. & A. (Betts 1998 - non breeding).

Family COENAGRIONIDAE *Agriocnemis pygmaea* (Selys, 1877) - Asia; M., S., P., A. (Carty & Carty 1996 - non breeding) & LD.

Family LIBELLULIDAE *Diplacodes lefebvrei* (Rambur, 1842) - Palaeotrop.; M., S., A. (Bowler & Hunter 1999 - non breeding) & LD. *Diplacodes trivialis* (Rambur, 1842) - Asia; M., S., P. & A. (Bullock 1989, Carty & Carty 1996, Bowler & Hunter 1999). *Orthetrum stemmale* (Selys, 1877) - Afr.; M., Cerf., S., P., Co., Coe., A. (Bullock 1989, Carty & Carty 1996, Bowler & Hunter 1999), LD., Bird & Denis. *Pantala flavescens* (Fabricius, 1798) - Pantrop.; S. & A. (Bowler & Hunter 1999). *Rhyothemis semihyalina* (Desjardins, 1832) - Afr.; M., N., P., A. (Bullock 1989, Carty & Carty 1994, Bowler & Hunter 1999 - non breeding) & LD. *Tholymis tillarga* (Fabricius, 1798) - Asia; M., S., P., Coe. & A. (Bowler & Hunter 1999). *Tramea limbata* (Desjardins, 1832); Indian Ocean; M., S., P. & A. (Bullock 1989, Carty & Carty

ORTHOPTERA

- Family GRYLLIDAE *Zarceus fallaciosus* Bolivar, 1895 - End.; M., L., Anon., S. & A. (Gerlach in Betts 1998).
Family PHASGONURIDAE *Conocephalus conocephalus* - Afr.; M., S. & A. (NPTS H1999.4).
Family GRYLLOTALPIDAE *Grylotalpa africanus* - Afr.; M., S. & A. (Rowley & Warman 1979).

DICTYOPTERA

- Family BLATELLIDAE *Lobopterella dimidiatipes* (Bouvier, 1890) - Asia; M., L., S. & A. (Roth 1996).
Symploce pallens (Stephens) - Afr.; A. (Roth 1996).
Family BLABERIDAE *Pycnoscelus 'surinamensis'* - Pantrop.; M., L., S., P., Coc., A. (Roth 1996). LD., Bird.
Family BLATTIDAE *Periplaneta americana* Linnaeus, 1758 - Introduced; widespread, A. (Rowley & Warman 1979).

ISOPTERA

- Family KALOTERMITIDAE *Kaltoermes scotti* Holmgren, 1910 - End.; S. & A. (NPTS H1999.3).
MICROTERTERMITIDAE *Microtermes subtilis* Wasmann, 1897 - Mad.; M., S. & A. (NPTS H1999.1-2).

DERMAPTERA

- Family LABIIDAE *Gonolabis electra* Burr - Introduced; M., S., P., Cur., A. (Floater 1994) & LD. *Labia minima* (Linnaeus) - Introduced; S., A. (NPTS Hw1999.5-9) & LD.

