

A POPULAR GUIDE TO SOME OF THE FISHES OF THE CORAL REEF.

BY HUGH COPLEY.

By fishes of the Coral Reef is meant those fish which inhabit and have their environment in or about the coral reef and are found in water from a foot or two to fifteen fathoms deep. There are many fishes not described in this guide which are rare, or will be described in a future publication dealing with the sporting and economic fish of our coastline. That does not mean to say the fish now to be described are not edible—for many are—but generally speaking not one described could be called a "market fish", in the accepted term of the phrase. Some even are poisonous if eaten, others are poisonous at certain periods of the year whilst still others have poisonous roes.

It is also interesting to know that some of these fish actually go to sleep—even lie on their sides—on pockets of sand in or about the lumps of coral. The great majority are gregarious, going about in small shoals and a few seem to be solitary in their habits, but none go about in huge shoals like the pelagic fishes. The majority feed on small fishes, although certain parrot fishes and surgeon fishes are strict vegetarians.

This little publication is intended for those who do not profess to have any knowledge of science; but are keen and interested in these fishes which they see whilst goggling in rock pools, or in the dug-outs of the native fishermen. Latin names, and long scientific family trees have been omitted, but as much knowledge as is known has been crowded in under the description of each fish. There is one word of warning necessary and that is the great majority of the reef fishes have many colour phases; they can also change colour faster and with more diverse effects than any chameleon and the colour fades away upon death until dull blacks and greys predominate. Also during their earlier life the young of the Rock-beauties and Angel fish are very different in colour, to the adults, whilst the very young go through a form completely unlike, in shape and colour, their mature form. The main colour of the young is a pattern of stripes whilst in adult forms these have been replaced by bands or zones of colour of a different hue. To help the reader, where possible, certain fixed characters are given and a note is made of the colour of the young when known. In most cases the description of the colour is made from live or freshly killed specimens so will differ from descriptions made from preserved spirit specimens. Another trouble is distribution, some of these fish are local, but the majority are found all over the Indo-Pacific regions, so the

distribution is given and also the place from which specimens have been secured. Finally, there is a display of these fish modelled by Mr. Allen Turner in the Coryndon Museum which can be consulted before or after a visit to the Coast.

THE LONG-SNOURED BUTTERFLY FISHES. GENERA *Chelmo*
AND *Forcipiger*.

Chelmo rostratus Linnaeus (Fig. 1).

This small fish has a body colour of light yellow-brown. There are four terracotta reddish cross-bands, the first crossing the eye and the last from the soft dorsal to the ventral fins. Each cross band is lined with sky blue. There is a black ocular spot on the dorsal edged with pale yellow. The tail and caudal peduncle are a pale straw colour with one terracotta and one black band on the caudal peduncle. All the other fins and the long snout are of a pale straw colour. Specimens grow to five inches in length.

This fish has a large range along the East African Coastline, the Islands of the Indian Ocean, and all over the South Pacific. Nowhere is it common and the author has no record of its being obtained at any part of the Coast. A coloured picture of this fish is always recognised by the native fishermen so it must come to hand some time.

Forcipiger longirostris (Broussonet) (Fig. 2).

Another small fish with a long snout. The general colour is yellow with a brown tinge. The head is black whilst the chin and breast are ivory white. The tail is a pale blue and the hind edge of the dorsal and anal is edged with Prussian blue. There is a black spot on the anal fin. This fish has a wide range over the Indo-Pacific, but specimens are very rare on our coastline.

THE ANGEL FISHES. FAMILY CHAETODONTIDAE, SUB-FAMILY
POMACANTHINAE.

Angel fishes and Butterfly fishes are members of the same family Chaetodontidae and a rough and ready method of distinguishing the one from the other is that Angel fishes have a spine on the preorbital or interopercular bones, whilst the Butterfly fishes have a smooth profile on these bones. These two bones form the posterior bones of the cheek. This peculiarity is not quite exact but nearly so.

The Angel fishes are compressed in shape and very thin across the back, for when seen from the front they look like a straight line with two eyes sticking out. They are seldom larger than eight inches in length and the Butterfly fishes not more than six inches. They are quick in movement, fitting about piles and posts or in and out the coral itself.

They apparently rely on a quickness of movement to escape from their enemies. They dart into and hide in the holes and crevices in the coral until danger is past. They are also protected by spines and their depth in comparison with their length makes them a difficult mouthful except to very large fish. The reason for their vivid coloration is not known; it certainly is not for concealment, for their form and colours in the water stand out to a most remarkable extent. Another character is their fearlessness. They seem to go anywhere and everywhere without the slightest fear. Their bump of curiosity is greatly developed, for they will come right up to one's face and sit there in mid-water apparently inspecting one with great interest. They feed on minute crustaceans, worms and other very small animals and browse off fine algae growing on old coral.

Their colour is a feast to the eyes and the fish seem to be able to alter this character at will. For many of these beautiful fish there is no common English name and seldom is there a native name, for the word *kitalangu* is nearly always used collectively or in a separate sense.

Holacanthus imperator Lacépède. The Imperial Angel Fish (Figs. 3 and 4).

This Angel fish grows to an overall length of eight inches. It is easily recognised by its beautiful coloration. The general body colour is a rich blue with a number of bright yellow lines running from the head to the tail. The tail is a bright orange; the pectoral fins are a bright blue; whilst the ventral fins are dark blue with pale blue lines. There is a black band covering the eye and another oblong patch covering part of the hind cheek. These are edged with bright blue. The eye is a bright orange. The snout and the spine on the gill cover is of an ivory white and so are the tips of the dorsal fin. The colour of the young is black with transverse bands on head and sides often with alternate narrow bluish bands. The dorsal and anal fins are usually striped with white and the tail is yellow but not with the bright orange coloration of the adult (see Fig. 4). These fish are not common, few come to hand, and these have been caught in fish traps baited with seaweed.

Its distribution is Indo-Pacific, specimens having been obtained from Mombasa, Zanzibar, Ceylon, Seychelles, and Polynesia. The specimen in the Museum was secured by Mr. A. Klein at Mombasa. The native name is *kitiwaywa*.

Holacanthus chrysurus C. and V. (Fig. 5).

This fish can be easily recognised from *H. semicirculatus* by its bright yellow tail. The main body colour is a deep rich velvety brown becoming paler towards and on the head. There are three broad white bands running across the body, bending abruptly towards the tail and again bending abruptly on the

dorsal fin and to a less extent on the ventral fin. Between each of the broad white bars are narrow white ones. These narrow white lines are absent in the fully adult fish. There is also a white bar on the head just behind the eye whilst there are three blue stripes running between the eye and the snout. The fins are deep brown with the exception of the tail which is yellow.

This Angel fish is seldom seen although believed common. It rarely grows much more than six inches in length.

Distribution: Zanzibar, Dar es Salaam and Mombasa, but this distribution may be much wider when more collecting has been carried out.

Holacanthus annularis Block (Fig 6).

This is easily recognised by the position of the blue bands. The general body colour is a yellowish brown with a dark centre on each of the scales. There are six or seven curved bands of blue colour running from the pectoral fin right across the body of the fish to the dorsal fin and to the tail. There is a blue annulus on the shoulder. Two blue lines run from the profile; one across the eye and one just below the eye to the edge of the gill plate. The tail is yellow.

The young are believed to be striped like *H. imperator*. The distribution of this rare fish is Ceylon, East Indies, and the East African Coastline.

Holacanthus striatus Cuvier (Fig. 7).

This is a very dull-coloured Angel fish. The main colour of the adult is dark brown whilst each scale has a black centre. The tip of the pectoral fin is black whilst the dorsal, anal, and caudal fins are jet black. The young are black with a number of transverse broad and narrow white bars. All fins are either black or edged with black whilst the tail is pale lemon yellow clouded with dark grey. The highly-striped young may be confused with *Holacanthus semicirculatus*.

Although specimens have been caught at Mombasa, Malindi, and Wasim Island, yet the main home of this fish is the Red Sea, for it is most abundant at Port Sudan and Suakin.

Holacanthus maculosus Cuvier. The Yellow-Saddled Angel Fish (Fig. 8).

This is one of the larger Angel fish growing to as much as nine inches in overall length. It can be recognised by the protruding teeth and the long waving points of the dorsal fin. The adults are a rich velvety-brown with a few black spots on the shoulder and forehead. The orange saddle runs from the tip of the soft dorsal fin and then across the body to the anal fin. The whole band is behind the origin of the anal fin and in this differs from *Holacanthus asfur*. The tail is orange yellow. The young

have twelve narrow irregular blue streaks crossing the body and also a pale yellow saddle. The anal has a number of blue curved stripes disposed all over its surface.

The specimen in the Museum was collected from Mombasa by the author. This again is a Red Sea fish with a dispersal along the coast of East Africa and Zanzibar.

Holacanthus semicirculatus Cuvier. The Sacred Angel Fish. (Fig. 9).

This is by far and away the most common of our Angel fishes, reaching a maximum length of nine inches. Old specimens are a brownish-grey with a series of black spots all over the body. The dorsal, anal and caudal are a deeper colour tone with short broken-up white bars. The very young and up to seven inches fish are black with a series of broad and narrow white bars running across the head and the body. The tail has cross white bars and a number of broken-up dots and splashes which sometimes form an Arabic quotation. See *East Africa Natural History Society Journal*, 12, Nos. 51 and 52, for a fuller description. This fish is widely distributed all over the Indo-Pacific. The native name is *gangue*.

The specimen in the Museum was collected from Mombasa by the author, but it has been collected at Dar es Salaam, Zanzibar, Seychelles, Aden, and Malindi, and is common in the Red Sea.

Holacanthus asfur Forskal (Fig. 10).

This Angel fish can be confused with the yellow saddled Angel fish (*Holacanthus maculosus*) as both have a yellow saddle. In this fish, the yellow saddle is *before* the anal fin and covers part of the pectoral fin. Also the dorsal and *anal* fins have streamer tails. The fish is a rich brown, shading darker posteriorly until the colour merges into black on the anal and dorsal fins. The head has a spotted effect owing to there being a black centre on each scale and the tail is chrome yellow in colour.

Although the range of this fish is a wide one yet its main concentration is the Red Sea, Arabian Coastline, British Somaliland, down the East Coast of Africa to Pemba, and perhaps still more southerly. It is a large Angel fish generally swimming in twos or threes round and in and out of the nigerheads and coral piles.

Holacanthus trimaculatus Cuvier (Fig. 11).

This Angel fish has a general body colour of bright yellow ranging to bright orange. The centre of each scale has a pearl-coloured spot. There is a small black spot on each side of the nape of the head ringed with a thin yellow circle and a large black spot, edged with white, on the shoulder just behind the gill cover and just under the lateral line. The fins are a pale yellow in colour, but the outer half of the anal fin is jet black.

The lips are blue black. This fish can be easily recognised by its bright yellow colour, the spot on the shoulder and the black edging to the anal fin.

Its distribution is Indo-Pacific and specimens have been taken at Zanzibar, Seychelles, and Mauritius.

Holacanthus diacanthus Boddaert (Fig. 12).

The general body colour is a pale yellow ranging to rich orange on the back. There are nine or ten white bands running vertically across the body and each band is edged with black. The breast is a pale pink and the lips orange. The anal is ochre colour with four or five bands of pale blue. The other fins are a pale yellow, but the hind part of the dorsal is black with blue spots on it. The tail is a bright yellow. There are two black-edged, pale blue stripes running from the nape to, and encircling, the eye.

