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**A LIST OF INSECTS CAUGHT IN LIGHT TRAPS
ON WEST ISLAND, ALDABRA ATOLL, INDIAN OCEAN**

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A LIST OF INSECTS CAUGHT IN LIGHT TRAPS ON WEST ISLAND, ALDABRA ATOLL, INDIAN OCEAN

by D. W. Frith¹

Collections made by J. C. F. Fryer during the Percy Sladen Trust Expeditions to the Indian Ocean (1908-1909) form the basis of several publications on the insect fauna of Aldabra Atoll, Indian Ocean. A bibliography of these and other pertinent literature is given by Stoddart (1971). Legrand (1965) published a comprehensive list of Lepidoptera based on collections made on the Seychelles and Aldabra during 1956 and 1958-60, and housed at the Muséum National d'Histoire Naturelle, Paris. Preliminary observations on the affinities and composition of the insect fauna of Aldabra were made by Cogan, Hutson and Shaffer (1971), their results being based primarily on collections made during the Royal Society Expedition to Aldabra 1967-68. Webb (1975) described species of Fulgoroidea (Hemiptera-Homoptera) collected during the above expedition.

Aldabra, the largest elevated coral atoll in the world, is situated 420 km northwest of Madagascar and 640 km from the African mainland in the southwest Indian Ocean, latitude 9° 24'S, longitude 46° 20'E (Stoddart and others 1971). The atoll is elongated east-west with a maximum length of 34 km and a maximum width of 14.5 km. At its highest point it is about 18 m above sea level, but most of the land mass lies approximately 5 m above sea level. The atoll consists of four main islands separated by tidal channels. The surface coral is mainly of two types, 'champignon', a deeply pitted and irregular solution-fretted reef rock, and 'platin', a smooth surfaced pavement-like cemented limestone (Fryer, in Stoddart *et al.* 1971). A third type, 'pavé' may be used to describe a surface that has similar features to platin but lies at a greater elevation (Stoddart 1970).

The study area was located on West Island or Ile Picard which measures 9.3 sq. km and forms the northwest corner of the atoll. It consists mainly of champignon apart from a small area of platin around Bassin Cabri and an area of pavé around Anse Var. The champignon is covered by mixed scrub except for coastal strips of palm grove and/or

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Casuarina equisetifolia L. woodland (for details of vegetation and place names see papers in Westoll and Stoddart 1971). The Royal Society Research Station, constructed in 1971, is located on the southern tip of West Island.

Insects were constantly trapped by the present author using two Heath light traps and a Rothamsted light trap during the period August 1971 - September 1972 whilst testing trapping techniques at the invitation of the Royal Society of London. Details of trap sites and trapping periods are given below. Insects were identified at the British Museum (Natural History) and Muséum National d'Histoire Naturelle, Paris (Lepidoptera only). Collections from the present study are housed at the British Museum (Natural History). Data on seasonal variation and abundance of insect families and predominant species only, caught by these three light traps, are given elsewhere (Frith, 1975), in a publication unsuitable for a comprehensive list of Aldabran insects. With future intensive zoological research on Aldabra and surrounding atolls, assured by the presence of the Royal Society Aldabra Research Station, there is a need for a continuously updated lists of flora and fauna. A list of Aldabran insects caught by the light traps is therefore presented here as a basis for future research. Whilst the present list is a preliminary one, the intensity of trapping and period involved is indicative of a fairly comprehensive study. Annual total numbers for orders and species are included as an indication of insect abundance. Many of the smaller insects remain unidentified to species and some species, obtained in very small numbers, were too damaged by trapping for identifications to be made, but numbers of these are given to indicate relative abundance within the family and genus.

Families are listed in the systematic order used in the Insects of Australia (CSIRO, 1970). Species are listed alphabetically within the family and genus.

