

## Checklist of the Fishes of the Chesterfield Islands (Coral Sea)

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**Abstract**—The fish of the Chesterfield islands, a region midway between the Great Barrier Reef (GBR) and New Caledonia, have been sampled during several cruises by ORSTOM between 1984 and 1989. Information from these cruises and other sources are compiled into the first fish checklist of this region. A total of 866 taxa, representing 134 families, are recorded. 134 taxa are identified to the genus level, of which 58 could be new to science. This fish fauna of the Chesterfield islands has closer affinities with that of New Caledonia than to the GBR. One notices also the low representation of several genera (*Neopomacentrus*, *Scolopsis*, *Siganus*, *Abudefduf*) which are abundant in both New Caledonia and on the GBR.

### Introduction

The Chesterfield Islands are located in the Coral Sea midway between Australia and New Caledonia between latitudes 19 and 22°S (Figure 1). These small islands lie upon a submerged plateau tilted eastward the edges of which are at a depth of 60–80 m. The outer slopes of the bank descend rapidly to depths of over 1000 m. Several other submerged plateaus (Nova Bank, Argo Bank, Kelso Bank, Capel Bank) extending south of the Chesterfield Islands form the northern part of the Lord Howe rise. They are separated from the Great Barrier Reef by the end of the Tasman Basin (3500 m deep) on which stand several islands and reefs (Kenn Reef, Bird Island, Cato Island, Frederick Island). The Chesterfield Islands, along with two reef formations (Nereus Reef and Fairway Reef) are separated from New Caledonia by the New Caledonian Basin (over 3500 m deep).

Very few studies have been conducted on the fishes from this area. The first publication concerning Chesterfield fishes seems to be the report by Rancurel (1973). The next is that of Barro (1979) who noted that ORSTOM conducted



Figure 1. Position of the Chesterfield Islands in the Coral Sea.

brief trawling trials between 230 and 290 m. The New Zealand Oceanographic Institute undertook a survey of the banks south of the Chesterfield Islands in 1979. In 1980 a Japanese trawler, the *Kaimon Maru*, fished south of the Bellona islands (Barro 1981); however no specimens were retained and some fish identifications are questionable.

In 1984 and in 1986, ORSTOM carried out two cruises (CHALCAL 1 and MUSORSTOM 5) in the Chesterfield area, principally to inventory the benthic fauna (Richer de Forges & Pianet 1984, Richer de Forges et al. 1986). The main sampling gears were dredges and beam trawls in which a number of small fishes were taken. During these expeditions fish trawls were used twice and 10 bottom longlines were set. The fish material collected during CHALCAL 1 has been investigated (Rivaton 1989), but the fishes from the MUSORSTOM 5 cruise are waiting to be curated at the Musée National d'Histoire Naturelle, Paris (MNHN) where all the samples were deposited. A few fish specimen were added in 1985 when 15 dredge hauls were made during the BELLONA geological survey.

In 1988 ORSTOM carried out two major cruises to the Chesterfield Islands, CORAIL 2 and 1, in July and September 1988, respectively. CORAIL 2 was planned mainly to study benthic invertebrates, but a number of fish specimens were collected in the dredges and beam trawls. The purpose of the CORAIL 1 cruise was the study of fish populations in both reef areas and soft bottoms. Most of the material presented in the present paper comes from this latter cruise. The South Pacific Commission (SPC) has performed some pole and line fishing in this area and has also done some bait fishing on the reefs of the Chesterfield islands in 1991.

The Chesterfield Islands have also been visited by commercial vessels, particularly longliners from Japan and Taiwan. These boats catch mainly tunas and

marlins. Since 1985 two longliners have been based in Noumea (New Caledonia) and their detailed catch records are available. In addition the Japanese vessels *Hokko Maru* and *Fukuju Maru* set a limited number of bottom longlines for a survey in the southern part of the Islands in 1988 and 1989.

### Material and Methods

Since most of the publications citing Chesterfield fishes are difficult to obtain, a summary of the fishing methods and locations known to us is given below.

#### 1973 ORSTOM CRUISE

An account of the fishes seen during this cruise is given by Laboute in the report by Rancurel (1973). All these sightings took place during five dives at the Ilot du Mouillage and Ile Longue in the southern part of the archipelago (Figure 2).

#### DIAPHUS 12 CRUISE

ORSTOM has conducted a number of tuna longline surveys between 1959 and 1975 around New Caledonia. Of these cruises only one, Diaphus 12 performed experimental fishing in the Chesterfield area, setting two longlines (Grandperrin et al. 1974).

#### 1979 ORSTOM CRUISE

This cruise is briefly described by Barro (1979). Three samples were obtained with shrimp trawls at depths ranging from 230 m to 290 m. Three new species have been described from these samples by Fourmanoir & Rivaton (1980) and Fourmanoir (1982). Details of the trawls are given on Figure 3.

#### KAIMON MARU

Barro (1981) reported the positions and the main species caught by this Japanese trawler. Five trawl hauls were made in the Chesterfield area. Unfortunately no specimens were kept and some identifications are dubious. For this reason only the species for which there was positive identification (mainly based on photographs) are kept in the present checklist.

#### CHALCAL I

A cruise report by Richer de Forges & Pianet (1984) gave a detailed account of the methods used (Figure 2). A total of 10 bottom longline sets were performed between 185 and 450 m. This resulted in the catch of 18 species of fishes. A number of smaller species were taken by fish trawl (2 sets), beam trawl (17 sets) and dredges (68 sets). These fishes were described briefly in the cruise report and in greater detail by Rivaton (1989). The locations of the stations are given in Figure 2. The unidentified specimen were deposited at the MNHN.

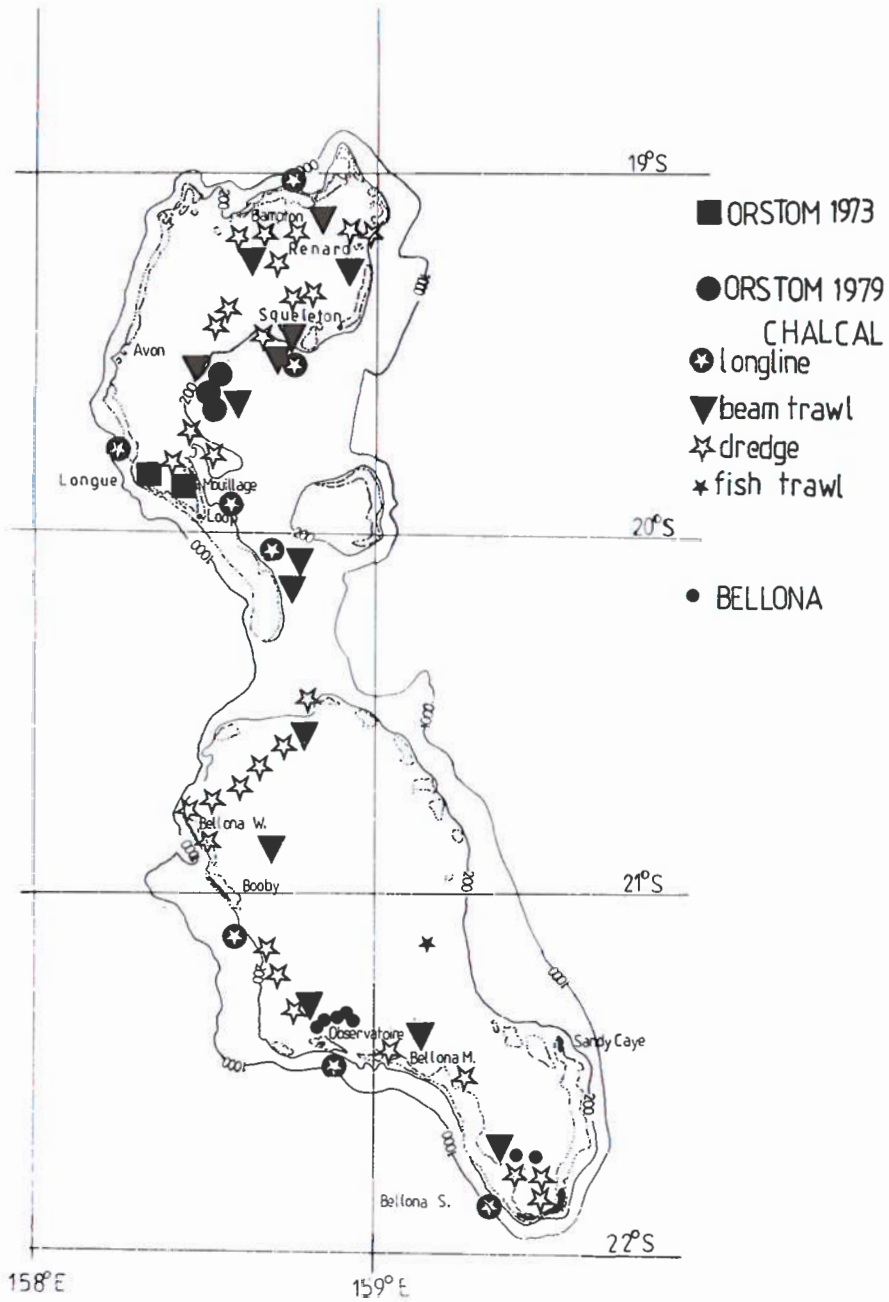


Figure 2. Positions of the stations where fish were caught during the ORSTOM 1973, 1979, CHALCAL and BELLONA cruises.

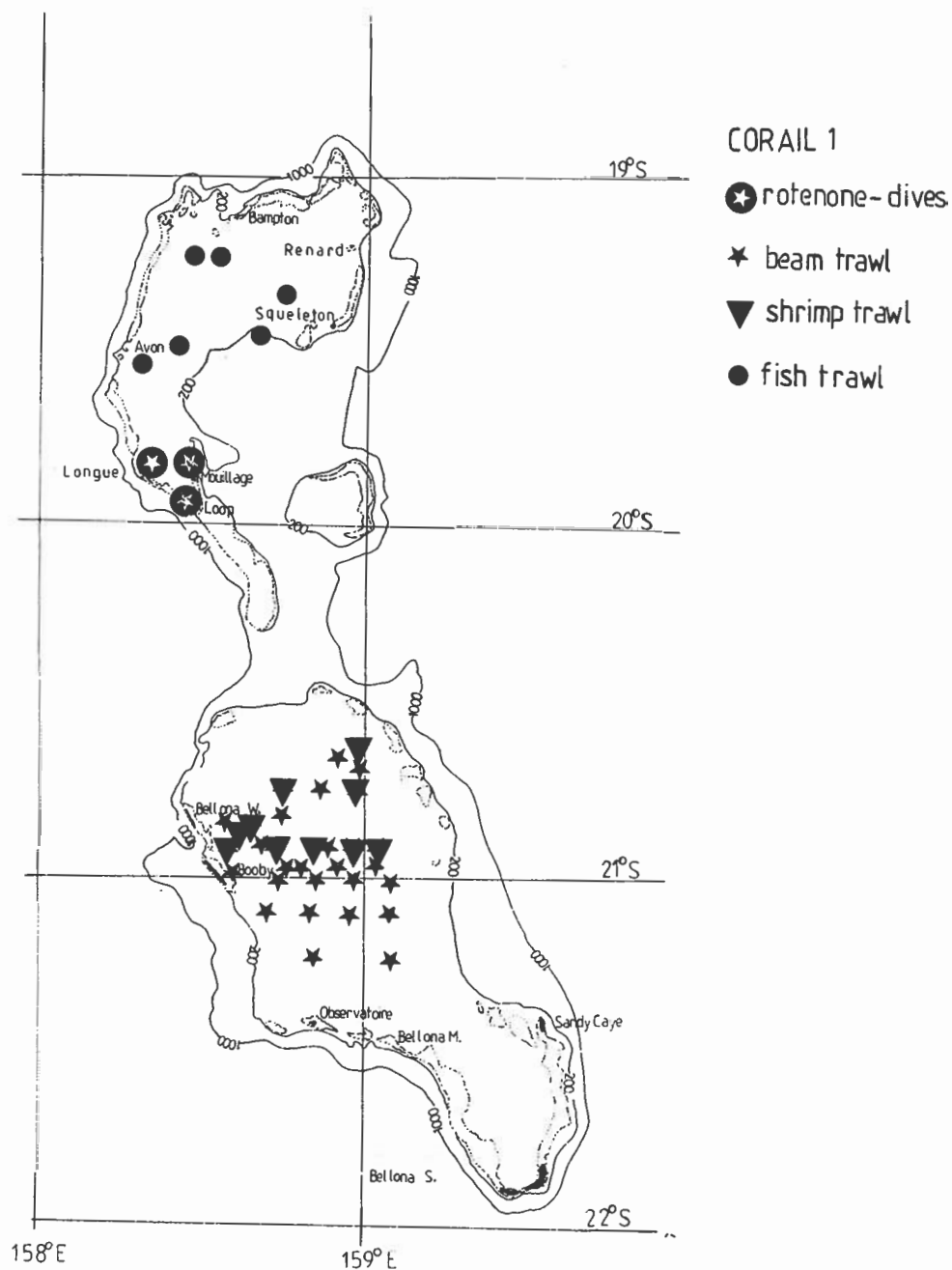


Figure 3. Positions of the stations where fish were either caught or observed during the CORAIL 1 cruise.

### BELLONA

A few dredge samples were obtained during a geological survey in the Bellona area in October 1985. Some small fish were collected. The positions of the stations are given on Figure 2.

### COMMERCIAL LONGLINERS

Tuna longlining has taken place in the Chesterfield area for at least 15 years. However, detailed catch records have been available only since 1983. A number of reports (Hallier & Mou Tham 1983, 1984, Mou Tham & Grandperrin 1985, 1986) gave the positions of the sets and the fishing effort.

### CORAIL I

As mentioned, the principal objective of this cruise was to study the fish fauna of the Chesterfield Bank. Two ships participated in the survey, the RV *Alis* and the RV *Coriolis*. The RV *Alis* did the trawling using beam trawl, shrimp trawl and fish trawl (Kulbicki et al. 1990a). A total of 55 hauls were carried out (Figure 3). The RV *Coriolis* was the base for the study of reef fishes (Kulbicki et al. 1990b). Most of the specimens were collected with rotenone. Three localities were sampled at three depth levels in the lagoon: 0–5m, 5–10m and 10–15m (Table 1). In addition, some fishes were caught by spearing, handlining, quinaldine and gillnet. Fish were also visually recorded along transects set in areas close to the rotenone stations and at other locations around the islands. Specimens from this cruise have been deposited at the MNHN of Paris, the Bishop Museum in Hawaii and the ORSTOM Nouméa center. A number of specimens were also photographed.

Table 1. Details of the shallow water stations where fish were caught or sighted during the CORAIL I cruise.

Station number and type	Depth range in meters	Position		Number of species recorded
		Latitude	Longitude	
1–2 rotenone	0–5	19°53'8	158°27'5	115
1–4 transect	0–5	19°53'8	158°27'5	102
3–4 rotenone	5–10	19°53'8	158°27'5	137
5–7 transect	5–10	19°53'8	158°27'5	80
5–6 rotenone	10–15	19°53'8	158°27'5	145
8–10 transect	10–15	19°53'8	158°27'5	69
7–8 rotenone	0–5	19°52'0	158°18'0	112
15–16 transect	0–5	19°52'0	158°18'0	53
9–10 rotenone	5–10	19°52'0	158°18'0	117
20–21 transect	5–10	19°52'0	158°18'0	43
11, 12, 15 rotenone	10–15	19°52'0	158°18'0	130
17–19 transect	10–15	19°52'0	158°18'0	52
13–14 rotenone	0–5	19°57'2	158°28'2	132
11–14 transect	0–5	19°57'2	158°28'2	111

## CORAIL 2

This cruise was planned primarily to sample the benthic invertebrate fauna of the Chesterfield Plateau. For this purpose dredges and beam trawls were used. A number of small species of fishes were caught with the dredges and beam trawls. The stations where fishes were taken are indicated on Figure 4.