This Angel fish is most variable in the number of its stripes, their shape and arrangement. The young are also most variable.

The distribution of this fish is very wide ranging all over the Indo-Pacific in its fullest extent whilst specimens have been obtained at Zanzibar, Mombasa, and from the Red Sea.

Holacanthus multispinis Playfair (Fig. 13).

This Angel fish is a uniform silky brown colour with numerous black bands along its side. There is a black patch edged with pale blue, on the shoulder. The dorsal has three black bands on a rich brown base whilst the anal has the black bands and also a bright blue edging. The caudal is also edged with bright blue. The colour of the pectoral fin is a dense black. So far the only specimens have been obtained from Zanzibar, Seychelle Islands, and Ceylon.

THE BUTTERFLY FISHES OR ROCK BEAUTIES. SUB-FAMILY CHAETODONTINAE.

Chaetodon trifasciatus (Fig. 14).

The main body colour is a dull salmon-yellow; with a number of brown-red lines running from head to tail. There is a black band from the nape, across the eye, and then to the lower head line. The snout is dusky. The back is light blue as also is part of the tail, the whole of the caudal peduncle and the hinder part of the body. There is one black band between two bright yellow bands on the tail. The dorsal fin has the spines a bright yellow and the soft dorsal is yellow; then a black band, then yellow; then a thin black band; then yellow and then a vivid orange red. The lines on the anal are thin yellow; then curved black; then thin yellow; then rich yellow orange then a pale yellow tip.

It is really impossible to describe this most glorious fish, but if the above description is compared with the figure, the reader should identify a specimen.

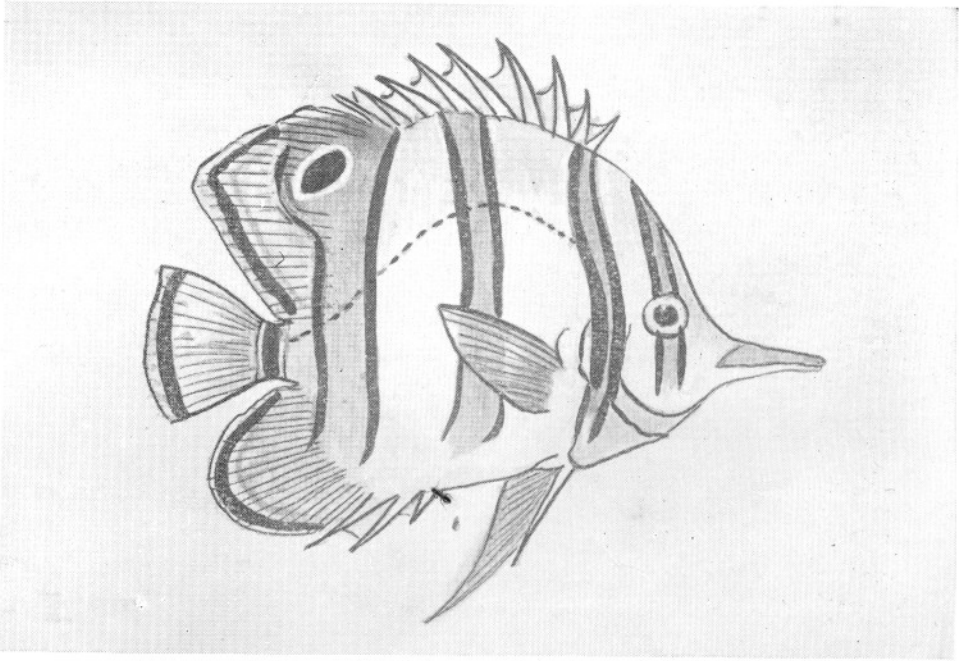


Fig. 1. *Chelmo rostratus*.

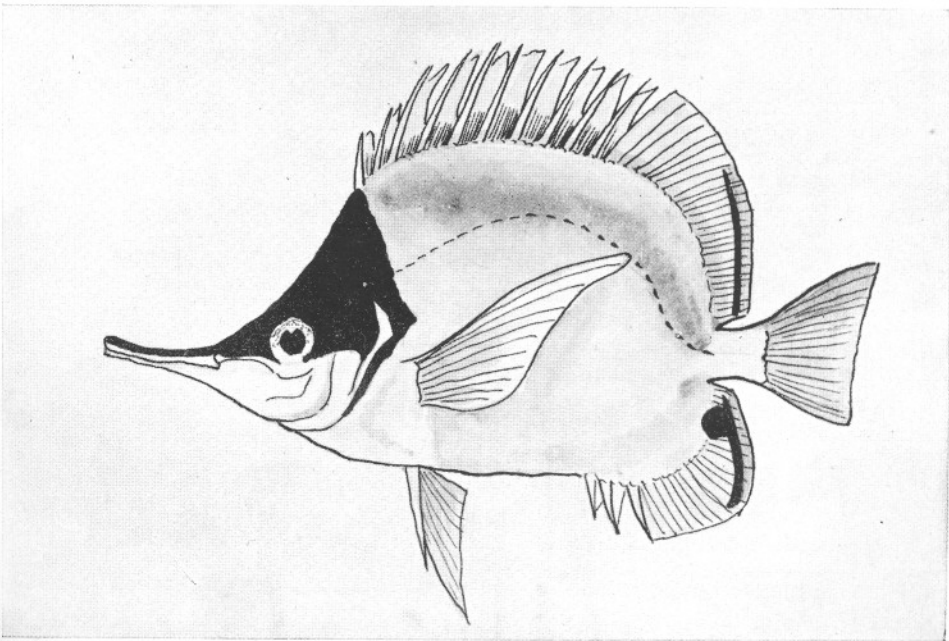


Fig. 2. *Forcipiger longirostris*.

PLATE 58.

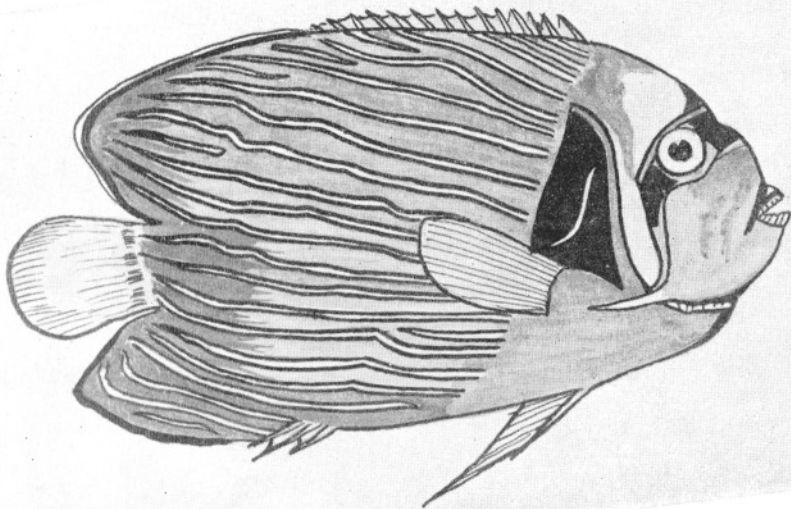


Fig. 3. *Holacanthus imperator*.

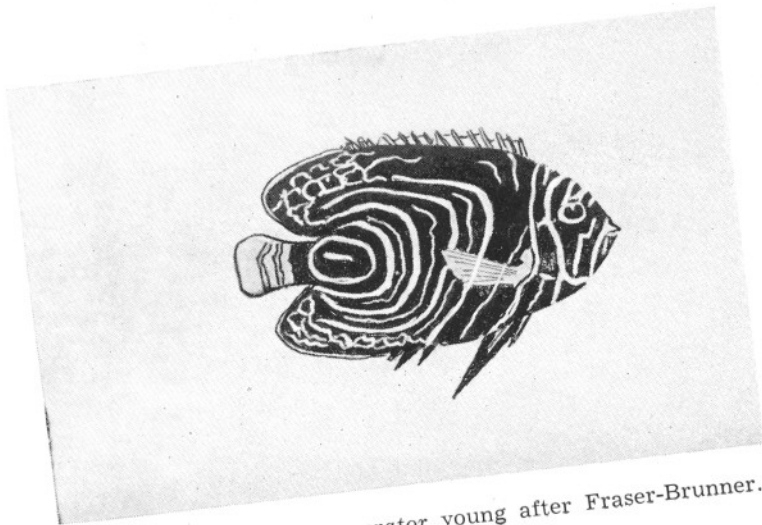


Fig. 4. *Holacanthus imperator* young after Fraser-Brunner.

PLATE 59.

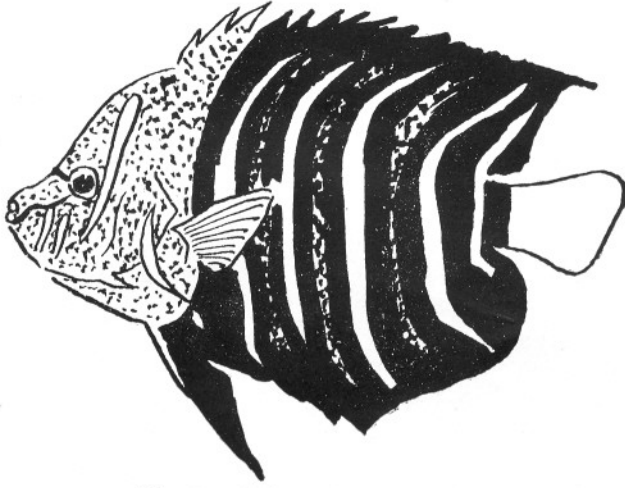


Fig. 5. *Holacanthus chrysurus*.

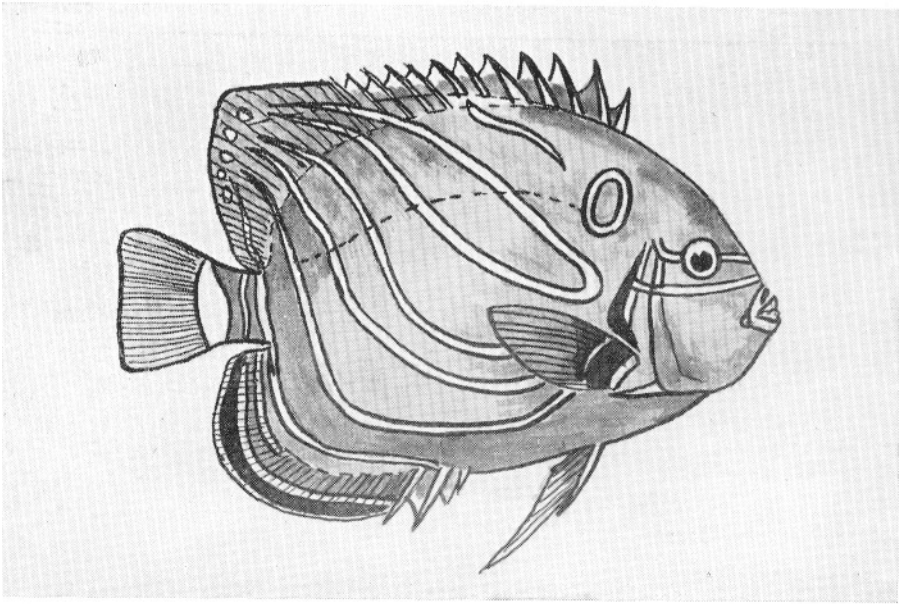


Fig. 6. *Holacanthus annularis*.

PLATE 60.

