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MARINE LIVING RESOURCES OF THE UNION TERRITORY OF LAKSHADWEEP —

**An Indicative Survey
With Suggestions For Development**

**CENTRAL MARINE FISHERIES RESEARCH INSTITUTE
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6. RESOURCES OF ORNAMENTAL FISHES

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INTRODUCTION

Among the fishes of Lakshadweep islands, those of ornamental value (aquarium fishes) are very abundant: of the 601 species of marine fishes belonging to 126 families reported from these Islands (Jones and Kumaran, 1980), at least 300 species belonging to over 40 families are ornamental fishes. In addition to the taxonomic account of fishes of Lakshadweep islands by Jones and Kumaran (1980), information on ornamental fishes of these islands is restricted to the works of Pillai *et al.* (1983), Madan Mohan *et al.* (1986), and Kumaran and Gopakumar (1986). There is, however, no information on the relative abundance or areas of abundance of different species of ornamental fishes from different islands. There is considerable demand for live ornamental fishes in several countries (Tomey 1985, 1986) and the present export market price of each fish, depending on the species, ranges from Rs. 16.10 to Rs. 272.25 with an average of Rs. 90.60 in Netherlands and from Rs. 4.96 to Rs. 148 with an average of Rs. 34.85 in South East Asian Countries. In West Germany, each specimen of some of the species of ornamental fishes from India can fetch from Rs. 99 to Rs. 810 (Anon 1986). In view of the demand for the ornamental fishes and the possible earning of foreign exchange through export of live ornamental fishes and also in view of the lack of adequate information on distribution and abundance of different species in different islands, a survey was conducted during January-March 1987 and the results with reference to ornamental fishes are presented here.

MATERIAL AND METHODS

The survey was conducted by three teams as follows:

I team: Chetlat, Kiltan, Kadmat and Amini islands during 5.1.1987-6.2.1987.

II team: Bitra, Thinnakara, Bangaram and Agatti islands during 9.2.1987-25.2.1987.

III team: Androth, Kavaratti, Suheli, Kalpeni and Minicoy during 6.3.1987-1.4.1987.

In all the islands the fishes were collected using drag net, encircling net and cast net. In the lagoons, the collections were made by encircling nets Fig. 15 A-D and those in the reef flats with drag nets Fig. 15. E: the drag net was laid in a semicircular fashion on the flats in suitable areas and stones were placed in the net to provide hiding space for fishes; the fishes were driven into the net from the open end and then the net was hauled. Every effort was made to collect all the species available in the area. Cast net was also operated on the reef flats during low tide periods; the net was laid over a big stone and then the stone was moved several times or lifted up, the fishes underneath the stone get entangled in the net and thus caught. Observations on the distribution and abundance of ornamental fishes were also made visually and through underwater surveys in deeper areas of the lagoons.

Collections were made from the lagoons and reef flats by dividing them into arbitrary zones so that representative samples of the species inhabiting the "zones" could be collected. Each zone was intensively studied; specimens were collected from different areas in each "zone" to get a general picture of distribution and abundance of different groups of fishes in the lagoons and reef flats. After collection, the fishes were taken to the shore, identified in fresh condition, photographs taken and then preserved in 5% formalin. All the collections were brought to the main land.

ORNAMENTAL FISHES OF LAKSHADWEEP ISLANDS

Jones and Kumaran (1980) recorded about 300 species of ornamental fishes belonging to over 40 families (Fig. 1). The most dominant group is Labridae with 45 species, followed by Pomacentridae (35), Apogonidae (22), Muraenidae (22) Serranidae (21), Blenniidae (20),

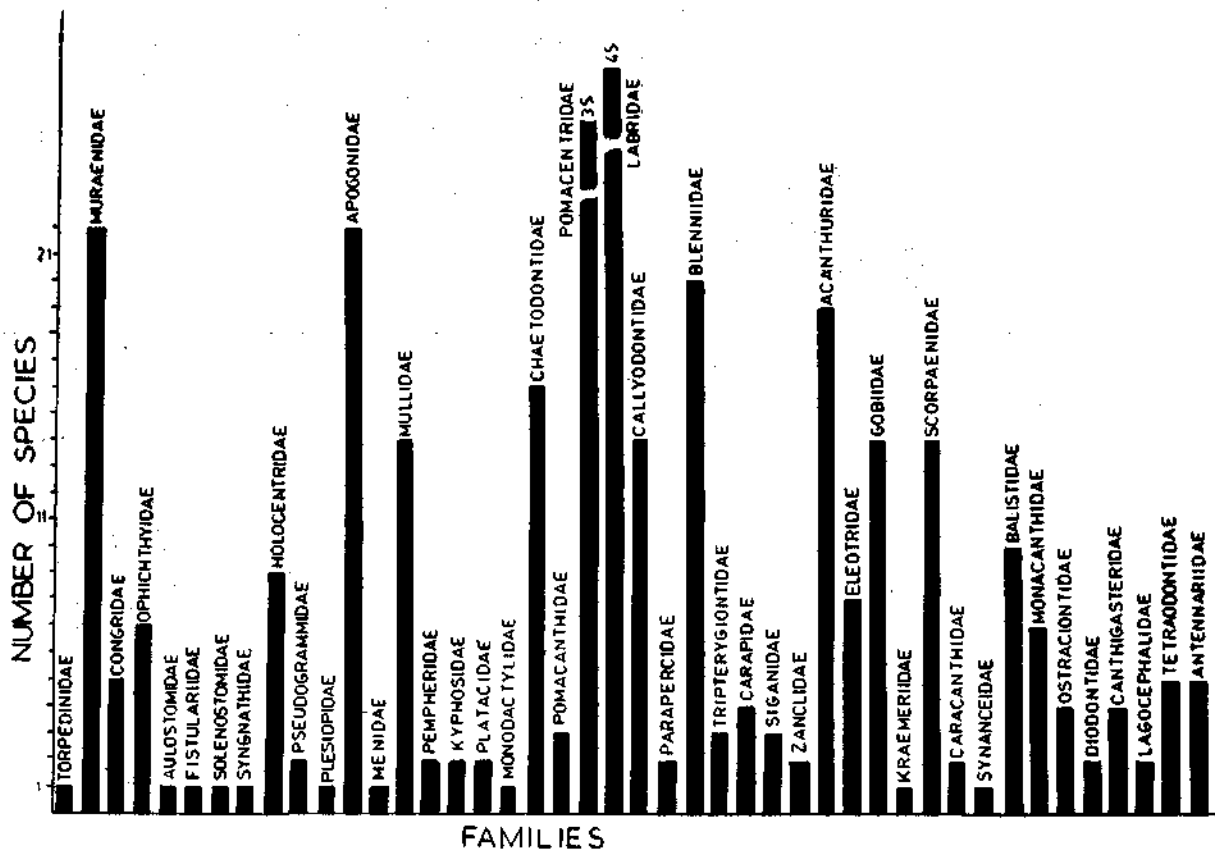


Fig. 1. Number of species of ornamental fishes in each family reported from the Lakshadweep islands.