HEMIPTERA

- Family APHIDIDAE *Pentalonia nigronervosa* Introduced; M., S. & A. (Rowley & Warman 1979).
Family CAPSIDAE *Sthenarus leucophilus* Distant, 1916 - End.; M. & A. (NPTS Hh1999.23).
Family CICADELLIDAE *Jakerella ineffectus* Distant, 1916 - End.; M. & A. (NPTS Hh1999.16). *Paganus virescens* Distant, 1916 - End.; M. & A. (Hh1999.16). *Scaphoideus vagans* Distant, 1916 - End.; M. & A. (NPTS Hh1999.25).
Family CIMICIDAE *Cimex marginellus* - A. (Rowley & Warman 1979).
Family COCCIDAE ? Sp. (Gerlach in Betts 1998).
Family DELPHACIDAE *Sogatella kolophon* - A. (Rowley & Warman 1979).
Family DERBIDAE *Protista moesta* Westwood - Afr.; M., S. & A. (Rowley & Warman 1979).
Family FULGORIDAE *Nisa thoracica* Distant, 1916 - End.; S. & A. (NPTS Hh1999.13). *Osaka relata* Distant, 1916 - End.; A. (NPTS Hh1999.15) & Co.
Family HYDROMETRIDAE *Halobates alluaudi* Bergroth, 1893 - Mad.; M. & A. (Rowley & Warman 1979).
Family MARGARODIDAE *Icerya seychellarum* (Westwood, 1855) - Cosmo.; M., S., P. & A. (Gerlach in Betts 1998).
Family NEPIDAE *Ranatra grandocula* Bergroth, 1893 - Mad.; M., S. & A. (Bowler & Hunter, pers. obs.).
Family NOTONECTIDAE *Anisops varius* Fieb., 1851 - Afr.-Asia; M., S., P. & A. (Rowley & Warman 1979).
Family PENTATOMIDAE ? Sp. - A. (NPTS Hh1999.12). *Acrosternum heegeri* (Fieb., 1861) - Mad.; M., S. & A. (Rowley & Warman 1979).
Family PYRRHOCORIDAE *Jourdainana rugifer* Distant, 1916 - End. gen.: A. (NPTS Hh1999.26).
Family SALDIDAE *Sala insignis* Distant, 1916 - End.; M. & A. (NPTS Hh1999.32).

NEUROPTERA

- Family CHRYSOPIDAE *Mallada desjardini* (Navas, 1911) - Indo-Pacific; M., L., S., P., A. (Rowley & Warman 1979 as *Chrysopa* sp.; Gerlach in Betts 1998) & Denis.
Family MYRMELEONIDAE *Myrmeleon obscurus* Rambur, 1853 - Afr.; M., Sil., N., A. (Rowley & Warman 1979) & Bird.

LEPIDOPTERA

- Family ARCTIIDAE *Utetheisa pulchelloides* Hampson, 1901 - Indian Ocean; M., S., A. (Carty & Carty 1996).
U. pulchella, LD. & Bird.
Family BLASTOBASIDAE *Blastobasis intrepida* Meyrick, 1911 - End.; M. & A. (Gerlach in Betts 1998).