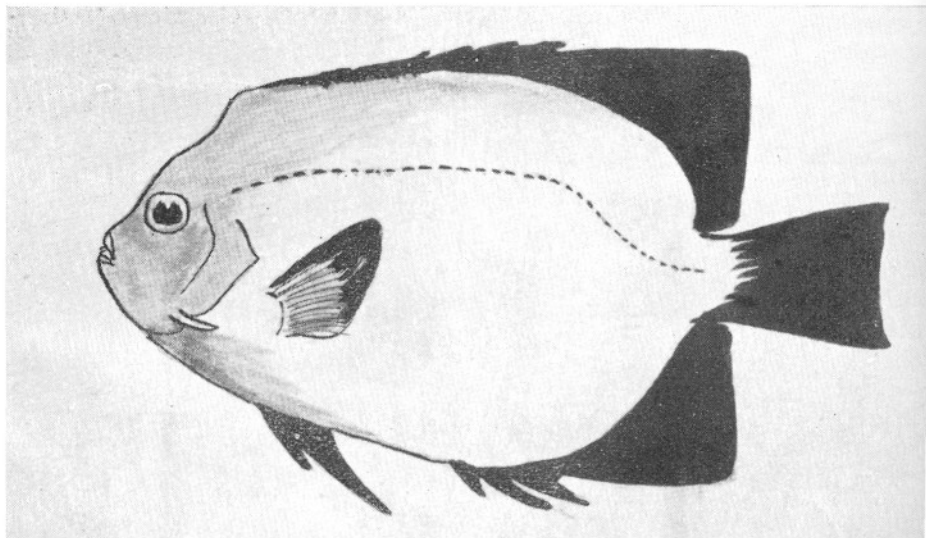


Fig. 7. *Holacanthus striatus*.

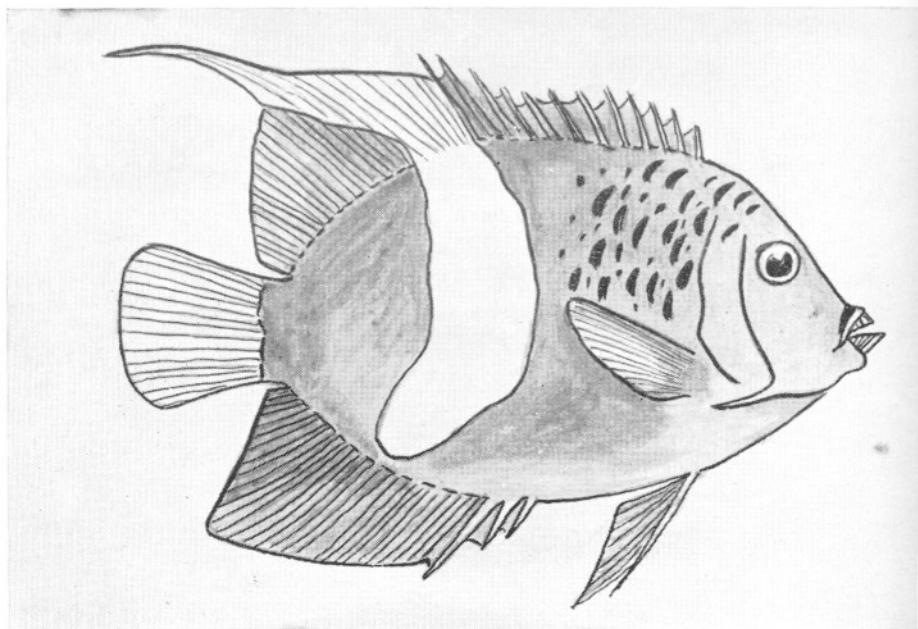


Fig. 8. *Holacanthus maculosus*.

PLATE 61.

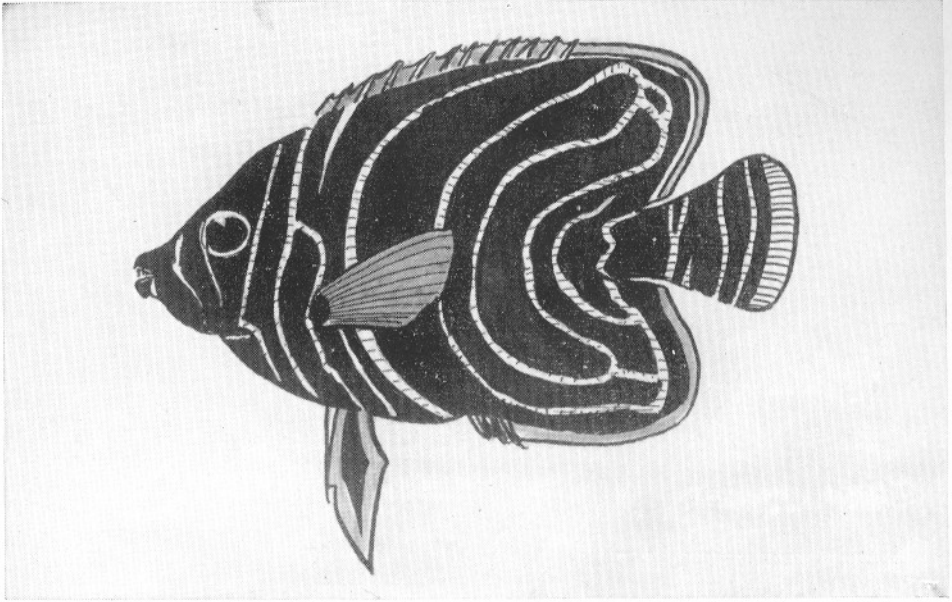


Fig. 9. *Holacanthus semicirculatus*.

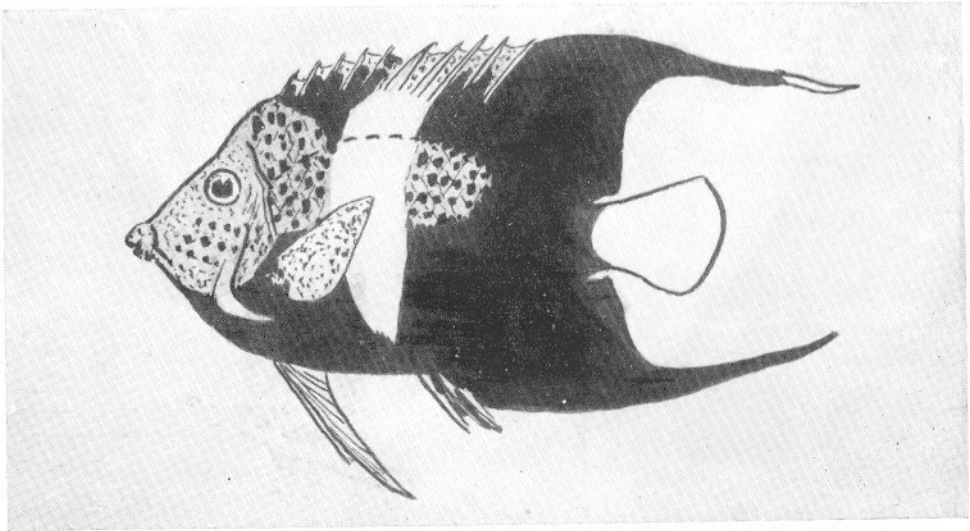


Fig. 10. *Holacanthus asfur*.

PLATE 62.

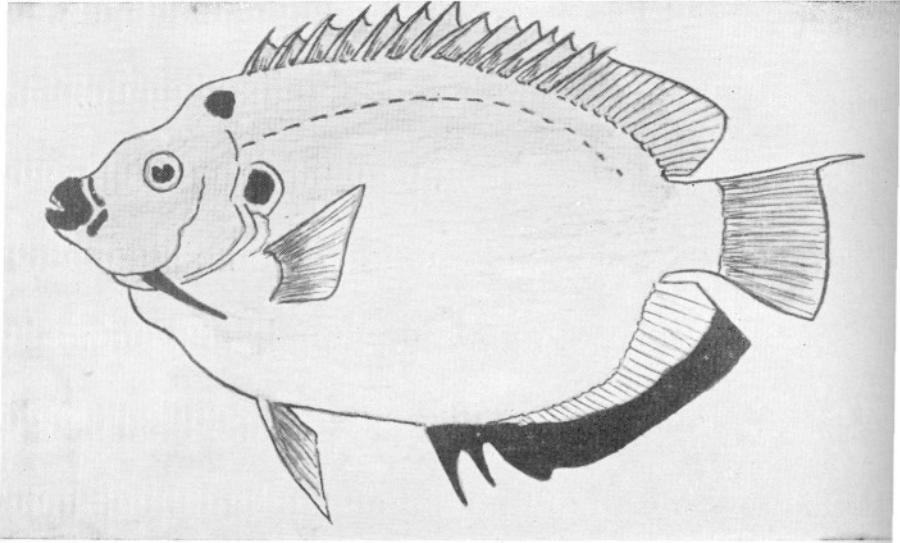


Fig. 11. *Holacanthus trimaculatus*.

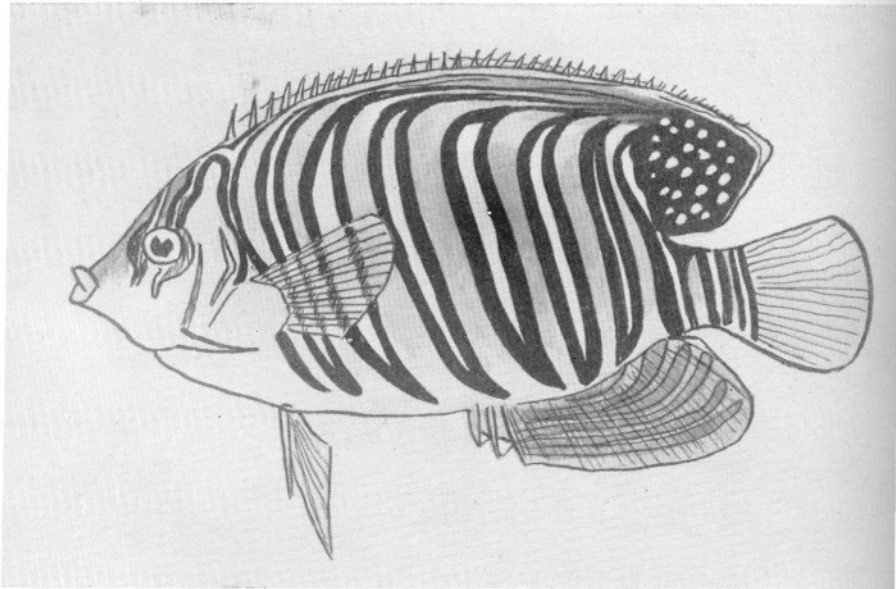


Fig. 12. *Holacanthus diacanthus*.