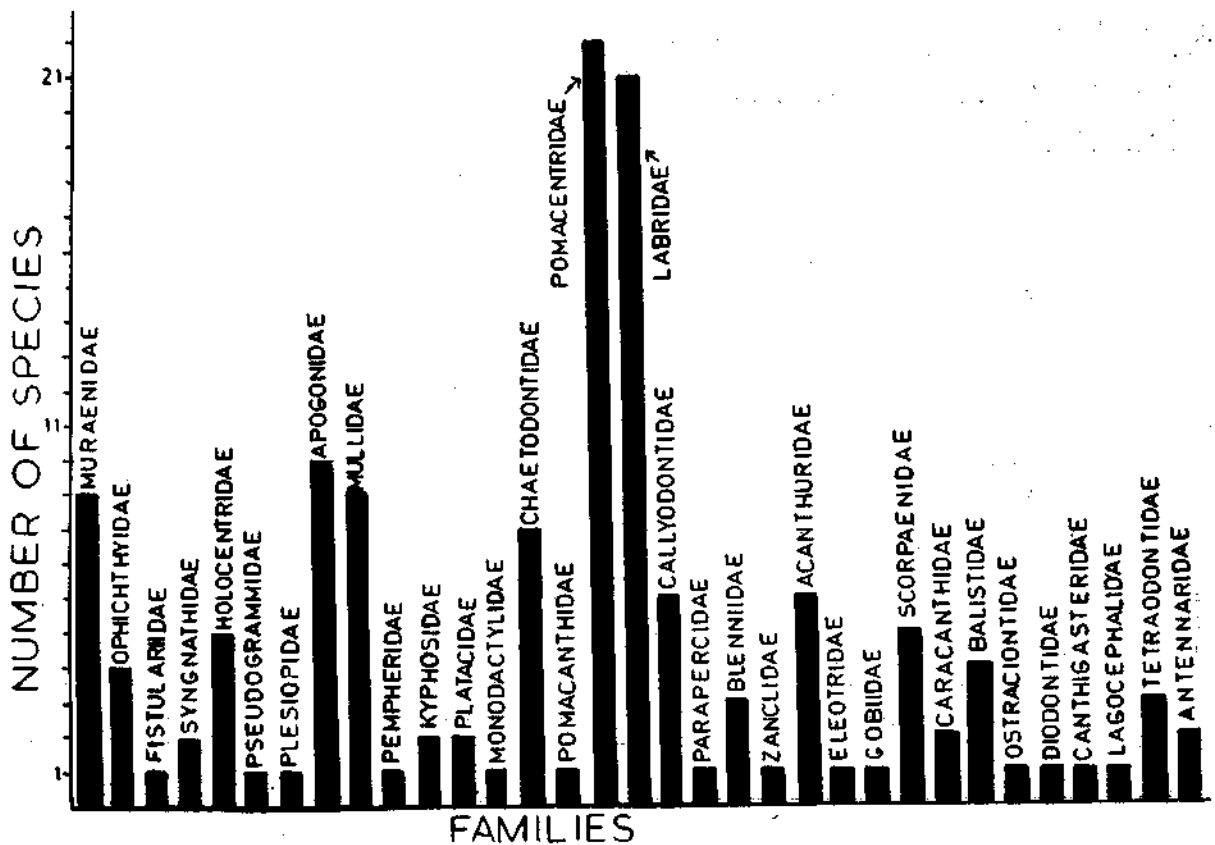


Fig. 2. Number of species of ornamental fishes in each family collected from the Lakshadweep islands during January-March 1987.

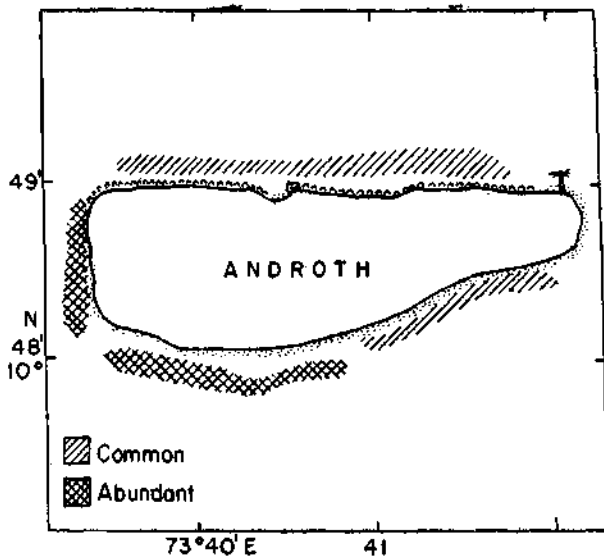


Fig. 10. Map of Androth island showing the distribution of ornamental fishes.

lagoons of different islands are shown in table 1 and in Figures 3-14 (the areas of abundance of ornamental fishes are shown by shaded areas).

1. *Chetlat*: At this island, pomacentrids are most dominant followed by acanthurids,

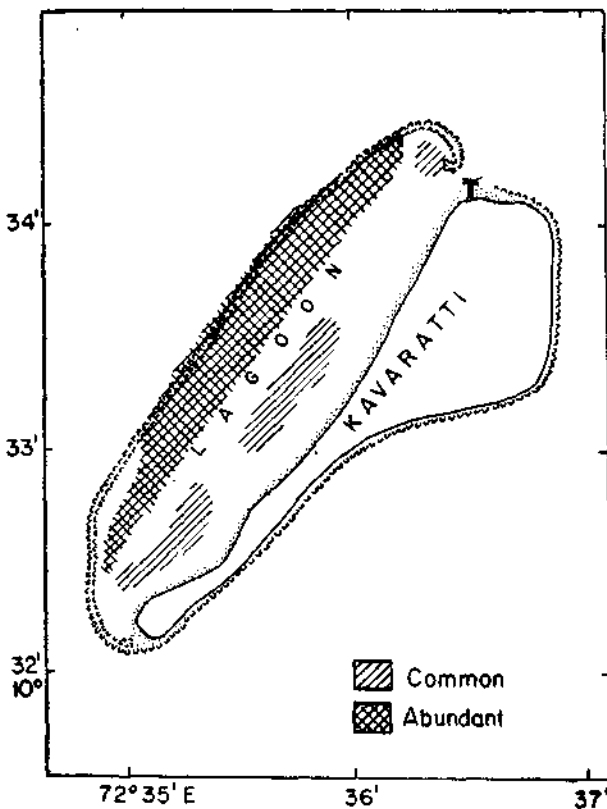


Fig. 11. Map of Kavaratti island showing the distribution of ornamental fishes.

apogonids and holocentrids. Pomacentridae are abundant both in the lagoon and reef flat, acanthurids in the reef flat and Holocentridae and Apogonidae are abundant in the lagoon.

2. *Kiltan*: At this island Pomacentridae, Labridae, Holocentridae and Acanthuridae are abundant. Of these pomacentrids are more abundant in the lagoon whereas Labrids in the reef flat.

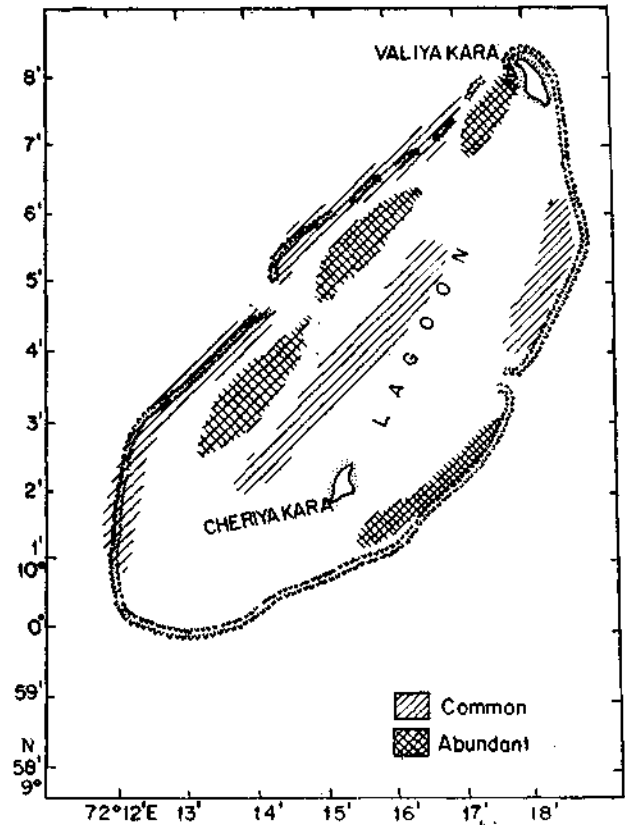


Fig. 12. Map of Suhelipar showing the distribution of ornamental fishes.

3. *Kadmat*: At this island also, pomacentrids are more abundant followed by labrids, holocentrids, and blenniids, the former two groups being more abundant in the reef flat.
4. *Amini*: Only two families, Pomacentridae and Labridae are abundant in this island, both in the reef flat. Eels of the family Muraenidae are common in the reef flats of this island.
5. *Bitra*: Labridae, and Scorpaenidae are most abundant in the reef flat. Only one species each of the first two families is abundant in the lagoon whereas scorpaenids were not seen in the lagoon.