- Family DANAIIDAE *Danaus chrysippus* (Linnaeus, 1758) - Palaetrop., M., S., P., A. (Rowley & Warman 1979) & LD.
- Family GELECHIIDAE *Lecithocera effera* Meyrick, 1918 - Introduced; M., S. & A. (Gerlach in Betts 1998).
- Family GEOMETRIDAE *Chloroclystis gerberae* Herb., 1964 - End; M., S. & A. (Gerlach in Betts 1998).
- Family *Scopula minorata* (Boisduval, 1833) - Afr.; M., S., P., A. (Rowley & Warman 1979), F. & Bird.
- Family *Sterria agrammaria* (Mabille, 1900) - Mad.; M. & A. (Gerlach in Betts 1998).
- Family HELIODINIDAE *Epicroesa* sp. - End.; S. & A. (Floater 1995).
- Family HESPERIIDAE *Borbo borbonica* (Boisduval, 1833) - Masc.; M., P. & A. (Rowley & Warman 1979). *B. gemella* (Boisduval, 1834) - Afr.; M., S., P. & A. (Rowley & Warman 1979). *Coeliades forestan* (Cramer, 1782) - Asia; M., A. (Rowley & Warman 1979) & LD.
- Family LITHOCOLLETIDAE *Caloptilia megalaurata* Legrand, 1965 - End.; M. & A. (Gerlach in Betts 1998).
- Family *Acrocercops rhombocoma* - A. (NPTS H11999.42).
- Family LYCAENIDAE *Lampides boeticus* (Linnaeus, 1767) - Cosmo.; M., S. & A. (Lindstone-Scott 1993).
- Family *Syntarucus prithous* (Linnaeus, 1767) - Afr.; M., SA., P. & A. (Lindstone-Scott 1993). *Zizeeria knysna* (Trimen, 1862) - Afr.; M., S., P., A. (Lindstone-Scott 1993). Bird & Denis. *Zizula hylax* (Fabricius, 1775) - Afr.; M., S. & A. (Rowley & Warman 1979).
- Family LYONETIDAE *Decadarchis trichodora* Meyrick, 1911 - End.; M. & A. (Gerlach in Betts 1998).
- Family *Opogona fricata* (Meyrick, 1911) - End.; M., S. & A. (Gerlach in Betts 1998). *O. tornatella* Legrand, 1965 - End.; M. & A. (Gerlach in Betts 1998). *O. tabernatella* Legrand, 1965 - End.; M., S. & A. (Gerlach in Betts 1998).
- Family NOCTUIDAE *Achaea catella* Guenée, 1852 - Afr.; M., S. & A. (Rowley & Warman 1979). *Amyna octo* (Guenée, 1852) - Pantrop.; M. & A. (Rowley & Warman 1979). *Anticarsia irrorata* (Fabricius, 1781) - Palaetrop.; M., SA., S., P., A. (Rowley & Warman 1979) & F. *Hypena masuralis* Guenée, 1854 - Palaetrop.; M., S., P., A. (Rowley & Warman 1979), & F. *Nanaguna breviscula* Walker, 1863 - Asia; M., S. & A. (Gerlach in Betts 1998). *Trigonoides hyppasia* (Cramer, 1779) - Afr.; M., SA., Cerf, S., P., A. (Bowler & Hunter pers. obs.), Fel. & F.
- Family NYMPHALIDAE *Hypolimnas misippus* (Linnaeus, 1764) - Indo-Pacific; M., SA., S., N., P. & A. (Bullock 1989, Carty & Carty 1996, Betts 1998). *Cynthia cardui* (Linnaeus, 1758) - Non-breeding migrant - M., SA. & A. (Bullock 1989, Carty & Carty 1996, Betts 1998).
- Family PLUTELLIDAE *Plutella formicattella* Legrand, 1965 - End.; M. & A. (Gerlach in Betts 1998).
- Family PYRAUSTIDAE *Antiercta ornatalis* (Duponchel, 1832) - Pantrop.; M., S., P., A. (Rowley & Warman 1979), Fel. & Denis. *Diaphana duponti* (Joannis, 1916) - Palaetrop.; M., L., S., A. (Rowley & Warman 1979), Mar., Fel. & Denis. *D. indica* (Saunders, 1851) - Palaetrop.; M., S., P., A. (Rowley & Warman 1979), Mar., F. & Bird. *Hymenia recurvalis* (Fabricius, 1775) - Palaetrop.; M., A. (Rowley & Warman 1979) & Denis. *Marasmia poeyalis* Boisduval, 1833 - Palaetrop.; A. (NPTS H11999.26-7). *Pionea ablactis* (Walter, 1859) - Palaetrop.; M., S. & A. (J. Bowler pers. obs. 1999). *Psara bipunctalis* (Fabricius, 1794) - Pantrop.; M. & A. (Rowley & Warman 1979). *Syngamia abruptalis* (Walker, 1859) - Palaetrop.; M., S. & A. (Gerlach in Betts 1998).
- Family SATYRIDAE *Melanitis leda* (Drury) - Palaetrop.; M., S., N. & A. (Carty & Carty 1996, Bowler & Hunter 1999).
- Family SPHINGIDAE *Deilephila nerii* (Linnaeus, 1758); Palaetrop.; M. & A. (A. Shaw photographed 1998). *Herse convolvuli* (Linnaeus, 1758) - Palaetrop.; M., S. & A. (Lindstone-Scott 1993, Betts 1998, Bowler & Hunter 1999).
- Family TINEIDAE *Haplotina insectella* - A. (J. Gerlach pers. obs.). *Hapsifera chalinoea* (Meyrick, 1908) - Afr.; A. (Gerlach in Betts 1998). *Progonarma pagetodes* Meyrick, 1911 - Indian Ocean; M., S. & A. (Gerlach in Betts 1998). *Trichophaga mormopis* Meyrick - Introduced; A. (Gerlach 1998b).
- Family TORTRICIDAE *Platypeplus aprobola* (Meyrick, 1886) - Indo-Pacific; M, S & A (Gerlach in Betts 1998).