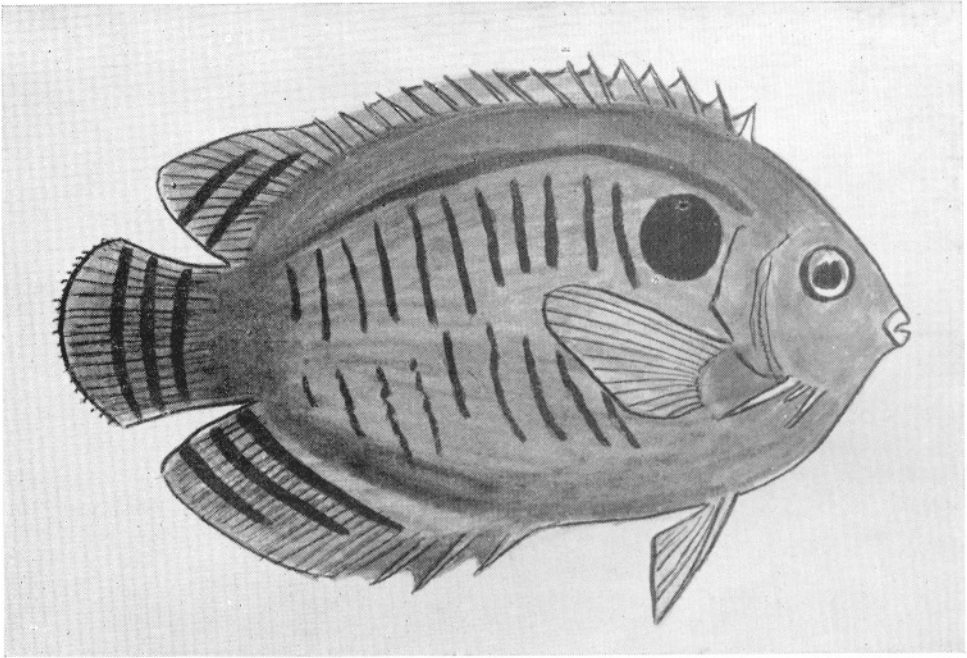


Fig. 13. *Holacanthus multispinis*.

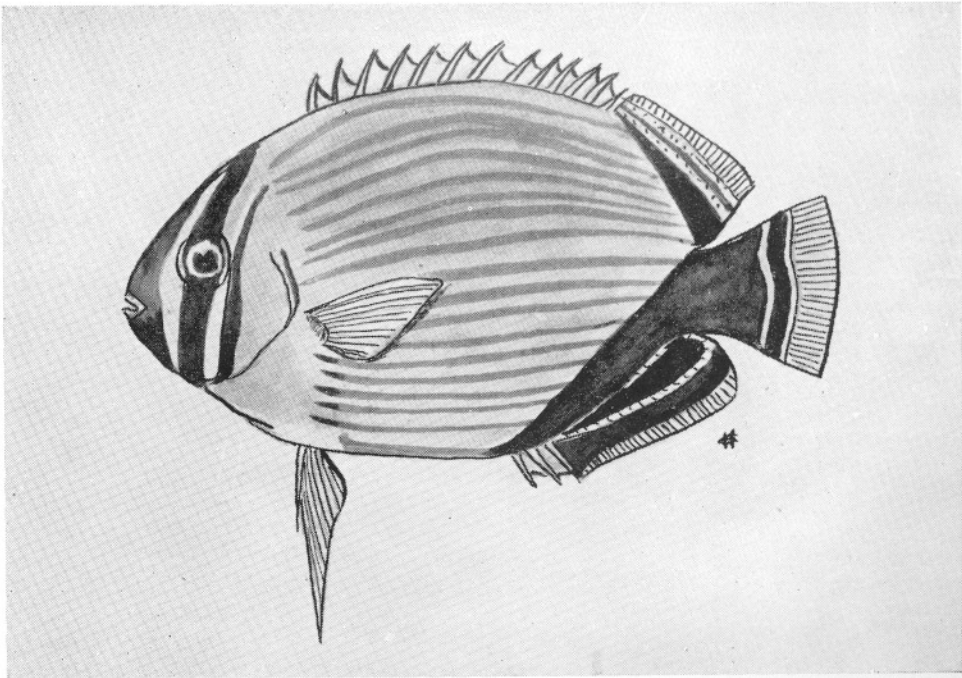


Fig. 14. *Chaetodon trifasciatus*.

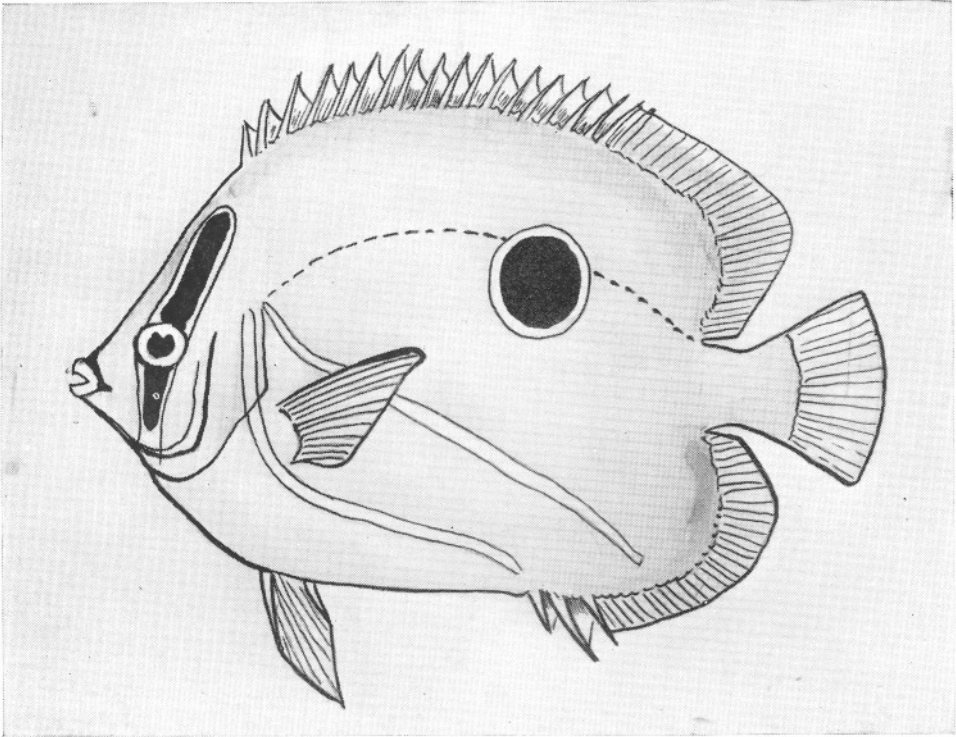


Fig. 15. *Chaetodon bennetti*.

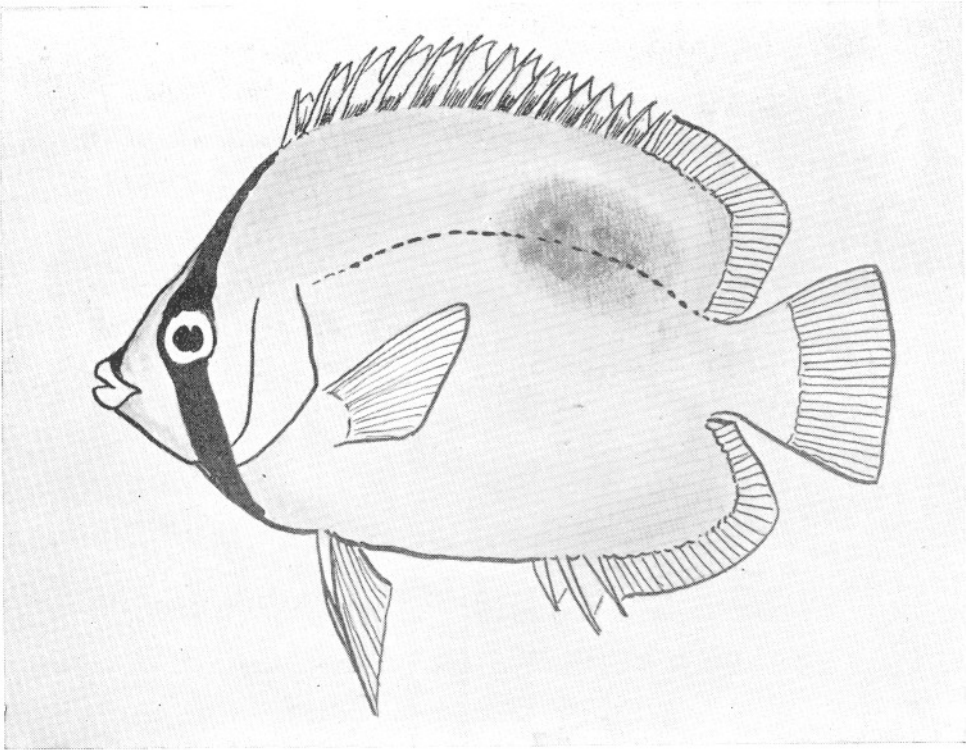


Fig. 16. *Chaetodon speculum*.

PLATE 65.

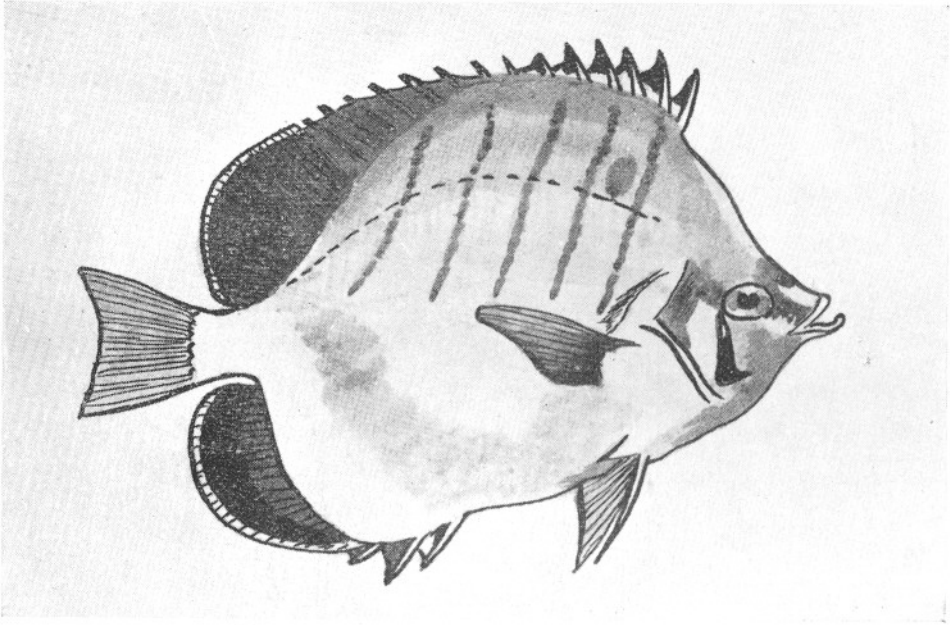


Fig. 17. *Chaetodon xanthocephalus*.

