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Exotic fishkeeping : **Breeding the Cichlids**

Published by The Saturn Press : Eveline Road, Mitcham, Surrey : 1955

Printed by The Press at Coombelands, Ltd., Addlestone, Surrey

Bound by G. A. Cramp & Sons, Ltd., Mitcham, Surrey

Blocks by The Star Illustration Co., Ltd., London, W.C.1

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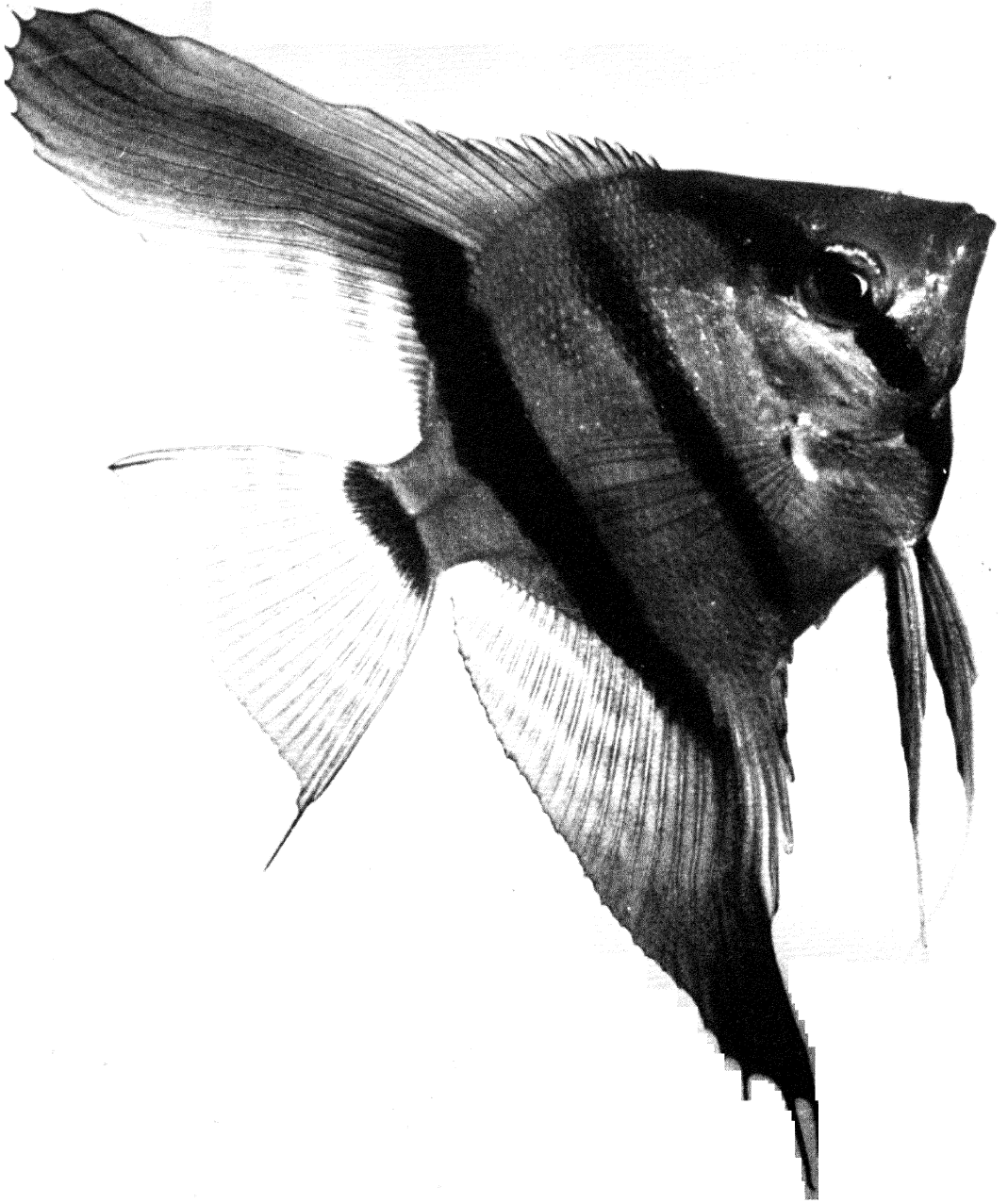
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Exotic fishkeeping

Breeding the Cichlids

THE CICHLIDS ARE NOTED FOR
GREAT TENACITY OF PURPOSE
FEARLESSNESS IN FACING DANGER
LOVE OF FAMILY

THE SATURN PRESS



Pterophyllum Eimekei

Note that this is a female, breeding tube with round tip is showing

WITH GRATEFUL THANKS I HUMBLY DEDICATE THIS BOOK
TO OUR MOST FAMOUS FISHKEEPER
SIR WINSTON CHURCHILL, K.G., O.M., C.H., M.P.