Trapping techniques

The light traps were placed about the research station in areas which varied in floral composition. A list of plant species near to each trap is given in Appendix 1. It was initially intended to trap for about 7 nights per month per trap, but due to the large size of nightly catches during some months for the Heath light traps this period was reduced. Trap localities and trapping periods were as follows:

Heath trap 1 was situated 70 m inland behind the research station and placed in a box 50 cm. above the champignon. The trap was surrounded on three sides by poor mixed scrub predominantly consisting of *Pemphis acidula* Forst. and the fourth side faced a large tidal pool. Monthly samples (2-8 nights per sample) were taken from September 1971 to August 1972.

Heath trap 2 was situated 60 m. inland on champignon surrounded by species rich mixed scrub which bordered a coconut plantation just north of the

research station. The trap was placed on a table 1 m. above the ground. Monthly samples (2-10 nights per sample) were taken from September 1971 until August 1972.

Rothamsted light trap was situated 50 m. in a clearing just east of the research station. The trap was placed on roughly dissected champignon and was surrounded by a relatively species rich mixed scrub, *Pemphis acidula* being the dominant species. Monthly samples (7-9 nights per month) were taken from October 1971 to September 1972.

A list of insects and their annual total numbers caught by Heath and Rothamsted light traps on West Island, Aldabra Atoll over a twelve month period.

[Species marked * are predominant species for which monthly population fluctuations are given in Frith (1975)]

<u>Family</u>	<u>Species</u>	<u>Annual total number</u>		
		<u>Heath</u> <u>Trap 1</u>	<u>Heath</u> <u>Trap 2</u>	<u>Rothamsted</u> <u>light trap</u>
LEPIDOPTERA				
Psychidae	<i>Pseudometisa</i> sp.	2	2	1
Ethmiidae	<i>Ethmia nigroapicella</i> Saalmüller	13	185	4
Cosmopterigidae	1 unidentified species	-	-	13
Alucitidae	1 unidentified species	-	-	1
Hyblaeidae	<i>Hyblaea puera</i> (Cramer)	1	12	-
Thyrididae	<i>Banisia aldabrana aldabrana</i> (Fryer)	34	7	35
Pyralidae	<i>Bocchoris inspersalis</i> Zeller	2	9	-
(excluding	* <i>Bradina</i> sp.	134	1198	1139
Phycitinae)	<i>Cirrhochrista oxylalis</i> Viette	30	17	3
	<i>Diaphana indica</i> (Saunders)	-	1	-
	* <i>Diastictis savyalis</i> Legrand	83	119	61
	* <i>Duponchelia fovealis floeschalis</i> Legrand	23	70	185
	* <i>Endotricha erythralis</i> Mabille	123	143	78
	* <i>Epipagis prolalis</i> Viette and Legrand	21	76	65
	* <i>Hymenia recurvalis</i> (Fabricius)	151	146	63
	* <i>Hymenoptychis sordida</i> Zeller	331	116	57