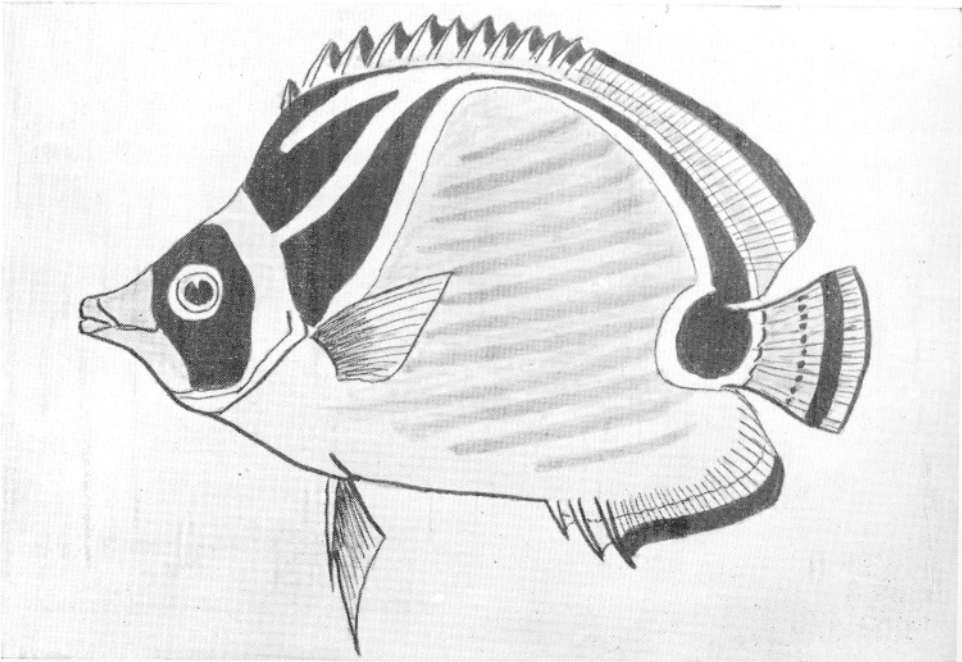


Fig. 18. *Chaetodon fasciatus*.

PLATE 66.

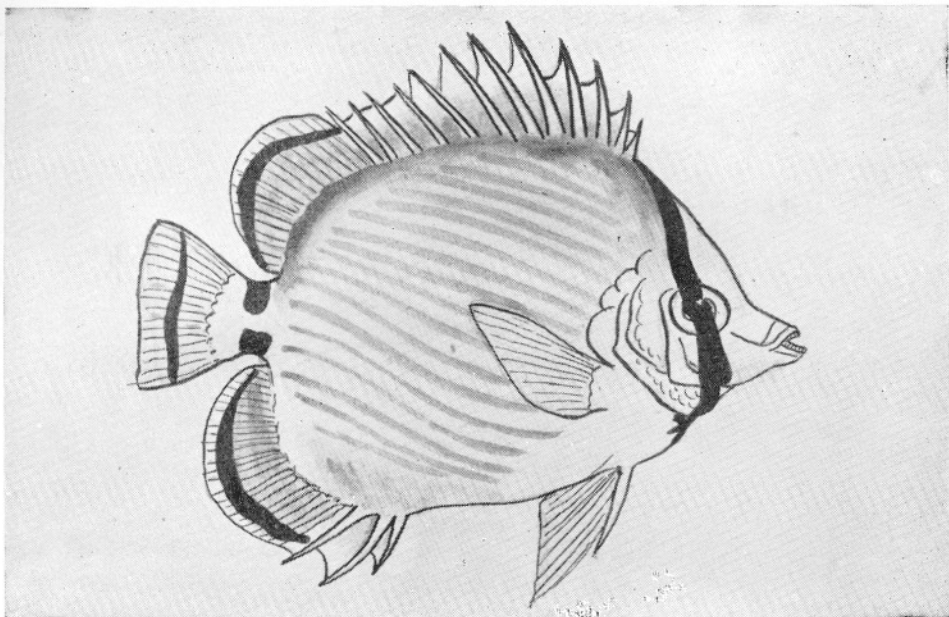


Fig. 19. *Chaetodon melanotus*.

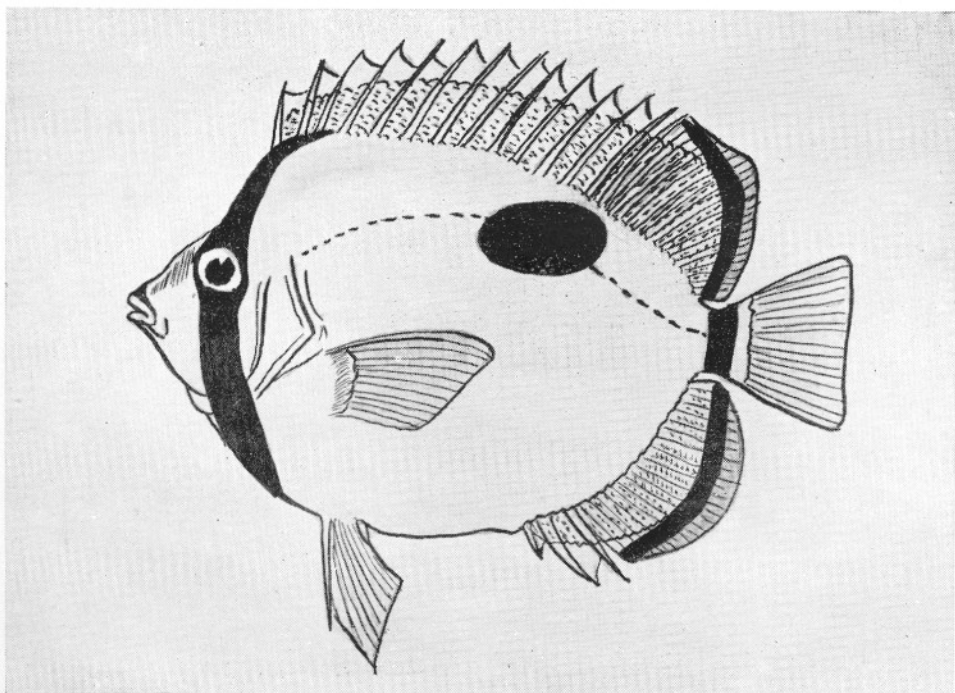


Fig. 20. *Chaetodon unimaculatus*.

PLATE 67.

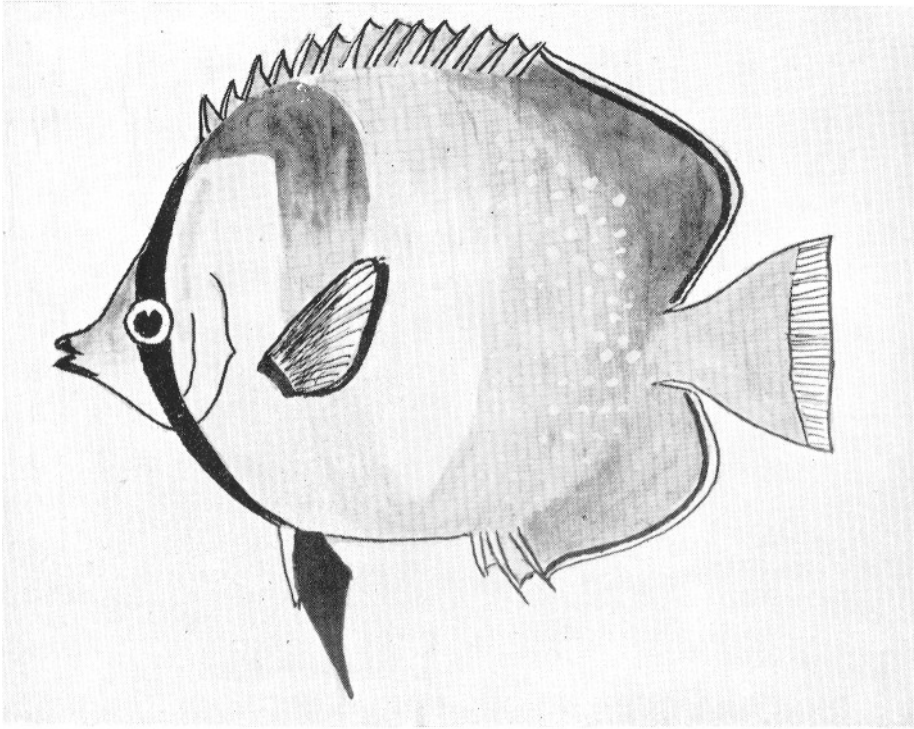


Fig. 21. *Chaetodon kleinii*.

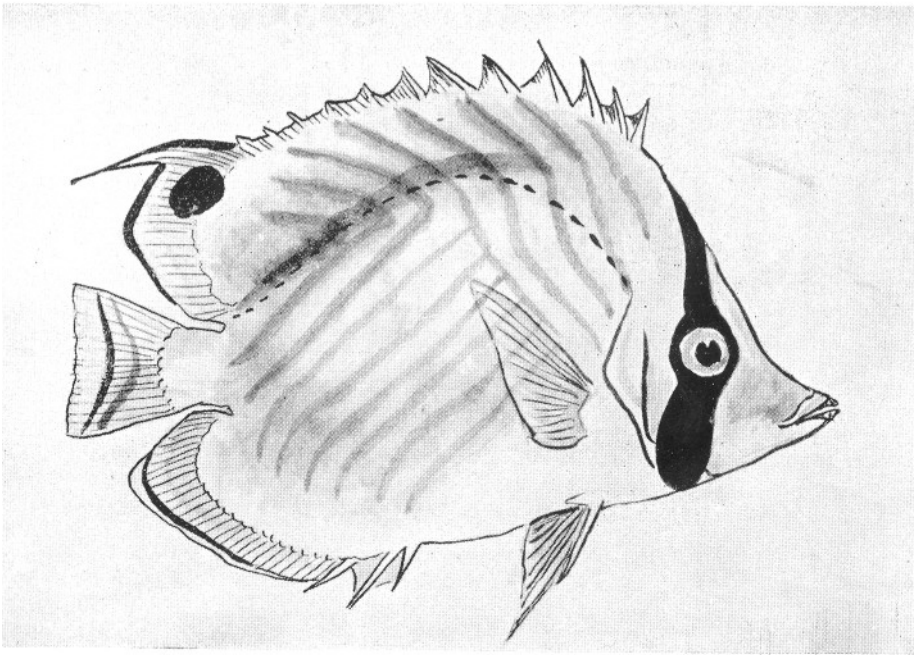


Fig. 22. *Chaetodon setifer*.

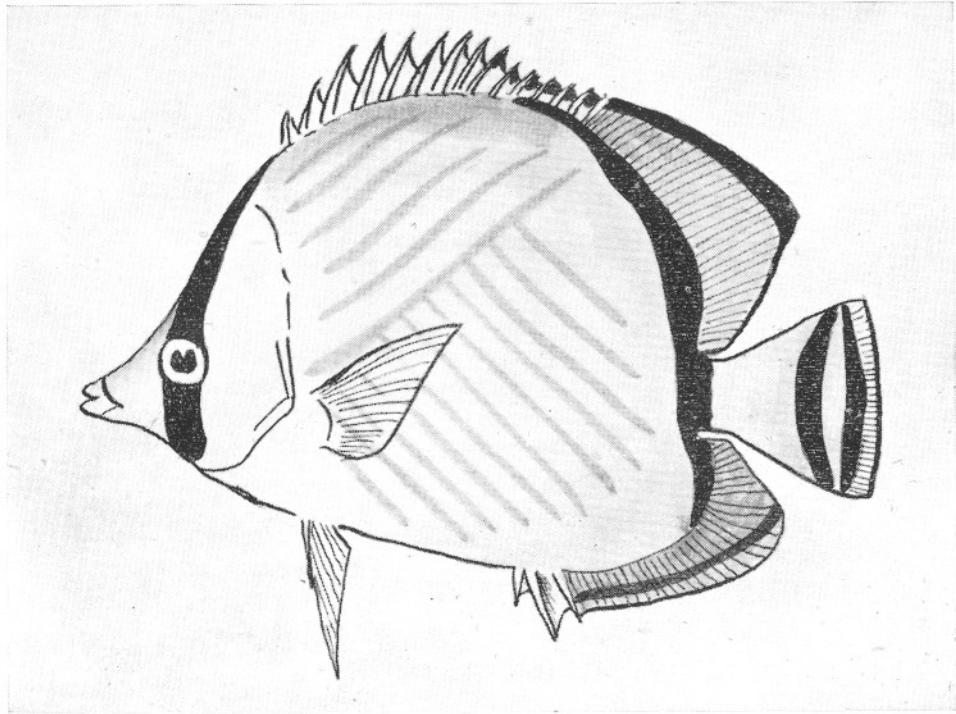


Fig. 23. *Chaetodon vagabundus*.

