JOURNAL
OF THE EAST AFRICA NATURAL HISTORY
SOCIETY AND NATIONAL MUSEUM

10th October 1972 No. 137

# PRELIMINARY CHECKLIST OF LAGOONAL FISHES OF DIANI, KENYA

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The area surveyed lies at the northern end of Diani Beach and is intersected, approximately, by 39°35'E longitude and 4°17'S latitude. It forms a rectangle about 1000×500 m, the longer sides being bounded by the shoreline and the outer edge of the reef platform exposed at low-water levels. The lagoon or reef flat is 500 m wide. The southern portion of the shoreline is of fine coral sand, the northern consists of old eroded coral rock subject to seasonal sand movement, which may engulf many of the rocky pools.

Within this area is a great variety of littoral, lagoonal and reef platform habitats; these, diagrammatically illustrated in fig.1, may be summarised briefly as follows:

| | | |
|---|---|---|
| Littoral | (1) | sandy shore |
| | (2) | rocky shore with associated pools |
| Lagoonal | (3) | sandy bottom |
| | (4) | *Cymodocea* and other marine grass meadows |
| | (5) | rocky outcrops, often with more or less extensive coral growths; coral heads |
| | (6) | old inner reefs, usually exposed at low tide, surrounded by rock debris |
| | (7) | channels, draining into reef channels at low tides |
| | (8) | rocky debris, inshore of reef platform |
| Reef platform | (9) | pools, of varying size |
| | (10) | reef channels connecting the lagoon to the sea, known locally as *milango*. |

Recordings were made at low tides between November 1970 and February 1971, and again in December 1971, and the list therefore relates more specifically to species present during the north-east monsoon period. About one third of the species listed were caught in small handnets and kept in an aquarium for two or three days while identification was made; they were subsequently returned to their specific habitats. For the remainder, identification was by underwater observation only, and this occasionally presented obvious problems in identity. A question mark in the text indicates where identity of genus or species is open to question.

The Diani lagoon is typical of the shallow type, as opposed to the appreciably deeper lagoon type such as occurs in the Watamu Marine National Park. Consequently, there is an absence of coral gardens, and nowhere is there an abundance of coral growths.

