

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

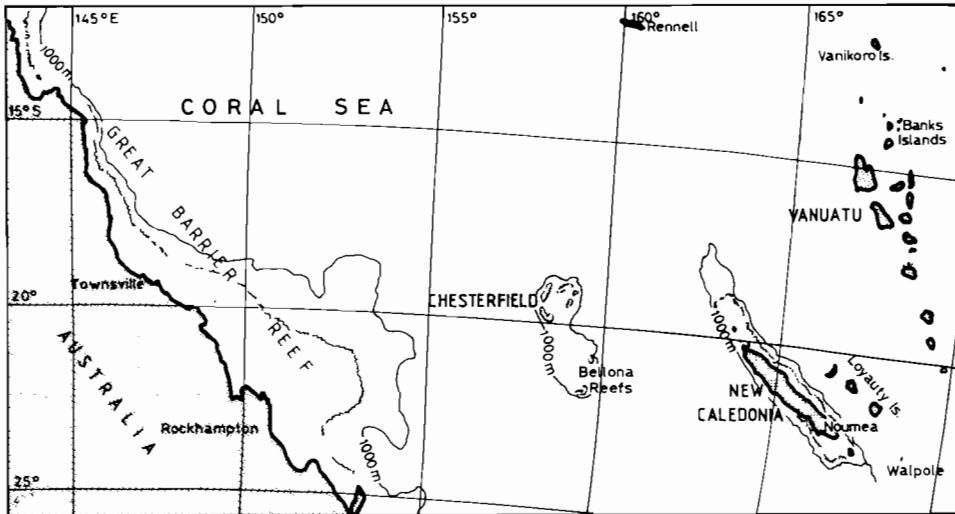


Figure 1. Position of the Chesterfield Islands in the Coral Sea.

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.