DIPTERA

- Family AGROMYZIDAE *Paralimna lineata* - A. (Rowley & Warman 1979).
- Family ANTHOMYZIDAE *Anthomyia amoena* - A. (Rowley & Warman 1979).
- Family BOMBYLIIDAE *Geron seychellarum* Greathhead - End.; M. & A. (Rowley & Warman 1979).
- Family CALLIPHORIDAE *Hemipyrellia germana* - A. (Rowley & Warman 1979).
- Family CANACEIDAE *Noticanace mahensis* (Lamb, 1912) - End.; M. & A. (Rowley & Warman 1979).
- Family CHIRONOMIDAE *Chironomus pulcher* - A. (Rowley & Warman 1979) *Dicrotendipes binotatus* (Kieffer)

- A. (Rowley & Warman 1979).

Family CHLOROPIDAE *Cadrema pallipes* - A. (Rowley & Warman 1979).

Family CULICIDAE *Aedes albopictus* (Skuse, 1895) - Indo-Pacific; widespread (Rowley & Warman 1979 as A. sp.).

Family DROSOPHILIDAE *Dettopsomia formosa* Lamb, 1914 - A. (Rowley & Warman 1979) *Drosophila nasuta* Lamb, 1914 - Afr.; M., S. & A. (Rowley & Warman 1979). *D. notabilis* Lamb, 1914 - End.; A. (Rowley & Warman 1979). *D. sechellia* Tsacas & Bachli, 1981 - End.; M., A. (Rowley & Warman 1979 as *D. melanogaster*; Gerlach in Betts 1998) & Co. *Mycodrosophila fracticosa* (Lamb, 1914) - End.; A. (Rowley & Warman 1979). *Zaprionus vittiger* Coquillett, 1902 - A. (Rowley & Warman 1979).

Family EPHYDRIDAE *Allotrichoma argentipraetexta* Lamb, 1912 - End.; A. (Rowley & Warman 1979). *Ceropsilopa longicornis* (Lamb, 1912) - End.; A. (Rowley & Warman 1979). *Hydrellia varipes* Lamb, 1912 - End.; A. (Rowley & Warman 1979). *Scatella septemfenestrata* Lamb, 1912 - End.; A. (Rowley & Warman 1979).

Family MICROPEZIDAE *Chaetonerides alluaudiae* (Giglio-Toss, 1895) - End.; M., S. & A. (Rowley & Warman 1979).

Family MILICHIDAE *Madiza albipennis* Lamb, 1914 - End.; A. (Rowley & Warman 1979). *Milichia superba* Lamb, 1914 - End.; A. (Rowley & Warman 1979 as *M.* sp.)

Family MUSCIDAE *Antherigona orientalis* - Asia; A. (Rowley & Warman 1979). *Musca domestica* (Linnaeus, 1758) - Cosmo.; M., S., A. (Rowley & Warman 1979) & Denis.

Family ORTALIDAE *Chrysomya anaea* Fabricius, 1794 - Afr.; A. (Rowley & Warman 1979).

Family PHORIDAE *Chonocephalus similis* Brues, 1905 - Asia; M., S. & A. (Rowley & Warman 1979). *Dohrniphora cornuta* - A. (Rowley & Warman 1979).

Family SARCOPHAGIDAE *Parasarcophaga tibialis* (Mcq.) - A. (Rowley & Warman 1979).

Family STRATIOMYIIDAE ?; M., S. & A. (Rowley & Warman 1979 as "*Stratiomya* sp."; Gerlach in Betts 1998 as *Anthrax villosa* [Bombyliidae]).

Family TETHINIDAE *Dasyrhinoessa ferruginea* (Lamb, 1914) - End.; A. (Rowley & Warman 1979)

Family XENASTIDAE *Xenasteia sechellensis* End.; A. (Rowley & Warman 1979).

THYSANOPTERA *Liothrips cf. micrurus* - ?; M. & A. (NPTS H1999-2-3).