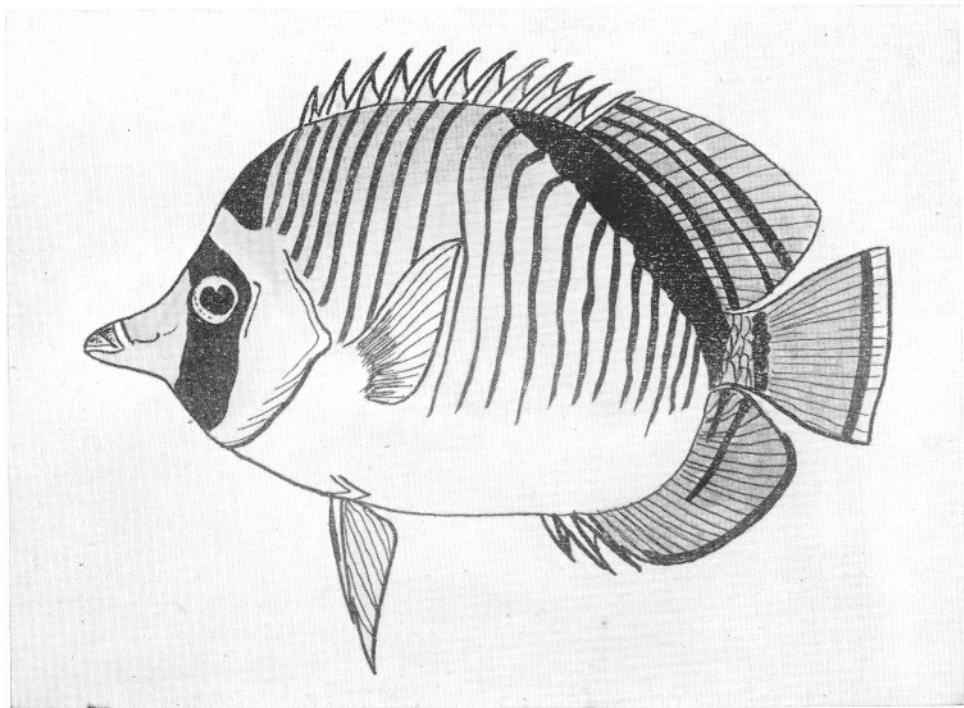


Fig. 24. *Chaetodon lineolatus*.

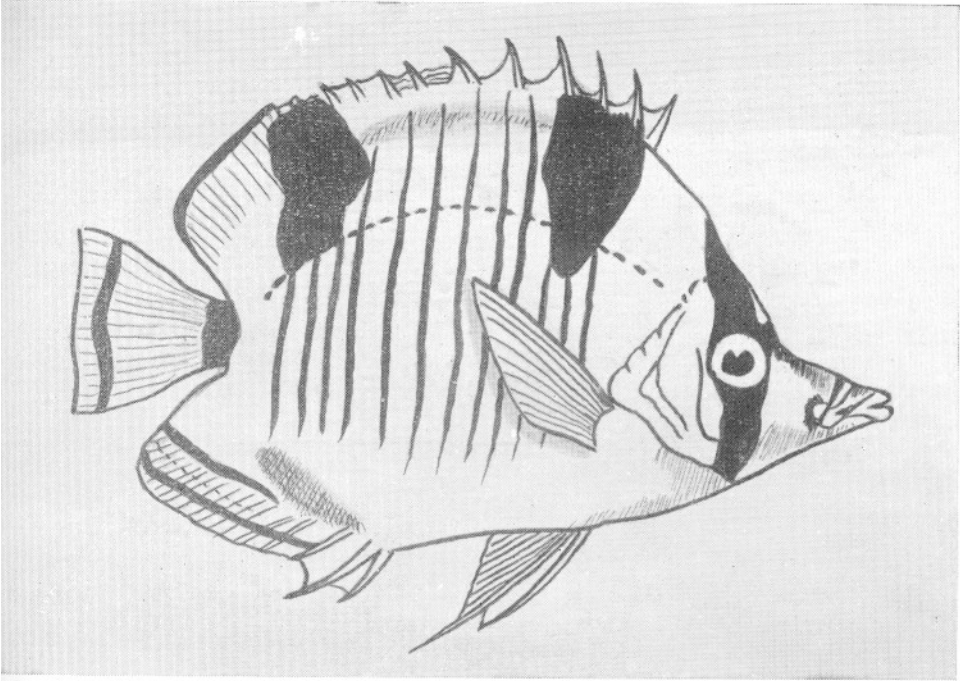


Fig. 25. *Chaetodon falcula*.

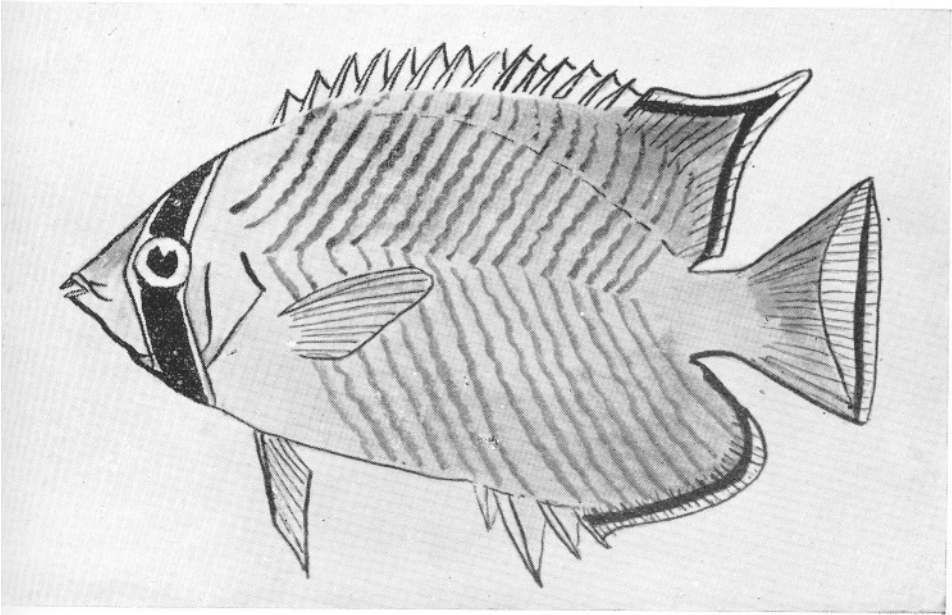


Fig. 26. *Chaetodon trifascialis*.

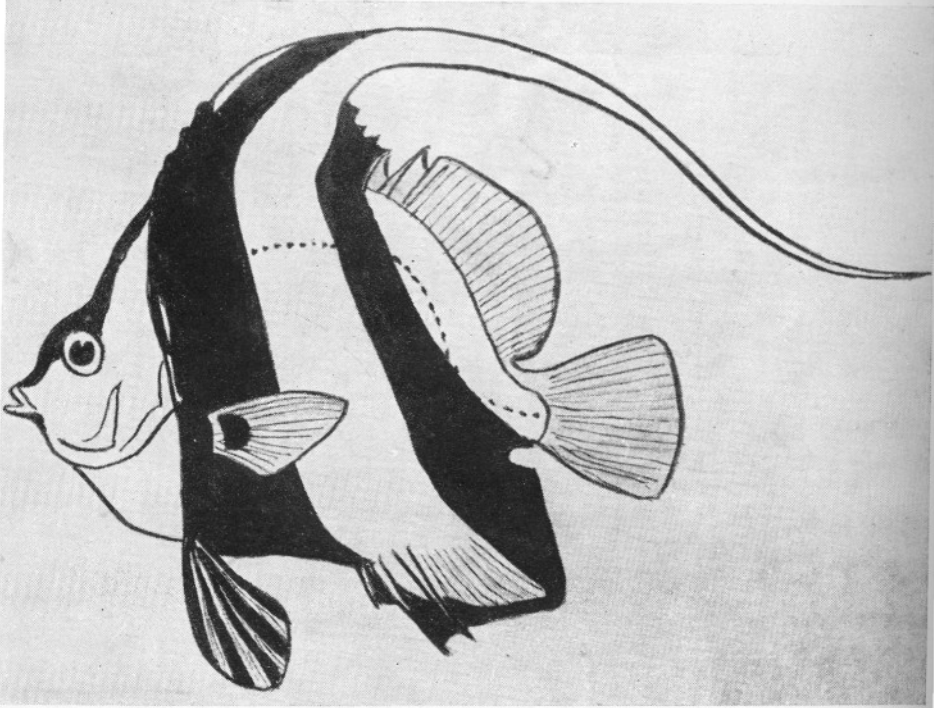


Fig. 27. *Heniochus acuminatus*.

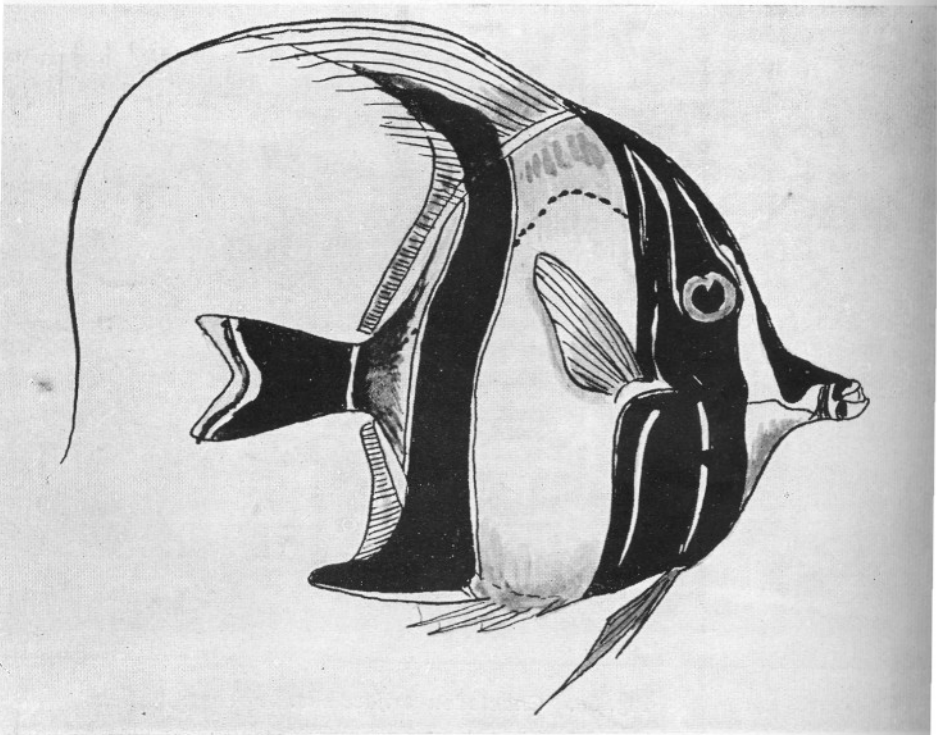


Fig. 28. *Zanclus cornutus*.

PLATE 71.