## JAPANESE BOTTOM LONGLINERS

Experimental bottom longlining was undertaken over most sea mounts of the New Caledonia region by the *Hokko Maru* in 1988 (Anon. 1988). Six sets were made in the Chesterfield area (Figure 5). In 1989, seven additional longline sets were carried out by the sister ship *Fujuku Maru* (Grandperrin & Lehodey 1992). Unfortunately only a limited number of species are detailed in these reports.

## Results

In the following list the letters D, M or E may be found before a species name. This indicates that the species is demersal (D), mesopelagic (M) or pelagic (E), if there is no letter the species is associated with reefs. The depth range where the species were observed or caught is given when available. Just before the information on depth, the collection method is given by a capital letter (R: rotenone, L: line fishing, T: trawling or dredging, S: spear fishing, C: cast net, V: sight record). Sight records are mentioned only if no other method did collect the species. When specimens exist, their location is given at the end of the line (H: Bishop Museum, Hawaii; J: Hokkaido University, Japan; N: ORSTOM Nouméa Center, New Caledonia; P: MNHN Paris, France; Z: DSIRO Wellington, New Zealand). If a picture was taken it is also mentioned. The families are ordered phylogenetically following Eschmeyer (1991). Taxa are ordered alphabetically within each family.

## CLASS ELASMOBRANCHII

## ORDER HEXANCHIFORMES

## Family HEXANCHIDAE

D *Heptanchias perlo* (Bonnaterre 1788) L 270–280m P—Grandperrin & Lehodey 1992

D *Hexanchus vitulus* Springer & Waller 1969 L 385–450m P—Richer de Forges & Pianet 1984

## ORDER ORECTOLOBIFORMES

## Family STEGOSTOMATIDAE

*Stegostoma fasciatum* (Hermann 1783) V 10m—Kulbicki et al. 1990b

## Family GINGLYMOSTOMATIDAE

*Nebrius concolor* (Rüppell 1837) V 5–20m—Kulbicki et al. 1990b



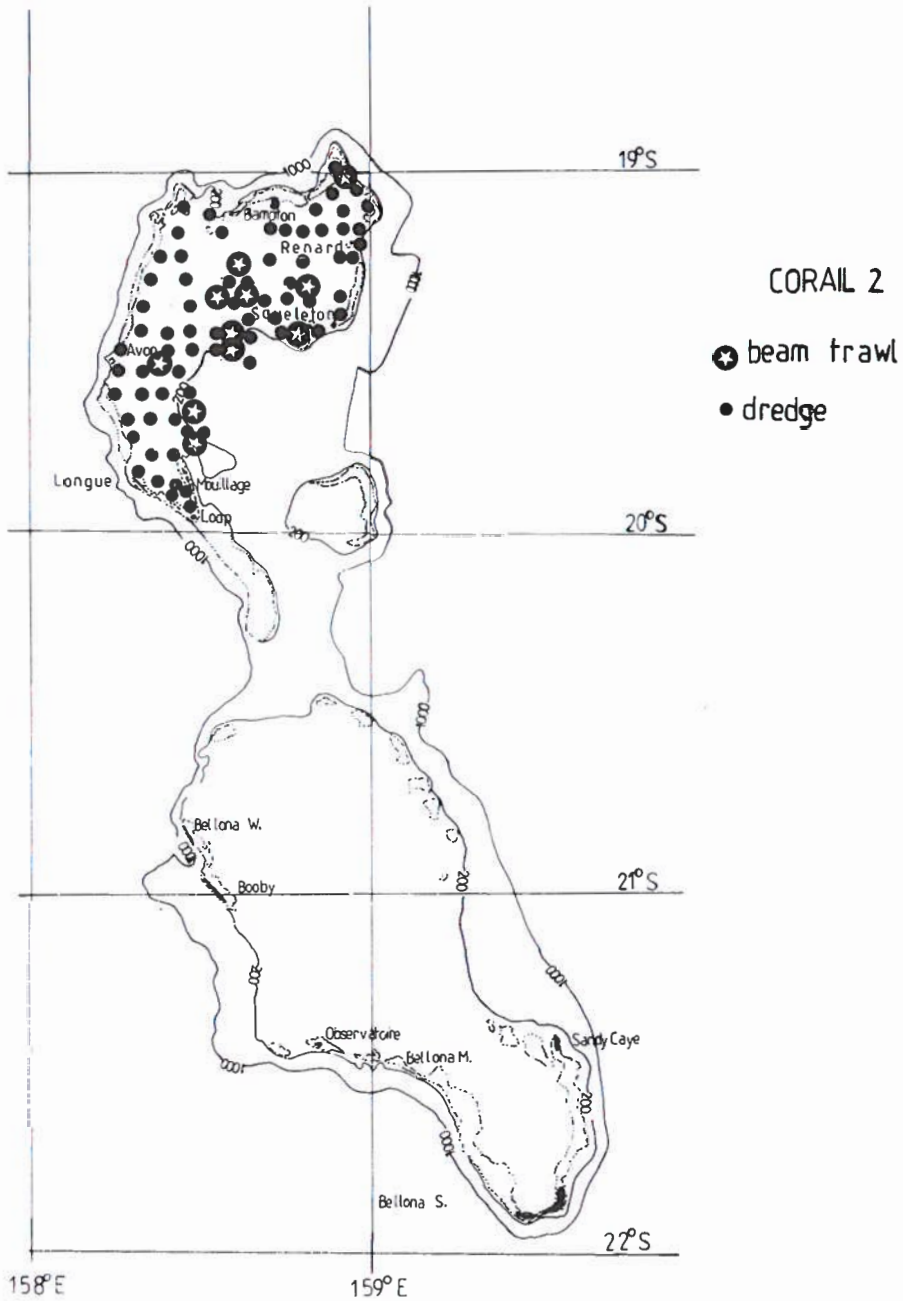


Figure 4. Positions of the stations where fish were caught during the CORAIL 2 cruise.



**ORDER LAMNIFORMES****Family LAMNIDAE**

E *Isurus oxyrinchus* Rafinesque 1810 L 40m—Kulbicki et al. 1990b

**ORDER CARCHARINIFORMES****Family TRIAKIDAE**

D *Hemitriakis japonica* (Müller & Henke 1839) LT 200–375m NP—photography—Richer de Forges & Pianet 1984

D *Mustelus manazo* Bleeker 1854 LT 275–310m P—Grandperrin & Lehodey 1992

D *Mustelus* sp. LT 450–530m—Grandperrin & Lehodey 1992

**Family HEMIGALEIDAE**

*Triaenodon obesus* (Rüppell 1837) L 5–200m—Kulbicki et al. 1990b

**Family CARCHARHINIDAE**

*Carcharhinus albimarginatus* (Rüppell 1837) VL 10–45m—Kulbicki et al. 1990b

*Carcharhinus amblyrhynchos* (Bleeker 1856) VL 5–45m—Kulbicki et al. 1990b

*Carcharhinus melanopterus* (Quoy & Gaimard 1824) V 0–15m—Kulbicki et al. 1990b

*Carcharhinus plumbeus* (Nardo 1827) L 185–305m—Richer de Forges & Pianet 1984

E *Prionace glauca* (Linnaeus 1758) L longline—Hallier 1984

**ORDER SQUALIFORMES****Family SQUALIDAE**

D *Squalus megalops* (MacLeay 1881) T 270–360m P—Barro 1981

D *Squalus rancureli* Fourmanoir & Rivaton 1979 T 320–410m P—Richer de Forges & Pianet 1984

D *Squalus* sp. T 365–410m—Richer de Forges & Pianet 1984

**ORDER MYLIOBATIFORMES****Family DASYATIDIDAE**

*Dasyatis kuhlii* (Müller & Henle 1841) T 1–93m HL—Kulbicki et al. 1990b

*Urogymnus africanus* (Bloch & Schneider 1801) T 15–217m P—Kulbicki et al. 1990b as *U. asperrimus*

*Urolophus* sp. nov. T 330m P—Rivaton 1989

**Family MYLIOBATHIDIDAE**

*Aetobatus narinari* (Euphrasen 1790) V 15–20m—Kulbicki et al. 1990b

**CLASS ACTINOPTERYGII****ORDER ANGUILLIFORMES****Family MORINGUIDAE**

*Moringua* sp. 1 R 5m H—Kulbicki et al. 1990b

*Moringua* sp. 2 R 10m H—Kulbicki et al. 1990b

*Moringua* sp. 3 R 10m H—Kulbicki et al. 1990b

#### Family CHLOPSIDAE

*Kaupichthys hyoproroides* (Strömann 1896) R 3–15m H

#### Family MURAENIDAE

*Anarchias* sp. 1 R 3–15m—photography—Kulbicki et al. 1990b

*Anarchias* sp. 2 R 3m—photography—Kulbicki et al. 1990b

*Enchelycore bayeri* (Schultz 1953) R 5–15m—Kulbicki et al. 1990b

*Gymnothorax berndti* Snyder 1904 T 80–290m N—Rivaton 1989

*Gymnothorax buroensis* (Bleeker 1857) R 3–10m N—Kulbicki et al. 1990b

*Gymnothorax chilospilus* Bleeker 1865 R 5m HN—photography—Kulbicki et al. 1990b

*Gymnothorax fimbriatus* (Bennett 1831) T 78m N—Kulbicki et al. 1990a

*Gymnothorax flavimarginatus* (Rüppell 1828) R 4m

*Gymnothorax fuscomaculatus* (Schultz 1953) R 3–10m HN—Kulbicki et al. 1990b

D *Gymnothorax intesi* Fourmanoir & Rivaton 1979 T 200–310m—Richer de Forges & Pianet 1984 as *Lycodontis intesi*

*Gymnothorax javanicus* (Bleeker 1859) R 3–10m—Kulbicki et al. 1990b

*Gymnothorax margaritophorus* (Bleeker 1864) R 3–15m HN—Kulbicki et al. 1990b

*Gymnothorax meleagris* (Shaw & Nodder 1795) R 10m N—Kulbicki et al. 1990b

*Gymnothorax melatremus* Schultz 1953 R 12m HN—photography—Kulbicki et al. 1990b

*Gymnothorax pindae* Smith 1962 R 3–15m HN—Kulbicki et al. 1990b

*Gymnothorax richardsoni* (Bleeker 1852) R 1m Z

D *Gymnothorax* sp. RT 15–208m HN—photography

*Gymnothorax zonipectus* Seale 1906 R 3–15m HN—Kulbicki et al. 1990b

*Siderea prosopeion* (Bleeker 1853) R 1m—Kulbicki et al. 1990b

*Siderea thyrsoides* (Richardson 1845) R 8m H—Kulbicki et al. 1990b as *Uropterygius* sp. 1

*Uropterygius fuscoguttatus* Schultz 1953 R 7–15m H—photography—Kulbicki et al. 1990b as *Uropterygius* sp. 2

*Uropterygius* sp. R 7–12m—Kulbicki et al. 1990b as *Uropterygius* sp. 3

#### Family OPHICHTHIDAE

*Apterichthys klazingai* (Weber 1913) R 25m—Kulbicki et al. 1990b as *Ophichthidae* sp. 1

*Apterichthys* sp. T 50m Z

*Leiuranus semicinctus* (Lay & Bennett 1839) R 5–15m N—Kulbicki et al. 1990b

*Muraenichthys* sp. RT 5–66m H—Kulbicki et al. 1990b

D *Myrophis uropterus* (Temminck & Schlegel 1842) T 44–260m N

*Muraenichthys gymnotus* Bleeker 1864 R 5m H—Kulbicki et al. 1990b as *Ophichthidae* sp. 2

*Muraenichthys laticaudata* (Ogilby 1897) R 5m H

Family CONGRIDAE

D *Ariosoma anago* (Temminck & Schlegel 1846) T 350m N—Rivaton 1989

D *Ariosoma mauritianum* (Pappenheim 1914) T 60m N—Rivaton 1989

*Conger cinereus* (Rüppell 1828) R 0–10m N—Kulbicki et al. 1990b

D *Gnathophis* sp. T 295m—Rivaton 1989

*Heteroconger hassi* (Klausewitz & Eibl-Eibesfeldt 1979) V 10m—Kulbicki et al. 1990b

ORDER CLUPEIFORMES

Family CLUPEIDAE

*Spratelloides delicatulus* (Bennett 1831) boukeami pelagic

ORDER GONORHYNCHIFORMES

Family GONORYNCHIDAE

D *Gonorynchus gonorynchus* (Linnaeus 1766) T 60m N

ORDER SILURIFORMES

Family PLOTOSIDAE

*Plotosus lineatus* (Thunberg 1787) RT 4–6m NZ—Rivaton 1989—Kulbicki et al. 1990b

ORDER SALMONIFORMES

*Glossanodon* sp. T 330m—Rivaton 1989

ORDER STOMIIFORMES

Family GONOSTOMATIDAE

D *Polymetme corythaeola* (Alcock 1898) T 650–705m N

D *Valenciennellus tripunctulatus* (Esmark 1870) T 500m N

Family STERNOPTYCHIDAE

E *Argyropelecus* sp. stom. cont. N—Grandperrin et al. 1974

E *Argyropolecus hemigymnus* Cocco 1829 T unknown Z

ORDER AULOPIIFORMES

Family AULOPIDAE

D *Aulopus japonicus* Günther 1880 T 290m N—Barro 1979

Family CHLOROPHTHALMIDAE

M *Chlorophthalmus albatrossis* Jordan & Starks 1904 T 348m N—Rivaton 1989

M *Chlorophthalmus* sp. T 330m P—photography—Rivaton 1989

Family SYNODONTIDAE

*Saurida gracilis* (Quoy & Gaimard 1824) RT 4–68m HN—Rivaton 1989

- Saurida undosquamis* (Richardson 1848) T 51–68m N—Rivaton 1989  
*Synodus binotatus* Schultz 1953 R 3–10m N—Kulbicki et al. 1990b  
*Synodus dermatogenys* Fowler 1912 RT 3–217m HN—photography—Rivaton 1989 as *S. englemani*  
*Synodus doaki* Russell & Cressey 1979 T 60m N—Kulbicki et al. 1990a  
*Synodus hoshinonis* (Tanaka 1917) T 53–91m N—Rivaton 1989  
*Synodus jaculum* Russell & Cressey 1979 RT 12–76m HN—Kulbicki et al. 1990b  
D *Synodus macrocephalus* Cressey 1981 T 51–217m N—Rivaton 1989  
D *Synodus oculus* Cressey 1981 T 44–91m HN—photography—Rivaton 1989  
*Synodus rubromarmoratus* Russell & Cressey 1979 R 8m H—Kulbicki et al. 1990b as *Synodus* sp. 2  
D *Synodus similis* McCulloch 1921 T 76m H—photography—Kulbicki et al. 1990a as *Synodus* sp.1  
*Synodus* sp. RT 12–75m H—photography—Kulbicki et al. 1990b  
*Synodus tectus* Cressey 1981 T 65–76m H—photography—Kulbicki et al. 1990a as *S. variegatus*  
*Synodus variegatus* (Lacepède 1803) R 8–56m—Rivaton 1989 as *S. dermatogenys*  
*Trachinocephalus myops* (Forster 1801) T 67–70m N

#### Family ALEPISAUROIDAE

- E *Alepisaurus brevirostris* Gibbs 1960 longline Hallier 1984  
E *Alepisaurus ferox* Lowe 1833 longline Hallier 1984