HYMENOPTERA

Family EUMENIDAE *Delta alluaudi* (Perez, 1895) - End.; M., S., P., A. (Rowley & Warman 1979) & Denis. *Odynerus sechellensis* Dalla Torre, 1904 - Masc.; M., S., P. & A. (Rowley & Warman 1979).

Family FORMICIDAE *Brachymyrmex cordemoyi* Forel, 1895 - Introduced; M., Isl., S., P., A. (Muhlenberg et al. 1977), CS., Co. & GS. *Camponotus grandidieri* Forel, 1886 - Afr.; M., S., P., CS., Co., A. (Muhlenberg et al. 1977), Alb., PS & F. *C. hova* Forel, 1891 - Mad.; M., S., P. & A. (Gerlach in Betts 1998). *Monomorium floricola* (Jerdon, 1851) - Intr.; M., S., P., A. (Rowley & Warman 1979), Co., CS., Alb., GS. & PS. *Odontomachus troglodytes* Santschi, 1914 - Afr.; M., Isl., S., P., Co., A. (Muhlenberg et al. 1977), CS., GS., & PS. *Paratrechina bourbonica* (Forel, 1886) - Asia; widespread (Muhlenberg et al. 1977). *P. longicornis* (Latreille, 1802) - Pantropical; M., Co., Coe., A. (Muhlenberg et al. 1977). CS., GS., & F. *Pheidole punctulata* Mayr, 1866 - Afr.; M., L., Ro., S., A. (Muhlenberg et al. 1977), Mar., GS., LD. & Bird. *Plagiolepis madecassa* (Forel, 1892) - Mad.; M., Anon., S., P., A. (Rowley & Warman 1979), Fel. *P. exigua* Forel, 1894 - Pantrop.; M., S., P., A. (Warman 1978), GS. & PS. *Tapinoma melanocephalum* (Fabricius, 1793) - Introduced; M., S., P., Co., Coe., A. (Rowley & Warman 1979), GS. & PS. *Technomyrmex albipes* (Smith, 1861) - Introduced; widespread (Muhlenberg et al. 1977). *Tetramorium lanuginosum* Mayr, 1870 - Pantrop.; M., S., A. (Rowley & Warman 1979 as *Triglyphostrotidens*) & Fel. *T. simillimum* (Smith, 1851) - Pantrop.; M., S., A. (Rowley & Warman 1979), GS. & PS.

Family MEGACHILIDAE *Megachile sechellensis* Cameron, 1907 - Aid.; M., Long, S., P. & A. (Rowley & Warman 1979 as *Eutrichaeria* sp.)

Family VESPIDAE *Polistes olivaceus* (De Geer, 1773) - Indo-Pacific; M., Moy., S., P., A. (Rowley & Warman 1979), LD. & Bird.

Family XYLOCOPIDAE *Xylocopa moluccensis* Asia; M., S. & A. (Rowley & Warman 1979).

COLEOPTERA

Family BOSTRYCHIDAE *Dinoderus minutus* Fabricius - Pantrop.; A. (Rowley & Warman 1979)