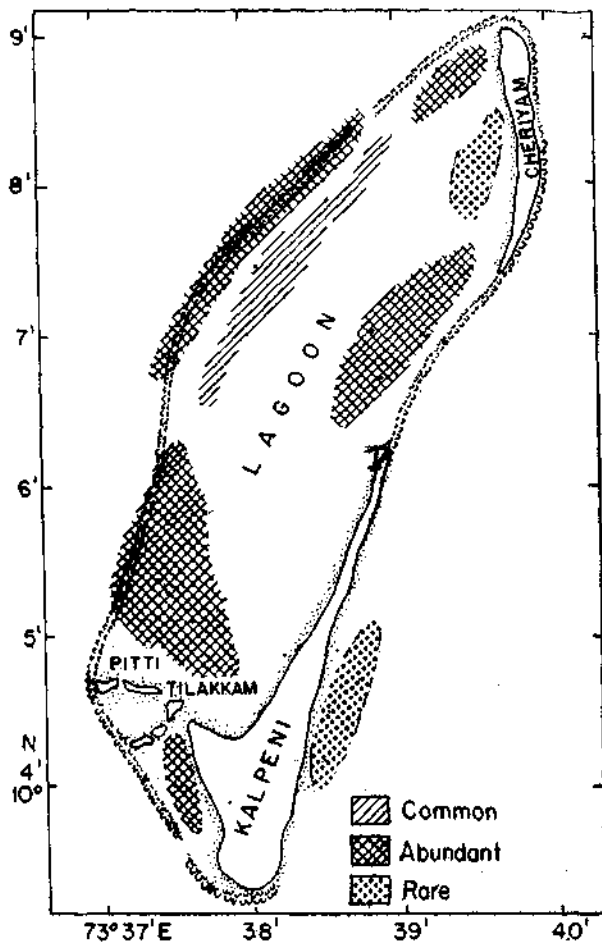


Fig. 13. Map of Kalpeni Island showing the distribution of ornamental fishes.

6. *Thinnakera*: Pomacentridae, Mullidae, Labridae and Acanthuridae are abundant in this island; three species of Pomacentridae, 2 each of Mullidae and Acanthuridae are abundant in the lagoon whereas two species each of the above four families are abundant in the reef flat.
7. *Bengaram*: Pomacentridae, Labridae, Chaetodontidae, Mullidae, and Balistidae are abundant in this island; except pomacentridae, the fishes of all the above families are abundant in the reefs.
8. *Agati*: Pomacentrds are the most abundant group here followed by Labridae, Scorpaenidae and others. In all these cases, reef flat is richer in ornamental fishes than the lagoon.
9. *Androth*: Only two species of pomacentridae and one species of Labridae are abundant in the reef flat.

10. *Kaveratti*: Only Labridae and Acanthuridae are abundant, particularly on the reef flat of this island.
11. *Suheli*: Labrids and apogonids are abundant in this island.
12. *Kalpeni*: Labridae is the only abundant group here both in the lagoon and reef flat.
13. *Minicoy*: Pomacentridae, Labridae and Acanthuridae are abundant both in the reef flat and lagoon of this island.

The above observations show the following:

- a. In 9 of the 13 islands surveyed, there are more number of ornamental fish species in the reef flats than in the lagoons, though some species are abundant in the lagoon and some in the reef flat, in almost all the islands reef flat is richer in ornamental fishes than the lagoon.
- b. Species of Pomacentridae and Labridae are not only more in number but they are also abundant in almost all the islands.

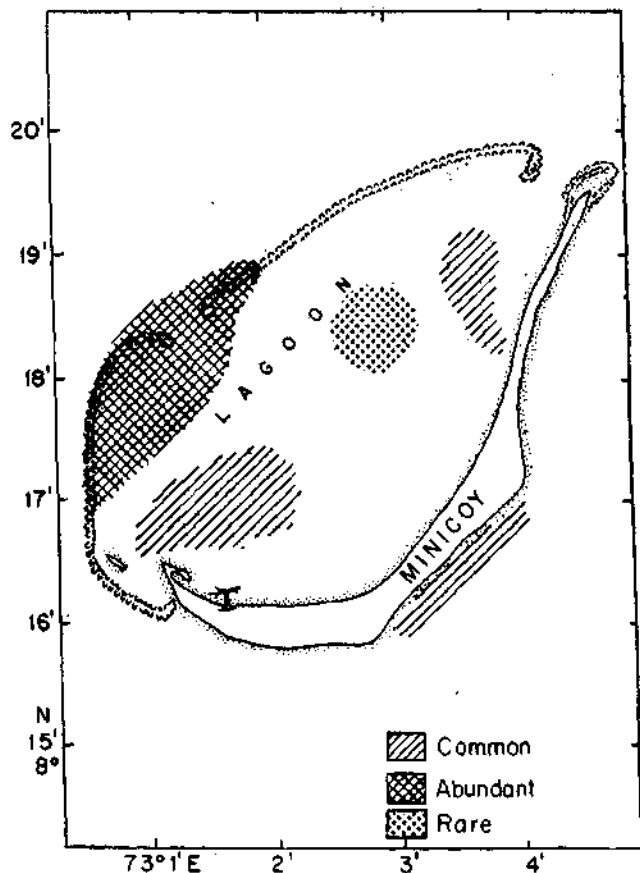


Fig. 14. Map of Minicoy island showing the distribution of ornamental fishes.

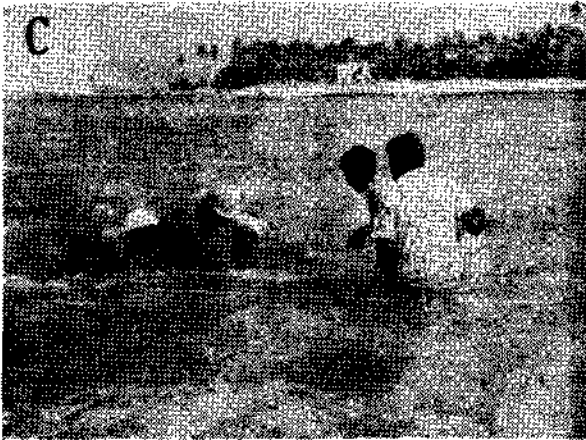


Fig. 15. A-D. Collection of fishes using encircling net in the lagoons. The drag net used in collection of fish in the reef flat.

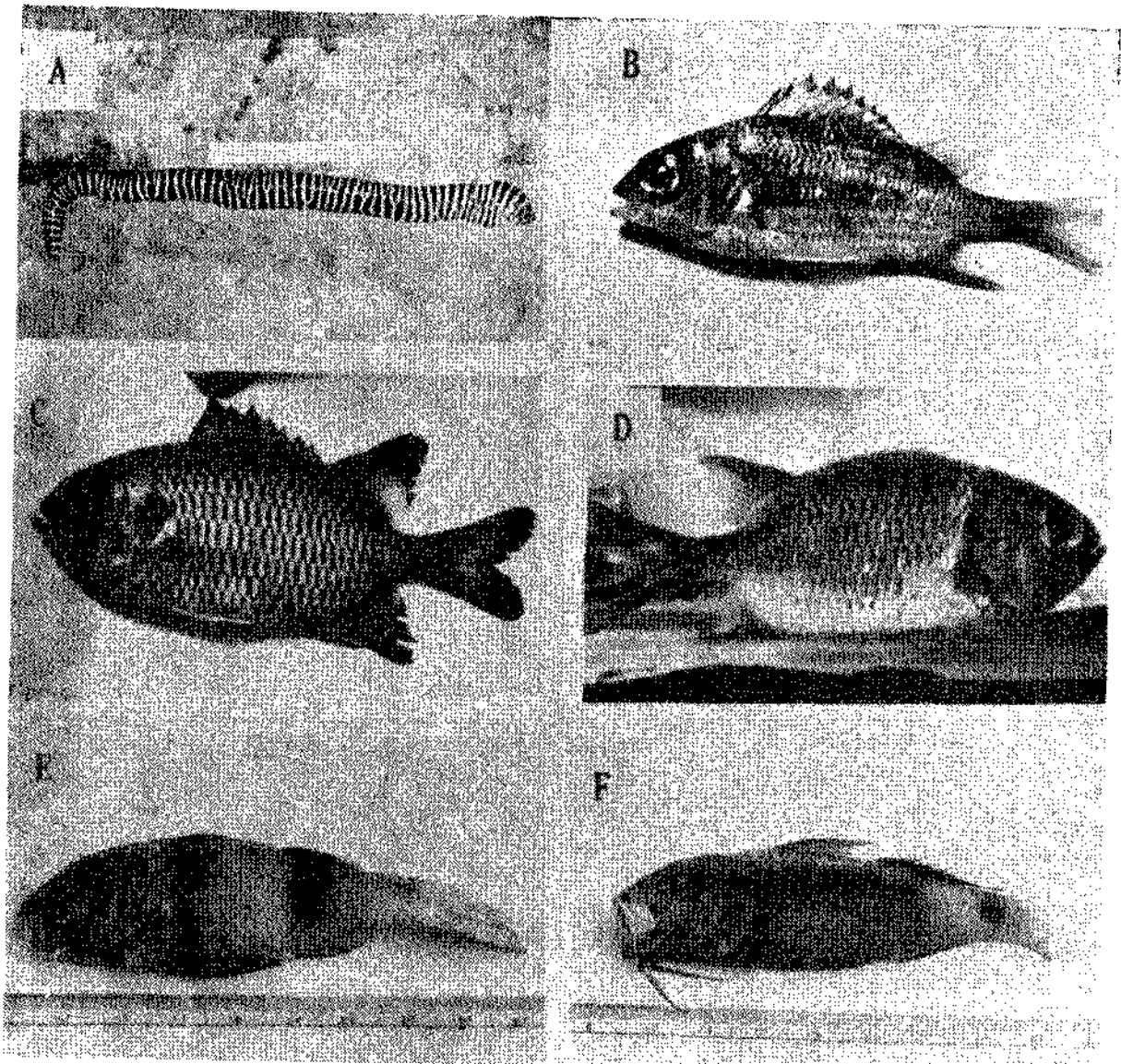


Fig. 16. A. *Echidna zebra*, B. *Holocentrus diadema*, C. *Myripristis adustus* D. *M. murdjan*, E. *Parupeneus bifasciatus*, F. *Pmacronemus*

c. Agati and Bitra have very rich resources of ornamental fishes as revealed by the total number and abundance of species followed by the group of four islands Kadmat, Chetlat, Kiltan and Amini. Agatti and Androth respectively are the richest and poorest islands in regard to the abundance of ornamental fish species. It is also clear that the western and northern group of islands are rich in ornamental fishes.