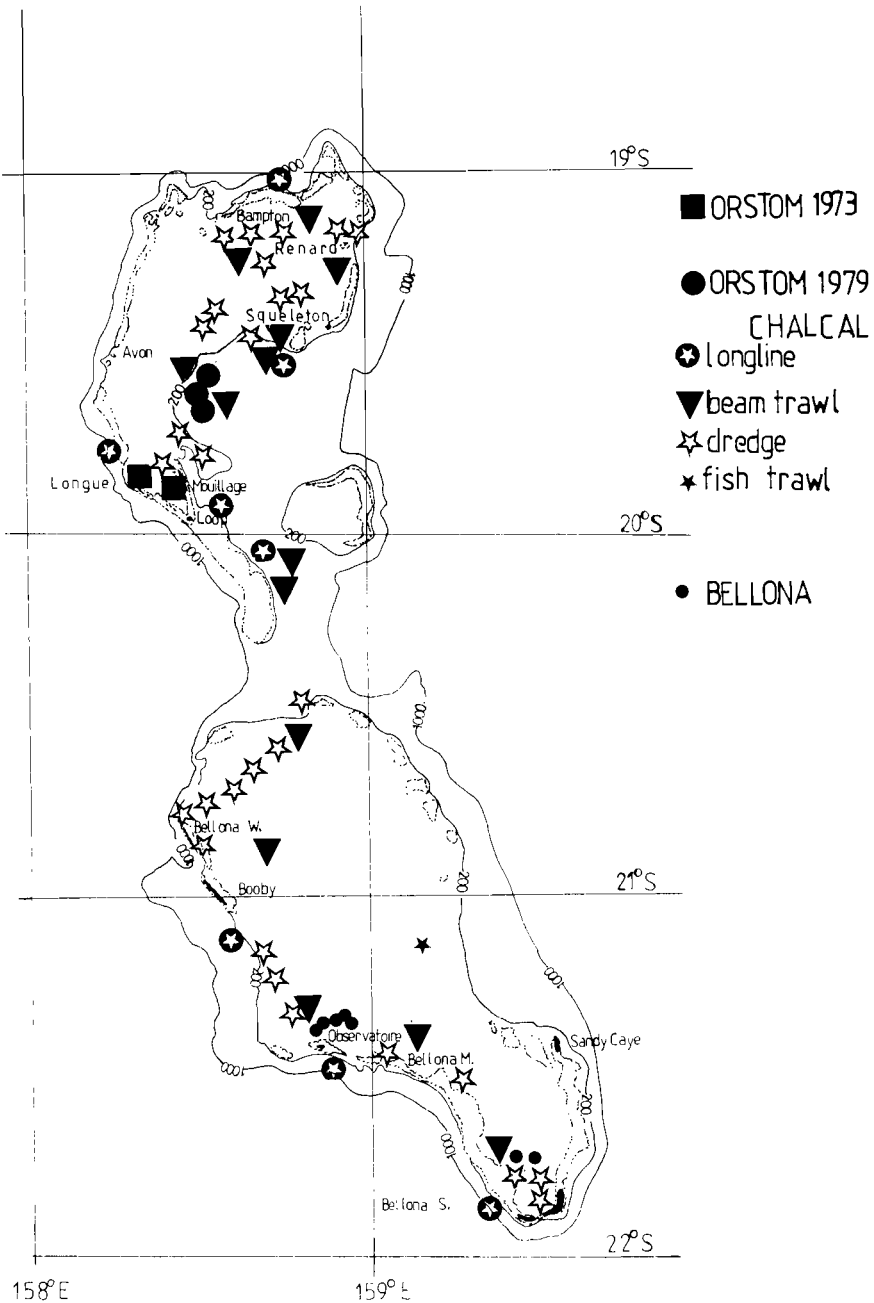


Figure 2. Positions of the stations where fish were caught during the ORSTOM 1973, 1979, CHALCAL and BELLONA cruises.