- Family CERAMBYCIDAE Sp? - S. & A. (NPTS Hc1999.60). *Coptops humerosa* Fairmaire - End.; M., S., N & A. (Rowley & Warman 1979).
- Family CHRYSOMELIDAE *Blaksha minor* Maulik, 1929 - End.; S., A. (NPTS Hc1999.57) & Denis.
- Family COCCINELLIDAE *Chilocorus nigritus* (Fabricius) - Introduced; M., S. & A. (Rowley & Warman 1979, NPTS Hc1999.55). *Rhodolia chermesina* Mulsant - Mad.; M., L., S., A. (Gerlach in Betts 1998) & Denis. *Xamerpillus gahani* Sicard, 1912 - End. gen.; M., S. & A. (NPTS Hc1999.62).
- Family CRYPTOPHAGIDAE *Hapalips championi* Grouvelle, 1914 - End.; M. & A. (NPTS Hc1999.79-80).
- Family CURCULIONIDAE *Baridomorpha triplaris* Champion, 1914 - End. gen.; M., S. & A. (NPTS Hc1999.77). *Cratopus aurostriatus* Fairmaire, 1892 - Mad.; M., S. & A. (Rowley & Warman 1979). *C. griseovestitus* Linell, 1897 - End.; M., L., Anon., S., P. & A. (NPTS Hc1999.58). *Sitophilus oryzae* - Introduced; A. (Rowley & Warman 1979).
- Family ELATERIDAE *Alaus scotti* Fleutiaux, 1923 - End.; M., S. & A. (Gerlach, pers. obs.).
- Family HYDROPHILIDAE ? sp. (Gerlach in Betts 1998).
- Family PLATYPODIDAE *Platypus cf. parallelus* - A. (NPTS Hc1999.83).
- Family PSELAPHIDAE *Sunorfia fasciculata* Raffray, 1913 - End.; P. & A. (NPTS Hh1999.81).
- Family RHIZOPHAGIDAE *Rhizophagus cf. dispar* - A. (NPTS Hc1999.68).
- Family SCARABAEIDAE *Oryctes monoceros* (Olivier, 1789) - Mad.; M., S., P., A. (Rowley & Warman 1979), Freg. & Denis.
- Family STAPHYLINIDAE *Coproporus* sp. - A. (NPTS Hc1999.74). *Leptusa* sp. - A. (NPTS Hc1999.73). *Medon strigosus* Bernhauer, 1921 - End.; P. & A. (Hc1999.72).
- Family TENEBRIONIDAE *Pseudhadrus* sp. - ?; A. (NPTS Hc1999.82).

CHORDATA

PISCES

- Family RIVULIDAE *Pachyplanchax playfairii* Günther - End.; M., S., P. & A. (Warman & Todd 1979).

REPTILIA

CHELONIA

- Family TESTUDINIDAE *Dipsochelys* sp. - End.; formerly widespread (Bour 1984).
- Family PELOMEDUSIDAE *Pelusius* sp. - End.; formerly widespread (Bour 1984)
- Family CHELONIIDAE *Chelonia mydas* (Linnaeus, 1766) - Pantrop.; widespread (Frazier 1984). *Eretmochelys imbricata* (Linnaeus, 1766) - Pantrop.; widespread (Frazier 1984).
- Family COLUBRIDAE *Lycognathopsis seychellensis* (Schlegel, 1837) - End.; M., S., P., Coue., A. (Nussbaum 1984) & F.
- Family GEKKONIDAE *Ailuronyx seychellensis* (Dumeril & Bibron, 1836) - End.; M., SA., Anon., Con., Ther., S., P., CS., Co., Coe., A. (Warman 1978), Mar., Fel., GS., LD. & F. *Phelsuma astriata* Tornier, 1901 - End.; M., SA, Cerf, Moy., L., Cach. Anon., Isl., Con., Ther., S., P., Cur., CS., R., Co., Coe., A. (Warman 1978), Fel., Coco, GS., PS., Mar., LD. & F. *Urocotyledon inexpectata* (Stein.) - End.; M., S., P., Cur., Cou, A. (Warman 1978), Coco, GS., Fel., LD. & F.
- Family SCINCIDAE *Mabuya sechellensis* (Dumeril & Bibron, 1836) - End.; M., SA, L., Cerf, Ro., Moy., Cach., Anon., Pet., Isl., Con., Ther., S., N., P., Cur., CS., R., Co., Coe., A. (Warman 1978), Fel., Coco, GS., PS., Mar., LD., F., Bird & Denis. *M. wrightii* Boulenger, 1887 - End.; M., V., Mam., Co., Coe., A. (Warman 1978), Mar., F., Ilot & Rec. *Pamelaescincus gardineri* (Boulenger, 1909) - End. gen.; M., Cerf, S., P., Cur., R., Co., A. (Warman 1978), PS., GS., LD. & F.
- Family TYPHLOPIDAE *Rhamphotyphlops brahminus* (Daudin) - Intr.; M., S., P., A. (Bullock 1989), LD. & F.