	<i>*Ischnurges lancinalis aldabrensis</i>			
	Viette	28	199	235
	<i>*Lamprosema aldabralis</i> Viette	86	289	78
	<i>*Nausinoe capensis</i> (Walker)	27	267	138
	<i>*Pardomima zanclophora</i> Martin	215	1770	153
	<i>Pagyda</i> sp.)			
	<i>Pyrausta</i> sp.)	124	226	238
	<i>Pyrausta incolar</i> is Guenée	-	-	3
	<i>Pyrausta</i> nr. <i>prostygialis</i>			
	Viette	4	60	3
	<i>Synclera univocalis</i> Walker)	50	17	12
	3 unidentified species	5	3	6
Geometridae	<i>*Chlorissa</i> sp.	40	115	99
	<i>*Chloroclystis</i> sp.	39	59	901
	<i>*Comostolopsis</i> sp.	8	197	195
	<i>*Erastria madecassaria</i> Boisduval	21	149	39
	<i>Problepsis deducta</i> Herbulot	8	74	11
	<i>Scardamia</i> sp.	4	37	5
	<i>*Scopula minorata</i> (Boisduval)	106	116	183
	<i>Scopula</i> nr. <i>minorata</i>			
	(Boisduval)	-	3	17
	<i>*Scopula sparsipunctata menaiensis</i>			
	Legrand	88	288	634
	<i>Scopula</i> sp.	14	11	5
	<i>*Sterrha</i> sp.	82	355	450
	<i>*Tephrina pulinda deerraria</i>			
	(Walker)	17	288	30
	<i>Xenimpia</i> sp.	4	33	14
	5 unidentified species	37	63	5
Sphingidae	<i>Agrius convolvuli</i> Linne	8	-	-
	<i>Hippotion geryon</i> Boisduval	18	30	-
Notodontidae	<i>Iridoplitis malagassica aldabralis</i>			
	Legrand	1	2	12
Arctiidae	<i>*Celama</i> sp.	1434	878	490
	<i>*Eilema aldabrensis</i> (Hampson)	697	1873	890
	<i>*Eilema</i> sp.	1	93	121
Noctuidae	<i>Achaea catella</i> Guenée	-	2	-
	<i>*A. violaceofascia</i> Saalmüller	267	405	11
	<i>Acontia malagassica</i> Mabilie	2	13	2
	<i>*Amyna octo</i> (Guenée)	88	72	2
	<i>Attatha gaetana</i> (Ch. Oberthür)	3	9	-
	<i>Aulotarache decoripennis</i>			
	(Mabilie)	3	2	2
	<i>*Avatha extranea</i> Berio	20	165	3
	<i>*Bryophilopsis griseoplaga</i>			
	Legrand	1234	1648	153

	* <i>B.nesta</i> (B. Fletcher)	72	102	20
	* <i>Catephia squamosa</i> Wallengren	187	169	45
	<i>Catephia</i> sp.	2	13	-
	<i>Chalciope delta</i> (Boisduval)	3	11	-
	<i>Dysgonia torrida</i> (Guenée)	7	43	1
	<i>Earias</i> spp. (4 species)	1	10	2
	* <i>Ericeia inangulata</i> (Guenée)	465	337	9
	<i>Eublemma costimacula</i> (Saalmüller)	2	6	-
	<i>Eulocastra neoxcisa</i> Berio	-	86	7
	<i>Eutelia blandiatrix</i> Guenée	2	1	-
	<i>Heliothis assulta</i> Guenée	5	10	-
	<i>Mythimna madensis</i> Berio	34	41	1
	<i>Oedebasis ovipennis</i> Hampson	2	2	-
	<i>Oediplexia</i> nr. <i>citrophila</i> Berio	4	36	7
	<i>Oglastra aldabrana aldabrana</i> Fryer	1	2	-
	<i>Ophiusa legendrei</i> Viette	8	7	-
	* <i>Ozarba aldabrae</i> Berio	87	475	13
	* <i>Perigea aldabrae</i> (Berio)	114	220	190
	<i>Plusia chalcytes</i> (Esper)	9	31	-
	<i>Tarache rachiastrix</i> Hampson	2	19	1
	<i>Trigonodes hyppasia anfractuosa</i> (Boisduval)	8	3	-
	<i>Zeuxinia aeschrina</i> Legrand	40	69	24
	14 unidentified species	10	202	21
Tortricidae	Approximately 10 unidentified species			
Tineidae	Approximately 2 unidentified species	15447	38845	14487
Pyralidae - Phycitinae	Approximately 10 unidentified species			
ANNUAL TOTAL NUMBER OF LEPIDOPTERA		23586	54576	21793
HEMIPTERA -HOMOPTERA				
Cixiidae	* <i>Achaemenes major</i> Jacobi	133	644	98
	<i>Brixia stellata</i> Distant	16	4	59
Achilidae	<i>Akotropis</i> sp	1	10	15
Ricaniidae	<i>Deferundata aldabrana</i> Distant	1	4	1
	<i>Neoprivesa fuscovaria</i> Distant	6	17	6
	<i>Osaka hyalina</i> Distant	2	10	2
	<i>Privesa</i> nr. <i>fryeri</i> Distant	15	37	11