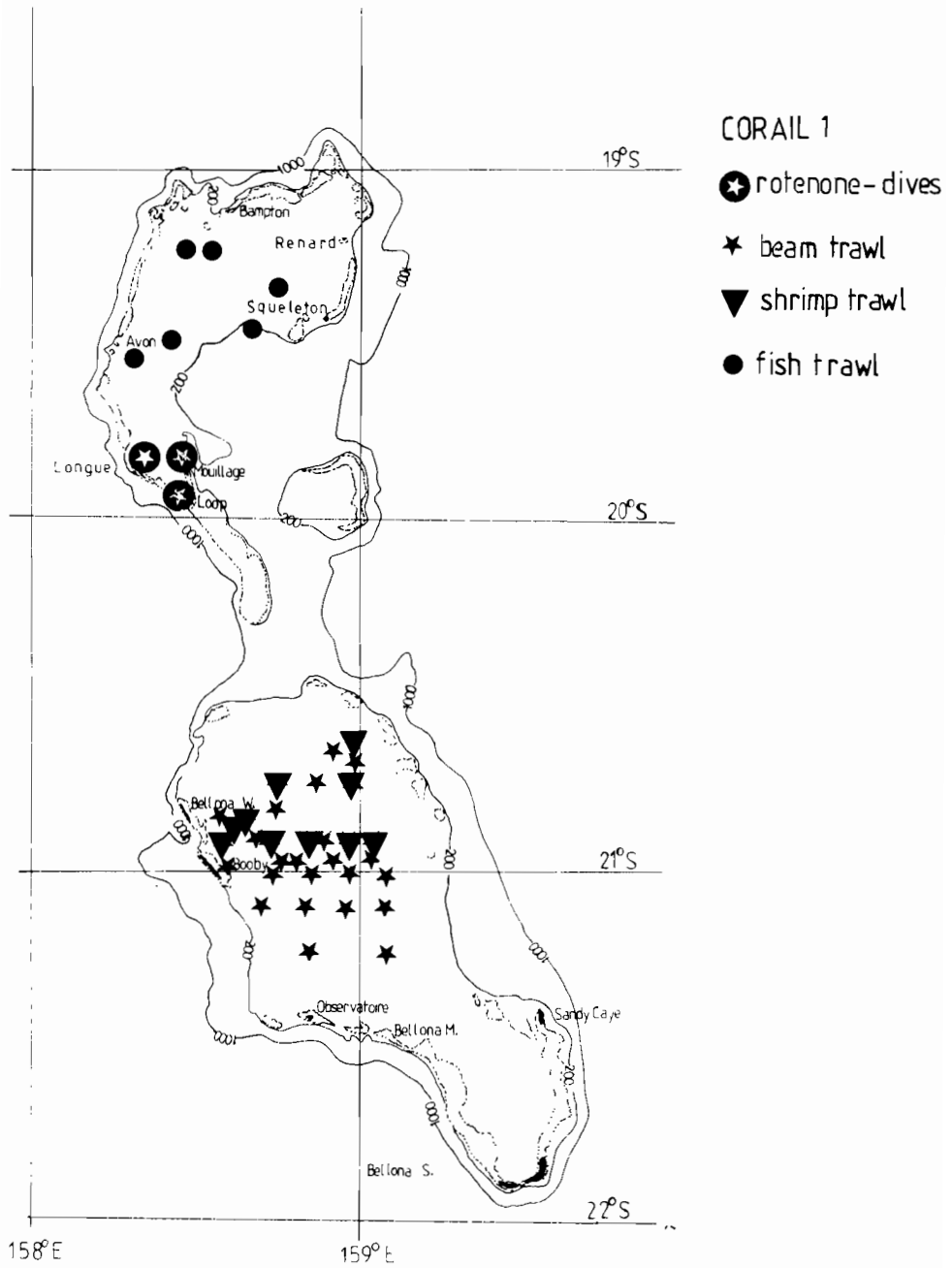


Figure 3. Positions of the stations where fish were either caught or observed during the CORAIL 1 cruise.

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 1

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 1 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 *Heptranchias 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

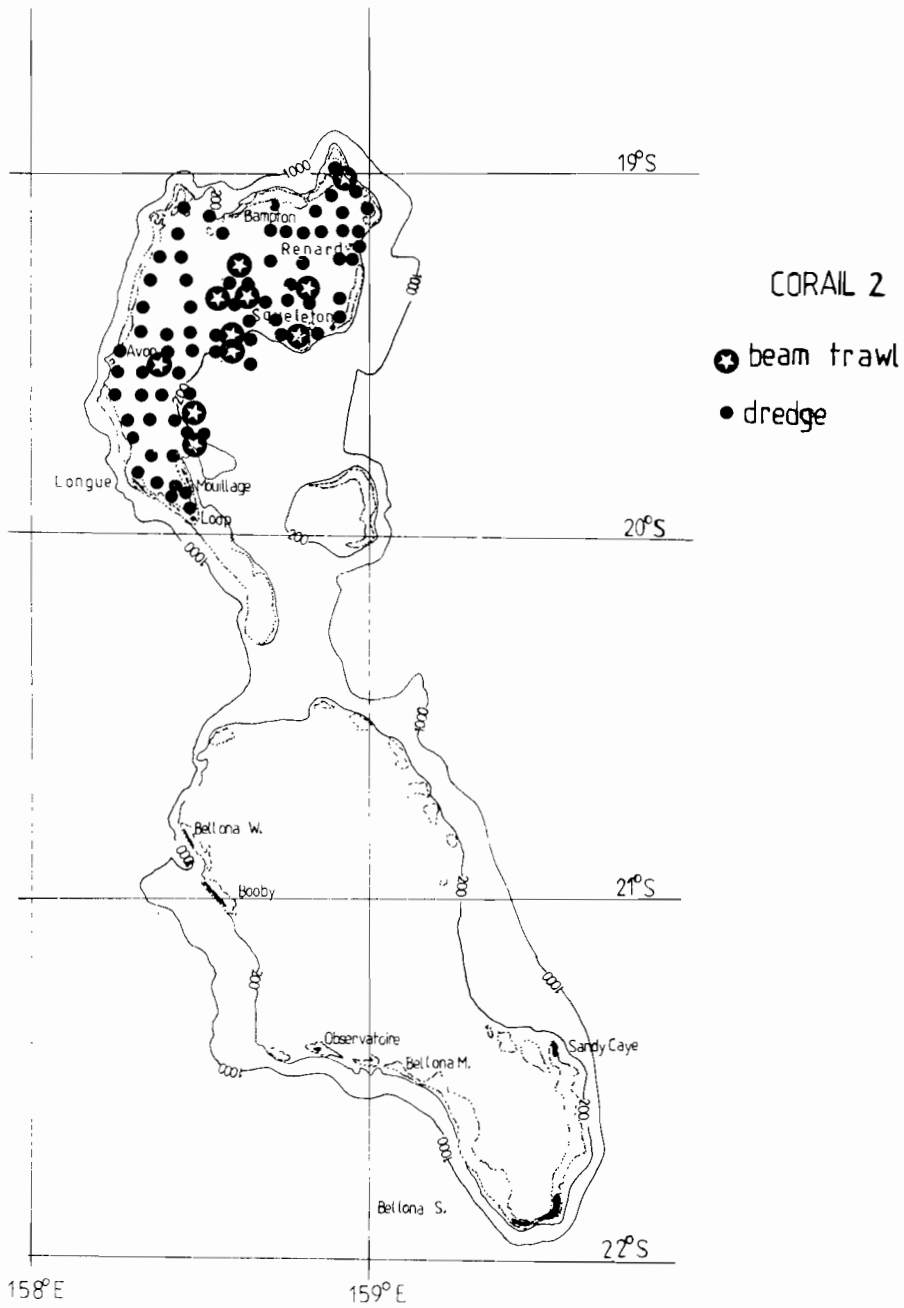


Figure 4. Positions of the stations where fish were caught during the CORAIL 2 cruise.