Introduction

Buckhurst Hill, Essex : April, 1955

The whole family of Cichlids with the exception of the Angel have never been popular with the majority of aquarists. Of the many reasons for this state of affairs the principal one is that they cannot be trusted with other fish and as the majority of aquarists maintain community tanks large Cichlids for these are out of the question.

Further disadvantages are also apparent—most of them grow very large—they are not entirely happy with anything but live food and they are prone to destroy plants, and lastly they are not easy to obtain for dealers in general are loath to stock them in view of these very facts.

In my opinion and any aquarist who has kept them for any length of time will agree with me, they have many endearing qualities, and I am afraid it is a case of ‘Give a dog a bad name.’

All of the Cichlids normally kept by aquarists are highly intelligent, and become astoundingly tame. Their colouring is really brilliant and their habits amusing, altogether a fish that can and does become a real pet. Once settled down they are absolutely fearless and will readily take titbits from the fingers.

I know that generally speaking they will eat any fish that they can get into their mouths and with some of the larger specimens this means they can eat full grown platies and sword-tails, but this trait is not inherent, it depends, and of course I am referring to aquarium bred fish, on how they were brought up. Time and again I have proved to my own satisfaction that providing they have been reared from babies on tubifex, garden worms, or bits of fish or meat *and are kept adequately fed* that they take no notice of other fish in their tank, not even tiny livebearers. At the present time I have two large Blue Acaras, *Aequidens latifrons*, they are five inches long, and since I have had them, at one inch long, they have been fed exclusively on tubifex, garden worms, etc. In order to confirm my previous experience I introduced about two dozen guppies of all sizes to their tank two days ago, those guppies are still swimming happily in the tank and the Acaras simply ignore their presence.

I have had this same experience with the Zebra Cichlids, The Firemouth, Dempsey, Festivum, and to a lesser extent when small with the Jewel Fish. I am loath to pinpoint this fish as an aggressor as it is one of the most beautiful of all the Cichlids but I must confess that the Jewel fish above all others is an inveterate hunter of other fish with a lightning like attack which never fails. They definitely prefer live fish even when young, as an instance a friend of mine took two baby Jewel fish from me and at the same time asked for two small Zebra Danios, now the Jewels were about one inch long, the Zebras about three quarters of an inch, when my friend suggested they go into the same jar with the Jewels I demurred, but he said they would be all right as it would only take him five minutes to get home, nevertheless he arrived home with two complacent looking baby Jewels and no sign of the Zebras. So I am afraid that the verdict is definitely against the Jewel Fish.

I will say this, that once Cichlids have been forced to eat baby fish through hunger, then no fish is safe from them. The Angel which is the only Cichlid normally kept, and indeed almost a *sin qua non* in any community tank, is as everyone is aware an inveterate eater of baby fish of any kind. Even quite young Angels will search out and eat baby fish, and young Angels although reared on tubifex, etc., will start eating baby fish as soon as they are aware of their presence, why is it then that what is a crime in the vastly more colourful Cichlids is entirely overlooked and condoned in the Angel Fish? Again, the dealer who would not consider his shop properly stocked without Angels generally refuses to stock any other of the larger Cichlids.

Personally I would say that no aquarist has known the best of our hobby until they have kept and bred the Cichlid.

A further crime with which the Cichlids are charged is that they destroy plants, the theory is that they tear up plants to prevent them being used as a refuge by enemies. I refuse to believe that the intelligent Cichlids are unaware of the presence of potential enemies. It is agreed that this plant destruction is only prevalent at breeding time. Consider therefore the methods adopted by most of these fish at breeding time, whether flower pots, flat stones, etc., are present, invariably they start by digging a nest in the compost, selecting a suitable site the fish settles down on the sand and by wriggling and twisting the body scoops out a depression. In the case of big *Astronotus* which I possessed they would press their bodies forward into the depression and acting in similar fashion to a bulldozer push the gravel up into a heap. *Apistogramma pertense* which, although one of the Dwarf Cichlids, is a great burrower picks the sand up in mouthfuls and removes it to another spot.