d. The abundant species are: *Abudefduf sordidus*, *A. sexfasciatus*, *A. cingulum*, *A. biocellatus*, *A. uniozellatus*, *A. xanthozona*, *A. zonatus*, *A. glaucus*, *Chromis caeruleus*,

C. ternatensis, *C. chrysurus*, *Dascyllus aruanus*, *Halichoeres scapularis*, *Stethojulis axillaris*, *S. strigiventer*, *S. albovittata*, *Thalassoma hardwickii*, *Labroides dimidiatus*, *Acanthurus triostegus*, *A. lineatus*, *Holocentrus diadema*, *Ostorhynchus novemfasciatus*, *O. endekataenia*, *Archamia fucata*, *Chaetodon auriga*, *Aspidcnotus tractus*, *Mulloidichthys samoensis*, *M. auriflamma*, *Pterois volitans* *Dendrochirus zebra*, *Rhineacanthus aculeatus* and *R. rectangulus*. All these fishes range in length from 2.5 cm to 22.0 cm. Some species of ornamental fishes collected from different islands are shown in Figs. 16-21.

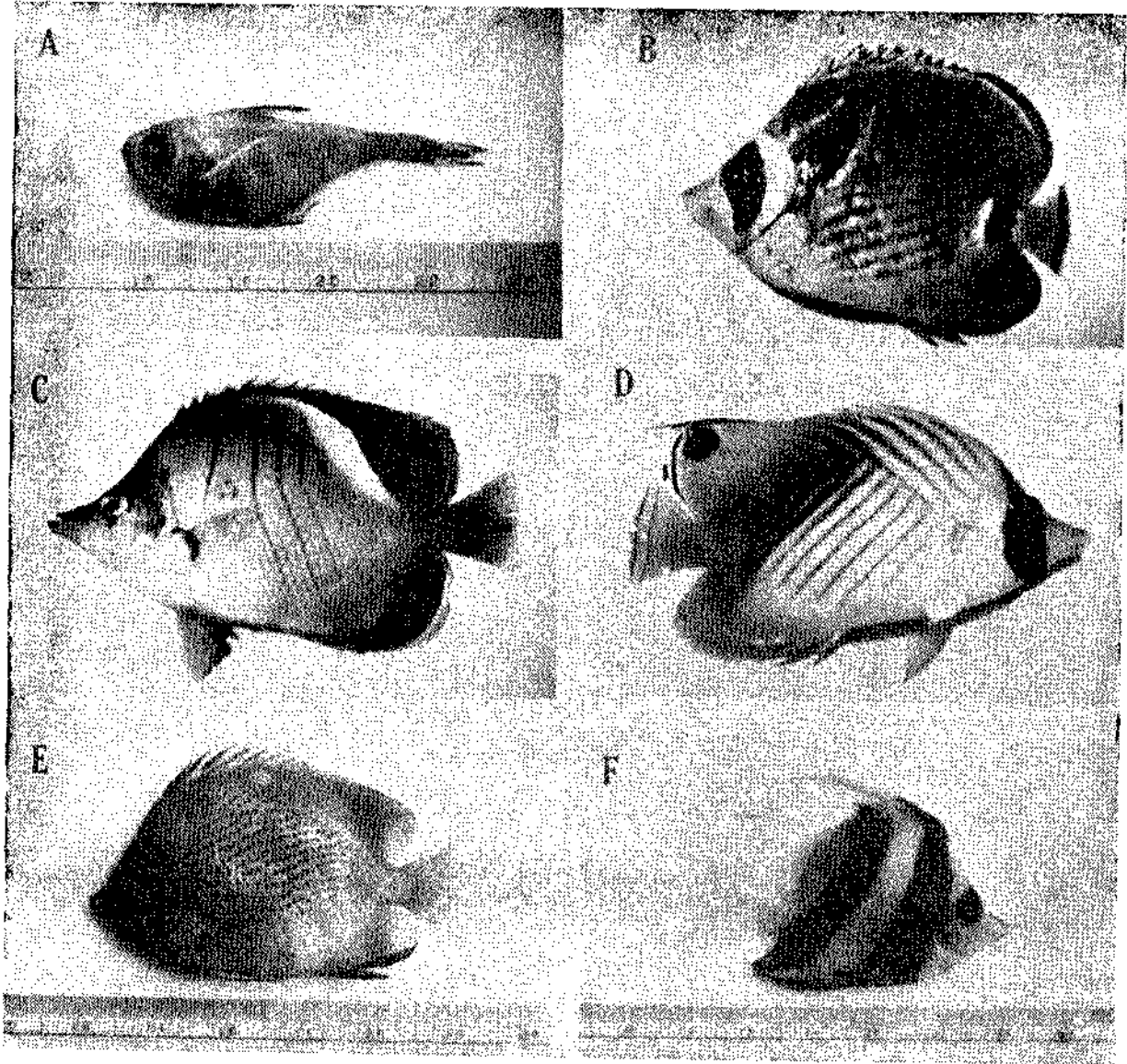


Fig. 17. A. *Pempheris owalensis*, B. *Chaetodon lunula*, C. *C. xanthocephalus*
D. *C. auriga*, E. *C. citrinellus*, F. *Heniochus acuminatus*