#### ORDER MYCTOPHIFORMES

##### Family MYCTOPHIDAE

- M *Diaphus coeruleus* (Klunzinger 1871) T 500m N—Grandperrin et al. 1974

#### ORDER GADIFORMES

##### Family BREGMACEROTIDAE

- M *Bregmaceros nectabanus* Whitley 1941 T 350m N—Rivaton 1989  
M *Bregmaceros* sp. T 66–500m N

##### Family MACROURIDAE

- D *Coryphaenoides* sp. T 500–590m N

#### ORDER OPHIDIIFORMES

##### Family OPHIDIIDAE

- D *Ophiodon muraenolepis* (Günther 1880) T 350–370m N—photography—Rivaton 1989  
*Brotula multibarata* Temminck & Schlegel 1846 RT 4–88m HN—Kulbicki et al. 1990b  
*Brotula* sp. R 3–5m H—Kulbicki et al. 1990b

##### Family CARAPIDAE

- Carapus* sp. T Z

*Encheliophis gracilis* (Bleeker 1856) T 62m

Family BYTHIDAE

*Brosomphysiops pautzkei* Schultz 1960 R 8m H—Kulbicki et al. 1990b

*Dinematichthys* sp. 1 brown R 3–15m H—Kulbicki et al. 1990b

*Dinematichthys* sp. 2 yellow R 3–15m H—photography—Kulbicki et al. 1990b

*Dinematichthys* sp. 3 pink R 4–10m H—photography—Kulbicki et al. 1990b

*Dinematichthys* sp. 4 grey R 8m H—Kulbicki et al. 1990b

ORDER LOPHIIFORMES

Family LOPHIIDAE

D *Lophiomus setigerus* (Vahl 1797) T 215–510m N—photography—Rivaton 1989

Family ANTENNARIIDAE

*Antennarius coccineus* (Lesson 1830) R 7–15m H—Kulbicki et al. 1990b

*Antennarius commersoni* (Latreille 1804) T 65–70m N—Rivaton 1989 as *A. molluccensis*

*Antennarius nummifer* Cuvier 1817 T 63–78 m—Kulbicki et al. 1990a

*Antennarius striatus* (Shaw & Nodder 1794) T 67–72m—Kulbicki et al. 1990a as *Phrynelox zerbrinus*

Family CHAUNACIDAE

D *Chaunax fimbriatus* Hilgendorf 1879 T 500–590m N—Rivaton 1989

Family OGCOCEPHALIDAE

D *Halicmetus reticulatus* Smith & Radcliffe 1912 T 500m N

D *Halieutea stellata* (Vahl 1797) T 230m P—Rivaton 1989

D *Malthopsis annulifera* Tanaka 1908 T 305–590m N—photography

D *Malthopsis lutea* Alcock 1891 T 500m N—photography

ORDER GOBIESOCIFORMES

Family GOBIESOCIDAE

Gobiesocid sp. 1 R 8m H—photography—Kulbicki et al. 1990b

Gobiesocid sp. 2 R 15m H—Kulbicki et al. 1990b as *Discotrema* sp.

*Lepadichthys* sp. 1 R 3–8m H—photography—Kulbicki et al. 1990b

ORDER ATHERINIFORMES

Family ATHERINIDAE

*Atherinomorus lacunosus* (Schneider 1801) C 1m H—Kulbicki et al. 1990b

*Hypoatherina barnesi* Schultz 1953 C 1m N—Kulbicki et al. 1990b

*Hypoatherina* sp. C 15m N—Kulbicki et al. 1990b

ORDER BELONIFORMES

Family BELONIDAE

*Platybelone argalus platyura* (Bennett 1832) V 2m—Kulbicki et al. 1990b

## ORDER LAMPRIFORMES

## Family LAMPRIDAE

M *Lampris guttatus* (Brünnich 1788) longline Hallier 1984

## Family VELIFERIDAE

D *Metavelifer multiradiatus* (Regan 1907) T 70–90m N—Kulbicki et al. 1990a

## Family TRACHIPTERIDAE

E *Zu cristatus* (Bonelli 1920) stom. cont.—Grandperrin et al. 1974

## Family ATELEOPODIDAE

D *Ateleopus japonicus* Bleeker 1879 T 215–217m N

## ORDER BERYCIFORMES

## Family MONOCENTRIDAE

D *Monocentris japonicus* (Houttuyn 1899) T 203–290m N—photography—  
Rivaton 1989

## Family ANOPOLOGASTRIDAE

E *Anoplogaster cornuta* (Valenciennes 1833) stom. cont.—Grandperrin et al. 1974

## Family BERYCIDAE

D *Beryx decadactylus* Cuvier 1829 T 270–355m N—Barro 1981

D *Beryx splendens* Lowe 1833 T 270–355m N—Barro 1981

D *Centroberyx affinis* (Günther 1859) T 215–217m N—photography—Rivaton  
1989

## Family HOLOCENTRIDAE

*Myripristis adusta* Bleeker 1853 R 2–15m H—Kulbicki et al. 1990b

*Myripristis berndti* Jordan & Evermann 1903 R 2–15m—Kulbicki et al. 1990b

*Myripristis kuntzei* Cuvier 1831 R 2–15m H—Kulbicki et al. 1990b

*Myripristis murdjan* (Forsskal 1775) R 3–15m HN—Kulbicki et al. 1990b

*Myripristis pralinia* Cuvier 1829 R 3–15m—Kulbicki et al. 1990b

*Myripristis violacea* Bleeker 1851 R 3–15m N—Kulbicki et al. 1990b

*Myripristis vittata* Cuvier 1831 V 18m—Kulbicki et al. 1990b

*Myripristis* sp. V 10m—Kulbicki et al. 1990b

*Neoniphon argenteus* (Valenciennes 1831) R 8–15m N—Kulbicki et al. 1990b

*Neoniphon opercularis* (Valenciennes 1831) R 4m—Kulbicki et al. 1990b

*Neoniphon sammara* (Forsskal 1775) R 3–15m HN—photography—Kulbicki et al.  
1990b

*Neoniphon* sp. R 8m—Kulbicki et al. 1990b

D *Ostichthys hypsipterygion* Randall Shimizu & Yamakawa 1982 T 270–355m  
NP—photography

D *Ostichthys kaianus* (Günther 1880) T 225–330m NP—photography—Rivaton  
1989

*Plectrypops lima* (Valenciennes 1831) R 4–10m N—Kulbicki et al. 1990b  
*Sargocentron caudimaculatum* (Rüppell 1838) V 25m—Kulbicki et al. 1990b  
*Sargocentron diadema* (Lacepède 1801) R 2–15m HN—Kulbicki et al. 1990b  
*Sargocentron lepros* Allen & Cross 1983 R 10m H—Kulbicki et al. 1990b  
*Sargocentron melanospiros* (Bleeker 1858) R 7m—Kulbicki et al. 1990b  
*Sargocentron punctatissimum* (Cuvier 1829) R 4–15m H—Kulbicki et al. 1990b  
*Sargocentron spiniferum* (Forsskal 1775) R 2–15m H—photography—Kulbicki et al. 1990b  
*Sargocentron* sp.1 R 7–13m H—photography—Kulbicki et al. 1990b

#### Family POLYMIXIDAE

D *Polymixia japonica* Günther 1877 T 270–500m N—photography

#### ORDER ZEIFORMES

##### Family PARAZENIDAE

D *Parazen pacificus* Kamohara 1935 T 500m N

##### Family ZEIDAE

D *Cyttomimus stelgis* Gilbert 1905 T 270–330m P

D *Zenopsis nebulosus* (Temminck & Schlegel 1845) T 500m P—photography—Rivaton 1989

##### Family CAPROIDAE

D *Antigonia capros* Lowe 1843 T 225–348m NP—photography—Rivaton 1989

#### ORDER GASTEROSTEIFORMES

##### Family PEGASIDAE

*Eurypegasus draconis* (Linnaeus 1758) RT 1–70m HN—photography—Rivaton 1989

#### ORDER SYNGNATHIFORMES

##### Family AULOSTOMIDAE

*Aulostomus chinensis* (Linnaeus 1766) TS 3–10m—Kulbicki et al. 1990b

##### Family FISTULARIIDAE

*Fistularia commersonii* Rüppell 1835 T 15–93m—Kulbicki et al. 1990b

*Fistularia petimba* (Lacepède 1803) T 44–80m—Kulbicki et al. 1990b

##### Family SOLENOSTOMIDAE

*Solenostomus* sp. T 75m

##### Family SYNGNATHIDAE

*Corythoichthys amplexus* Dawson & Randall 1975 RT 13–51m HN—photography—Kulbicki et al. 1990b



- Corythoichthys haematopterus* (Bleeker 1851) T 19m N—Kulbicki et al. 1990b as *Corythoichthys* sp. 1  
*Corythoichthys intestinalis* (Ramsay 1881) T 32–225m N—Rivaton 1989  
*Corythoichthys schultzi* Herald 1953 T 45–75m HN  
*Corythoichthys* sp. RS 10m —Kulbicki et al. 1990b as *Corythoichthys* sp. 2  
*Corythoichthys paxtoni* Dawson 1977 R 10m H—Kulbicki et al. 1990b as *Corythoichthys* sp. 3  
*Doryrhamphus dactyliophorus* (Bleeker 1853) R 3–8m N—Kulbicki et al. 1990b  
*Doryrhamphus excisus excisus* Kaup 1856 R 3–15m HN—Kulbicki et al. 1990b  
*Festucalex erythraeus* (Gilbert 1903) T 35–69m N  
*Festucalex gibbsi* Dawson 1977 T 35–41 m N  
*Halicampus boothae* (Whitley 1964) RS 3m H—Kulbicki et al. 1990b as *Micrognathus* sp. 1  
*Halicampus dunckeri* (Chabanaud 1929) T 63–67m N  
*Halicampus mataafae* (Jordan & Seale 1906) S 3m H  
*Hippocampus hystrix* Kaup 1856 T 60–69m N—Rivaton 1989  
*Micrognathus brevirostris* (Rüppell 1838) R 7m H—photography—Kulbicki et al. 1990b as *Micrognathus* sp. 2  
*Micrognathus* sp. R 10m—Kulbicki et al. 1990b as *Micrognathus* sp. 2

#### ORDER SCORPAENIFORMES

##### Family SCORPAENIDAE

- Ablabys taenianotus* (Cuvier 1829) T 44–78m N  
*Dendrochirus brachypterus* (Cuvier 1829) T 32–80m HN—Rivaton 1989  
*Erosa erosa* (Langsdorf 1829) T 62–85m HN—Rivaton 1989  
*Inimicus caledonicus* (Sauvage 1878) T 63–78m HN—Rivaton 1989 as *I. didactylus*  
*Inimicus* sp. T 78m H—Kulbicki et al. 1990a as *I. didactylus*  
*D. Iracundus signifer* Jordan & Evermann 1903 T 63–64m N  
*D. Neocentropogon* sp. T 75–79m—Kulbicki et al. 1990a  
*D. Neocentropogon trimaculatus* Chan 1965 T 203–208m N—Rivaton 1989  
*D. Neomerinthe rotunda* Chen 1981 T 225–295m N—Rivaton 1989  
*D. Neomerinthe rufescens* (Gilbert 1905) T 250m N—Barro 1979  
*D. Ocosia apia* Poss & Eschmeyer 1975 T 288–350m NZ—photography—Rivaton 1989  
*D. Paracentropogon longispinis* (Cuvier 1829) T 63–64m N  
*Parascorpaena mcadamsi* (Fowler 1938) T 16–26m N  
*Pontinus macrocephalus* (Sauvage 1882) T 310m N  
*D. Pontinus* sp. T 44–150m HN—photography  
*Pteroidichthys* sp. T 62–83m N—Kulbicki et al. 1990a  
*Pterois antennata* (Bloch 1787) T 10–72m—Kulbicki et al. 1990b  
*Pterois* sp. T 70–76m H  
*Richardsonichthys leucogaster* (Richardson 1848) T 56–90m N—Rivaton 1989  
*D. Richardsonichthys* sp. T 47–246m  
*Rhinopias* sp. R 10m H

- D Scorpaena neglecta* ? Temminck & Schlegel 1844 T 120–150m N  
*Scorpaenodes albaiensis* (Evermann & Seale 1907) R 3–8m—Kulbicki et al. 1990b  
*Scorpaenodes brocki* Schultz 1966 ? R 4m—Kulbicki et al. 1990b as *Scorpaenodes*  
sp. 1  
*Scorpaenodes guamensis* (Quoy & Gaimard 1824) R 3–15m HN—Kulbicki et al.  
1990b  
*Scorpaenodes parvipinnis* (Garrett 1864) R 3–15m HN—Kulbicki et al. 1990b  
*Scorpaenodes scabra* (Ramsey & Ogilby 1885) R 8–12m H—photography—  
Kulbicki et al. 1990b  
*Scorpaenodes varipinnis* Smith 1957 R 7–15m H—photography—Kulbicki et al.  
1990b  
*Scorpaenodes minor* (Smith 1958) R 3–10m H—Kulbicki et al. 1990b as *Sebas-*  
*tapistes* sp. 1  
*Scorpaenopsis diabolus* Cuvier 1829 R 7m N—Kulbicki et al. 1990b  
*Scorpaenopsis brevifrons* Eschmeyer & Randall 1975 R 10m H—Kulbicki et al.  
1990b as *Scorpaenopsis* sp.  
“*Scorpaenopsis*” *fowleri* (Pietschmann 1934) R 3m—Kulbicki et al. 1990b as *Scor-*  
*paenodes fowleri*  
*Scorpaenopsis oxycephala* (Bleeker 1849) R 7m H—Kulbicki et al. 1990b  
*Scorpaenopsis* sp. cf *venosa* RT 7–55m H—Kulbicki et al. 1990b as *Sebastapistes*  
sp. 2  
*Sebastapistes cyanostigma* (Bleeker 1856) R 7–9m—Kulbicki et al. 1990b as *Se-*  
*bastapistes albobrunnea*  
*Sebastapistes tinkhami* (Fowler 1946) R 3–8m H—photography—Kulbicki et al.  
1990b as *Sebastapistes* sp.  
*Sebastapistes* sp. R 3–8m H—photography—Kulbicki et al. 1990b  
*D Setarches guentheri* Johnson 1862 T 300–500m N—photography—Rivaton  
1989  
*D Setarches longimanus* (Alcock 1894) T 230–350m NP—photography—Rivaton  
1989  
*Synanceia verrucosa* (Bloch & Schneider 1801) R 13m—Kulbicki et al. 1990b

#### Family CARACANTHIDAE

*Caracanthus unipinna* (Gray 1831) RT 8–15m HN—Kulbicki et al. 1990b

#### Family APLOACTINIDAE

Aploactinid T 50–70m NH

*Cocotropus* sp. 1 T H

*Cocotropus* sp. 2 R 10m H—photography—Kulbicki et al. 1990b

*Cocotropus dermacanthus* Bleeker 1852 R 7–12m—Kulbicki et al. 1990b

*Erisphex obbesi* (Weber 1913) T 57m N

*Erisphex potti* (Steindachner 1896) T 64m N—Rivaton 1989

*Paraploactis* sp. T 50m N

## Family TRIGLIDAE

D *Lepidotrigla* sp. T 169–330m N—photography—Rivaton 1989

D *Parapterygotrigla* sp. T 500m N

D *Pterygotrigla* sp. T 225–350m N—photography—Rivaton 1989

D *Satyrichthys welchi* (Herre 1925) T 330–370m N—photography—Rivaton 1989

## Family DACTYLOPTERIDAE

*Dactyloptena orientalis* (Cuvier 1829) ST 15–65m HN—Rivaton 1989

## Family PLATYCEPHALIDAE

D *Bembradium* sp. T 348m N—Rivaton 1989

*Onigocia macrolepis* (Bleeker 1854) T 60–90m—Rivaton 1989

*Onigocia spinosa* (Temminck & Schlegel 1842) T 41–82m—Rivaton 1989

*Onigocia* sp. 1 R 3–15m H—photography—Kulbicki et al. 1990b as *Platycephalus* sp.