Little wonder then that all but the most robust plants which are deeply rooted, become dislodged and float to the surface. At the present time I have a pair of *Nigrofusiusatus*, the Zebra Cichlid which have reared a large brood without disturbing a single plant, true it is a large tank planted with giant *Sagittaria*, but the fact remains that if the sole object was to remove foliage to disclose lurking enemies these fish are quite capable of tearing off the leaves with their mouths. I am sure in my own mind that the plants are dislodged accidentally during nest making.

The breeding habits of the Cichlids are profoundly interesting, principally because of the tremendous care and hard work on the part of the parent fish to ensure the well being of the brood. With some of the Cichlids the courtship is a strenuous and exciting affair consisting principally of what appears to be a trial of strength by locking mouths together and twisting and twirling rather in the manner of two wrestlers attempting to throw each other. All being well and it is very rare for a pair of Cichlids, always excluding the Angel, to refuse to mate, the pair begin questing for a nest site. Sometimes a number of holes are dug in the sand as previously described before the site is finally decided. They will dig down to the glass or slate bottom and commence to rub and polish until it is scrupulously clean, and even then I have known them abandon it for some reason known only to themselves and start all

over again on a flat smooth stone or piece of rock if available, but in the majority of cases they prefer to dig a hole as the eggs are then to some extent out of observation. While these preparations are going on the ovipositors are in evidence, these protrude from the vent with a round blunt tip in the case of the female and a sharp point in the case of the male. If you have been in any doubt about the sex of your fish, and you should not be as with most of them the sex is easily discerned, again excluding the Angel, you will have definite evidence, and this is in fact the only certain way to identify the sex of Angels.

The eggs are laid in a symmetrical pattern by the female and each egg is fertilised by the male following the female. As soon as the egg laying is finished the ovipositors disappear and each parent takes turn at fanning the eggs. With pectoral fins working like fans they hover over the nest creating a current which prevents dirt settling on the eggs. The eggs of most species hatch in about sixty hours at 80 degrees. Any infertile eggs are eaten and the parents congregate the newly hatched babies in a mass. Each baby fish quivers with a trembling movement almost continuously for something like twenty-four hours after hatching, presumably again to prevent tiny particles of dirt settling on them, and viewing the nest it appears to be full of a shimmering jelly like mass.

Now begins the most critical stage and during the next two days parents should not be disturbed or distracted in any way, although Cichlids will fight to the death for their young I am quite prepared to believe that they would eat them at this stage rather than any harm should come them, so except for daily feeding keep away from their tank.

From this stage for a period of three to four days the male makes a new depression or nest daily and the young fish are taken in the mouth by the parents, they appear to be chewing, actually they are rolling the fry around in their mouths to clean them and then they are deposited in the new nest. It seems certain that the reason for taking them to a new nest is to ensure that every baby gets its daily 'bath,' and it is an object lesson in parental care, considering the large broods they produce, to see the anxious nosing round the old nest by both parents to make quite certain that they have not left one tiny baby behind.

The grandest sight of all and one which I do not think can be equalled in any phase of fish keeping will occur on the fourth or fifth day when the whole of the brood is free swimming and 'mother' decides it is time to take them for an airing. You will see her rise slowly and carefully from the nest with the whole brood swimming in a cloud around her and the male majestically circling the swarm to prevent stragglers. If one over confident youngster starts exploring it is gently taken into the mouth of the male and ejected back into the brood. At this stage if you approach the tank without caution the parents will immediately herd the whole of the brood into the current nest, and it is amazing how quickly and efficiently they can control the mass of young fish. At night, and this will go on for about two weeks, they again herd all the babies into the nest.

Feeding the babies after they are free swimming is not a difficult problem, if the tank is a

large one and the brood not too numerous, sufficient infusoria will be present in the tank. Cichlids are such gross feeders that their excreta produces an excess of infusoria. If the brood is very numerous, around four hundred or so, by no means uncommon with large parents, you will have to add infusoria. At a week old the fry are sufficiently robust to take micro worms, brine shrimp and fine dried food, at a fortnight old they will manage tubifex and once on this they will grow fast, the majority of a well-reared brood will be one inch long at eight weeks old.

It is advisable not to remove all the baby fish from the tank at one operation, I usually net them out in three batches taking out around fifty per cent the first time, and a week later fifty per cent of the remainder, finally clearing the tank after another week. If the whole of the babies disappear at the same time there is a danger that each parent will suspect the other of eating the babies with the consequences of a possible fight between them.