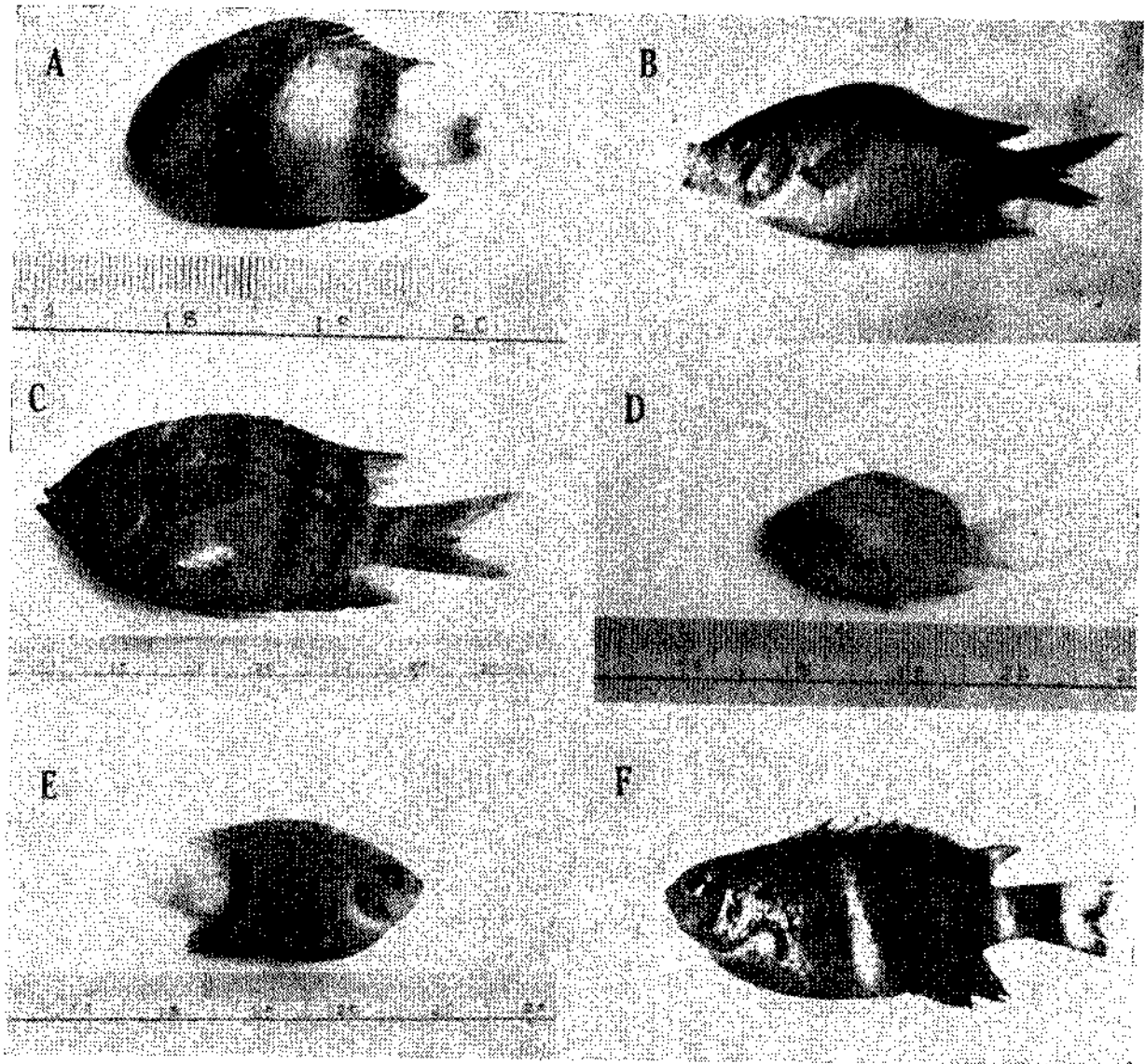


Fig. 18. A. *Dascyllus aruanus*, B. *Chromis caeruleus*, C. *Abudefduf saxatilis*
 D. *A. sordidus*, E. *A. dickii*, F. *A. xanthona*

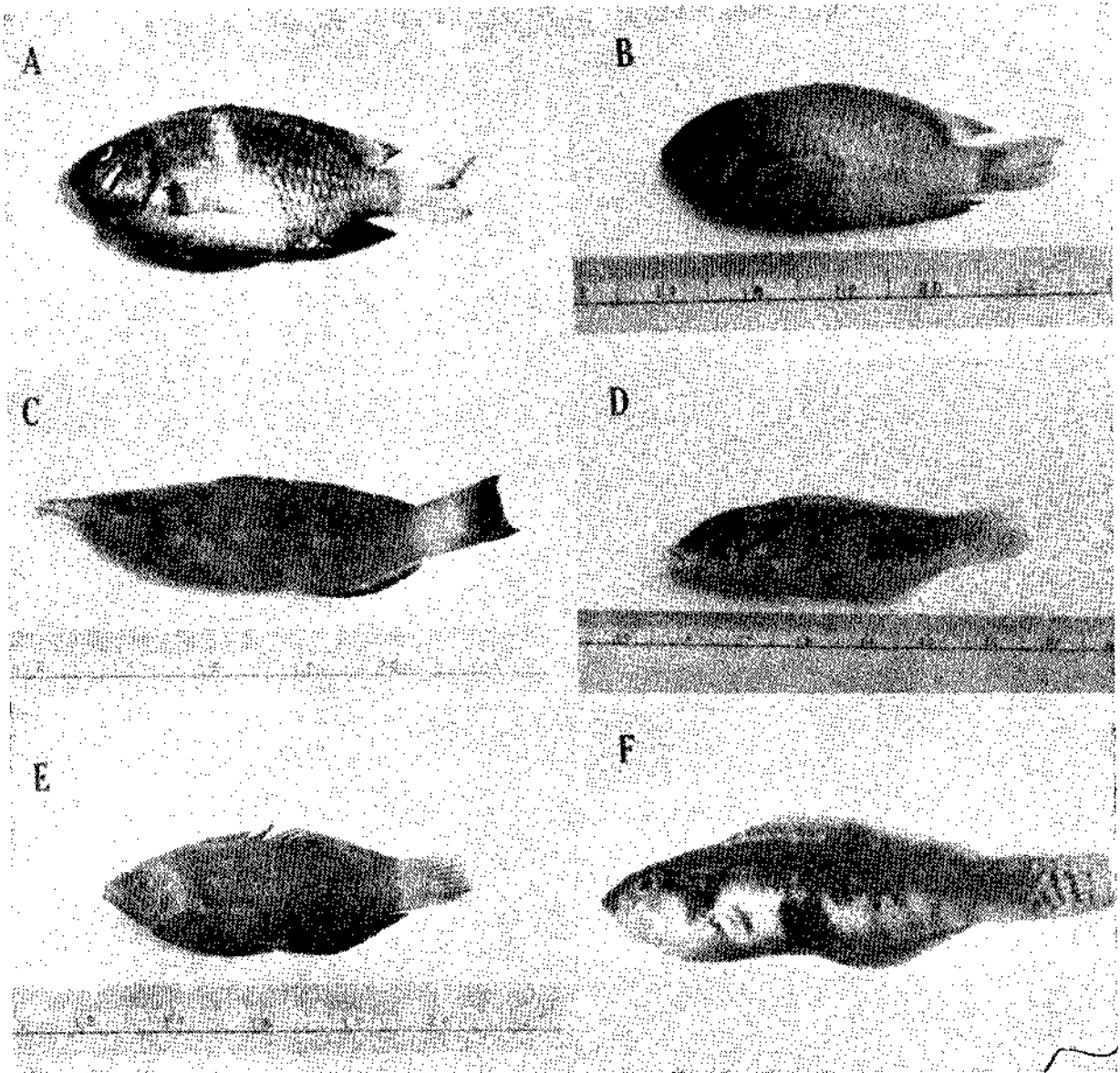


Fig. 19. A. *Abudefduf biocellatus*, B. *A. glaucus*, C. *Gomphosus vartus* D. *Halichoeres capularis*, E. *H. notopsis*, F. *H. kawarin*