*Onigocia* sp. 2 T 70m H

D *Onigocia* sp. 3 T 317m Z—Rivaton 1989

*Platycephalidae novum generum* ? T 51–68m

*Rogadius* sp. T 35–41m H—photography

D *Suggrundus* sp. T 203–228m N—Rivaton 1989

*Thysanophrys chiltonae* Schultz 1966 R 7m H—Kulbicki et al. 1990b as *Thysanophrys* sp. 2

*Thysanophrys otaitensis* (Cuvier 1829) R 3–15m H—Kulbicki et al. 1990b as *Thysanophrys* sp. 1

*Thysanophrys* sp. R 8m—Kulbicki et al. 1990b as *Thysanophrys* sp. 3

## Family CONGIPODIDAE

*Amblyaspistus taeniotus* (Cuvier 1829) T 65 m—Rivaton 1989

## Family HOPLICHTHIDAE

D *Hoplichthys citrinus* Gilbert 1930 T 290–330 NZ—photography—Rivaton 1989

## ORDER PERCIFORMES

## Family ACROPOMATIDAE

D *Neoscombrops pacificus* Mochizuki 1979 T 295–330m P—Rivaton 1989

D *Synagrops philippinensis* (Günther 1880) T 350–370m N—Rivaton 1989

## Family SERRANIDAE

*Anyperodon leucogrammicus* (Valenciennes 1828) V 25m—Kulbicki et al. 1990b

D *Caprodon schlegelii* (Günther 1859) T 270–280m P—photography—Barro 1981 as *Anthias schlegelii*

*Cephalopholis argus* Bloch & Schneider 1801 R 1–20m—Kulbicki et al. 1990b

*Cephalopholis leopardus* (Lacepède 1801) R 7–15m H—Kulbicki et al. 1990b

*Cephalopholis miniata* (Forsskal 1775) R 7–15m N—Kulbicki et al. 1990b

*Cephalopholis spiloparaea* (Valenciennes 1828) V 20m—Kulbicki et al. 1990b

*Cephalopholis urodeta* (Forster 1801) R 5–15m H—Kulbicki et al. 1990b

- D Chelidoperca lecomi* Fourmanoir 1982 T 295–330m N—photography—Fourmanoir 1982
- D Chelidoperca* sp. T 215m NP—photography
- Epinephelus cyanopodus* (Richardson 1846) RST 7–80m—Kulbicki et al. 1990b
- Epinephelus fasciatus* (Forsskal 1775) V 12m N—Kulbicki et al. 1990b
- Epinephelus fuscoguttatus* (Forsskal 1775) T 345m—Richer de Forges & Pianet 1984
- Epinephelus lanceolatus* (Bloch 1790) V 25–40m N—Kulbicki et al. 1990b
- Epinephelus macrospilos* (Bleeker 1855) R 5m—Kulbicki et al. 1990b
- Epinephelus maculatus* (Bloch 1790) T 8–64m—Rivaton 1989
- Epinephelus merra* Bloch 1793 R 1–15m HN—Kulbicki et al. 1990b
- D Epinephelus morrhua* (Valenciennes 1833) R 4–15m HN—Richer de Forges & Pianet 1984
- D Epinephelus octofasciatus* Griffin 1926 T 270–355m
- Epinephelus polyphkadion* (Bleeker 1849) T 180–450m
- Gracila albomarginata* (Fowler & Bean 1930) L < 35m Laboute 1973
- Grammistops ocellatus* Schultz 1953 R 12m H—Kulbicki et al. 1990b
- Liopropoma susumi* (Jordan & Seale 1906) R 3–15m HN—Kulbicki et al. 1990b
- D Luzonichthys* sp. stom.cont.—Grandperrin et al. 1974
- D Ostracoberyx dorygenys* Fowler 1934 LT 270–355m N—photography
- D Plectranthias barroi* Fourmanoir 1982 T 203–208m N—photography—Fourmanoir 1982
- Plectranthias fourmanoiri* ? Randall 1980 R 12m—Kulbicki et al. 1990b
- Plectranthias kelloggi* (Jordan & Evermann 1903) T 348m N—Rivaton 1989
- Plectranthias longimanus* (Weber 1913) T 32–75m N
- D Plectranthias maculatus* Fourmanoir 1982 T 225m N—Fourmanoir 1982
- D Plectranthias randalli* Fourmanoir & Rivaton 1980 T 300m—photography
- Plectranthias* sp. T 58–62m N
- Plectropomus laevis* (Lacepède 1802) R 4–15m—Kulbicki et al. 1990b
- Plectropomus leopardus* (Lacepède 1802) R 2–15m—photography—Kulbicki et al. 1990b
- Pseudanthias elongatus* (Franz 1910) T 100m
- Pseudanthias hypselosoma* (Bleeker 1878) RT 15–48m H—Kulbicki et al. 1990b
- Pseudanthias pascalus* (Jordan & Tanaka 1927) V 20–35m N—Kulbicki et al. 1990b
- Pseudanthias squamipinnis* (Peters 1855) V 20m N—Kulbicki et al. 1990b
- D Pseudanthias* sp. T 225m N—Rivaton 1989
- Pseudogramma polyacantha* (Bleeker 1856) RT 3–48m HN—Kulbicki et al. 1990b
- Variola louti* (Forsskal 1775) RL 8–35m—Kulbicki et al. 1990b

#### Family PSEUDOCHROMIDAE

- Cypho purpurascens* (De Vis 1884) R 3–15m HN—photography—Kulbicki et al. 1990b as *Pseudochromis purpurascens*
- Pseudochromis paccagnellae* Axelrod 1973 V 10m N—photography—Kulbicki et al. 1990b

*Pseudochromis salvati* Plessis & Fourmanoir 1966 R 3–15m N—Kulbicki et al. 1990b

*Pseudochromis tapeinosoma* Bleeker 1853 R 1–10m HN—Kulbicki et al. 1990b

*Pseudoplesiops howensis* Allen 1987 R 3–15m HN—Kulbicki et al. 1990b as *Pseudoplesiops* sp.

*Pseudoplesiops rosae* Schultz 1943 R 3–15m HN—Kulbicki et al. 1990b as *Pseudoplesiops* sp.

#### Family PLESIOPIDAE

*Plesiops insularis* Mooi & Randall 1991 R 3–5m H—Kulbicki et al. 1990b as *Plesiops* sp.

*Assessor macneilli* Whitley 1935 R 7–12m H—Kulbicki et al. 1990b

#### Family CALLANTHIIDAE

*D Callanthias australis* Ogilby 1900 T 330m N—photography—Rivaton 1989

#### Family BANJOSIDAE

*M Banjos banjos* (Richardson 1846) T 270–355m P

#### Family KUHLIIDAE

*Kuhlia mugil* (Bloch & Schneider 1801) C 2 HN—Kulbicki et al. 1990b

#### Family PRIACANTHIDAE

*D Cookeolus japonicus* (Cuvier 1829) T 270–355m N—photography

*Heteropriacanthus cruentatus* (Lacepède 1802) R 4–8m P—Kulbicki et al. 1990b

*Priacanthus hamrur* (Forsskal 1775) V 5m N—Kulbicki et al. 1990b

*D Priacanthus macracanthus* Cuvier 1829 T 330m NP—photography—Rivaton 1989

#### Family APOGONIDAE

*Apogon apogonides* (Bleeker 1856) R 12–75m N—Kulbicki et al. 1990b

*Apogon aureus* (Lacepède 1802) R 12–65m HN—Kulbicki et al. 1990b

*Apogon bandanensis* Bleeker 1854 T 23–62m N

*Apogon catalai* Fourmanoir 1973 T 51–88m HN—photography—Rivaton 1989

*Apogon crassiceps* Garman 1903 R 2–15m HN—Kulbicki et al. 1990b

*Apogon cyanosoma* Bleeker 1853 R 3–64m HN—photography—Kulbicki et al. 1990b

*Apogon doederleini* Jordan & Snyder 1901 R 3–65m HN—photography—Kulbicki et al. 1990b

*Apogon doryssa* (Jordan & Seale 1906) R 12m N—Kulbicki et al. 1990b

*Apogon ellioti* Day 1878 T 68–82m N—Rivaton 1989

*Apogon exostigma* (Jordan & Starks 1906) RT 3–47m N—Kulbicki et al. 1990b

*Apogon fasciatus* (White 1790) T 67–91m N—Kulbicki et al. 1990a

*Apogon fraenatus* Valenciennes 1832 R 3–15m HN—Kulbicki et al. 1990b

- Apogon fuscus* Quoy & Gaimard 1825 R 3–15m H—photography—Kulbicki et al. 1990b
- Apogon guamensis* Valenciennes 1832 R 1–3m HN—photography—Kulbicki et al. 1990b
- Apogon kallopterus* Bleeker 1856 R 2–15m N—Kulbicki et al. 1990b
- Apogon kiensis* Jordan & Snyder 1901 T 73–78m HN—Kulbicki et al. 1990a
- Apogon marmoratus* (Alleyne & Mc Leay 1877) T 65 m—Rivaton 1989
- Apogon nigrofasciatus* Lachner 1953 R 3–15m H—Kulbicki et al. 1990b
- Apogon notatus* (Houttuyn 1782) T 70–76m N—Kulbicki et al. 1990a
- Apogon novemfasciatus* Cuvier 1828 T 16–85m N—Kulbicki et al. 1990a
- Apogon selas* Randall & Hayashi 1989 T 72m H—Kulbicki et al. 1990a as *Apogon* sp.
- Apogon septemstriatus* Günther 1880 T 60–68m N—Rivaton 1989
- Apogon taeniophorus* Regan 1905 R 1m H—Kulbicki et al. 1990b
- Apogon talboti* Smith 1961 R 1m H—Kulbicki et al. 1990b
- Apogon trimaculatus* Cuvier 1828 R 3–12m H—Kulbicki et al. 1990b
- Apogon* sp. R 10m H—Kulbicki et al. 1990b
- Apogonichthys ocellatus* (Weber 1913) R 3–8m—Kulbicki et al. 1990b as *Apogon ocellatus*
- Apogonichthys perdix* Bleeker 1854 R 3–15m H—Kulbicki et al. 1990b as *Apogon perdix*
- Archamia fucata* (Cantor 1850) R 10–15m N—Kulbicki et al. 1990b
- Cheilodipterus artus* Smith 1961 R 3–158m—Kulbicki et al. 1990b
- Cheilodipterus lachneri* Klauswitz 1959 R 3–15m—Kulbicki et al. 1990b
- Cheilodipterus quinquelineatus* Cuvier 1828 R 3–15m—photography—Kulbicki et al. 1990b
- Foa brachygramma* (Jenkins 1902) T 69m N—Kulbicki et al. 1990a as *Foa* sp.
- Foa* sp. T 67–78m N—Rivaton 1989
- Fowleria abocellata* Goren & Karplus 1980 T 23m N
- Fowleria aurita* (Valenciennes 1831) T 44–74m N
- Fowleria isostigma* (Jordan & Seale 1906) R 2–8m H—Kulbicki et al. 1990b
- Fowleria marmorata* (Alleyne & McLeay 1877) RT 3–67m HN—Kulbicki et al. 1990b
- Fowleria variegata* (Valenciennes 1832) R 2–8m H—Kulbicki et al. 1990b
- Fowleria* sp. RT 3–75m—Kulbicki et al. 1990b
- Gymnapogon philippinus* (Herre 1939) R 7m H—Kulbicki et al. 1990b as *Gymnapogon* sp. 1
- Gymnapogon urospilotus* Lachner 1953 R 4m H—Kulbicki et al. 1990b as *Gymnapogon* sp. 2
- Pseudamia gelatinosa* Smith 1955 R 10m H—Kulbicki et al. 1990b as *Pseudamiops* sp.
- Pseudamiops* sp. R 2–7m—Kulbicki et al. 1990b as *Pseudamiops* sp.
- Rhabdamia* sp. aff. *eremia* R 12m—Kulbicki et al. 1990b
- Rhabdamia cypselurus* Weber 1909 R 12–73m HN—photography—Kulbicki et al. 1990b



*Rhabdamia gracilis* (Bleeker 1856) RT 12–91m H—photography—Kulbicki et al. 1990b

*Siphamia versicolor* (Smith & Radcliffe 1911) T 62–91m HN—Rivaton 1989

#### Family MALACANTHIDAE

*Hoplolatilus* sp. V 20m—Kulbicki et al. 1990b as *H. starcki*

*Hoplolatilus starcki* Randall & Dooley 1974 T 85m

*Malacanthus brevisrostris* Guichenot 1848 V 15 m—Kulbicki et al. 1990b

*Malacanthus latovittatus* (Lacepède 1802) V 15–20m—Kulbicki et al. 1990b

#### Family ECHENEIDIDAE

*Echeneis naucrates* Linnaeus 1758 RL 10–85m—Kulbicki et al. 1990b

#### Family CARANGIDAE

*D Carangoides chrysophrys* (Cuvier 1833) T 275–310m N

*Carangoides ferdau* (Forsskål 1775) VT 10–30m—Kulbicki et al. 1990b

*Carangoides fulvoguttatus* (Forsskål 1775) VT 10–92m—Kulbicki et al. 1990b

*Carangoides gymnostethus* (Cuvier 1833) S 12m—Kulbicki et al. 1990b

*D Carangoides* sp.cf *equula* T 270–355m N

*Caranx ignobilis* (Forsskål 1775) VT 20–40m—Kulbicki et al. 1990b

*Caranx lugubris* Poey 1861 T 40m—Laboute 1973

*Caranx melampygus* Cuvier 1833 V 3–40m—Kulbicki et al. 1990b

*Decapterus russellii* (Rüppell 1829) T 67m—Rivaton 1989

*D Decapterus* tabl Berry 1967 T 310m

*Elagatis bipinnulatus* (Quoy & Gaimard 1824) T 140m—Laboute 1973

*Gnathanodon speciosus* (Forsskål 1775) VT 15–30m—photography—Kulbicki et al. 1990b

*Naucrates ductor* (Linnaeus 1758) T 300m N—Rivaton 1989

*Pseudocaranx dentex* (Bloch & Schneider 1801) V 12m—photography—Kulbicki et al. 1990b