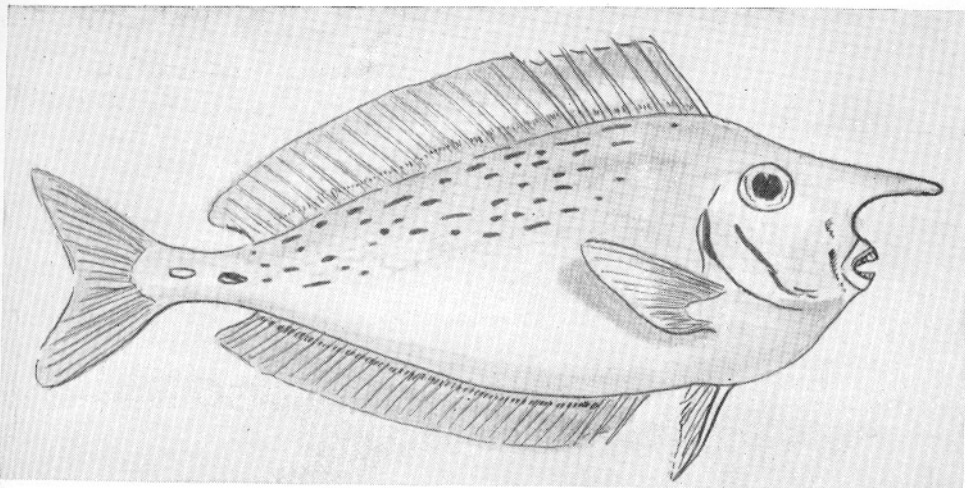


Fig. 29. *Naso brevirostris*.

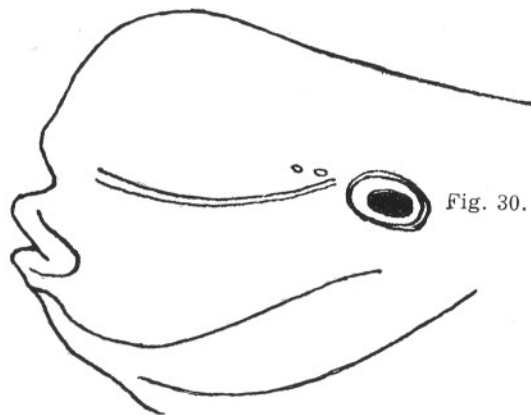


Fig. 30. Head of *Naso tuberosus*.

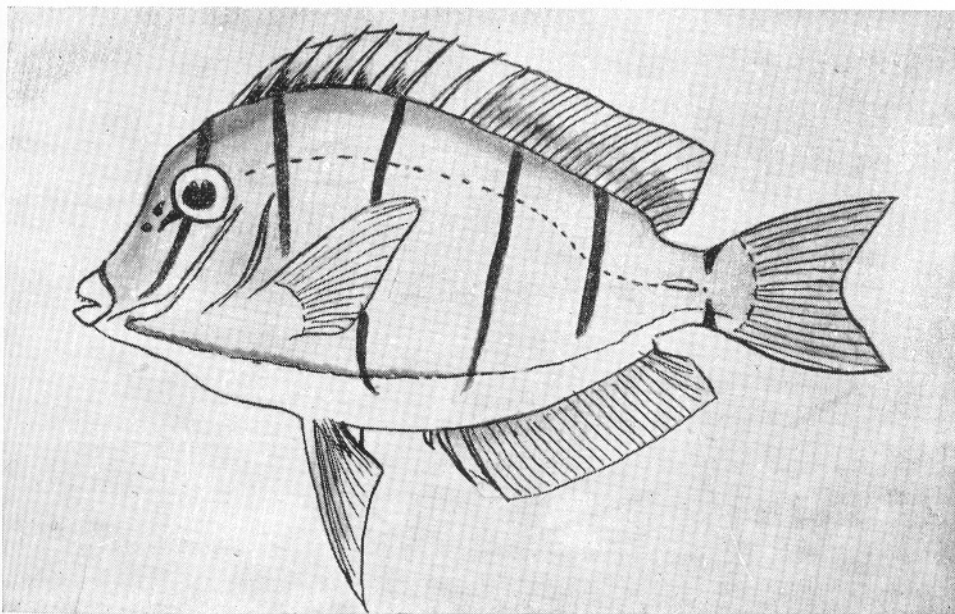


Fig. 31. *Acanthurus triostegus*.

PLATE 72.

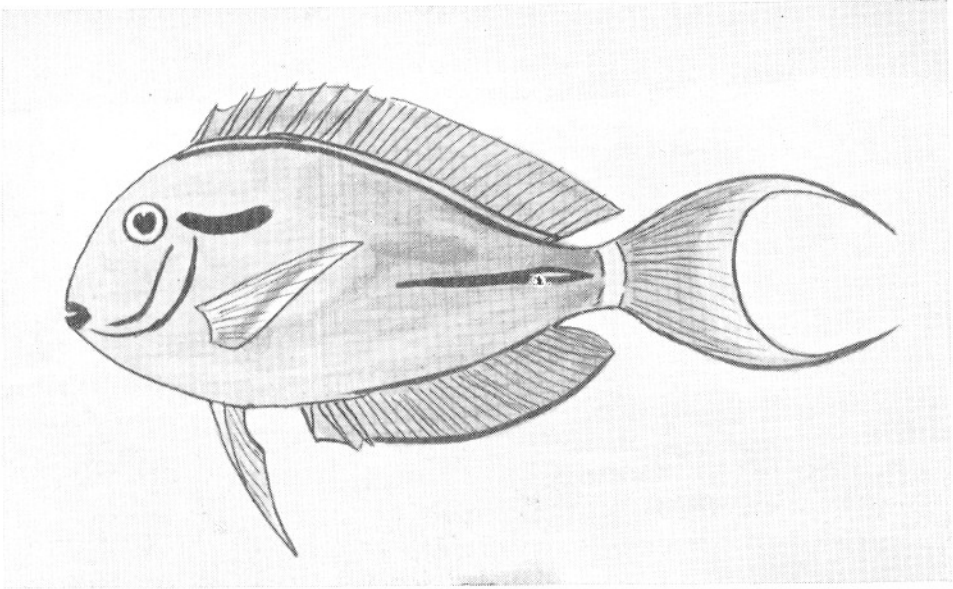


Fig. 32. *Acanthurus gahm*.

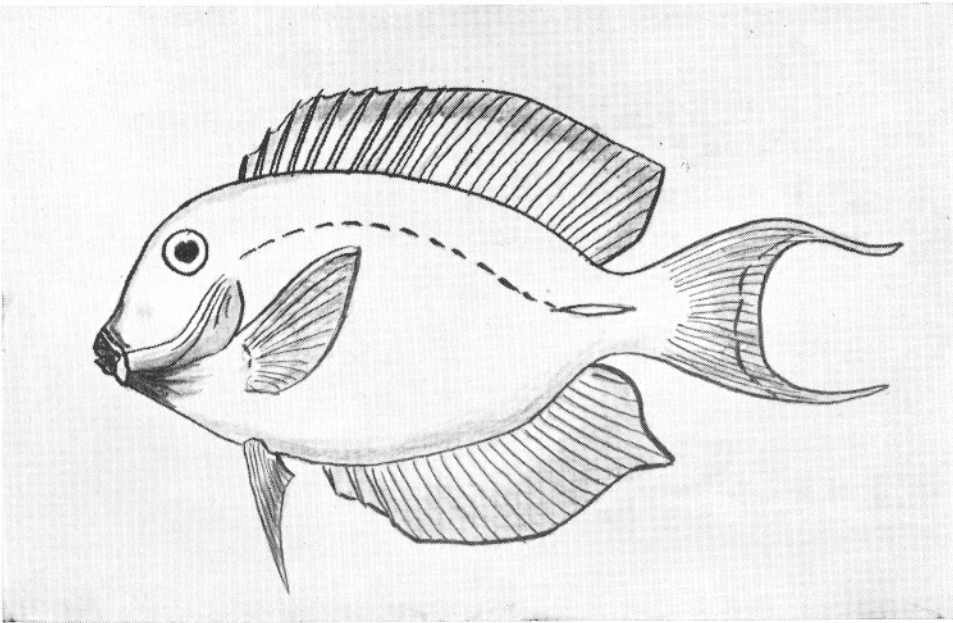


Fig. 33. *Acanthurus leucosternon*.

Its range is all over the Indo-Pacific; the Red Sea, Madagascar, Portuguese East Africa, and the East African Coast-line. It is quite abundant at Malindi, Lamu, Mombasa, and Gazi Bay.

In size, it ranges to six inches, but the average specimens would be about four inches in length. The colour is very constant throughout life and also between individuals.

Chaetodon bennetti (Fig. 15).

The general body colour is yellow with the throat and breast a bright lemon. There is a deep brown, edged bluish-white, bar from the nape across the eye and on to the edge of the gill plate. There are two brownish stripes that start just behind the eye and run in a curve to the anal. There is a jet black ocellus edged with pale blue on the hinder part of the body just touching and below the lateral line. The fins are pale yellow; the anal is tipped with cadmium; the pectoral has a cadmium base and the tail often has a cadmium bar. This Butterfly fish is widely distributed all over the Indo-Pacific regions and has been reported from Zanzibar and Mikindani.

The colours are fairly constant and the changes of colour taking place with age are slight.

Chaetodon speculum (Fig. 16).

The general ground colour is a sulphur-yellow and the lips and snout are orange. There is a large dusky patch on the hinder part of the body right across the lateral line. There is a jet black stripe from the nape, across the eye, and right down to the lower edge of the throat. The eye is a bright golden colour. All the fins are a pale yellow with dusky patches situated here and there. The ventral is, however, a vivid sulphur-yellow in colour.

This is a small Butterfly fish not growing to more than four inches in length. Its distribution is Indo-Pacific, but a specimen has been reported from Zanzibar.

Chaetodon xanthocephalus (Fig. 17).

This fish is not highly coloured being brownish with six indistinct dark vertical streaks. The dorsal and anal fins are violet edged with white whilst the caudal and ventral fins are yellowish.

The distribution of this fish is East Africa (Zanzibar, Mikindani, and Mozambique), India, and Ceylon.

Chaetodon lunula or *C. fasciatus* (Fig. 18).

The back is a rich brown olive changing through an olive golden colour to a bright lemon yellow on the breast. From the gill plates, running up to the dorsal fin, there is a big black mark strongly edged with a real hot orange colour. From the tip of this mark a broad yellow line runs back to the base of the

tail, the end of this line makes a question mark. It is edged with black. There is a big black blotch on the body high up near the soft dorsal. There is a wide, black band across the eye tapering to a point at the bottom edge of the gills. The lips are crimson; this merges into a deep yellow ground and then into a white band. There is a big patch of white on the nape of the neck. The soft dorsal is bright yellow, then a red orange, then black; the soft anal is bright red, bright yellow and then black tipped. The tail has a bright yellow base colour with a bright red band, a black band and a pure white edging. On the breast and across the body is a series of subdued bright red stripes, and also some red dots on the yellow breast.

This is a large, dashing and gloriously-coloured Butterfly fish with a wide distribution all over the Indo-Pacific. It has been obtained at Malindi, Kilifi, and Gazi Bay; also Dar es Salaam and Zanzibar. There is a fine specimen in the Coryndon Museum collected at Mombasa.

Specimens are most variable in coloration and so are the younger forms of the adults.

Chaetodon melanotus (Fig. 19).