Flatidae	<i>*Chaetormenis madagascariensis</i> (Signoret)	53	718	517
Cicadellidae	<i>Balclutha</i> sp.	-	8	6
	<i>Batracomorphus</i> sp.	-	-	6
	<i>Empoasca</i> spp. (2 species)	-	-	48
	*nr. <i>Helionidia</i> sp.	4	5978	102
	* <i>Limentius aldabranus</i> Distant	2	26	239
	<i>Naevus subparallelus</i> Knight	-	28	14
	<i>Paganalia virescens</i> Distant	1	-	-
	<i>Penthima</i> sp.	-	15	10
	*nr. <i>Vulturinus</i> sp.	236	297	2183
	<i>Xestocephalus</i> sp.	-	-	21
HEMIPTERA				
-HETEROPTERA				
Miridae	2 unidentified species	159	364	444
Tingidae	1 unidentified species	-	-	38
Coreidae	<i>Plinactus</i> sp.	4	27	1
Stenocephalidae	<i>Dicranocephalus punctipes</i> (Stål)	2	8	8
Lygaeidae	* <i>Dieuches</i> sp.A	1288	8591	551
	<i>Dieuches</i> sp.B	1	5	-
	* <i>Lethaeus stellatus</i> Distant	1769	2704	1412
	2 unidentified species	9	-	36
Cydnidae	2 unidentified species	84	145	19
Pentatomidae	* <i>Acrosternum</i> nr. <i>heegeri</i> Fieber	190	248	207
	<i>Eysarcoris</i> sp.	1	-	-
	<i>Nezara viridula</i> (Linnaeus)	-	1	1
	1 unidentified species	1	-	-
Notonectidae	1 unidentified species	-	3	-
Corixidae	1 unidentified species	20	-	-
ANNUAL TOTAL NUMBER OF HEMIPTERA		3998	19892	6055
Carabidae	* <i>Aulocoryssus aciculatus</i> <i>pavoninus</i> Gerstaecker	194	149	12
	<i>Callida rufoplagiata</i> Jeannel	1	19	3
	<i>Chlaenius</i> nr. <i>allacteus</i> Alluaud	-	2	3
	<i>C. bisignatus</i> Dejean	1	7	-
	<i>Egadroma laticolle</i> Jeannel	7	8	1
	<i>E. trivitte</i> Fairmaire	-	3	-

	<i>*Myriocile melancholica</i>			
	<i>perplexa</i> Dejean	291	128	16
	<i>Platymetopus interpunctatus</i>			
	Dejean	6	9	-
	<i>Tachys</i> sp.	-	21	-
	<i>Tetragonoderus bilunatus</i>			
	Klug	6	5	2
Dytiscidae	<i>Copelatus</i> sp.	1	1	-
	<i>Laccophilus posticus</i> Aube	-	2	-
Hydrophilidae	<i>*Berosus</i> sp.A	36	82	16
	<i>*Berosus</i> sp.B	150	444	3
	<i>Enochrus</i> sp.	8	63	16
	<i>Hydrobius</i> sp.	-	1	-
Staphylinidae	<i>*Bledius</i> sp.	61	17	5
	<i>*Carpeleimus</i> sp.	767	7	25
Scarabaeidae	<i>Comaserica granulipennis</i>			
	Fairmaire	-	7	1
	<i>*Phaecrous insularis</i> Linell	161	177	12
Elateridae	<i>Cardiophorus lutosus</i> Candèze	4	28	-
	<i>*Cardiotarsus labidus</i> Erichson	43	100	20
	<i>Elastrus aldabrensis</i> Fleutiaux	13	31	7
	<i>Megapenthes difformis</i> Fleutiaux	10	14	15
	1 unidentified species	9	39	2
Bostrychidae	<i>Apate congener</i> Gerstaecker	7	3	-
	<i>Ennaedesmus</i> sp.	2	-	-
Cleridae	<i>Necrobia rufipes</i> DeGeer	2	3	2
Nitidulidae	<i>Cryptarcha</i> sp	1	-	-
Coccinellidae	<i>Exochomus laeviusculus</i> Weise	-	1	1
Tenebrionidae	<i>Alphitobius diaperinus</i> Panzer	1	-	-
	<i>Leichenum canaliculatum</i>			
	Fabricius	-	1	-
	<i>Platydema</i> sp.	-	1	-
Alleculidae	<i>Cacoplesia</i> nr. <i>viriditincta</i>			
	Champion	6	27	7
Monommidae	<i>Monomma pruinosum</i> Champion	-	9	-
Oedemeridae	<i>*Ananca aldabrana</i> Champion	496	1112	790
	<i>Oxacis</i> sp.	7	4	3
	3 unidentified species	1	1	2