*Scomberoides lysan* (Forsskål 1775) S 10–15m—Kulbicki et al. 1990b

*D Seriola lalandi* Valenciennes 1833 T 290m—Barro 1981 as *S. aureovittata*

*D Seriola rivoliana* Valenciennes 1833 T 270–355m—Barro 1981

#### Family CORYPHAENIDAE

*E Coryphaena hippurus* Linnaeus 1758 L—Barro 1979

#### Family BRAMIDAE

*E Pteraclis vellifera* (Pallas 1769) L stom. cont.—Grandperrin et al. 1974

*E Pterycombus petersii* (Hilgendorf 1878) L stom. cont.—Grandperrin et al. 1974

*E Brama orcini* Cuvier 1831 L stom. cont.—Grandperrin et al. 1974

#### Family EMMELICHTHYIDAE

*D Emmelichthys nitidus* Richardson 1845 T 85–88m



## Family LUTJANIDAE

- Aphareus furca* (Lacepède 1801) V 12–15m—Kulbicki et al. 1990b  
*Aprion virescens* Valenciennes 1830 ST 5–80m—Kulbicki et al. 1990b  
*D Etelis carbunculus* Cuvier 1828 L 275–530m—photography—Barro 1981  
*D Etelis coruscans* Valenciennes 1862 L 285–530m—photography—Barro 1981  
 as *E. oculatus*  
*Lutjanus adetii* (Castelnau 1873) T 80–85m—Kulbicki et al. 1990a  
*Lutjanus bohar* (Forsskål 1775) R 4–15m N—Kulbicki et al. 1990b  
*Lutjanus gibbus* (Forsskål 1775) V 5m—Kulbicki et al. 1990b  
*Lutjanus kasmira* (Forsskål 1775) R 3–15m—Kulbicki et al. 1990b  
*Lutjanus quinquelineatus* Bloch 1790 R 3–15m N—Kulbicki et al. 1990b  
*Lutjanus sebae* (Cuvier 1828) VT 15–85m—photography—Kulbicki et al. 1990b  
*Lutjanus vitta* (Quoy & Gaimard 1824) T 80–93m N—Kulbicki et al. 1990a  
*Macolor niger* (Forsskål 1775) V 20–30m—Kulbicki et al. 1990b  
*D Paracaesio caeruleus* (Katayama 1934) T 270–355m  
*D Parapristipomoides squamimaxillaris* (Kami 1979) L 270–355 m NP—photography  
*D Pristipomoides argyrogrammicus* (Valenciennes 1831) L 200–480m N—photography—Richer de Forges & Pianet 1984 as *Tropidinius argyrogrammicus*  
*D Pristipomoides auricilla* (Jordan Evermann & Tanaka 1927) L 200–310m N—Richer de Forges & Pianet 1984  
*D Pristipomoides filamentosus* (Valenciennes 1830) L 270–355m N—Barro 1981  
*D Pristipomoides flavipinnis* Shinohara 1963 L 200–310m—Barro 1981  
*D Pristipomoides sieboldii* (Bleeker 1857) L 270–355m  
*D Pristipomoides zonatus* (Valenciennes 1830) L 185–310m—Richer de Forges & Pianet 1984 as *Tropidinius zonatus*

## Family CAESIONIDAE

- Caesio caeruleaurea* Lacepède 1802 R 4–8m—photography—Kulbicki et al. 1990b  
*Pterocaesio digramma* (Bleeker 1865) RT 4–92m N—Kulbicki et al. 1990b  
*Pterocaesio pisang* (Bleeker 1853) T 44–65m  
*Pterocaesio tile* (Cuvier 1830) R 4–15m—Kulbicki et al. 1990b  
*Pterocaesio trilineata* Carpenter 1987 R 3–15m HN—photography—Kulbicki et al. 1990b  
*Pterocaesio marri* Schultz 1953 T 76m H

## Family HAEMULIDAE

- Plectorhinchus chaetodonoides* Lacepède 1800 S 12m H—photography—Kulbicki et al. 1990b  
*Plectorhinchus picus* Valenciennes 1830 RS 5–10m H—photography—Kulbicki et al. 1990b  
*Diagramma pictum* (Thunberg 1792) ST 5–93m N—Kulbicki et al. 1990b

## Family SPARIDAE

- D Dentex* sp. T unknown N—photography

## Family LETHRINIDAE

*Gnathodentex aurolineatus* (Lacepède 1803) R 2–10m HN—Kulbicki et al. 1990b

*Gymnocranius audleyi* Ogilby 1916 V 15m—Kulbicki et al. 1990b as *G. bitorquatus*

*Gymnocranius euanus* Günther 1879 V 10m—photography—Kulbicki et al. 1990b as *Gymnocranius* sp.

*Gymnocranius grandoculis* (Valenciennes 1830) T 70–90m—Kulbicki et al. 1990a as *G. rivulatus*

*Gymnocranius* sp. “lethrinoïdes” ST 5–200m—Kulbicki et al. 1990b

*Lethrinus atkinsoni* (Seale 1909) T 80–92m—Kulbicki et al. 1990a as *L. mahsena*

*Lethrinus erythracanthus* Valenciennes 1830 V 25m—Kulbicki et al. 1990b as *L. kallopterus*

*Lethrinus harak* (Forsskål 1775) L 20m

*Lethrinus miniatus* Günther 1874 R 8–25m N—photography—Kulbicki et al. 1990b

*Lethrinus nebulosus* (Forsskål 1775) T 7–80m N—photography—Kulbicki et al. 1990b

*Lethrinus olivaceus* Valenciennes 1830 V 15–25m N—photography—Kulbicki et al. 1990b

*Lethrinus rubrioperculatus* Sato 1978 T 88–93m—Kulbicki et al. 1990a

*Lethrinus xanthochilus* Klunzinger 1870 L 25m—Kulbicki et al. 1990b

*Monotaxis grandoculis* (Forsskål 1775) RT 3–48m—Kulbicki et al. 1990b

## Family NEMIPTERIDAE

*D. Parascolopsis* sp. T 215–217m

*Pentapodus* sp. RT 10–80m H—photography—Kulbicki et al. 1990b

*Scolopsis affinis* Peters 1877 V 10m—Kulbicki et al. 1990b

## Family MULLIDAE

*Mulloidichthys flavolineatus* (Lacepède 1801) V 1–7m N—Kulbicki et al. 1990b

*Mulloidichthys vanicolensis* (Valenciennes 1831) R 1–10m N—Kulbicki et al. 1990b

*Parupeneus barberinoides* Bleeker 1852 T 20–76m H—Kulbicki et al. 1990a

*Parupeneus barberinus* (Lacepède 1801) RS 1–15m—Kulbicki et al. 1990b

*Parupeneus cyclostomus* (Lacepède 1802) RT 2–78m HN—Kulbicki et al. 1990b

*Parupeneus ciliatus* (Lacepède 1801) V 2–7m N—Kulbicki et al. 1990b as *P. dispilurus*

*Parupeneus heptacanthus* (Lacepède 1801) T 80–90m N—Kulbicki et al. 1990a as *P. pleurospilus*

*Parupeneus multifasciatus* (Quoy & Gaimard 1824) R 1–15m HN—Kulbicki et al. 1990b

*Parupeneus pleurostigma* (Bleeker 1853) RT 2–91m HN—Rivaton 1989

*D. Upeneus fillifer* (Ogilby 1910) T 60–80m H—Kulbicki et al. 1990a as *Upeneus* sp. long filament

D *Upeneus* sp. 1 T 70–92m HN—photography—Kulbicki et al. 1990a as *Upeneus* sp. barbillon blanc

D *Upeneus* sp. 2 T 60–76m HN—photography—Kulbicki et al. 1990a as *Upeneus* sp.

D *Upeneus* sp. RT 7–82m—Kulbicki et al. 1990b

*Upeneus vittatus* Lacepède 1801 T 60–74m N

#### Family PEMPHERIDAE

*Parapriacanthus ransonneti* Steindachner 1870 RT 8–76m HN—photography—Kulbicki et al. 1990b

*Pempheris schwenkii* Bleeker 1855 R 7m H—Kulbicki et al. 1990b as *Pempheris* sp.

#### Family KYPHOSIDAE

*Kyphosus cinerascens* (Forsskal 1775) C 2—Kulbicki et al. 1990b

*Kyphosus vaigiensis* (Quoy & Gaimard 1825) S 5–20—Kulbicki et al. 1990b

#### Family EPHIPPIDIDAE

*Platax pinnatus* (Linnaeus 1758) S 12–15m—photography—Kulbicki et al. 1990b

#### Family MONODACTYLIDAE

*Monodactylus argenteus* (Linnaeus 1758) R 12m N—Kulbicki et al. 1990b

#### Family CHAETODONTIDAE

D *Amphichaetodon howensis* (Waite 1903) T 200m N—photography

*Chaetodon auriga* Forsskal 1775 R 1–15m—Kulbicki et al. 1990b

*Chaetodon bennetti* Cuvier 1831 V 7m—Kulbicki et al. 1990b

*Chaetodon citrinellus* Cuvier 1831 R 1–12m HN—Kulbicki et al. 1990b

*Chaetodon ephippium* Cuvier 1831 V 8m—Kulbicki et al. 1990b

*Chaetodon flavirostris* Günther 1874 R 6–14m N—Kulbicki et al. 1990b

D *Chaetodon guentheri* Ahl 1923 T 70–90m N—Kulbicki et al. 1990a

*Chaetodon kleinii* Bloch 1790 RS 5–48m H—Kulbicki et al. 1990b

*Chaetodon lineolatus* Cuvier 1831 V 10m—Kulbicki et al. 1990b

*Chaetodon lunula* (Lacepède 1802) V 15m—Kulbicki et al. 1990b

*Chaetodon melannotus* Bloch & Schneider 1801 R 2–12m N—Kulbicki et al. 1990b

*Chaetodon mertensii* Cuvier 1831 R 2–15m HN—Kulbicki et al. 1990b

*Chaetodon pelewensis* Kner 1867 R 2–12m N—Kulbicki et al. 1990b

*Chaetodon plebeius* Cuvier 1831 R 2–14m HN—Kulbicki et al. 1990b

*Chaetodon reticulatus* Cuvier 1831 V 15m—Kulbicki et al. 1990b

*Chaetodon trifascialis* (Quoy & Gaimard 1824) R 2–12m N—Kulbicki et al. 1990b

*Chaetodon trifasciatus* Mungo Park 1797 R 2–12m N—Kulbicki et al. 1990b

*Chaetodon ulietensis* Cuvier 1831 R 8m N—Kulbicki et al. 1990b

*Chaetodon unimaculatus* Bloch 1787 R 12m—Kulbicki et al. 1990b

*Chaetodon vagabundus* Linnaeus 1758 R 3m N—Kulbicki et al. 1990b

- Coradion altivelis* McCulloch 1916 T 70-77 m—Kulbicki et al. 1990a  
*Forcipiger flavissimus* Jordan & McGregor 1898 R 2-12m—Kulbicki et al. 1990b  
*Heniochus acuminatus* (Linnaeus 1758) RT 5-90m—Kulbicki et al. 1990b  
*Heniochus chrysostomus* Cuvier 1831 R 2-15m—photography—Kulbicki et al. 1990b  
*Heniochus monoceros* Cuvier 1831 R 2-15m—Kulbicki et al. 1990b

#### Family POMACANTHIDAE

- Centropyge bicolor* (Bloch 1787) V 5 m—Kulbicki et al. 1990b  
*Centropyge bispinosus* (Günther 1860) R 1-15m HN—Kulbicki et al. 1990b  
*Centropyge flavicauda* Fraser-Brunner 1933 RT 10-60m H—Kulbicki et al. 1990b  
*Centropyge flavissimus* (Cuvier 1831) R 1-15m H—Kulbicki et al. 1990b  
*Centropyge heraldi* Woods & Schultz 1831 V 10 m H—Kulbicki et al. 1990b  
*Centropyge* sp. T 35-53 m  
*Centropyge tibicen* (Cuvier 1831) R 1-15m HN—Kulbicki et al. 1990b  
*Centropyge vrolicki* (Bleeker 1853) R 3-12m N—Kulbicki et al. 1990b  
*Chaetodontoplus conspicillatus* (Waite 1900) T 100m  
*Genicanthus watanabei* (Yasuda & Tominaga 1970) V 20m—Kulbicki et al. 1990b  
*Pomacanthus imperator* (Bloch 1787) V 10 m—Kulbicki et al. 1990b  
*Pygoplites diacanthus* (Boddaert 1772) R 7 m—Kulbicki et al. 1990b

#### Family PENTACEROTIDAE

- D *Pentaceros decacanthus* Günther 1883 T 270-280m NP  
D *Pentaceros japonicus* Döderlein T 540m—Barro 1981  
D *Pseudopentaceros richardsoni* Smith T 515—Barro 1981

#### Family POMACENTRIDAE

- Amblyglyphidodon curacao* (Bloch 1787) R 1-14m N—Kulbicki et al. 1990b  
*Amblyglyphidodon leucogaster* (Bleeker 1847) V 7m—Kulbicki et al. 1990b  
*Amphiprion akindynos* Allen 1972 RT 1-76m N—photography—Kulbicki et al. 1990b  
*Amphiprion clarkii* (Bennett 1830) V 4m N—photography—Kulbicki et al. 1990b  
*Amphiprion melanopus* Bleeker 1852 R 2-15m—photography—Kulbicki et al. 1990b  
*Amphiprion perideraion* Bleeker 1855 R 10-15m HN—Kulbicki et al. 1990b  
*Chromis agilis* Smith 1960 R 10-15m H—Kulbicki et al. 1990b  
*Chromis amboinensis* (Bleeker 1873) V —Kulbicki et al. 1990b  
*Chromis atripectoralis* Welander & Schultz 1951 R 3-12m H—Kulbicki et al. 1990b  
*Chromis atripes* Fowler & Bean 1928 V 12m N—Kulbicki et al. 1990b  
*Chromis chrysurus* (Bliss 1883) R 3-15m H—photography—Kulbicki et al. 1990b  
*Chromis flavomaculata* Kamohara 1960 R 5-15m HN—photography—Kulbicki et al. 1990b  
*Chromis fumea* (Tanaka 1917) R 12-72m HN—Kulbicki et al. 1990b  
*Chromis iomelas* Jordan & Seale 1906 R 3-13m HN—Kulbicki et al. 1990b

- Chromis lepidolepis* Bleeker 1877 R 12m HN—Kulbicki et al. 1990b  
*Chromis leucura* Gilbert 1905 T 70m N—Kulbicki et al. 1990a  
*Chromis margaritifer* Fowler 1946 R 7–15m HN—Kulbicki et al. 1990b  
*D Chromis mirationis* Tanaka 1917 T 203–208m N  
*Chromis retrofasciata* Weber 1913 T 12–32m N—Kulbicki et al. 1990b  
*Chromis ternatensis* (Bleeker 1856) R 15–64m N—Kulbicki et al. 1990b  
*Chromis vanderbilti* (Fowler 1941) R 7–15m HN—Kulbicki et al. 1990b  
*Chromis viridis* (Cuvier 1830) R 2–15m—photography—Kulbicki et al. 1990b  
*Chromis weberi* Fowler & Bean 1928 V 10m N—Kulbicki et al. 1990b  
*Chromis xanthura* (Bleeker 1854) R 7–12m H—Kulbicki et al. 1990b  
*Chrysiptera biocellata* (Quoy & Gaimard 1825) R 1–5m N—Kulbicki et al. 1990b  
*Chrysiptera flavipinnis* (Allen & Robertson 1974) V 10m—Kulbicki et al. 1990b  
*Chrysiptera glauca* (Cuvier 1830) R 1m H—Kulbicki et al. 1990b  
*Chrysiptera rollandi* (Whitley 1961) V 4m N—Kulbicki et al. 1990b  
*Chrysiptera taupou* (Jordan & Seale 1906) R 1–10m—Kulbicki et al. 1990b  
*Chrysiptera starcki* (Allen 1973) R 1m HN—Kulbicki et al. 1990b  
*Chrysiptera tricolor* (Allen & Randall 1974) RT 20–90m H—Kulbicki et al. 1990b  
*Dascyllus aruanus* (Linnaeus 1758) R 1–67m N—photography—Kulbicki et al. 1990b  
*Dascyllus melanurus* Bleeker 1854 T 50–67m N—Rivaton 1989—Kulbicki et al. 1990b  
*Dascyllus reticulatus* (Richardson 1846) RT 1–48m HN—Kulbicki et al. 1990b  
*Dascyllus trimaculatus* (Rüppell 1828) V 10m N—Kulbicki et al. 1990b  
*Lepidozygus tapeinosoma* (Bleeker 1856) R 15m—Kulbicki et al. 1990b  
*Neoglyphidodon melas* (Cuvier 1830) RS 1–5m HN—photography—Kulbicki et al. 1990b as *Paraglyphidodon melas*  
*Plectroglyphidodon dickii* (Lienard 1839) V 10m—Kulbicki et al. 1990b  
*Plectroglyphidodon johnstonianus* Fowler & Ball 1924 T 3–15m H—Kulbicki et al. 1990b  
*Plectroglyphidodon lacrymatus* (Quoy & Gaimard 1825) T 1–15m—Kulbicki et al. 1990b  
*Pomacentrus amboinensis* Bleeker 1868 RT 1–15m N—photography—Kulbicki et al. 1990b  
*Pomacentrus bankanensis* Bleeker 1853 R 5–32m N—Rivaton 1989—Kulbicki et al. 1990b  
*Pomacentrus lepidogenys* Fowler & Bean 1928 R 1–15m HN—Kulbicki et al. 1990b  
*Pomacentrus melanopterus* Bleeker 1852 RS 3–12m HN—Kulbicki et al. 1990b  
*Pomacentrus moluccensis* Bleeker 1853 R 1–15m—photography—Kulbicki et al. 1990b  
*Pomacentrus pavo* (Bloch 1787) R 5–15m N—Kulbicki et al. 1990b  
*Pomacentrus philippinus* Evermann & Seale 1907 R 7–15m HN—photography—Kulbicki et al. 1990b  
*Pomacentrus* sp. T 71m N—Kulbicki et al. 1990a  
*Pomacentrus vaiuli* Jordan & Seale 1906 R 1–15m N—Kulbicki et al. 1990b