At about eight weeks the brood can be finally cleared out, by that time the parents take little notice of them, and are probably considering raising another family. In theory both fish should do an equal share of guarding and shepherding the babies but this is not always the case, one or other, usually the male tends to pay little attention to the brood with consequent 'ructions' from the partner.

I had a pair of Jewel Fish the male of which invariably neglected his duty. He would be all right for the first two days swimming around the brood like a sheep dog, then he would get tired of it. I have watched and you could almost read his mind, he seemed to say to himself 'Aw, hell to this business' and leisurely swim off to a corner of the tank. Frantic bobbing by the female as the brood began to scatter, then like a shot from a gun she would fly to the corner of the tank where he was and belt him all round the tank, fly back to the centre of the brood and 'father' would meekly swim up and collect the brood together, during one brood they had she tore half his tail off so vicious was her attack.

You will have gathered from the foregoing remarks that the Cichlids are easy to breed. They are, some of them ridiculously so. Given a true pair they will breed in a tank far too small to accommodate the brood, at a pinch a twenty-four inch tank would do, but you will have to watch the size of the brood, better to use a thirty or thirty-six inch tank, and remember that a really large pair of Cichlids are likely to produce a brood of a thousand or even more and will need a one hundred gallon tank.

Some of the Cichlids will breed at a comparatively small size. I have had Zebra Cichlids breed when less than two inches long with consequent smaller brood, and again Jewel Fish, Cutteri, Firemouths, Festivum and Orange Chromides do not grow inordinately large, so you have a wide choice of fish that can be bred in a reasonable size tank.

There is another group of Cichlids known as Mouthbreeders, of these only one is generally available. This is the Egyptian Mouthbreeder, *Haplochromis multicolor*, and is particularly suitable for breeding in a small tank. At maturity this fish is only two inches in length and

can be kept and bred in an eighteen inch tank. The amazing breeding habits of this fish are described fully under a special heading.

Most of the larger Cichlids are not at all fussy about water, always excepting the Angel. But for breeding old water in well conditioned tanks is necessary. A well-fed pair of Cichlids will quickly condition their tank as those that have not previously kept Cichlids will discover. Due no doubt to their gross feeding habits green algae will grow on the glass of their tank at an alarming rate even in subdued light and will necessitate regular cleaning. Strangely enough this does not happen to anything like the same extent in the case of Angels.

Generally speaking the breeding temperature for all the Cichlids is 70-80 and must be particularly maintained in the early stages of hatching. As with all young fish, baby Cichlids revel in a high temperature which keeps them feeding and growing.

Despite all the bad things that has been said about them—and after all they are only following their natural instinct—the Cichlids possess qualities which are almost absent in other aquarium fish, they go about the business of breeding in a purposeful fashion, they are absolutely fearless of enemies and their devotion and attention to their family has to be seen to be believed. My advice to my readers is to ignore the black sheep stories you may have heard and try them for yourself. One other thing in their favour as a family they are very hardy and not prone to disease, and have an exceptionally long life, kept under good conditions they will live up to ten years.

As I have already stated, these fish especially when large do make their tanks dirty, and require special attention in this direction by syphoning out at fairly frequent intervals and by occasionally replacing a fair quantity of their water with fresh.

Cichlasoma Nigrofasiatum (*Sick-la-soma nigro-fas-i-atum*)

Zebra Cichlid : *length 3-4", temperature 75° F.*

The Zebra Cichlid is in my opinion the most easily bred among the Cichlids. They have bred for me when only 1½" long in an 18" tank. I have also had a pair breed and rear their young in a large community tank, not to be recommended because as the baby fish begin to scatter they will attack other fish in their defence.

I think the most amazing experience I had with these fish was when I put no less than seventeen almost mature fish in a 3' tank. As usual the glass became thickly coated with algae until the fish could not be seen and for many weeks they remained there until I was asked one day for a couple of pairs. As I was trying to net them I continually caught baby fish of 1" long, true there was not a great number, but I marvel that any survived at all among such a crowd of adults and when I remembered that they had more often than not been forgotten at feeding times, a case of out of sight out of mind—it seems miraculous, and says much for the maternal instinct of this Cichlid.



Cichlasoma nigrofasciatum

KONGO CICHLID ; ZEBRA CICHLID

Note baby fish in photo



Cichlasoma nigrofasciatum

Photo by DAVID NEWBERY

Cichlasoma Nigrofasiatum (*continued*)

This is one of the Cichlids that changes its colour, and they can be a sort of light brown with black vertical stripes, or the ground colour will be almost cream and the stripes slatey blue, again when breeding the female will disclose an orange edge on the dorsal fin.