The main body colour is a mixture of light pink and blue, fading out on the edges of the body, all fins, nose and the tail to a bright yellow. There is a thin dusky stripe running from the nape across the eye and then to the lower edge of the throat. There is a small black spot on the caudal peduncle. There is a series of blue-black stripes and dots, diagonally across the body.

This is quite a common Butterfly fish and is found from the Red Sea, along our own coastline to Zanzibar, India, and the whole of the Indo-Pacific. The colours are fairly constant both in the adult and in the young forms.

Chaetodon unimaculatus (Fig. 20).

The whole of the body colour is a dirty pale yellow. There is a very broad black line running from the nape of the neck, crossing the eye and finishing at the lower edge of the throat. There is a big black blotch set squarely on the lateral line and a black band on the base of the tail. The edge of the soft dorsal and anal fin have a black band edged with bright blue. All the other fins are a pale dirty yellow colour like the body.

This sober coloured butterfly fish is found all over the Indo-Pacific and specimens have been obtained at Zanzibar.

Chaetodon kleinii (Fig. 21).

The body colour is a pale yellow merging into a yellow brown for the posterior half of the body. This portion of the body has a number of white spots scattered all over it. There is a reddish brown band from the shoulder right across the body. The tail is bright yellow edged with pale blue. The snout is black with a red-

dish tinge whilst there is a black band from the nape of the neck covering the eye and running to the throat. The ventral fin is jet black; the pectoral fin is plum colour with a black band at the base. There is a pale blue and black edging to the soft dorsal and anal fin. This is quite a common species found all over the Indo-Pacific regions. Specimens have been collected at Zanzibar.

Chaetodon setifer (Fig. 22).

The body colour is a pure white shading into pale yellow then into rich orange towards the hinder part of the body. There is a dense black ocellus on the soft dorsal which also has a black edging and a hot orange tip. The soft anal has a black line near its edge. The tail has a narrow bar of red; then yellow, red and then pure white. There is a broad black band across the eye. There are a number of pale bluish coloured lines running across the body in two groups. The lips are orange.

This fish is widely distributed all over the Indo-Pacific regions. It is very common all along the East African coastline and is eaten by the natives. When goggling this fish will come up close to the goggles and simply hang in the water staring at one. There is a specimen exhibited in the Coryndon Museum, collected at Mombasa. The native name is *kitalangu*.

Chaetodon vagabundus (Fig. 23).

The body colour is silver grey tinged with pale yellow with a number of green-grey stripes set in two series at right angles to each other. There is a black line from the nape of the neck through the eye to the lower line of the throat. The soft dorsal is a brilliant orange with a broad black bar at its base and jet black tips. The anal is also a rich orange with a thin black stripe. The tail is a lemon yellow with two black bars and pale blue edging.

This is a common Butterfly fish with a very wide distribution from the Red Sea, down our coast to Zanzibar, Madagascar, and all over the Indo-Pacific. There is believed to be very few colour variations between individuals and between the young and the adult stages.

Chaetodon lineolatus (Fig. 24).

The body colour is a silver grey toned with a pale plum colour which is darker on the snout and towards the posterior half of the fish. There is a wide black eye band and a black patch on the body adjoining the soft dorsal fin. The soft dorsal is a rich yellow colour striped with a rich blue line, then a bright red stripe then another rich blue stripe. The soft ventral is a pale lemon colour with a pale blue edging then a rich blue stripe and a blue stripe across the caudal peduncle. There is also a blue stripe across the protruded snout.

This is one of the larger Butterfly fishes growing up to six inches in size and is most widely distributed. It is a very common species in the Red Sea and all down the East African Coastline to Madagascar and Delagoa Bay. Its range extends all over the Indo-Pacific.

Chaetodon falcula Block (Fig. 25).

This is one of the *Chaetodon* with a pronounced snout armed with tiny protruding teeth. The general body colour is a rich brown fading to pale yellow on the belly. There is a broad black band across the eye extending to the lower gill cover. There is one large jet black blotch on the shoulder extending onto the front spiny dorsal and another extending from the lateral line to the beginning of the soft dorsal. There is also a black band on the caudal peduncle. There are a variable number, generally seventeen, of dark thin brown lines extending in a vertical fashion across the body. The dorsal, anal and tail are edged in pure white backed by a black thin line. On the anal there is a second brown band. The background colour of all the fins is a pale lemon colour. On the protruding snout there are several blue and white lines. The young closely resemble the adults.

This is a well-known fish and although not common off our Coastline, yet is very common on the late Italian Somaliland Coastline. It is found in the Red Sea, caught off several places on the East African Coastline, Mozambique, Mauritius, India, Nicobar Islands, and the whole of the East Indies. The average length of the few specimens seen by the author would be five inches long.

Chaetodon trifascialis Quoy and Gaimand (Fig. 26).

The ground colour is a silver grey shading off to silver on the belly, and this is crossed by a number of dark narrow bands forming a series of Vs all directed forward. The breast is pale yellow deepening to olive on the snout. There is a broad black eye-stripe faced on both sides with a white stripe. The soft dorsal terminates in a point and is of an olive colour with a thin marginal black band and orange tips. The anal is also yellow with a marginal black band and white tip to the fin. The ventral is a bright orange whilst the tail has a thin black stripe on a bright yellow ground.

The distribution of this fish is the Red Sea, the East Coast of Africa and all over the Indo-Pacific, and it can be readily recognised by the black V-shaped marks on the body all pointing forward.

Off our coast it is not, in the experience of the author, a common fish and may be seasonable.

GENUS *Heniochus*.

A small genus of Butterfly fishes which can be easily recognised by their thin and elevated bodies and by the front

of the dorsal fin being extended into a long streamer. Practically all have broad crossbands on the body. Their habits are the same as those of the other Butterfly fishes. Only one has been collected, so far, off our coastline.

Heniochus acuminatus Linnaeus (Fig. 27).

This is the common member of the genus. The body colour is an ivory white. There is a long streamer to the dorsal fin the front edge of which is orange. There are two black cross bands on the body; the front one extending across the body just behind the eye and along the forepart of the dorsal fin. The other is right across the body from the middle of the dorsal to the hind part of the anal fin. The soft dorsal, tail and pectoral fins are a rich lemon colour. The eye is a bright orange colour. It grows to a length of six inches and is eaten by the natives.

This fish is common in the Red Sea, the whole of the East African Coastline down to Natal, Zanzibar, Seychelles, and all over the Indian Ocean and the South Pacific.

GENUS *Zanclus*.

Zanclus canescans Linnaeus. The Moorish Idol (Fig. 28).

This peculiar looking, but very handsome fish, is well-known, for its shape and colour have been used extensively for commercial design and as a cover illustration for advertising matter.

The general body colour is a bright canary yellow. The broad band of colour across part of the head and the forepart of the body, the hind stripe and the main colour of the tail all are rich chocolate brown. There is a chocolate, edged blue, wavy line on the snout and two wavy bright blue lines, run down the forward patch of chocolate brown. The hinder chocolate coloured patch also has a bright blue line on it. The tail fin is edged with bright yellow backed by a bright blue line. The pectoral fin is pale yellow and the ventral is black-chocolate in colour. There is a small horn just over the eye. This fish is hardly ever over four inches in length and it flits about the coral heads in a most absurd and grotesque manner.

The wide distribution covers the whole of the Indian and the South Pacific Oceans. It has been collected at Mombasa, Tiwi, and Zanzibar. The native name at Mombasa is *tantange*.

THE UNICORN FISHES. GENUS *Naso*.

This is a group of medium-sized to large herbivorous fishes found all over the Red Sea, Indian Ocean, and the Pacific. Some have a well-developed horn on the nose, but in others of the genus it is simply a slight bump. This horn imparts an extraordinary grotesque appearance to the fish. Generally they are dull-coloured, but some are vividly decorated whilst others are actually very beautiful. On either side of the caudal peduncle

there are a number of spines and these are first rate weapons of offence. Even a slight blow from the tail of one of these fishes will cut one's hand to the bone and that is the reason the native fishermen always remove them as soon as possible. The large specimens are, contrary to popular ideas, most excellent eating, but the skin should be removed either before or after cooking. In life the skin is rough to the touch, like that of a shark.

Naso brevirostris (Valenciennes) (Fig. 29).

When alive the colour of the body is a rich olive brown shading to white on the belly. The sides have a number of blue dots or lines and these are continued on the side of the head. There is an orange line on the gills. The dorsal, anal and pectoral fins are a uniform brown whilst the dorsal and anal often have a basal band of bright cobalt colour. The tail is a rich verdant green with a cross bar of yellow and one again of black and a pure white edging to the tip of the fin. On death all these colours vanish leaving a dirty uniform black colour all over the body.

This fish is common in the Red Sea, at Malindi, Kilifi, Mombasa, Gazi Bay, and Zanzibar, whilst it is found all over the Indian Ocean and the tropical Pacific regions. The native name is *poodju pemba*.

Naso tuberosus Lacépède (Fig. 30).

This fish can be immediately recognised from the previous one as the frontal horn is replaced by a rounded and most prominent bump. The older the specimen, the more prominent is this rounded bump.

The general body colour is a greyish brown, getting darker with age. The body is peppered all over with small blue spots. The dorsal and anal fins are an orange colour with a pale blue and a dark blue stripe and white edging to the fin. The pectoral is brown with a white margin; the ventral fin is yellow and the tail grey also with a white edging.

This fish is the largest of the genus going to eight pounds in weight. It is common in the Red Sea, all the way down the East African Coastline, to Mozambique and again all over the Indian Ocean. It is excellent eating. The native name is *poodju gamier*.

THE SURGEON FISHES. GENUS *Acanthurus*.

The name surgeon or lancet fishes is derived from the sharp caudal spine an offensive weapon used by violent sideways strokes of the body. These fish go in shoals about submerged reefs in a moderate depth of water. Piers and jetties are also a great attraction. Contrary to public ideas, all are excellent eating.

Acanthurus triostegus Linnaeus. The Striped Surgeon Fish (Fig. 31). The native name is *togo*.

The general body colour is a greeny-yellow shading to ivory white on the belly and throat. There are six transverse black bands on the side and a thin black longitudinal line along the middle of the snout. The fins are a pale green, but the caudal has a narrow black margin.

This fish is found all over the Indo-Pacific and is common all down the East African Coast; specimens having been obtained at Malindi, Kilifi, Mombasa, and Gazi Bay. It grows to six or seven inches and is eaten by the native fishermen. Another native name is *kigumwgumu*.

Acanthurus gahm Riippell (Fig. 32).

The general colour of this fish is a rich black brown with a black stripe on the shoulder. There is a narrow bright blue stripe on the dorsal and anal fins. The caudal fin has a bright blue margin and the fork of the caudal has a whitish zone. The tip of the pectoral fin is a bright orange. This fish is widely spread all over the Indo-Pacific and it is also a very common fish in the fish markets at Malindi, Mombasa, and Nairobi. The spine is always cut off before being sold to the public. This fish runs to two pounds in weight and is excellent eating. The native name at Mombasa is *kangadjia* or *kangaja*.

Acanthurus leucosternon Bennett (Fig. 33).

The general body colour is a rich chocolate or umber brown fading to a pale orange on the throat and on the belly. There is a white band on the chin and another on the cheek. The caudal, anal and dorsal fins are slate black, but the caudal has bright orange tips.

This fish is found all over the Indo-Pacific and all down our Coastline to Mozambique. It is common at all the fishing places off our coast and in the fish markets. A native name given to the writer was *kangadjia marembo*.