- Pomachromis richardsoni* (Snyder 1909) V 20m—Kulbicki et al. 1990b  
*Pristotis jerdoni* (Day 1873) T 70–85m HN—Rivaton 1989  
*Stegastes albifasciatus* (Schlegel & Müller 1839) R 2m H—Kulbicki et al. 1990b  
*Stegastes fasciolatus* (Ogilby 1889) R 1–5m—Kulbicki et al. 1990b  
*Stegastes gascoynei* (Whitley 1964) R 1–5m N—Kulbicki et al. 1990b  
*Stegastes nigricans* (Lacepède 1803) R 1–7m N—Kulbicki et al. 1990b

#### Family CIRRHITIDAE

- Cirrhitichthys falco* Randall 1963 R 15m N  
*Cyprinocirrhites polyactis* (Bleeker 1875) T 15–95m N—Kulbicki et al. 1990a  
*Paracirrhites arcatus* (Cuvier 1829) R 12m N  
*Paracirrhites forsteri* (Schneider 1801) R 8–12m N

#### Family OPISTHOGNATHIDAE

- D *Opisthognathus* sp. T 56–210m PZ

#### Family MUGILIDAE

- Crenimugil crenilabis* (Forsskal 1775) C 2m H—Kulbicki et al. 1990b

#### Family LABRIDAE

- Anampses femininus* Randall 1972 R 2–8m HN—photography—Kulbicki et al. 1990b  
*Anampses geographicus* Valenciennes 1840 R 3–15 m N—Kulbicki et al. 1990b  
*Anampses neoguinaicus* Bleeker 1878 RS 3–15m H—photography—Kulbicki et al. 1990b  
*Anampses twistii* Bleeker 1856 R 4m H—Kulbicki et al. 1990b  
*Bodianus axillaris* (Bennett 1831) V 12m N—Kulbicki et al. 1990b  
D *Bodianus cylindriatus* (Tanaka 1930) T 330m—photography—Rivaton 1989  
*Bodianus loxozonus* (Snyder 1908) V 10m—Kulbicki et al. 1990b  
*Bodianus perditio* (Quoy & Gaimard 1824) V 15–25m—Kulbicki et al. 1990b  
D *Bodianus* n.sp. TL 50–310m N  
*Cheilinus bimaculatus* Valenciennes 1839 ST 25–61m HN—Rivaton 1989  
*Cheilinus chlorourus* (Bloch 1791) R 2–15m—Kulbicki et al. 1990b  
*Cheilinus digrammus* (Lacepède 1801) R 2–15m H—Kulbicki et al. 1990b  
*Cheilinus fasciatus* (Bloch 1791) V 3m—Kulbicki et al. 1990b  
*Cheilinus oxycephalus* Bleeker 1853 R 2–15m H—photography—Kulbicki et al. 1990b  
*Cheilinus orientalis* Günther 1862 T 31–90m N—photography—Kulbicki et al. 1990a  
*Cheilinus* n.sp. R 3–8m HN—photography—Kulbicki et al. 1990b as *Cheilinus* sp. (*orientalis*?)  
*Cheilinus trilobatus* (Lacepède 1801) R 2–15m—Kulbicki et al. 1990b  
*Cheilinus undulatus* Rüppell 1835 R 8m—Kulbicki et al. 1990b  
*Cheilinus unifasciatus* Streets 1877 R 2–15m H—Kulbicki et al. 1990b  
*Cheilio inermis* (Forsskal 1775) V 4m—Kulbicki et al. 1990b

- Choerodon fasciatus* (Günther 1862) R 4–10m—Kulbicki et al. 1990b  
D *Choerodon jordani* (Snyder 1905) T 55–82m N—Kulbicki et al. 1990a  
D *Choerodon* sp. pink T 62–217m H—photography—Kulbicki et al. 1990a as  
*Choerodon* sp. pink  
D *Choerodon margaritiferus* Fowler & Bean 1928 T 72m HN—photography  
D *Choerodon melanostigma* Fowler & Bean 1928 T 60m N—Rivaton 1989  
*Cirrhilabrus laboutei* Randall & Lubbock 1982 RS 13–20m H—Kulbicki et al.  
1990b  
*Cirrhilabrus lineatus* Randall & Lubbock 1982 S 1m H—photography—Kulbicki  
et al. 1990b  
*Cirrhilabrus punctatus* 1989 R 2–78m—Kulbicki et al. 1990b as *Cirrhilabrus* sp. 1  
*Cirrhilabrus* sp. RT 36–40m HN—Kulbicki et al. 1990b as *Cirrhalabrus* sp. 2  
*Coris aygula* Lacepède 1801 V 2–5m—Kulbicki et al. 1990b  
*Coris batuensis* (Bleeker 1856) RS 1–15m H—photography  
*Coris dorsomacula* Fowler 1983 RS 10m H—photography—Kulbicki et al. 1990b  
*Coris gaimard* (Quoy & Gaimard 1824) V 4–12m—Kulbicki et al. 1990b  
*Coris picta* (Bloch & Schneider 1801) T 85m N—Kulbicki et al. 1990a  
*Cymolutes* sp. V 5m N—Kulbicki et al. 1990b  
*Epibulus insidiator* (Pallas 1770) R 1–15m H—Kulbicki et al. 1990b  
*Gomphosus varius* Lacepède 1801 R 1–15m H—Kulbicki et al. 1990b  
*Halichoeres biocellatus* Schultz 1960 R 2–14m HN—Kulbicki et al. 1990b  
*Halichoeres hortulanus* (Lacepède 1801) V 2–15m—Kulbicki et al. 1990b  
*Halichoeres margaritaceus* (Valenciennes 1839) R 1m HN—Kulbicki et al. 1990b  
*Halichoeres marginatus* Rüppell 1835 R 1–15m HN—Kulbicki et al. 1990b  
*Halichoeres prosopoeion* (Bleeker 1853) V 5m—Kulbicki et al. 1990b  
*Halichoeres* sp. T 75m N—Kulbicki et al. 1990a  
*Halichoeres trimaculatus* (Quoy & Gaimard 1834) R 2–15m HN—Kulbicki et al.  
1990b  
*Hemigymnus fasciatus* (Bloch 1792) V 1–15m—Kulbicki et al. 1990b  
*Hemigymnus melapterus* (Bloch 1791) R 1–8m—Kulbicki et al. 1990b  
*Hologymnosus doliatus* (Lacepède 1802) V 5m—Kulbicki et al. 1990b  
*Labrichthys unilineatus* (Guichenot 1847) R 3m HN—Kulbicki et al. 1990b  
*Labroides bicolor* Fowler & Bean 1928 R 2–12m—Kulbicki et al. 1990b  
*Labroides dimidiatus* (Valenciennes 1839) R 1–15m HN—Kulbicki et al. 1990b  
*Labropsis australis* Randall 1981 R 2–12m H—Kulbicki et al. 1990b  
*Labropsis xanthonota* Randall 1981 V 20m—Kulbicki et al. 1990b  
*Macropharyngodon kuiteri* Randall 1978 R 8–15m H—photography—Kulbicki et  
al. 1990b  
*Macropharyngodon meleagris* (Valenciennes 1839) V 12m—Kulbicki et al. 1990b  
*Macropharyngodon negrosensis* Herre 1932 R 10m—Kulbicki et al. 1990b  
*Novaculichthys taeniourus* (Lacepède 1802) V 4–25m N—Rivaton 1989—Kulbicki  
et al. 1990b  
*Pseudocheilinus evanidus* Jordan & Evermann 1903 R 2–13m HN—Kulbicki et  
al. 1990b  
*Pseudocheilinus hexataenia* (Bleeker 1857) R 2–15m HN—Kulbicki et al. 1990b



- Pseudocheilinus octotaenia* Jenkins 1900 V 20m N—Kulbicki et al. 1990b  
*Pseudojuloides cerasinus* (Snyder 1904) V 10m—photography—Kulbicki et al. 1990b  
*Pseudojuloides* sp. T 70m N  
*Pteragogus cryptus* Randall 1981 RT 2–69m HN—photography—Kulbicki et al. 1990b  
*Pteragogus enneacanthus* (Bleeker 1853) RT 2–64m H—photography—Kulbicki et al. 1990b as *P. amboinensis*  
*Pteragogus flagellifera* (Valenciennes 1839) T 70–78m—Rivaton 1989 as *P. opercularis*  
*Stethojulis bandanensis* (Bleeker 1851) R 1–10m HN—Kulbicki et al. 1990b  
*Stethojulis strigiventer* (Bennett 1832) R 1–15m HN—Kulbicki et al. 1990b  
*Thalassoma amblycephalum* (Bleeker 1856) R 7–12m N—Kulbicki et al. 1990b  
*Thalassoma hardwicke* (Bennett 1830) R 1–8m H—Kulbicki et al. 1990b  
*Thalassoma janseni* (Bleeker 1856) R 1–8m H—Kulbicki et al. 1990b  
*Thalassoma lunare* (Linnaeus 1758) R 1–15m HN—Kulbicki et al. 1990b  
*Thalassoma lutescens* (Lay & Bennett 1839) R 1–15m H—Kulbicki et al. 1990b  
*Thalassoma purpureum* (Günther 1880) R 1 m—Kulbicki et al. 1990b  
*Thalassoma quinquevittatum* (Lay & Bennett 1839) R 1m—Kulbicki et al. 1990b  
*Thalassoma trilobatum* (Lacepède 1801) R 1m H—Kulbicki et al. 1990b  
*Wetmorella albofasciata* Schultz & Marshall 1954 R 3 m HN—Rivaton 1989  
*Wetmorella nigropinnata* Seale 1901 R 2–15m HN—Kulbicki et al. 1990b  
*Xiphocheilus typus* Bleeker 1856 T 67–82m N—Kulbicki et al. 1990a  
*Xyrichthys pavo* Valenciennes 1839 L 5–70m N—Kulbicki et al. 1990b  
*Xyrichthys* sp. V 8m—Kulbicki et al. 1990b

#### Family SCARIDAE

- Calotomus carolinus* (Valenciennes 1840) T 65–69m  
*Calotomus spinidens* (Quoy & Gaimard 1824) T 72m N—Kulbicki et al. 1990a  
*Cetoscarus bicolor* (Rüppell 1828) R 4–10m—Kulbicki et al. 1990b  
*Hipposcarus longiceps* (Valenciennes 1840) V 3–9m—Kulbicki et al. 1990b  
*Scarus altipinnis* (Steindachner 1879) R 3–9m—Kulbicki et al. 1990b  
*Scarus chameleon* Choat & Randall 1987 V 2–15m N—Kulbicki et al. 1990b  
*Scarus forsteni* (Bleeker 1861) V 20m—Kulbicki et al. 1990b  
*Scarus frenatus* Lacepède 1802 V 10–15m—Kulbicki et al. 1990b  
*Scarus frontalis* Valenciennes 1839 S 15m—Kulbicki et al. 1990b  
*Scarus ghobban* (Forsskål 1775) RT 3–90m N—Kulbicki et al. 1990b  
*Scarus globiceps* Valenciennes 1839 V 18m—Kulbicki et al. 1990b  
*Scarus longipinnis* Randall & Choat 1980 RST 2–69m HN—photography—Kulbicki et al. 1990b  
*Scarus microrhinos* Bleeker 1854 R 2–20m—Kulbicki et al. 1990b  
*Scarus niger* (Forsskål 1775) R 1–15m—Kulbicki et al. 1990b  
*Scarus oviceps* Valenciennes 1839 V 1–5m—Kulbicki et al. 1990b  
*Scarus psittacus* Forsskål 1775 R 1–8m—Kulbicki et al. 1990b  
*Scarus rivulatus* Valenciennes 1840 V 1–5m—Kulbicki et al. 1990b

- Scarus rubroviolaceus* Bleeker 1847 V 20m—Kulbicki et al. 1990b  
*Scarus schlegeli* (Bleeker 1861) V 1–15m—Kulbicki et al. 1990b  
*Scarus sordidus* (Forsskal 1775) R 1–15m—Kulbicki et al. 1990b  
*Scarus spinus* (Kner 1868) V 20m—Kulbicki et al. 1990b

#### Family CHIASMODONTIDAE

- M *Pseudoscopelus* sp. stom. cont.—Grandperrin et al. 1974

#### Family CHAMPSODONTIDAE

- D *Champsodon guentheri* Regan 1908 T 317m Z  
D *Champsodon snyderi* Franz 1910 T 230–350m N—Rivaton 1989  
D *Champsodon* sp. T 200–250m N

#### Family AMMODYTIDAE

- D *Embolichthys mitsukurii* (Jordan & Evermann 1902) T 169–217m N  
D *Embolichthys* sp. T 203–208m N

#### Family URANOSCOPIDAE

- D *Uranoscopus sulfureus* Valenciennes 1831 T ?–208m  
*Uranoscopus* sp. 1 R 12m H—photography—Kulbicki et al. 1990b  
D *Uranoscopus* sp. 2 T 350 m P—Rivaton 1989 as *Uranoscopus* sp.