This is the fish I would recommend to any aquarist who wishes to make a first attempt at breeding Cichlids.

Hemichromis Bimaculatus (*Hem-i-crow-mus bi-mac-u-latus*)

Jewel Cichlid : *maximum size 4", breeding temperature 80° F.*

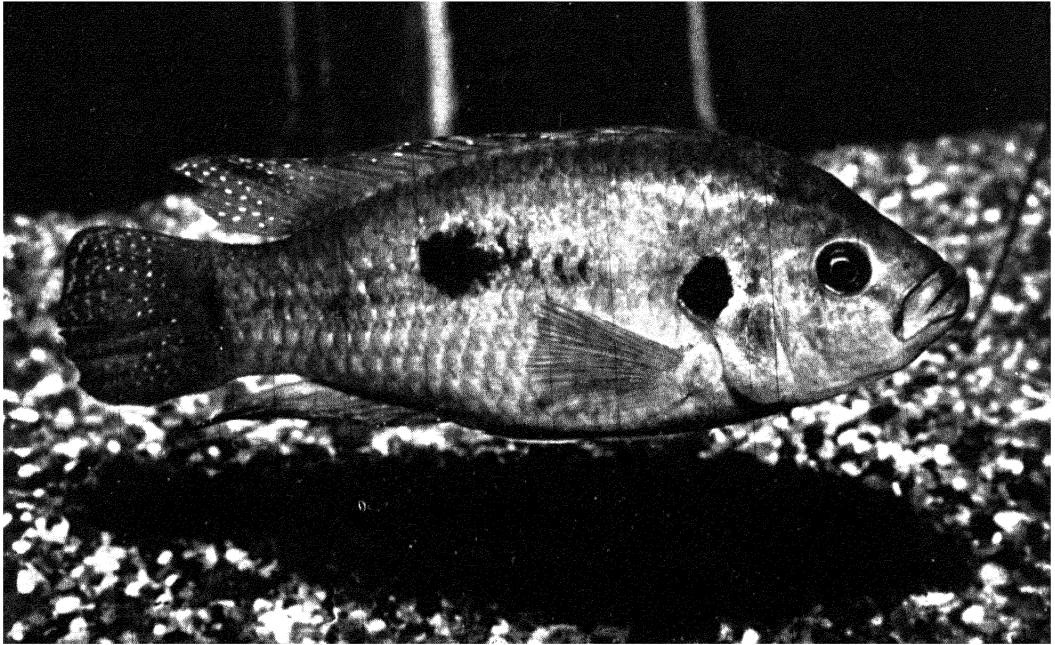
Among the Cichlids commonly kept by aquarists this is the one fish that is an inveterate eater of other fish, they will take other live food under protest and when hungry will eat tubifex or garden worms, but I can assure you that hungry or well fed no fish small enough for them to swallow or rather get into their mouths is safe from them.

Which is a great pity for no other Cichlid can surpass them for colouring, and no other fish that I know can equal the gorgeous red of a female Jewel when ready to breed. Normally of a greenish shade with bright blue 'jewels' the sex can be ascertained by the jewels being larger and more numerous on the gill plate of the male and the jewels in the caudal fin extend practically right round the edge of it. In the female the caudal jewels only extend half-way in the tail and there are very few jewels on the gill plate.

The males are variable in their breeding colours, I have seen them remain the usual greenish shade except that it is very intense and brilliant. But I had a male who used to turn almost black when breeding and he was a magnificent spectacle with the brilliant greeny jewels contrasting with the black of his body. I may say in passing that the females even without the presence of a male, will when carrying eggs and ready to breed, assume a lovely shade of almost pillar box red.

The Jewels are not such inveterate 'diggers' as some of the other Cichlids, and will if it is provided spawn in a flower pot or on a flat slab or stone placed at the back of the tank.