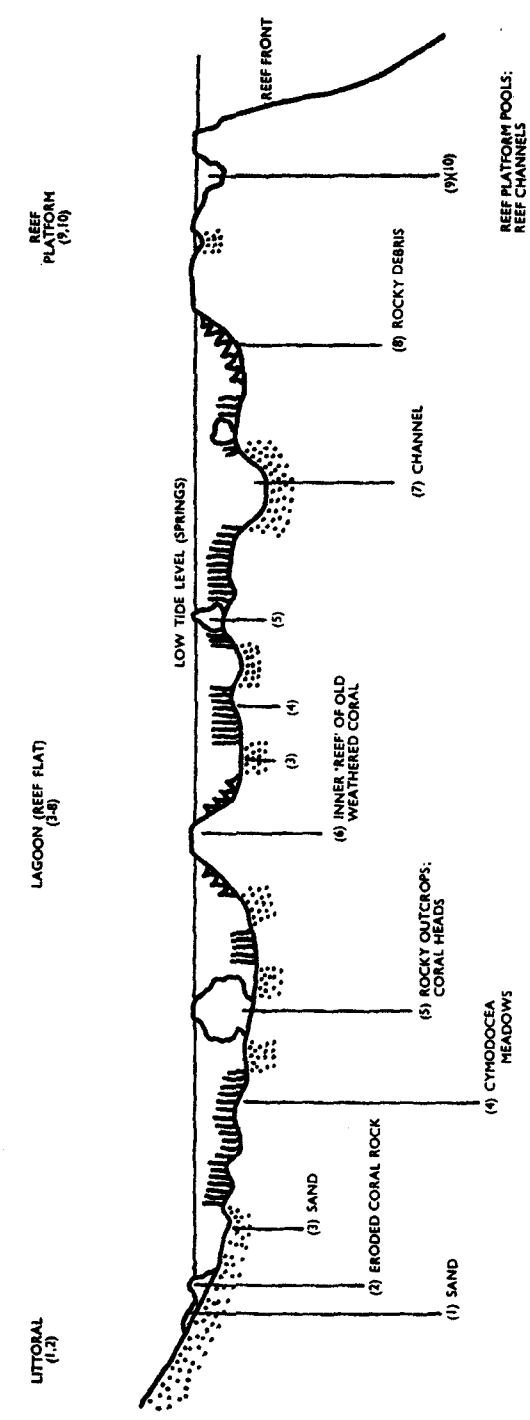


*Fig. 1 Diagrammatic cross-section of the lagoon at North Diani*

Vertical scale exaggerated. The relative extent of the various ecological zones varies considerably in different transects.

This is significantly reflected by the extreme paucity of species of parrot fish (Callyodontidae) and by the relatively low species density of butterfly fish (Chaetodontidae). In contrast, species of the families Pomacentridae, Labridae and Apogonidae are abundant, which indicates favourable habitats for these.

The checklist can only be described as preliminary: observations were confined to low tides occurring during daylight hours, and no attempt was made to poison pools or lagoonal areas in order to make a complete species census. It is therefore certain that many more species, particularly of such families as the Labridae, Muraenidae, Scorpaenidae, Gobiidae, Salariidae, Blennidae and Eleotridae, will be added. In spite of this, the 137 species catalogued from an area approximately 0.5 square kilometer is indicative of the extremely rich fauna inhabiting the shallow lagoons of the Kenya reef.

In the checklist, the numbers entered subsequent to the species refer to the numbers given to the serially described habitats in which the species was most often observed. Special habitats not referred to above, such as the occurrence of *Amphiprion ephippium* in the sea anemone *Stoichactys*, are referred to individually in the list. Similarly, the letters give an indication of whether the species occurred commonly in moderately high population densities (C); fairly commonly, but generally less abundantly (P); or was encountered infrequently (R).

The author citations for species were taken from Smith & Smith (1963).

CHIROCENTRIDAE
*Chirocentrus dorab* (Forsk) lagoonal (P)
CLUPEIDAE
*Sardinella melanura* (Cuv), lagoonal, seasonal, in vast shoals
PLOTOSIDAE
*Plotosus arab* Blkr, (9, P, juveniles in shoals)
SYNODIDAE
*Synodus variagatus* Lac, (3, C)
HEMIRAMPHIDAE
*Hemiramphus ? far* Forsk, surface waters of lagoon (P)
TYLOSURIDAE
*Tylosurus crocodilus* Les, surface waters of lagoon (C)
HOLOCENTRIDAE
*Holocentrus diadema* Lac, (5, 9, C)
*H. sammara* Forsk (5, 9, C)
*Myripristis pralinus* C+V, (5, 9, C)
SOLEIDAE
*Pardachirus marmoratus* (Lac) (3, P)
SYNGNATHIDAE
*Corythoichthys fasciatus* (Gray) (3, 4, 5, C)
AULOSTOMIDAE
*Aulostomus valentini* Blkr, (5, R)
FISTULARIDAE
*Fistularia petimba* (Lac) (4, R)
SOLENOSTOMIDAE
*Solenostomus ? cyanopterus* Bleck, (4, R)
CIRRHITIDAE
*Cirrhitichthys aprinus* (C+V), (8, R)
*Paracirrhites forsteri* (Bl-Schn), (8, R)
TERAPONIDAE
*Terapon jarbua* (Forsk) (2, C)
DULEIDAE
*Dules taeniurus* C+V, (2, P)
SERRANIDAE
*Epinephelus macrospilus* (Blkr), (10, R)
*E. merra* (Bloch), (8, R)
*Grammistes sexlineatus* (Thunb), (5, 6, 8, 9, C)