#### Family TRICHONOTIDAE

- D *Trichonotus filamentosus* (Steindachner 1867) T 215–217m N

#### Family CREEDIIDAE

- Limnichthys* sp. R 12m—Kulbicki et al. 1990b

#### Family PERCOPHIDAE

- D *Acanthaprhites* sp. nov. T 48–217m N—Rivaton 1989  
D *Bembrops filifera* Gilbert 1905 T 300–350m N—Rivaton 1989  
D *Bembrops* sp. T 500–590m NP—photography  
D *Chrionema chryseres* Gilbert 1905 T 348m N  
D *Pteropsaron* sp. T 225m N—Rivaton 1989

#### Family PINGUIPEDIDAE

- D *Parapercis binivirgata* (Waite 1904) T 295–330m N—photography—Rivaton 1989  
*Parapercis cylindrica* (Bloch 1792) RT 2–82m HN—Rivaton 1989  
*Parapercis millipunctata* (Günther 1860) V 25m—Kulbicki et al. 1990b  
*Parapercis polyophthalma* (Cuvier 1829) R 1–15m HN—Kulbicki et al. 1990b  
*Parapercis schauinslandi* (Steindachner 1900) RST 32–82m HN—Kulbicki et al. 1990b  
*Parapercis snyderi* Jordan & Starks 1905 T 46–78m N—Kulbicki et al. 1990a  
D *Parapercis* sp. 1 T 70–82m N—photography—Rivaton 1989

*D Parapercis* sp. 2 RST 15–72m H—photography—Kulbicki et al. 1990b as *Parapercis* sp. 1

*D Parapercis* sp. 3 T 348m P—Rivaton 1989 as *Parapercis* sp. 2

#### Family TRYPTERYGIIDAE

*Enneapterygius* sp.nov.1 R 1–15m H—photography—Kulbicki et al. 1990b as *Enneapterygius* sp. 1

*Enneapterygius* sp.nov.2 R 4m H—photography—Kulbicki et al. 1990b as *Enneapterygius* sp. 2

*Enneapterygius* sp. aff. *obscurus* R 3m H—Kulbicki et al. 1990b as *Enneapterygius* sp. 1

*Enneapterygius abeli* (Klausewitz 1960) R 4m H—Kulbicki et al. 1990b as *Enneapterygius* sp. 1

*Enneapterygius semilarvatus* Fricke R 3m H—photography—Kulbicki et al. 1990b as *Enneapterygius* sp. 1

*Helcogramma* sp. 1 R 2–15m HN—Kulbicki et al. 1990b as *Helcogramma* sp. 1

*Helcogramma* sp. 2 R 3–8m N—Kulbicki et al. 1990b as *Helcogramma* sp. 1

*Norfolkia brachylepis* (Schultz 1960) R 2–15m HN—photography—Kulbicki et al. 1990b as *Norfolkia* sp.

#### Family BLENNIIDAE

*Aspidontus dussumieri* (Valenciennes 1836) R 12m—Kulbicki et al. 1990b

*Aspidontus taeniatus* Quoy & Gaimard 1836 T 8–48m

*Atrosalarias fuscus* Rüppell 1835 V 2–4m—Kulbicki et al. 1990b

*Cirripectes chelomatus* Williams & Maugé 1983 R 1m N—photography—Kulbicki et al. 1990b as *C. stigmatus*

*Cirripectes polyzonus* Bleeker 1868 R 4m H—Kulbicki et al. 1990b

*Cirripectes stigmaticus* Strasburg & Schultz 1953 R 3–14m—Kulbicki et al. 1990b

*Ecsenius stictus* Springer 1988 R 10m H—photography—Kulbicki et al. 1990b as *E. yaeyamaensis*

*Ecsenius yaeyamaensis* (Aoyagi 1954) R 2–15m—Kulbicki et al. 1990b

*Enchelyurus ater* (Günther 1877) R 3m H—photography—Kulbicki et al. 1990b

*Enchelyurus kraussi* (Klunzinger 1871) R 2–15m H—photography—Kulbicki et al. 1990b as *Enchelyurus* sp.

*Entomacrodus striatus* (Quoy & Gaimard 1836) R 1m H—Kulbicki et al. 1990b

*Istiblennius edentulus* (Forster 1801) R 1m HN—Kulbicki et al. 1990b

*Istiblennius periophthalmus* (Valenciennes 1836) R 1m N—Kulbicki et al. 1990b

*Meiacanthus atrodorsalis* (Günther 1877) S 4m N—Kulbicki et al. 1990b

*Meiacanthus phaeus* Smith-Vaniz 1976 R 3–12m H—photography—Kulbicki et al. 1990b as *Meiacanthus* sp.

*Petroscirtes xestus* Jordan & Seale 1906 R 12m H—photography—Kulbicki et al. 1990b as *Petroscirtes* sp.

*Plagiotremus laudandus* (Whitley 1961) S 5–12m—photography—Kulbicki et al. 1990b as *Plagiotremus* sp.

*Plagiotremus rhinorhynchus* (Bleeker 1852) R 12m N—Kulbicki et al. 1990b

- Plagiotremus tapeinosoma* (Bleeker 1857) R 3–45m N—Kulbicki et al. 1990b  
*Rhabdoblennius ellipes* (Jordan & Starks 1906) R 1m H—Kulbicki et al. 1990b  
as *Rhabdoblennius* sp.  
*Salarias fasciatus* (Bloch 1786) R 4m—Kulbicki et al. 1990b

#### Family CALLYONIMIDAE

- D *Bathycallyonimus formosanus* (Fricke 1981) T 88m N—photography—Rivaton 1989  
D *Calliurichthys japonicus* (Houttuyn 1782) T 34–208m HN—photography—Kulbicki et al. 1990a as *Callyonymus japonicus*  
*Diplogrammus goramensis* (Bleeker 1858) T 23m  
D *Foetorepus altivelis* (Temminck & Schlegel 1845) T 348m N—Rivaton 1989  
D *Paradiplogrammus* sp. T 47–75m N  
D *Pseudocalliurichthys* sp. T 40–74m N—Kulbicki et al. 1990a as *Pseudocallyonymus variegatus*  
D *Repomucenus huguenini* (Bleeker 1859) T 70–80m N—Rivaton 1989  
D *Repomucenus* sp. T 81–85m  
*Synchiropus rameus* (McCulloch 1926) T 91m N—Rivaton 1989 as *Orbonymus rameus*  
*Synchiropus circularis* Fricke 1984 R 5m H—photography—Kulbicki et al. 1990b  
as *Synchiropus* sp. 1  
*Synchiropus morrisoni* Schultz 1960 R 8m H—photography—Kulbicki et al. 1990b  
as *Synchiropus* sp. 1

#### Family GOBIIDAE

- Amblyeleotris steinitzi* (Klausewitz 1974) R 4–12m N—Kulbicki et al. 1990b  
*Amblyeleotris* sp. T N  
*Amblygobius albimaculatus* (Rüppell 1828) V 52m N—Kulbicki et al. 1990b  
*Amblygobius bynoensis* (Richardson 1844) T 2–14m—Kulbicki et al. 1990b  
*Amblygobius decussatus* (Bleeker 1855) RS 19m—photography  
*Amblygobius phalaena* (Valenciennes 1837) R 3–8m HN—Kulbicki et al. 1990b  
as *A. albimaculatus*  
*Asterropteryx ensiferus* (Bleeker 1874) R 14m HN—Kulbicki et al. 1990b as *Asterropteryx* sp.  
*Bathygobius cyclopterus* (Valenciennes 1837) R 1m H—photography—Kulbicki et al. 1990b as *Bathygobius* sp. 1  
*Bathygobius cocosensis* (Bleeker 1854) R 1m H—Kulbicki et al. 1990b as *Bathygobius* sp. 2  
*Cabillus tongarevae* (Fowler 1927) R 5m H  
*Callogobius sclateri* (Steindachner 1880) RT 1–37m H—Kulbicki et al. 1990b  
*Callogobius maculipinnis* (Fowler 1918) RT 4–37m HN—Kulbicki et al. 1990b  
as *Callogobius* sp. 2  
*Cryptocentrus strigiliceps* (Jordan & Seale 1906) R 1m—Kulbicki et al. 1990b  
*Ctenogobiops* sp. RT 2–44m—Kulbicki et al. 1990b

- Eviota cometa* Jewett & Lachner 1983 R 8m HN—photography—Kulbicki et al. 1990b as *Eviota* sp. A
- Eviota distigma* Jordan & Seale 1906 R 2–8m HN—photography—Kulbicki et al. 1990b as *Eviota* sp. B
- Eviota monostigma* Fourmanoir 1971 R 8m H—Kulbicki et al. 1990b as *Eviota* sp. 1
- Eviota nigriventris* Giltay 1933 R 12m H—photography—Kulbicki et al. 1990b
- Eviota prasites* Jordan & Seale 1906 R 1–15m H—photography—Kulbicki et al. 1990b as *Eviota* sp. D
- Eviota sparsa* Jewett & Lachner 1983 R 2–8m H—Kulbicki et al. 1990b as *Eviota* sp. E
- Eviota* sp. 1 R 2–8m H—photography—Kulbicki et al. 1990b as *Eviota* sp. C
- Eviota* sp. 2 R 6–9m H—photography—Kulbicki et al. 1990b as *Eviota* sp. 2
- Eviota* sp. 3 R 5m H—photography—Kulbicki et al. 1990b
- Fusigobius neophytus* (Günther 1877) R 3–15m H—photography—Kulbicki et al. 1990b
- Fusigobius* sp. 1 R 8–10m HN—photography—Kulbicki et al. 1990b as *Fusigobius* sp. 1
- Fusigobius* sp. 2 R 12m H—photography—Kulbicki et al. 1990b as *Fusigobius* sp. 2
- Fusigobius* sp. 3 R 13m HN—photography—Kulbicki et al. 1990b as *Fusigobius* sp.
- Gnatholepis scapulostigma* Herre 1953 R 12m N—Kulbicki et al. 1990b
- Gnatholepis* sp. R 12m H—Kulbicki et al. 1990b
- Gobiodon citrinus* (Rüppell 1838) R 1–15m HN—Kulbicki et al. 1990b
- Gobiodon multilineatus* Wu 1979 R 8–66m HN—Kulbicki et al. 1990b as *Gobiodon* sp. 2
- Gobiodon okinawae* Sawada Arai & Abe 1972 R 2–15m H—Kulbicki et al. 1990b
- Gobiodon quinquestrigatus* (Valenciennes 1837) T 16–70m N—Kulbicki et al. 1990a as *Gobiodon* sp.
- Gobiodon rivulatus* (Rüppell 1830) RT 8–78m H—Kulbicki et al. 1990b as *Gobiodon* sp. 1
- Gobiodon* sp. 1 R 8m H—Kulbicki et al. 1990b
- Gobiodon* sp. 3 R 14m—Kulbicki et al. 1990b
- Istigobius decoratus* (Herre 1927) R 3–13m N—Kulbicki et al. 1990b
- Istigobius rigilius* (Herre 1953) R 2–15m HN—photography—Kulbicki et al. 1990b
- Macrodonogobius wilburi* Herre 1936 R 12m H—Kulbicki et al. 1990b
- Paragobiodon echinocephalus* (Rüppell 1828) RT 35–47m HN—Kulbicki et al. 1990b as *Paragobiodon* sp.
- Paragobiodon lacunicolus* (Kendall & Goldsborough 1911) T 55m N
- Paragobiodon* sp. R 8–67m HN—Kulbicki et al. 1990b
- Pleurosicya* sp. R 6–13m HN—Kulbicki et al. 1990b
- Priolepis cincta* (Regan 1908) T 66–78m HN—Kulbicki et al. 1990a
- Priolepis semidoliatus* (Valenciennes 1837) R 1m H—Kulbicki et al. 1990b



*Trimma caesiura* Jordan & Seale 1906 R 2–15m—photography—Kulbicki et al. 1990b as *Trimma* sp. 3

*Trimma okinawae* (Aoyagi 1949) R 8–14m N—photography—Kulbicki et al. 1990b as *Trimma naudei*

*Trimma* sp.1 R 7–12m HN—photography—Kulbicki et al. 1990b

*Trimma* sp.2 R 7–12m H—Kulbicki et al. 1990b

*Valenciennaea longipinnis* (Lay & Bennett 1839) R 4m—photography—Kulbicki et al. 1990b

*Valenciennaea puellaris* (Tomiya 1955) T 15–84m N—photography—Kulbicki et al. 1990b

*Valenciennaea wardi* (Playfair 1866) T 62–88m N—photography—Rivaton 1989

#### Family MICRODESMIDAE

*Gunnelichthys monostigma* Smith 1958 V 5 m—Kulbicki et al. 1990b—Kulbicki et al. 1990b

*Nemateleotris magnifica* Fowler 1938 V 18–25m—Kulbicki et al. 1990b

*Ptereleotris evides* (Jordan & Hubbs 1925) V 10–15m—Kulbicki et al. 1990b

*Ptereleotris microlepis* (Bleeker 1856) S 10 m H—Kulbicki et al. 1990b

#### Family XENISTHMIDAE

*Xenisthmus polyzonatus* (Klunzinger 1871) R 8–12m H—Kulbicki et al. 1990b

*Xenisthmus* sp. R 10–15m—Kulbicki et al. 1990b

#### Family SIGANIDAE

*Siganus argenteus* (Quoy & Gaimard 1825) R 2–8m H—Kulbicki et al. 1990b

*Siganus punctatus* (Forster 1801) R 2–8m H—Kulbicki et al. 1990b

#### Family ZANCLIDAE

*Zanclus cornutus* (Linnaeus 1758) R 1–15m—Kulbicki et al. 1990b

#### Family ACANTHURIDAE

*Acanthurus albipectoralis* Allen & Ayling 1987 RS 1–15m H—photo—Kulbicki et al. 1990b

*Acanthurus blochii* Valenciennes 1835 R 1–15m—Kulbicki et al. 1990b

*Acanthurus dussumieri* Valenciennes 1835 R 2–10m N—Kulbicki et al. 1990b

*Acanthurus lineatus* (Linnaeus 1758) V 5 m—Kulbicki et al. 1990b

*Acanthurus nigricauda* Duncker & Mohr 1928 R 1–15m—Kulbicki et al. 1990b

*Acanthurus nigricans* (Linnaeus 1758) V 20 m—Kulbicki et al. 1990b

*Acanthurus nigrofuscus* (Forsskal 1775) R 1–15m H—Kulbicki et al. 1990b

*Acanthurus olivaceus* Forster 1801 V 15 m—Kulbicki et al. 1990b

*Acanthurus pyroferus* Kittlitz 1834 S 18 m H—Kulbicki et al. 1990b

*Acanthurus thompsoni* (Fowler 1923) V 20 m—Kulbicki et al. 1990b

*Acanthurus triostegus* (Linnaeus 1758) C 1 m—Kulbicki et al. 1990b

*Acanthurus xanthopterus* Valenciennes 1835 R 8–15 m—Kulbicki et al. 1990b

*Ctenochaetus binotatus* Randall 1955 R 2–14m HN—Kulbicki et al. 1990b

*Ctenochaetus striatus* (Quoy & Gaimard 1825) R 1–15 m—Kulbicki et al. 1990b  
*Ctenochaetus strigosus* (Bennett 1828) V 10 m—Kulbicki et al. 1990b  
*Naso annulatus* (Quoy & Gaimard 1824) V 4–12m—Kulbicki et al. 1990b  
*Naso brevirostris* (Valenciennes 1835) V 4 m—Kulbicki et al. 1990b  
*Naso hexacanthus* (Bleeker 1855) V 3–15 m—Kulbicki et al. 1990b  
*Naso lituratus* (Forster 1801) R 1–15 m—Kulbicki et al. 1990b  
*Naso maculatus* Randall & Struhsaker 1981 T 71m N—Kulbicki et al. 1990a  
*Naso caesioides* Randall & Bell 1992 S 8 m—Kulbicki et al. 1990b as *N. hexacanthus*  
*Naso tuberosus* (Lacepède 1801) V 4–30m—photo—Kulbicki et al. 1990b  
*Naso unicornis* (Forsskal 1775) RS 1–20 m—Kulbicki et al. 1990b  
*Naso vlamingii* (Valenciennes 1835) V 3–14 m—Kulbicki et al. 1990b  
*Zebrasoma scopas* (Cuvier 1829) R 1–15 m N—Kulbicki et al. 1990b  
*Zebrasoma veliferum* (Bloch 1797) R 1–15m N—Kulbicki et al. 1990b