Cerambycidae	<i>Idobrium voeltzkowi</i> Kolbe	-	13	33
	nr. <i>Lygrus</i> sp.	1	19	14
	<i>Paralocus semitibialis</i> Fairmaire	4	7	14
Chrysomelidae	<i>Aspidomorpha apicalis</i> Klug	4	-	-
	<i>Keeta fryeri</i> Maulik	65	11	2
	* <i>Rhyparidula insularis</i> Maulik	9	760	10
	<i>Rhyparidula</i> sp.	2	49	5
Anthribidae	<i>Phloeobius pustulosus</i> Gerstaecker	-	4	6
Curculionidae	<i>Camptorhinus</i> sp.	1	-	-
	* <i>Cratopus viridisparus</i> Fairmaire	3	33	60
ANNUAL TOTAL NUMBER OF COLEOPTERA		2381	3422	1108

DIPTERA

Tipulidae	<i>Limonia corallicola mayotteana</i>)			
	Alexander)			
	<i>L.edwardsella</i> Alexander)	39	26	232
	<i>Limonia</i> sp.)			
	1 unidentified species)			
Culicidae	Unsorted to species	240	53	856
Chironomidae	Unsorted to species	977	102	15110
Tabanidae	<i>Aegophagomyia remota</i> Austen	13	15	12
Stratiomyidae	<i>Odontomyia</i> sp.	-	4	1
Asilidae	<i>Ommatius pulchripes</i> Bigot	3	14	3
Bombyliidae	<i>Micomitra famula</i> Bezzi	2	1	-
Dolichopodidae	<i>Hydrophorus praecox</i> Lehmann	1	4	5
Tephritidae	<i>Ceratitis capitata</i> Wiedemann	-	4	-
	<i>Coelotrypes vittatus</i> Bezzi	7	11	8
	<i>Dioxyna sororcula</i> Wiedemann	-	1	-
	<i>Psednometopum aldabrensis</i> Lamb	5	56	1
Neriidae	1 unidentified species	-	-	5
Lauxaniidae	<i>Homoneura</i> sp.	106	498	82
	<i>Sapromyza</i> sp.	2	20	18