APOGONIDAE
*Apogon nigripes* Plfr (4, C)
*A. semiornatus* Peters (4, R)
*Apogonichthyoides nigripinnis* C+V (4, 6, P)
*Cheilodipterus artus* Smith (4, 5, 6, C)
*Ostorhinchus angustatus* Smith (4, 5, 6, C)
*O. cyanosoma* (Blkr) (4, 5, 6, C, often among sea urchin spines)
*O. fleurieu* Lac (5, P)
*O. savayensis* (Gnthr.) (2, 5, 6, C)
*Paramia quinquelineata* (C+V) (4, 6, C, often among sea urchin spines)
*Pristiapogon frenatus* (C+V) (4, 5, C)
CARANGIDAE
*Gnathanodon speciosus* (Forsk). lagoon generally, juveniles only, R
MULLIDAE
*Pseudupeneus macronema* (Lac) (3, 6, C)
PLATACIDAE
*Platax pinnatus* (Linn) (2, P, juveniles only)
MONODACTYLIDAE
*Monodactylus argenteus* Linn (5, P)
POMACANTHIDAE
*Centropyge multispinis* (Plfr) (5, C)
*Pomacanthodes chrysurus* (C+V) (5, 6, R, juveniles only)
*P. imperator* (Bloch) (5, 6, R, juveniles only)
*P. striatus* (Rupp) (2, 5, 6, R, juveniles only)
*Pomacanthops semicirculatus* (C+V) (5, 6, R, juveniles only)
*Pygoplites diacanthus* (Boddaert) (5, one record only)
CHAETODONTIDAE
*Chaetodon auriga* Forsk (3, 4, 5, 6, 7, C)
*C. guttatissimus* Benn (5, one record only)
*C. leucopleura* Plfr (7, R)
*C. lunula* (Lac) (juveniles 2, 5, adults 9, 10, C)
*Heniochus acuminatus* C+V (5, R)
ACANTHURIDAE
*Acanthurus leucosternon* (Benn) (9, 10, C)
*A. lineatus* Linn (10, C)
*A. triostegus* (Linn) (7, 8, 9, 10, C)
*A. xanthopterus* C+V (5, 10, P)
*Zebrasoma flavescens* (Benn) (9, 10, R)
*Z. veliferum* (Bloch) (5, P)
ZANCLIDAE
*Zanclus cornutus* (Linn) (5, 9, 10, P)
LEIOGNATHIDAE
*Leiognathus equula* (Forsk) (lagoonal, seasonal, dense shoals)
KYPHOSIDAE
*Kyphosus vaigiensis* (Q & G) (5, R)
PEMPHERIDAE
*Pempheris oualensis* C+V (5, 9, C, in shoals)
LUTIANIDAE
*Lutianus fulviflamma* (Forsk) (2, 4, 6, 8, C)
*L. johni* (Bloch) (4, 5, C)
*L. kasmira* (Forsk) (4, 5, 6, P)
*Macolor niger* (Forsk) (5, juveniles only, R)
GATERINIDAE
*Gaterin flavomaculatus* (Ehren) (3, 4, 7, C)
*G. orientalis* (Bloch) (3, 4, 7, P)
*G. playfairi* (Pell) (3, 4, 7, R)
POMACENTRIDAE
*Abudefduf annulatus* (Peters) (6, 8, C)
*A. cingulum* (Klunz) (6, 8, C)
*A. lachrymatus* (Q+G) (5, P)
*A. saxatilis* (Linn) (2, 8, 9, C)
*A. septemfasciatus* (C+V) (2, 8, 9, C)
*A. sexfasciatus* (Lac) (2, 8, 9, C)
*A. sparoides* (C+V) (2, 9, C)
*A. xanthozonus* (Blkr) (6, 8, C)

*Amphiprion ephippium* (Bloch) (in sea anemones, C)
*Chromis dimidiatus* (Klunz) (5, 9, P)
*C. nigrurus* Smith (5, 9, R)
*Dascyllus aruanus* (Linn) (5, C)
*D. trimaculatus* (Rupp) (juveniles in sea anemones, adults 5, C)
*Pomacentrus pavo* (Bloch) (5, C)
*P. pulcherrimus* Smith (5, 9, 10, C)
*P. taeniurus* Blkr (5, R)
*P. tripunctatus* (C+V) (9, 10, C)