#### Family SPHYRAENIDAE

*Sphyrna barracuda* (Walbaum 1792) L 5 m—Kulbicki et al. 1990b

#### Family GEMPYLIDAE

M *Nealotus tripes* Johnson 1865 L stom. cont.—Grandperrin et al. 1974  
M *Prometichthys prometheus* (Cuvier 1831) L 270m NP—Barro 1981

#### Family XIPHIIDAE

E *Xiphias gladius* Linnaeus 1758 longline Hallier 1984

#### Family ISTIOPHORIDAE

E *Istiophorus platypterus* (Shaw & Nodder 1792) longline Hallier 1984  
E *Makaira indica* (Cuvier 1831) longline Hallier 1984  
E *Makaira mazara* (Jordan & Snyder 1901) longline Hallier 1984  
E *Tetrapturus angustirostris* Tanaka 1914 longline Hallier 1984  
E *Tetrapturus audax* (Philippi 1887) longline Hallier 1984

#### Family SCOMBRIDAE

E *Acanthocybium solandri* (Cuvier 1831) L—Barro 1979  
E *Euthynnus affinis* (Cantor 1849) L 10–270m—Kulbicki et al. 1990b  
E *Gymnosarda unicolor* (Rüppell 1838) L 40m—Kulbicki et al. 1990b  
E *Katsuwonus pelamis* (Linnaeus 1758) L  
E *Scomberomorus commerson* (Lacepède 1802) V 10m—Kulbicki et al. 1990b  
E *Thunnus alalunga* (Bonnaterre 1788) longline Hallier 1984  
E *Thunnus albacares* (Bonnaterre 1788) L Hallier 1984  
E *Thunnus obesus* (Lowe 1839) longline Hallier 1984

#### Family CENTROLOPHIDAE

D *Hyperoglyphe antarctica* (Carmichael 1818) L 270m NP

#### Family NOMEIDAE



M *Psenes* sp. stom.cont.—Grandperrin et al. 1974

D *Cubiceps* sp. T 79m N

#### Family ARIOMMATIDAE

D *Ariomma* sp. T 330m N—Rivaton 1989

#### ORDER PLEURONECTIFORMES

##### Family BOTHIDAE

D *Arnoglossus japonicus* Hubbs 1915 T 350m J—Rivaton 1989

D *Arnoglossus oxyrhynchus* Amaoka 1969 T 215m J—Rivaton 1989

D *Arnoglossus polyspilus* (Günther 1880) T 68–300m J—Rivaton 1989

D *Arnoglossus* sp. T 225m J—Rivaton 1989

D *Asterorhombus intermedius* (Bleeker 1866) RT 15–82m HJZ—photography—Rivaton 1989

*Asterorhombus* sp. R 10m H—photography—Kulbicki et al. 1990b as *Asterorhombus intermedius*

*Bothus mancus* (Broussonet 1782) R 4m J—Kulbicki et al. 1990b

*Bothus pantherinus* (Rüppell 1830) RT 10–85m J—Rivaton 1989

D *Bothus* sp. R 8–78m H—Kulbicki et al. 1990b

D *Engyprosopon grandisquama* (Temminck & Schlegel 1846) T 65–91m J—Kulbicki et al. 1990a

D *Engyprosopon longipelvis* Amaoka 1969 T 44–217m J—Rivaton 1989

D *Engyprosopon macroptera* Amaoka 1963 T 85–88m J—Kulbicki et al. 1990a as *Engypsopon* sp.

D *Engyprosopon* sp. T 32–228m J—Kulbicki et al. 1990a as *Engyprosopon* sp.

D *Grammatobothus pennatus* Ogilby 1913 T 80–93m HJ—Kulbicki et al. 1990a

*Grammatobothus polyophthalmus* (Bleeker 1866) T 71–90m J—Rivaton 1989

D *Parabothus* sp. T 68–305m J—Rivaton 1989

D *Taeniopsetta ocellata* (Günther 1880) T 300m J—Rivaton 1989

D *Tosarhombus neocaledonicus* Amaoka & Rivaton 1991 T 169–300m JZ—photography—Rivaton 1989

D *Tosarhombus* sp. T 59+m J

##### Family PLEURONECTIDAE

D *Plagiopsetta glossa* Franz 1910 T 280–330m J—photography—Rivaton 1989

D *Samaris cristatus* Gray 1831 T 63–225m J—Rivaton 1989

D *Samaris macrolepis* Norman 1927 T 66–85m J

*Samaris* sp. R 4m H

*Samariscus latus* Matsubara & Takamuki 1951 T 67m J

D *Samariscus* sp. T 317m Z

*Samariscus triocellatus* Woods 1966 R 8–12m HJ—photography

##### Family SOLEIDAE

*Aesopia cornuta* (Kaup 1858) T 70m N—Rivaton 1989

*Aseraggodes* sp. cf *whitakeri* R 5m H—Kulbicki et al. 1990b

D *Pseudaesopia japonica* (Bleeker 1862) T 65–68m N—Rivaton 1989

Family CYNOGLOSSIDAE

D *Cynoglossus interruptus* Günther 1880 T 71–75m—Kulbicki et al. 1990a

D *Cynoglossus* sp. T 78m JN—Rivaton 1989—Kulbicki et al. 1990a

ORDER TETRAODONTIFORMES

Family TRIACANTHODIDAE

D *Triacanthodes ethiops* Alcock 1854 T 330m N—photography—Rivaton 1989

Family BALISTIDAE

*Abalistes stellatus* (Lacepède 1798) T 80–91m N—Kulbicki et al. 1990a

*Balistapus undulatus* (Mungo Park 1797) V 10m N—Kulbicki et al. 1990b

*Balistoides conspicillum* (Bloch & Schneider 1801) V 25m—Kulbicki et al. 1990b

*Pseudobalistes fuscus* (Bloch & Schneider 1801) RT 3–85m—Kulbicki et al. 1990b

*Rhinecanthus aculeatus* (Linnaeus 1758) V 10m—Kulbicki et al. 1990b

*Rhinecanthus rectangulus* (Bloch & Schneider 1801) V 20m—Kulbicki et al. 1990b

*Sufflamen bursa* (Bloch & Schneider 1801) V 15m—Kulbicki et al. 1990b

*Sufflamen chrysopterus* (Bloch & Schneider 1801) R 2–8m—photography—Kulbicki et al. 1990b

*Sufflamen fraenatus* (Latreille 1804) R 36m HN—Rivaton 1989

Family MONACANTHIDAE

D *Brachaluteres jacksonianus* (Quoy & Gaimard 1924) T 50–73m N—Rivaton 1989

D *Brachaluteres taylori* Woods 1966 T 60m H—photography

*Cantherines dumerilii* (Hollard 1854) V 20m—Kulbicki et al. 1990b

*Cantherines pardalis* (Rüppell 1835) V 25m—Kulbicki et al. 1990b

D *Laputa* sp. T 75m H

*Oxymonacanthus longirostris* (Bloch & Schneider 1801) R 1–5m H—Kulbicki et al. 1990b

*Paraluteres prionurus* (Bleeker 1851) R 12m H—Kulbicki et al. 1990b

*Paramonacanthus japonicus* (Tilesius 1801) T 39–90m N—Rivaton 1989

*Pervagor alternans* (Ogilby 1899) R 10m H

*Pervagor aspricaudus* (Hollard 1854) R 12m—Kulbicki et al. 1990b

*Pervagor janthinosoma* (Bleeker 1854) R 2–14m H—Kulbicki et al. 1990b

*Pervagor melanocephalus* (Bleeker 1853) RT 12–61m N—Kulbicki et al. 1990b

*Pseudalutarius nasicornis* (Temminck & Schlegel 1846) RT 30–70m NH—photography—Kulbicki et al. 1990b

D *Thamnaconus* sp. T 68m

D *Thamnaconus tessellatus* (Günther 1880) T 330m NP—photography—Rivaton 1989

Family OSTRACIIDAE

*Lactoria cornuta* (Linnaeus 1758) T 15–67m HN—photography—Rivaton 1989

- Lactoria diaphana* (Bloch & Schneider 1801) T 60–93m N—Kulbicki et al. 1990a  
*Lactoria fornasini* (Bianconi 1846) T 44–92m HN—Rivaton 1989  
*Ostracion cubicus* Linnaeus 1758 RT 3–55m N—Kulbicki et al. 1990b  
*Ostracion meleagris* Shaw 1796 RT 3–58m—Kulbicki et al. 1990b  
*Tetrosomus concatenatus* (Bloch & Schneider 1785) 60–67 m P—Rivaton 1989  
*Tetrosomus gibbosus* (Linnaeus 1758) RT 20–67m N—Kulbicki et al. 1990b  
*D Kentaceros flavofasciatus* (Kamohara 1938) T 288–330m NZ—Rivaton 1989

#### Family TRIODONTIDAE

- D Triodon macropterus* Lesson 1829 T 300–310m—photography—Richer de Forges & Pianet 1984

#### Family TETRAODONTIDAE

- D Amblyrhynchotes* sp. T 330m NZ—Rivaton 1989  
*Arothron nigropunctatus* (Bloch & Schneider 1801) V 2–5m—photography—Kulbicki et al. 1990b  
*Arothron stellatus* (Bloch & Schneider 1801) S 10–52m—Kulbicki et al. 1990b  
*Canthigaster bennetti* (Bleeker 1853) R 6m—Kulbicki et al. 1990b  
*Canthigaster coronata* (Vaillant & Sauvage 1875) RT 10–76m HN—Rivaton 1989  
*Canthigaster janthinoptera* (Bleeker 1855) R 3–15m H—Kulbicki et al. 1990b  
*Canthigaster rivulata* (Temminck & Schlegel 1850) T 75–88m HN—Rivaton 1989  
*Canthigaster valentini* (Bleeker 1853) RT 2–91m HN—Kulbicki et al. 1990b  
*Lagocephalus sceleratus* (Gmelin 1788) T 61–90m N—Kulbicki et al. 1990a  
*D Sphoeroides pachygaster* (Müller & Troschel 1848) T 330m—Rivaton 1989  
*D Torquigener pallimaculatus* Hardy 1983 T 60–78m NZ—Rivaton 1989  
*D Torquigener tuberculiferus* Hardy 1983 T 73–80m NZ—Kulbicki et al. 1990a

#### Family DIODONTIDAE

- Diodon holocanthus* Linnaeus 1758 T 52–93m—Kulbicki et al. 1990a  
*Diodon hystrix* Linnaeus 1758 R 3–15m—photography—Kulbicki et al. 1990b

A total of 866 taxa distributed among 133 families are recorded. 134 taxa are identified only to genus, of these 58 could be new to science. The composition of this list is unbalanced in favor of shallow-water reef species (683 taxa) which have been sampled far more thoroughly than fishes from other habitats, demersal species total 150 taxa, pelagic species number 23 taxa and only 10 mesopelagic taxa are listed.

A comparison indicates that on a total of 22 major (more than 10 taxa) families, 10 had comparable species numbers with the south GBR, 6 with the north GBR, 4 with New Caledonia and 4 with the northern New Zealand group islands (Table 2). Besides the 58 undescribed taxa, there are 22 species found in the Chesterfield which are not yet known from New Caledonia (Table 3). Until the area is better studied it is not possible to know the rate of endemism, but it is likely to be low if one considers the rates found on the GBR (Russell, 1983) or the North New Zealand group (Francis, 1993). In particular none of the 58

Table 2. Major families of shallow water fishes found in the Chesterfield islands with comparison with nearby areas.

Family	Chesterfield	New Caledonia (1)	North NZ group (2)	South GBR (3)	North GBR (4,5,6)
Acanthuridae	26	34	13	25	36
Apogonidae	47	69	10	33	47
Balistidae	19	29	14	24	35
Blenniidae	22	47	20	40	50
Carangidae	17	34	23	32	45
Chaetodontidae	23	34	23	32	45
Gobiidae	55	90	27	104	153
Holocentridae	20	23	6	11	25
Labridae	73	93	56	69	106
Lethrinidae	14	18	5	9	20
Lutjanidae	12	21	8	14	24
Mullidae	14	19	10	7	16
Muraenidae	21	31	17	23	30
Platycephalidae	10	16	1	4	10
Pomacanthidae	12	15	7	15	24
Pomacentridae	54	90	35	69	106
Scaridae	21	26	13	22	27
Scorpaenidae	26	26	13	21	26
Serranidae	32	61	22	32	88
Syngnathidae	16	29	6	12	18
Synodontidae	9	13	6	8	8
Tetraodontidae	10	19	9	11	14

(1): Rivaton et al., 1990 (2) : Francis, 1993; Francis and Randall, 1993 (3) : Russel, 1983 (4) : Allen, 1989 (5) : Randall et al., 1990 (6) : Paxton et al., 1978.

Table 3. List of the determined species found in the Chesterfield but not yet recorded from New Caledonia.

<i>Amphichaetodon howensis</i>	<i>Halicampus mataafae</i>	<i>Rhabdoblennius ellipes</i>
<i>Chaetodon guentheri</i>	<i>Macropharyngodon kuiteri</i>	<i>Sargocentron lepros</i>
<i>Choerodon jordani</i>	<i>Meiacanthus phaeus</i>	<i>Scarus frontalis</i>
<i>Chromis mirationis</i>	<i>Naso maculatus</i>	<i>Synchiropus circularis</i>
<i>Cirrilabrus punctatus</i>	<i>Petroscirtes xestus</i>	<i>Synodus oculus</i>
<i>Corythoichthys paxtoni</i>	<i>Plectranthias fourmanoiri</i>	<i>Synodus rubromarmoratus</i>
<i>Cynoglossus interrupta</i>	<i>Pseudopleksiops howensis</i>	<i>Synodus tectus</i>
<i>Halicampus boothae</i>	<i>Pteragogus enneacanthus</i>	<i>Tosarhombus neocaledonicus</i>

undescribed species was found in large numbers as is often the case of endemic fishes in remote localities (Francis 1993).

Despite the incomplete state of the present sampling, one notices that a number of genera which are well represented in New Caledonia (Rivaton et al. 1990) or on the Great Barrier Reef (Paxton et al., 1978, Russel 1983, Allen 1989, Randall et al., 1989), are either not yet recorded or scarcely represented in the

samples from the Chesterfield islands (*Abudefduf* spp., *Neopomacentrus* spp., *Scolopsis* spp. or Siganidae). Kulbicki et al. (1994) found very similar trends at Uvea atoll (NW of New Caledonia) where *Abudefduf* is represented by only 2 species, *Neopomacentrus* by one species, *Scolopsis* by one species and *Siganidae* by three species. Francis (1993) has also observed that these genera (except *Abudefduf*) were either absent or poorly represented in the Northern New Zealand group. It is likely that these observations are a result of the short duration of the larval stages of these species, but larval duration is certainly not the only possible factor, habitat selection, current patterns and geological history playing also a major role.

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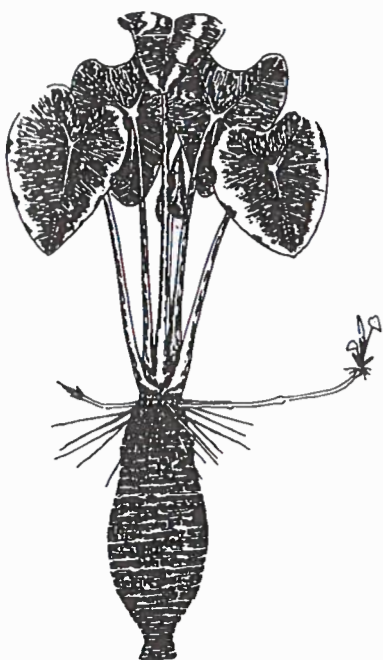
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