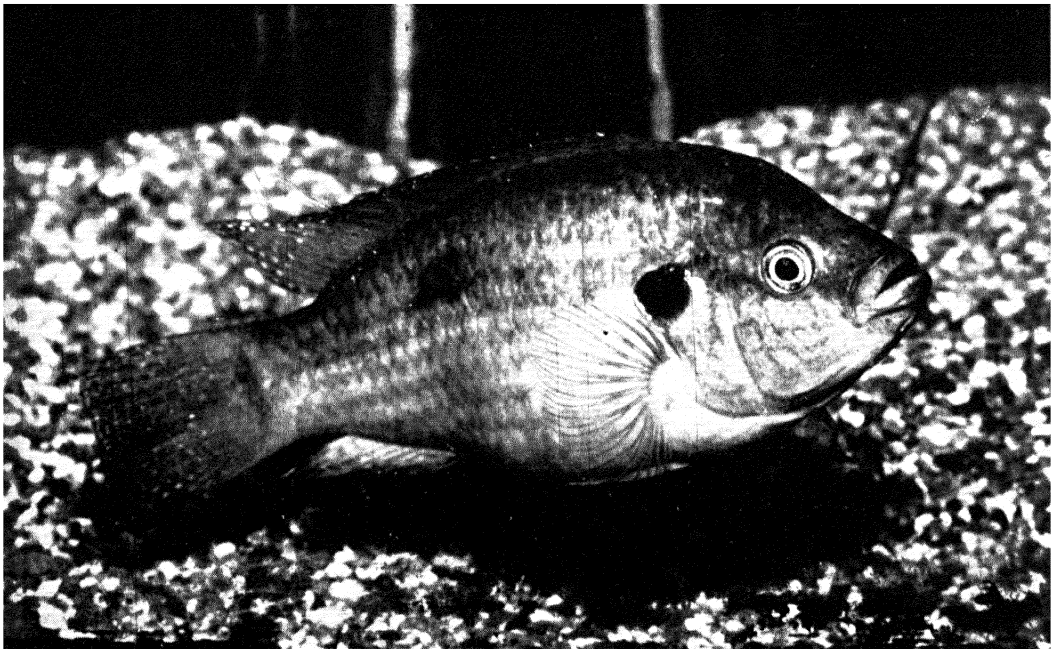
They are confirmed eaters of the other fish, but despite all I have heard to the contrary I have never known them to eat their own babies, and I have left part of a brood with the parents until they have hatched out another brood, and, although apparently they were not taking any notice of the young fish of the previous batch, I thought it discreet to remove them.



Hemichromis Bimaculatus

JEWEL CICHLID

Female fish. Note that jewels on outer edge of caudal fin do not extend right round the fin



Hemichromis Bimaculatus

JEWEL CICHLID (MALE)

Hemichromis Bimaculatus (*continued*)

That they can differentiate between their own babies and other fish I have proved many times, release a number of young Guppies into their tank and it is certain that some of them will swim into the shoal of baby Jewels, and it is amazing to see the parents dash into the cloud of tiny fish and unerringly pick off the baby Guppies, and more astounding was an occasion when the male missed a guppy and caught one of his babies by accident in his mouth, some instinct must have instantly told him he was wrong because he immediately ejected the baby Jewel and again went after the guppy.

Well reared and fed the Jewel is ready and will breed at something under 3" long, really the best time to breed them as the brood will be of manageable number for the average aquarist, around one hundred or so. Temperature and rearing the babies as in general instructions.

Aequidens Latifrons (*E-kwi-dens lay-te-frons*)

Blue Acara : *length 5-6", breeding temperature 80° F.*

The Blue Acara is one of the popular Cichlids which is more easily obtained than any of the others. Although it grows rather large it is not by any means of an aggressive nature and I have seen this fish in community tanks on many occasions. Its common name of Blue Acara would lead one to expect a blue fish, actually the principal colour is a sort of green with rather deeper markings on the head and many bluish green scales. The fins where they are coloured are dullish orange with blue markings. Has the typical central body spot common to many of the Cichlids but the spot is rather larger than most of them. This again is one of the very prolific breeders that is likely to overwhelm you with the numbers of the fry, large fish will produce well over a thousand babies. They are exemplary parents and youngsters may be left with them for a very long time.