LABRIDAE
*Anampses meleagrides* C+V (10, P)
*Cheilinus trilobatus* Lac (juveniles, 4, R)
*Cheilio inermis* (Forsk) (three colour forms, 4, C)
*Coris africana* Smith (4, 9, 10, P)
*C. angulata* Lac (4, 9, 10, P)
*C. caudimacula* Q+G (4, 9, 10, C)
*C. formosa* Benn (4, 9, 10, P)
*Gomphosus caeruleus* Lac (10, R)
*G. varius* Lac (5, 9, 10, C)
*Halichoeres centriquadrus* (Lac) (5, 9, C)
*H. kawarin* Blkr (5, 9, C)
*Labroides dimidiatus* C+V (5, 8, 9, 10, C)
*Novaculichthys taeniourus* (Lac) (3, 4, R)
*Stethojulis axillaris* (Q+G) (5, 9, C)
*Thalassoma hebraicum* (Lac) (5, 9, C)
*T. lunare* (Linn) (5, 9, C)

CALLYODONTIDAE
*Xanothon margaritus* (Cartier) (3, 5, R)

MUGILIDAE
*? Valamugil seheli* (Forsk) (juveniles only, 2, R)

SPHYRAENIDAE
*Sphyraena ?jello* C+V (juveniles only, 2, R)

SIGANIDAE
*Siganus oramin* (Bl-Schn) (10, P)

GOBIIDAE
*Acentrogobius reichei* (Blkr) (2, C)
*Gobiodon rivulatus* (Rupp) (in coral only, C)

BLENNIDAE
*Meiacanthus mossambicus* Smith (5, P)
*Omobranchus mekranensis* (Rgn) (2, P)
*Runula rhinorhyncos* (Blkr) (5, 9, C)

SALARIIDAE
*Exallias brevis* (Kner) (9, R)
*Istiblennius andamanensis* (Day) (2, C)
*I. bellus impudens* Smith (2, C)
*I. edentulus* (BI-Schn) (2, C)

SCORPAENIDAE
*Pterois volitans* (Linn) (5, 9, C)
*Pteropterus antennata* (Bloch) (5, 9, C)
*P. radiata* (C+V) (5, 9, P)
*? Scorpaenodes* spp. (5, 9, C)

PLATYCEPHALIDAE
*Platycephalus ? grandidieri* (Sauv) (3, R)

OPHICHTHIDAE
*Myrichthys colubrinus* (Bodd) (3, 4, 8, C)
*M. maculosus* (C+V) (3, 4, 8, R)

MURAENIDAE
*Echidna nebulosa* (Ahl) (5, 6, 8, 10, C)
*E. zebra* (Shaw) (6, 8, R)
*Lycodontis* spp. (5, 6, 8, 10, C)
*Siderea* spp. (5, 6, 8, 10, C)

MONACANTHIDAE
*Amanses fronticinctus* (Gnthr) (6, 8, R)
*Paraluteres prionurus* Blkr (6, 8, R)

BALISTIDAE
*Rhinecanthus aculeatus* (Linn.) (5, 6, 8, C)
*R. rectangulus* (Schn) (5, 6, 8, R)
OSTRACIIDAE
*Lactoria cornuta* (Linn) (5, 6, 8, 9, P)
*L. fornasini* (Bianconi) (5, 6, 8, 9, R)
*Ostracion lentiginosum* (Bloch) (5, R)
*O. tuberculatus* (Linn) (5, P)
DIODONTIDAE
*Diodon hystrix* Linn (4, 6, 9, C)
TETRAODONTIDAE
*Arothron* sp. (4, one record only)
CANTHIGASTERIDAE
*Canthigaster bennetti* (Blkr) (5, 6, 8, 9, (C)
*C. janthinopterus* (Blkr) (5, 6, 8, 9, R)
*C. margaritatus* (Rupp) (5, 6, 8, 9, P)
*C. valentini* (Blkr) (5, 6, 8, 9, C)
ANTENNARIIDAE
*Antennarius ? chironectes* Lac (5, 6, 8, P)
*A. ? oligospilos* Blkr (5, 6, 8, R)
*Histrio histrio* (Linn) (5, 6, 8, R)

## REFERENCES

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(Received 14th March, 1972)