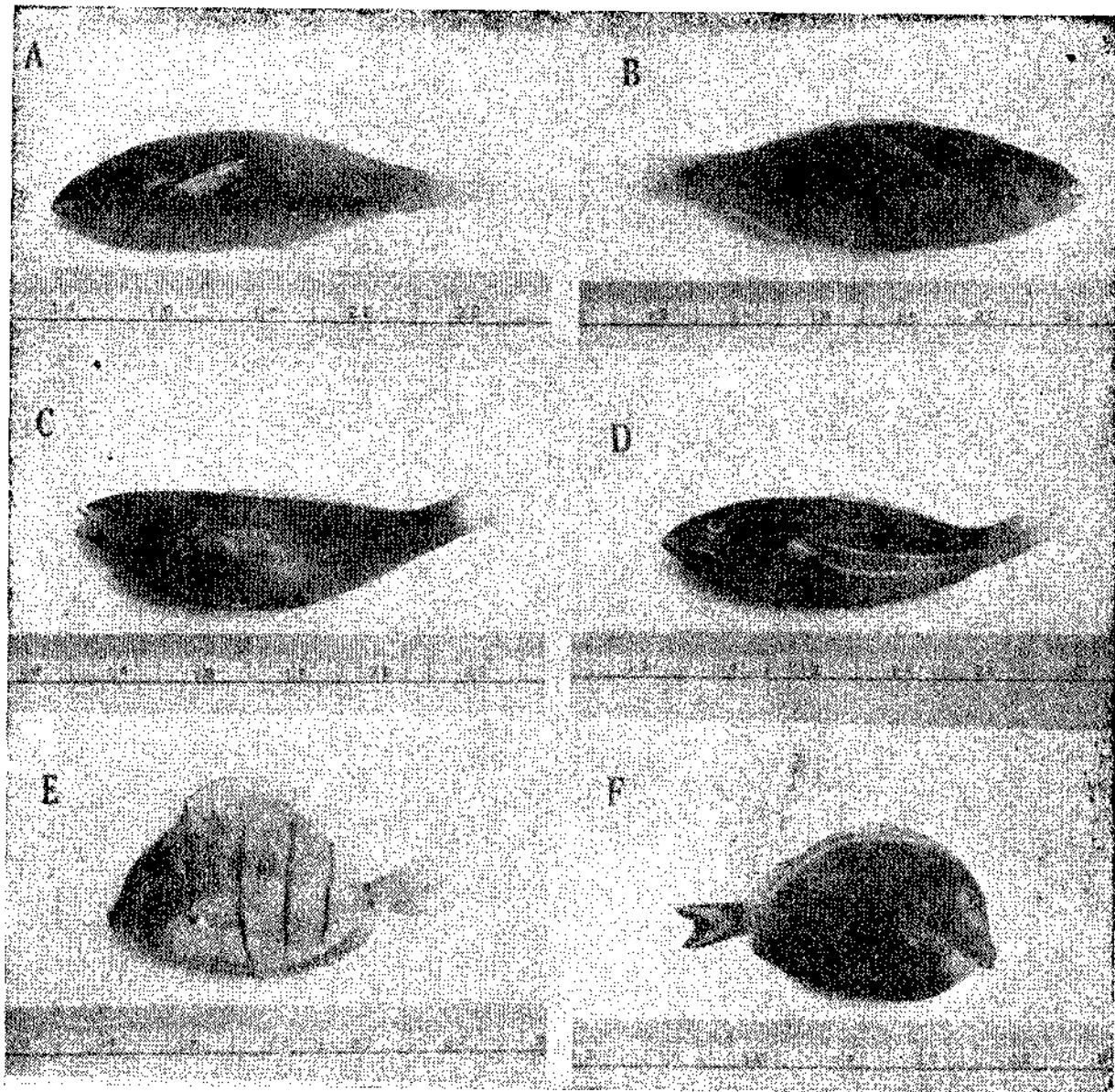


Fig. 20. A. *Stethojulis axillaris*, B. *S. phaekadopleur*, C. *S. Strigiventer* S. *albovittata*,
 E. *Acanthurus triostegus*, F. *A. leucosternon*

It is observed that labrids and calliodontids are abundant in areas where sea grass is abundant; thus the reef flat along the eastern side of Aminī these fishes are very abundant. Pomacentrids, particularly *Chromis caeruleus* and *Dasyllus aruanus* and some labrids are abundant in the lagoons where corals are abundant. Lagoons with sandy bottom are generally poor in ornamental fishes but goat fishes are available in considerable quantities during night time particularly in Kadmat and Chetal. Ornamental

fish fauna is also poor along the near-shore sandy portions of the lagoons. The reef flats are particularly rich in pomacentrids, serranids, holocentrids, acanthurids and in some islands labrids. The different species of eels are residents of crevices in the reef flats. Pomacentrids represented by *Abudefduf sordidus*, *A. saxatilis*, *A. sexfasciatus* and *A. glaucus* and chaetodontids, ostraciontids, canthigasterids and some acanthurids are abundant in areas under the Jettys and in areas protected by large rocks.

HABITAT OF IMPORTANT GROUPS

Fig. 21. A. *Acanthurus lineatus*, B. *A. maroides*, C. *Rhinecanthus aculeatus*, D. D. *R. rectangulus*, E. *Pterois volitans*, F. *Canthigaster margaritatus*

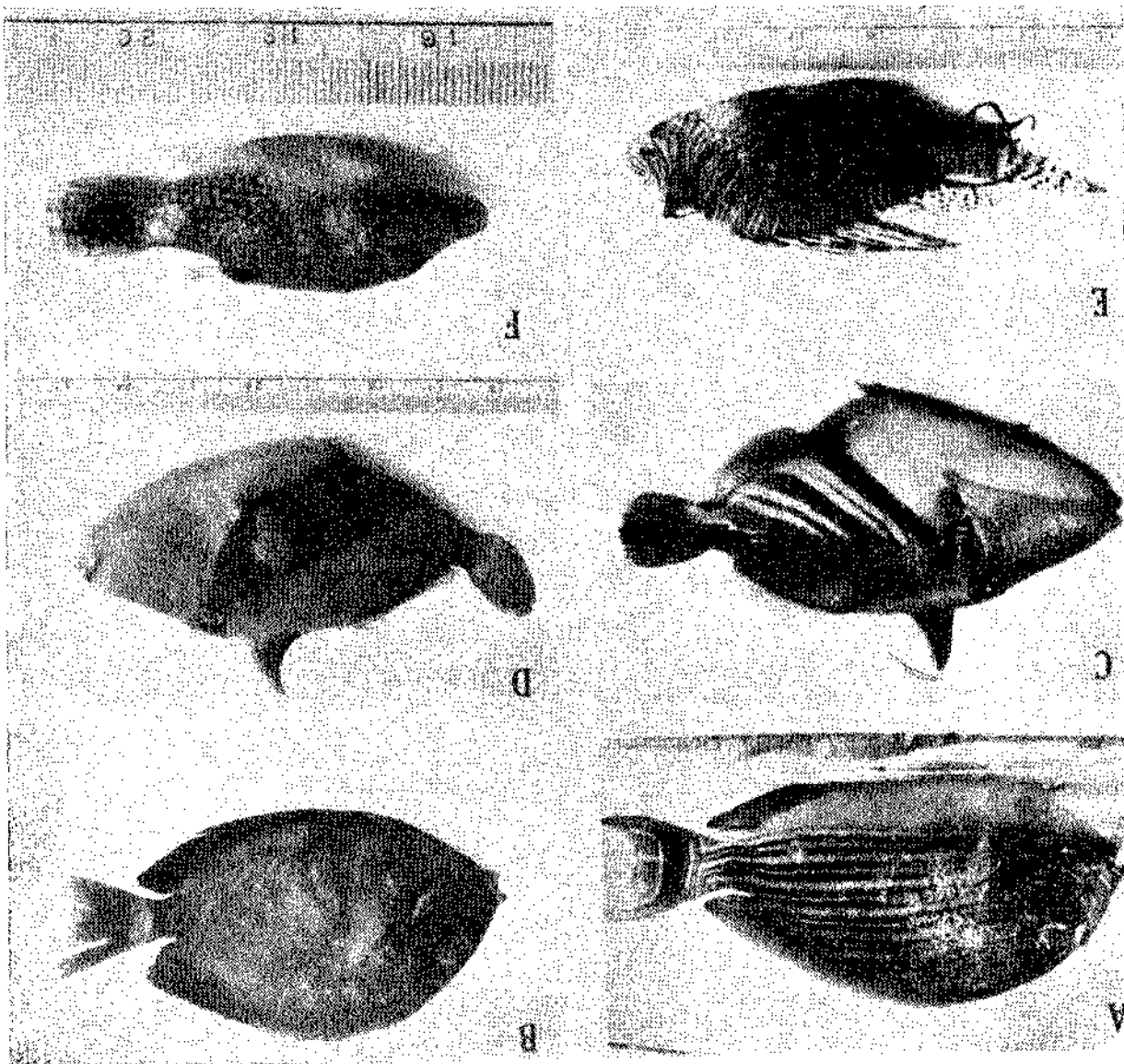


TABLE 1: List of ornamental fishes with information on relative abundance of each of them in the reef flats and lagoons of different islands.

Sl. No.	Family	Species	Chetlat	Kiltan	Kad-mat	Amini	Bitra	Thin-nakara	Ban-garam	Agatti	And-roth	Kava-ratti	Suheli	Kalpe-ni	Mini-coy
1	Muraenidae	<i>Echidna zebra</i>	X	—	—	—	—	—	—	—	—	—	—	—	—
2		<i>E. nebulosa</i>	—	—	—	XX	X	—	X	XX	—	X	X	—	—
3		<i>E. polyzona</i>	—	—	—	—	X	—	—	—	—	—	—	—	—
4		<i>Uropterygius marmoratus</i>	—	—	—	—	—	—	—	—	—	—	X	—	—
5		<i>Gymnothorax pictus</i>	XXX	—	—	X	XXX	X	X	X	X	X	X	—	—
6		<i>G. pseudothyrsoides</i>	—	—	—	XX	—	—	—	—	—	—	—	—	—
7		<i>G. pictus</i>	—	—	—	—	—	—	—	—	—	—	—	—	—
8		<i>G. fimbriatus</i>	—	—	—	—	XXX	XX	X	XXX	—	X	X	—	—
9		<i>G. petelli</i>	—	—	—	—	X	—	X	—	—	—	—	—	—
10	Ophichthyidae	<i>Myrichthys colubrinus</i>	—	—	—	—	X	—	—	X	—	—	—	—	—
11		<i>M. maculosus</i>	—	—	—	—	—	—	—	—	—	—	—	—	—
12		<i>Callechelys melanotaenia</i>	—	—	—	—	—	—	—	—	—	—	—	X	—
13		<i>Leiuranus semicinctus</i>	—	—	—	—	—	—	—	—	—	XX	XX	—	—
14	Fistulariidae	<i>Fistularia petimba</i>	—	—	XXX	—	X	XX	XXX	XXX	—	—	—	—	—
15	Syngnathidae	<i>Choeroichthys sculptus</i>	—	—	—	—	X	X	XX	XX	—	—	—	—	—
16		<i>C. intestualis</i>	—	—	—	—	XX	X	X	X	—	—	—	—	—
17	Holocentridae	<i>Holocentrus sammara</i>	XX	—	—	—	XX	—	X	XXX	—	—	—	XX	X
18		<i>H. diadema</i>	XXX	XXX	XX	X	—	—	—	—	—	—	—	—	X
19		<i>H. lacteoguttatum</i>	—	—	—	—	—	—	—	—	XX	—	—	—	—
20		<i>Myripristis adustus</i>	—	XX	—	X	—	—	—	—	—	—	—	—	—
21		<i>M. murdjan</i>	XX	—	XX	—	XX	XX	X	XX	—	—	—	—	—
22	Pseudogrammdae	<i>Pseudogramma polyacanthus</i>	—	—	—	—	X	X	XX	—	—	—	—	—	—
23	Plesiopidae	<i>Plesiops caeruleolineatus</i>	XX	—	X	—	XX	—	X	XX	—	—	—	—	—
24	Apogonidae	<i>Pristiapogon fraenatus</i>	XX	—	—	—	—	—	—	—	—	—	—	—	—
25		<i>P. snyderi</i>	—	—	—	—	—	—	—	—	—	—	—	X	—
26		<i>Ostorhynchus savayensis</i>	XX	—	—	—	—	—	—	—	—	—	—	—	—
27		<i>O. novemfasciatus</i>	XXX	—	—	XX	—	—	—	—	—	—	—	XX	X
28		<i>O. endakataenia</i>	—	—	—	—	XX	—	X	XXX	—	—	—	—	—