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 hyoporoides (Strömman 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 *Argyrolepecus* sp. stom. cont. N—Grandperrin et al. 1974

E *Argyrolepecus hemigymnus* Cocco 1829 T unknown Z

ORDER AULOPIFORMES

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

Brosmophysops 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 ANOPLOGASTRIDAE

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 kuntee Cuvier 1831 R 2–15m H—Kulbicki et al. 1990b

Myripristis murdjan (Forsskål 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 (Forsskål 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 melanospilos (Bleeker 1858) R 7m—Kulbicki et al. 1990b
Sargocentron punctatissimum (Cuvier 1829) R 4–15m H—Kulbicki et al. 1990b
Sargocentron spiniferum (Forsskål 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 matafae (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 albobrunea
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—Rivatón 1989

D *Parapterygotrigla* sp. T 500m N

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

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

Family DACTYLOPTERIDAE

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

Family PLATYCEPHALIDAE

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

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

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

Platycephalidae novum generum ? T 51–68m

Rogadius sp. T 35–41m H—photography

D *Suggrundus* sp. T 203–228m N—Rivatón 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 CONGIOPODIDAE

Amblyaspistus taeniotus (Cuvier 1829) T 65 m—Rivatón 1989

Family HOPLICHTHIDAE

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

ORDER PERCIFORMES

Family ACROPOMATIDAE

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

D *Synagrops philippinensis* (Günther 1880) T 350–370m N—Rivatón 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 schlegeli*

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 (Forsskål 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 lecromi* 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* (Forsskål 1775) V 12m N—Kulbicki et al. 1990b
- Epinephelus fuscoguttatus* (Forsskål 1775) T 345m—Richer de Forges & Pianet 1984
- Epinephelus lanceolatus* (Bloch 1790) V 25–40m N—Kulbicki et al. 1990b
- Epinephelus macropilos* (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* (Forsskål 1775) RL 8–35m—Kulbicki et al. 1990b

Family PSEUDOCROMIDAE

- 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 (Forsskål 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 3–15m—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 urospilotes* 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 brevirostris 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. “lethrinoides” 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* (Forsskål 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 Forsskål 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 ehippium 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 chrysur*a (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 tricincta (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 HNZ—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 OPISTOGNATHIDAE

- D Opistognathus* sp. T 56–210m PZ

Family MUGILIDAE

- Crenimugil crenilabis* (Forsskål 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 (Forsskål 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 prosopeion (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 *Acanthaphrites* 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 polyophtalma (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 rhinorhynchos (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 *Callyonimus 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 *Pseudocallyonimus 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 strigilliceus (Jordan & Seale 1906) R 1m—Kulbicki et al. 1990b
Ctenogobius 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
- Macrodontogobius 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
Valenciennesa longipinnis (Lay & Bennett 1839) R 4m—photography—Kulbicki et al. 1990b
Valenciennesa puellaris (Tomiyama 1955) T 15–84m N—photography—Kulbicki et al. 1990b
Valenciennesa 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 (Forsskål 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 caesius 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
Zebрасoma scopas (Cuvier 1829) R 1–15 m N—Kulbicki et al. 1990b
Zebрасoma veliferum (Bloch 1797) R 1–15m N—Kulbicki et al. 1990b

Family SPHYRAENIDAE

- Sphyræna 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 polypsilus* (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 *Engyprosopon* 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
Tetrasomus concatenatus (Bloch & Schneider 1785) 60–67 m P—Rivaton 1989
Tetrosomus gibbosus (Linnaeus 1758) RT 20–67m N—Kulbicki et al. 1990b
D *Kentocapros 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 (Russel, 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 mataaefae</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>Cirrillabrus punctatus</i>	<i>Petrosirtes xestus</i>	<i>Synodus oculus</i>
<i>Corythoichthys paxtoni</i>	<i>Plectranthias fourmanoiri</i>	<i>Synodus rubromarmoratus</i>
<i>Cynoglossus interrupta</i>	<i>Pseudoplesiops 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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