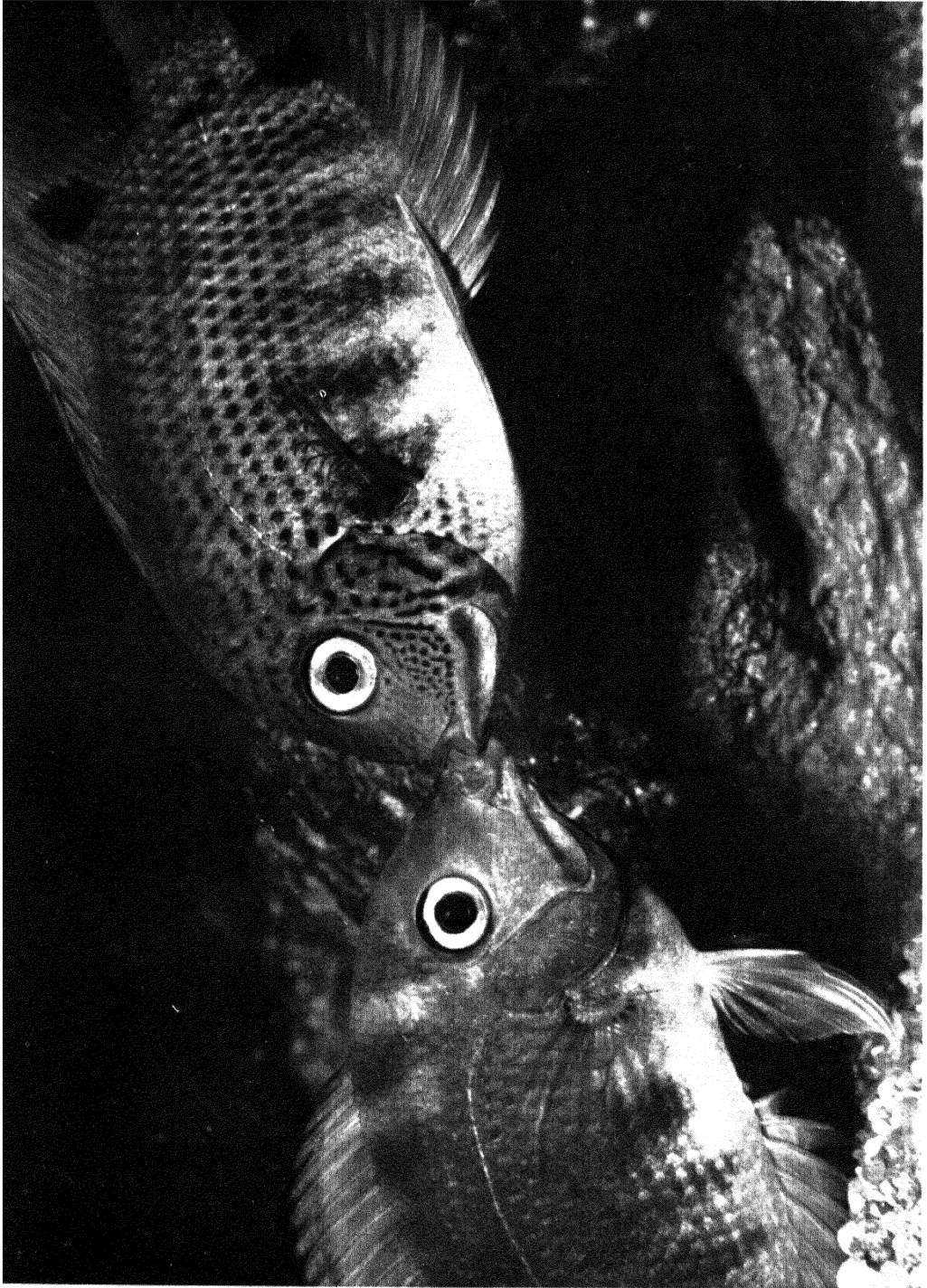
Although both sexes are similar colour and markings, the male can be easily distinguished by the tapering point to the dorsal fin.

Cichlasoma Severum

Maximum length 6", breeding temperature 80° F.

Cichlasoma severum is only available occasionally, principally because this fish is not too easy to induce to breed.

You can observe these fish in any colour from grey to black depending upon their mood, normal colour is greeny grey with a bold black stripe which seems to divide the tail from the body and gives the fish a peculiar foreshortened shape. Given plenty of room in a large tank and fed principally on garden worms they will breed. Our photograph shows a pair in a typical breeding jaw lock.



A pair in typical mating jaw lock

Cichlasoma Severum

Cichlasoma Meeki (*Sick-la-so-ma meek-i*)

Firemouth Cichlid : *maximum length 5", breeding temperature 80° F.*

The Firemouth is one of the most spectacular of the Cichlids. Once they reach maturity and colour up they remain so, naturally at breeding time the colours are more brilliant but it is always a striking fish. The deep red starts at the bottom of the mouth and extends almost back to the tail fin, and they have a bright blue edge to the dorsal and annal fins. They also have a brilliant spot just below the gill plate.

Not quite as prolific as the usual run of Cichlids but will breed readily under the usual Cichlid conditions as described.

No photograph other than a colour plate can do justice to the Firemouth, but the 'shot' included here shows the typical hump back and sharp snout of this fish, very reminiscent of our common perch.