Sl. No.	Family	Species	Chetlat	Kiltan	Kadmat	Amini	Bitra	Thinna-kara	Ban-garam	Agatti	Androth	Kava-ratti	Suheli	Kal-peni	Mini-coy
29		<i>O. moluccensis</i>	—	—	—	—	—	—	—	—	—	X	X	—	—
30		<i>Archamia fucata</i>	—	—	xxx	—	—	—	—	xx	—	—	—	—	—
31		<i>Apogon leptacanthus</i>	—	—	—	—	xx	x	xx	xx	—	—	—	—	—
32		<i>Cheilodipterus lachneri</i>	—	—	—	—	x	—	—	—	—	—	—	—	—
33		<i>Paramia quinquelineata</i>	—	—	—	—	—	—	—	—	—	—	xx	—	—
34	Mullidae	<i>Upeneus tragula</i>	—	—	—	—	x	xx	xxx	xxx	—	—	—	—	—
35		<i>U. vittatus</i>	—	—	—	—	—	xx	xx	x	—	—	—	—	—
36		<i>U. arge</i>	—	—	—	—	—	xx	—	x	—	—	—	—	—
37		<i>Mulloidichthys samoensis</i>	—	—	xxx	—	—	—	—	—	—	—	—	—	xx
38		<i>M. auriflamma</i>	xxx	xxx	xxx	—	—	xx	—	xx	—	—	—	—	—
39		<i>Parupeneus barberinus</i>	xx	xx	xx	xx	xx	x	x	x	—	—	xx	x	—
40		<i>P. bifasciatus</i>	—	—	xx	x	—	—	—	—	—	—	—	—	—
41		<i>P. trifasciatus</i>	—	—	—	—	—	xxx	—	—	x	—	—	—	—
42		<i>P. macronemus</i>	—	—	xxx	—	—	—	x	xx	—	—	—	—	—
43	Pempheridae	<i>Pempheris ovalensis</i>	—	—	—	xx	—	—	—	—	—	—	—	—	—
44	Kyphosidae	<i>Kyphosus cinerascens</i>	—	—	—	—	—	x	x	—	—	—	—	—	—
45		<i>K. raigiensis</i>	—	—	—	—	x	—	x	—	—	—	—	—	—
46	Platacidae	<i>Platax orbicularis</i>	—	—	—	—	—	xxx	—	—	xxx	—	—	—	—
47		<i>P. tiera</i>	—	—	—	—	—	xxx	—	x	xx	—	—	—	—
48	Monodactylidae	<i>Monodactylus argenteus</i>	—	—	—	—	—	xx	—	—	x	—	—	—	—
49	Chaetodontidae	<i>Chaetodon lunula</i>	—	xx	—	—	—	—	—	—	—	—	—	—	—
50		<i>C. citrinellus</i>	—	xx	xx	—	—	—	—	—	—	—	—	—	—
51		<i>C. xanthocephalus</i>	—	xx	—	—	—	—	—	—	—	—	—	—	—
52		<i>C. auriga</i>	—	xx	—	x	xx	—	xx	xxx	x	x	—	—	—
53		<i>C. melanotus</i>	—	—	—	—	—	—	—	—	x	x	—	—	—
54		<i>C. meyeri</i>	—	—	—	—	—	—	xx	x	—	—	—	—	—
55		<i>C. trifasciatus</i>	—	—	—	—	—	—	—	xx	—	—	—	—	—
56		<i>Heniechus acuminatus</i>	—	xx	—	—	—	—	—	—	—	—	—	—	—
57	Pomacanthidae	<i>Pomacanthodes semicirculatus</i>	—	—	—	—	x	—	xx	—	—	—	—	—	—
58	Pomacentridae	<i>Amphiprion nigrepes</i>	—	—	—	—	—	—	x	x	—	—	—	—	—
59		<i>Lepidozygous tapeinosoma</i>	—	—	—	—	—	—	xx	xx	—	—	—	—	—
60		<i>Dascyllus aruanus</i>	xxx	xxx	xx	—	xxx	xx	x	xxx	—	—	—	—	xx xxx

Sl. No.	Family	Species	Chetlat	Kiltan	Kadmat	Amini	Bitra	Thinna-kara	Ban-garam	Agatti	Androth	Kava-ratti ₁	Suheli	Kal-peni	Mini-coy
61		<i>D. trimaculatus</i>	—	—	—	—	—	XX	XX	—	—	—	—	—	X
62		<i>D. reticulatus</i>	—	—	—	—	—	—	—	—	—	—	—	—	XX
63		<i>Chromis chrysurus</i>	—	XXX	—	—	—	—	X	XXX	XX	—	—	—	—
64		<i>C. caeruleus</i>	XX	XXX	XXX	—	XXX	XXX	XXX	XXX	XX	—	—	—	—
65		<i>C. ternatensis</i>	—	—	—	—	XXX	X	XXX	XXX	XXX	—	—	—	—
66		<i>Pomacentrus nigricans</i>	X	—	XXX	—	—	—	—	XX	—	—	—	—	—
67		<i>P. littoralis</i>	—	—	—	X	X	—	—	XX	—	—	—	—	—
68		<i>Abudefduf saxatilis</i>	—	XX	XX	XX	—	—	—	—	—	—	—	—	—
69		<i>A. sexfasciatus</i>	XXX	XXX	—	—	—	—	—	XX	—	—	—	—	—
70		<i>A. sodidus</i>	XXX	XX	—	—	—	—	—	—	—	—	—	—	—
71		<i>A. septemfasciatus</i>	XX	—	XX	—	—	—	—	—	—	—	XX	—	—
72		<i>A. cingulum</i>	XXX	—	—	—	X	—	X	—	—	—	—	—	—
73		<i>A. dickii</i>	—	—	XX	—	—	—	—	—	—	—	—	—	—
74		<i>A. biocellatus</i>	XXX	—	—	—	—	—	—	—	X	—	—	—	—
75		<i>A. uniocellatus</i>	XXX	XX	XXX	X	—	—	—	—	—	—	—	—	X X
76		<i>A. xanthozone</i>	XXX	—	—	—	—	—	—	—	X	—	—	—	—
77		<i>A. zonatus</i>	XXX	—	XX	XX	XX	X	—	—	X	—	—	—	—
78		<i>A. glaucus</i>	XXX	XXX	XXX	XX	—	—	—	—	X	—	—	—	—
79		<i>A. bengalensis</i>	—	—	—	—	—	—	—	—	X	—	—	—	—
80	Labridae	<i>Gomphosus varius</i>	—	XX	—	—	—	—	XX	X	—	—	—	—	—
81		<i>G. caeruleus</i>	—	—	—	—	X	—	—	X	—	—	—	—	—
82		<i>Cheilio inermis</i>	—	—	—	—	—	—	—	—	—	XX	—	—	—
83		<i>Halichoeres scapularis</i>	XXX	—	—	—	—	X	XX	—	—	—	—	XX	X
84		<i>H. notopsis</i>	—	XX	—	—	—	—	—	—	—	—	—	—	—
85		<i>H. kawarin</i>	—	—	XX	XX	X	X	XX	—	—	—	—	—	—
86		<i>H. centriquadrus</i>	—	—	—	—	—	—	—	—	—	XX	—	XX	—
87		<i>Stethojulis axillaris</i>	XXX	XXX	XX	XXX	XX	XX	X	XX	—	XX	XX	XX	—
88		<i>S. strigivener</i>	—	—	XXX	XXX	—	—	—	—	—	—	—	—	—
89		<i>S. trilineata</i>	—	XX	—	—	—	—	—	—	—	—	—	—	—
90		<i>S. albovittata</i>	XXX	XX	XX	—	—	—	—	—	—	—	—	—	XX