AVES

- Family PROCELLARIIDAE *Puffinus lherminieri* Lesson, 1893 - Pantrop.; Co., Coe., A. (Warman & Todd 1984) & Bird. *P. pacificus* Gmelin, 1789 - Pantrop.; Co., Coe., A. (Proctor 1974) & Bird.
- Family ARDEIDAE *Butorides striatus* (Linnaeus, 1758) - Pantrop.; widespread (Bullock 1989 - breeding not confirmed).
- Family FREGATIDAE *Phaethon lepturus* Lacépède & Daudin, 1802 - Pantrop.; M., S., Cur., Co., Coe. & A. (Betts 1940). *P. rubricauda* Boddaert, 1783 - Pantrop.; A. (Warman 1978).
- Family LARIIDAE *Anous stolidus* (Linnaeus, 1758) - Pantrop.; Co., Coe., A. (Ridley & Percy 1958) & Bird. *A. tenuirostris* Temminck, 1815 - Pantrop.; Co., Coe., A. (Betts 1940) & Bird. *Gygis alba* Sparrm.

- 1786 - Indo-Pacific; M., S., P., Co., Coe., A. (Betts 1940), LD., F. & Bird. *Sterna anathetus* Scopoli
 1786 - Pantrop.; Co., Coe., A. (Bullock 1989) & Bird. *S. dougallii* Montagu, 1813 - Cosmo.; Sech.
 Mam., A. (Proctor 1974). *S. fuscata* Linnaeus, 1766 - Pantrop.; A. (Ridley & Percy 1966), Ilt, Rec. &
 Bird.
- Family RALLIDAE *Gallinula chloropus* (Linnaeus, 1758) - Cosmo.; M., S., P., Co., Coe., A. (Warman 1978), A.
 LD.
- Family COLUMBIDAE *Streptopelia picturata* (Temminck) - Mad.; M., S., P., Co., Coe., A. (Warman 1978),
 Mar., Fel. & F. *Geopelia striata* (Linnaeus, 1758) - Introduced; M., S., P., Co., Coe., A. (Warman 1978),
 Mar., Fel., LD. & F. *Alectroenas pulcherrima* (Sonnerat, 1768) - End.; M., S., P., A. (Betts 1998), Fel.,
 Mar., LD. & F.
- Family OTIIDAE *Tyto alba* (Scopoli, 1769) - Introduced; M., S., P., Co., Coe., A. (Bullock 1989) & F.
- Family NECTARIDAE *Nectarinia dussumieri* (Hartlaub, 1860) - End.; M., S., P., Co., Coe., A. (Oustalet 1878),
 Mar., Fel., LD. & F.
- Family PSITTACIDAE *Coracopsis nigra* (Linnaeus, 1766) - Comoros; P. & A. (Bullock 1989)
- Family MUSCICAPIDAE *Terpsiphone corvina* (Newton, 1867) - End.; P., A. (Bullock 1989), LD. & Fel.
- Family SYLVIIDAE *Acrocephalus sechellensis* (Oustalet, 1877) - End.; Co., Coe. & A. (Bullock 1989).
- Family TURDIDAE *Copsychus sechellarum* Newton, 1867 - End.; SE., P., Co., Coe., A. (Newton 1867) & F.
- Family PLOCEIDAE *Foudia madagascariensis* (Linnaeus, 1758) - Mad.; M., Cerf. S., P., Co., Coe., A. (Warman
 1978), Mar., Fel., LD. & F. *Foudia sechellarum* (Newton, 1867) - End.; Co., Coe. & A. (Bullock 1989,
 Castle & Mileto 1994).
- Family STURNIDAE *Acridotheres tristis* (Linnaeus, 1766) - Introduced; widespread, M., S., P., Co., Coe., A.
 (Warman 1978), Mar., Fel., LD. & F.

MAMMALIA

RODENTIA

- Family MURIDAE *Mus musculus* (Linnaeus, 1758) - Introduced; M., S., P., A. (Warman 1978), F. & Bird

Uncertain records

- Family PYRAUSTIDAE '*Eyodnynerus sechellensis*' - Warman 1978. '*Marucca* sp.' - Warman 1978

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