Lonchaeidae	<i>Lamprolonchaea aurea</i> Macquart	1	14	1
Drosophilidae	1 unidentified species	-	7	10
Tethinidae	Approximately 3 unidentified species	1565	588	3825
Chloropidae	<i>Cadrema pallida</i> Loew	-	-	13
Anthomyiidae	<i>Anthomyia fasciata</i> Walker	3	1	-
Muscidae	<i>Atherigona</i> sp.	33	1	92
	<i>Atherigona orientalis</i> Schiner)	1	9	32
	<i>Coenosia strigipes</i> Stein)			
	<i>Helina</i> sp.	39	282	42
	<i>Limnophora</i> sp.	1	5	2
	<i>Lispe tetrastigma</i> Schiner	24	1	1
	<i>Musca sorbens</i> Wiedemann	1	3	1
	<i>Ophyra nigrisquama</i> Stein	-	11	-
Calliphoridae	<i>Chrysomya</i> nr. <i>albiceps</i> Wiedemann	4	14	19
	<i>Cosmina fuscipennis</i> Desvoidy	11	4	6
	<i>Rhinia</i> nr. <i>apicalis</i> Wiedemann	-	15	-
	2 unidentified species	2	2	-
Sarcophagidae	<i>Sarcophaga</i> spp. (2 species)	15	12	4
Tachinidae	<i>Pleisiocyptera</i> nr. <i>hemimelaena</i>			
	Bezzi	3	5	3
	6 unidentified species	31	25	7
Ceratopogonidae	<i>Forcipomyia</i> sp.)			
	1 unidentified species)			
Scenopinidae	1 unidentified species)			
Ephydriidae	<i>Brachydeutera</i> sp.)	155	180	781
	<i>Paratissa semilutea</i> Loew)			
Milichiidae	1 unidentified species)			
ANNUAL TOTAL NUMBER OF DIPTERA		3284	1988	21172
HYMENOPTERA				
Formicidae	* <i>Anochetus</i> sp. A	164	181	750
	<i>Anochetus</i> sp. B	6	8	42
	* <i>Camponotus</i> sp. A	1015	1832	275
	* <i>Camponotus</i> sp. B	71	118	29
	* <i>Camponotus</i> sp. C	1164	975	492
	<i>Camponotus</i> sp. D	12	-	12

	* <i>Leptogenys maxillosa</i> F. Smith	7	130	134
	* <i>Pheidole</i> sp.A	347	13	297
	<i>Pheidole</i> sp.B	-	4	3
	* <i>Tetramorium simillimum</i> Emery	407	62	590
	1 unidentified species	-	112	-
Ichneumonidae	* <i>Enicospilus</i> sp.	70	51	1
Braconidae	* <i>Phanerotoma</i> sp.	43	234	159
Unsorted to families - 9 unidentified species		9	21	76
ANNUAL TOTAL NUMBER OF HYMENOPTERA		3315	3741	2860
ODONATA	5 unidentified species	3	-	3
DICTYOPTERA	3 unidentified species	2	34	11
ORTHOPTERA	3 unidentified species	1	30	16
EMBIOPTERA	1 unidentified species	1	-	1
NEUROPTERA	1 unidentified species	36	141	133
TOTAL NUMBER OF TRAPPING NIGHTS		48	56	87

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Appendix 1. Composition of vegetation surrounding the light and suction traps on West Island, Aldabra Atoll

Heath trap 1:

2 - 3 m. in height

Pemphis acidula Forst.

Ipomoea macrantha R. & S.

Herb layer

Achyranthes aspera L.

Portulaca oleracea L.

Heath Trap 2 and Johnson-Taylor Suction traps:

2 - 3 m. in height

Euphorbia abbottii Baker

Acalypha claoxyloides Hutch.

Allophylus aldabricus Radlk.

Dichrostachys sp. nov.

Polysphaeria multiflora Hiern

Dracaena reflexa Lam.

Maytenus senegalensis Exell

Ochna ciliata Lam.

Ipomoea macrantha R. & S.

Azima tetraacantha Lam.

Pemphis acidula Forst.

Premna obtusifolia R.Br.

Herb layer

Euphorbia hirta L.

Dactyloctenium pilosum Stapf

Passiflora suberosa L.

Lomatophyllum

Cyperus obtusiflorus Vahl

Achyranthes aspera L.

Rothamsted light trap:

2 - 3 m. in height

Pemphis acidula Forst.

Vernonia cinerea Less.

0.5 - 1 m. in height

Acalypha claoxyloides Hutch.

Ipomoea macrantha R. and S.

Passiflora suberosa L.

Asparagus umbellulatus Bresler

Ścaevola taccada Roxb.

Herb layer

Achyranthes aspera L.