Sl. No.	Family	Species	Chetlat	Kiltan	Kadmat	Amini	Bitra	Thin-nakara	Ban-garam	Agatti	And-roth	Kava-ratti	Suheli	Kalpe-ni	Mini-coy
91		<i>S. phaekadopleura</i>	—	—	—	—	XX	X	—	X	—	—	—	—	X
92		<i>Thalassoma amblycephalus</i>	—	—	XX	—	—	—	—	—	—	—	XX	—	—
93		<i>T. hardwicki</i>	—	—	—	—	XX	XX	X	XXX	—	—	—	—	—
94		<i>T. quinquivittata</i>	—	—	—	—	—	—	—	—	—	—	—	XX	—
95		<i>Labroides dimidiatus</i>	—	—	—	—	X	X	—	XX	XX	XXX	XX	XXX	XX
96		<i>Macropharyngodon meligris</i>	—	—	—	—	XX	XX	—	X	—	—	—	—	—
97		<i>Cheilinus chlorurus</i>	—	—	—	—	XX	—	X	—	—	—	—	—	—
98		<i>C. trilobatus</i>	—	—	—	—	—	X	—	XX	—	X	—	XX	X
99		<i>Cymolutes lecluse</i>	—	—	—	—	—	—	XX	X	—	—	—	—	—
100		<i>Novaculichthys taeniourus</i>	—	—	—	—	—	—	—	—	—	—	—	X	—
101	Callyodontidae	<i>Cryptotomus spinidens</i>	—	—	—	—	—	—	—	XX	—	—	—	—	—
102		<i>Callyodon taeniurus</i>	—	—	—	—	—	XX	XX	XX	—	—	—	X	—
103		<i>C. harid</i>	—	—	XX	—	—	—	—	—	—	—	—	—	—
104		<i>C. bataxiensis</i>	—	XX	XX	—	—	—	—	—	—	—	—	—	—
105		<i>C. sexvittatus</i>	X	—	—	—	—	—	—	—	—	—	—	—	—
106		<i>C. ghobban</i>	—	—	—	—	—	—	—	—	—	X	—	—	—
107	Parapercidae	<i>Parapercis hexophthalma</i>	—	—	—	—	—	—	—	—	—	XX	—	—	—
108	Blennidae	<i>Aspidonotus tractus</i>	—	—	XXX	—	XX	X	—	—	—	—	—	—	—
109		<i>Petroscirtes pindae</i>	—	—	XX	—	—	—	—	—	—	—	—	—	—
110		<i>Istiblennius edentulus</i>	XX	XX	XX	—	—	—	—	—	—	—	X	—	—
111	Zanclidae	<i>Zanclus cornutus</i>	—	—	—	—	—	—	—	—	X	X	—	XX	X
112	Acanthuiidae	<i>Ctenochaetus strigosus</i>	—	XX	—	—	—	—	—	—	—	—	—	—	—
113		<i>Acanthurus triostegus</i>	XXX	XXX	XXX	XX	XX	XX	X	XXX	X	XX	X	X	X
114		<i>A. leucosternon</i>	X	—	—	—	—	XX	X	—	X	XX	X	X	XX
115		<i>A. lineatus</i>	XX	XX	XXX	X	—	—	—	—	—	—	—	—	—
116		<i>A. matoides</i>	—	XX	—	—	—	—	—	—	—	—	—	—	—
117		<i>A. elongatus</i>	XX	—	—	—	—	—	—	—	—	—	—	—	—
118	Electridae	<i>Electroides sexguttatus.</i>	—	XX	—	—	—	—	—	—	—	—	XX	—	—
119	Gobiidae	<i>Acentrogobius ornatus</i>	—	XX	—	—	—	—	—	—	—	—	—	—	—
120	Scorpaenidae	<i>Pterois volitans</i>	—	—	xx	x	xx	—	—	xxx	—	—	—	—	—

Sl. No.	Family	Species <i>P. antennate</i>	Che-llat	Kittan	Kad-mat	Amini	Bitra	Thinna-kara	Banga-ram	Agatti	And-roth	Kava-ratti	Suheli	Kal-peni	Mini-Coy
121		<i>Scorpaenodes guamensis</i>	—	—	—	—	XX	—	—	X	—	—	—	—	—
122		<i>Dendrochirus zebra</i>	—	—	—	—	X	XX	X	XX	—	—	—	—	—
123		<i>Sebastapistes strongia</i>	—	—	—	—	XX	X	X	XXX	—	—	—	—	—
124		<i>Caracanthus unipinnus</i>	—	—	—	X	—	—	—	—	—	—	—	—	—
125	Caracanthidae	<i>C. maculatus</i>	—	—	—	—	—	—	—	—	—	—	—	XX	—
126		<i>Rhineacanthus aculeatus</i>	—	—	—	—	—	—	—	—	—	—	—	XX	—
127	Balistidae	<i>R. rectangulus</i>	X	—	—	X	—	X	XXX	XX	—	XXX	XXX	XXX	XX
128		<i>Balistoides viridescens</i>	XX	—	—	—	XX	X	XX	XXX	—	—	—	—	—
129		<i>Melichthys niger</i>	—	—	—	—	—	—	—	—	—	—	—	XX	—
130		<i>Ostracion tuberculatus</i>	—	—	—	—	—	—	—	—	—	—	XX	—	—
131	Ostracanthidae	<i>Lophodiodon calori</i>	—	XX	—	—	—	—	—	—	—	—	—	—	—
132	Diodontidae	<i>Canthigaster margaritotus</i>	X	XX	—	X	XX	XX	X	XX	—	—	—	—	—
133	Canthigasteridae	<i>Sphaeroides hypselogeneion</i>	—	X	X	—	—	—	—	—	—	—	—	—	—
134	Lagocephalidae	<i>Tetraodon nigropunctatus</i>	XXX	—	—	—	—	—	—	—	—	—	—	—	—
135	Tetrantodontidae	<i>T. meleagris</i>	—	—	—	XX	X	—	—	—	—	—	—	—	—
136		<i>T. hispidus</i>	—	—	—	XX	X	X	X	—	—	—	—	—	—
137		<i>Antennarius chironectes</i>	—	—	—	—	—	—	—	—	—	—	X	—	—
138	Antennariidae	<i>A. coccineus</i>	—	—	—	—	—	—	—	—	—	—	XX	—	—

XXX : Abundant; XX : Common; K : Rare - not seen

REMARKS

The survey as mentioned above was conducted during a short period of three months and thirteen islands were covered during the survey. The results are very useful for an appraisal of the availability of different species of ornamental fishes in different islands and for planning a comprehensive future research on the resources of ornamental fishes of different islands. The data collected, however, are not sufficient for estimation of resource potential of these fishes. In this connection the following points need consideration:

- i. The information on population characteristics is restricted to one or two species that too from Minicoy only. There is also no information on seasonal variations of important species. There is therefore need to study various aspects of biology of dominant species of ornamental fishes from different islands to enable a detailed study of stock assessment of these fishes. Initially, the study should be undertaken for at least two years to enable advice on the exploitation pattern.
- ii. Presently the exploitation of ornamental fishes is only on a sustenance basis and there is no organised exploitation for commercial purpose. Since the ornamental fishes are associated with corals and associated fauna and flora in the islands, any exploitation on a commercial scale can result in destruction of the environment which in turn can also eventually affect the fish populations inhabiting these areas. Further, since the areas are easily accessible, the exploitation of reef fishes is likely to quickly lead to depletion of stocks and therefore utmost caution has to be exercised before planning exploitation and export trade of ornamental fishes. Fishing with traps is suitable for ornamental fishes; this is not likely to lead to destruction of habitat and therefore can be encouraged. However exploitation of ornamental fish species from the lagoons and reef flats can be undertaken on a smaller scale, and the same should be closely monitored.

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