Aequidens Maronii (*E-kwi-dens ma-ro-ni-eye*)

Keyhole Cichlid : *length 3", breeding temperature 78-80° F.*

The Keyhole Cichlid is another of the Cichlids that does not grow very large. The colour of the fish is lightish brown and unfortunately the photograph does not show the keyhole marking very plain which is a feature of the fish and from which it derives its common name.

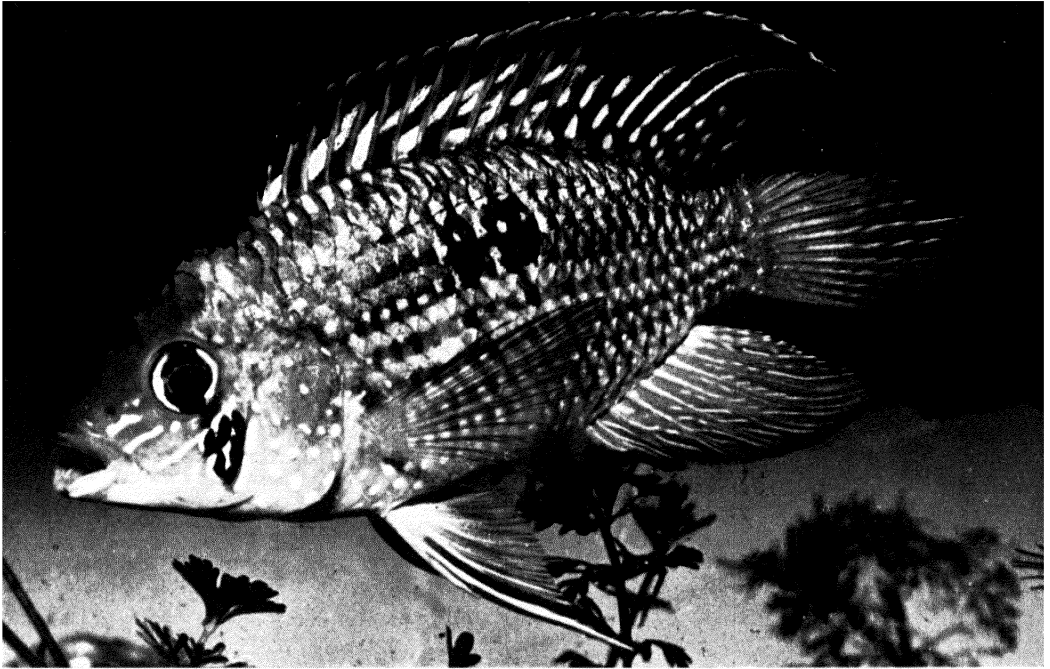
When mature the male has a pointed dorsal and annal fin. Not at all a boisterous fish, and can be kept and bred in a twelve-gallon tank, breeds in typical Cichlid manner as per our instructions.

Aequidens Portalgrensis (*E-kwi-dens por-tal-e-gren-sis*)

Brown Acara : *maximum length 5", breeding temperature 75-80° F.*

Not particularly brilliant in colour this fish has many other qualities to recommend it. In my opinion it has the most gentle disposition of all the Cichlids. A certain breeder—I had a pair who commenced to clean up a flower pot for a spawning within one hour of being introduced to each other, a case of love at first sight no doubt, they locked jaws just once, and then commenced cleaning the pot—and wonderfully patient parents. The sexes are very much alike both in colour and shape, possibly the dorsal and annal of the male are rather sharper than the female, sometimes more blue about the head and with more spots in the tail.

Amazing fecundity, a large pair can overwhelm you with the number of their offspring.



Aequidens Latifrons

BLUE ACARA (MALE)



Cichlasoma Meeki

FIREMOUTH CICHLID

Cichlasoma Biocellatum (*Sick-la-so-ma bi-ose-l-lay-tum*)

Jack Dempsey : length 6-7", breeding temperature 80°.

The Jack Dempsey is probably the best known Cichlid among aquarists. A long standing favourite and a sure and certain breeder this fish has proved itself in many ways. The very fact that the fish is commonly known by its nick-name proves its popularity, and it is almost a *sin qua non* among any collection of Cichlids.

This fish can be tamed to an amazing extent. I kept a male for a very long time in a tank by himself on the lowest shelf in one of the fish houses. The glass of the tank was invariably covered with green algae and the top of the water with duckweed so that the fish could not be seen, but hold a titbit close to the water in the fingers and immediately Jack's blunt head would appear and gently take the food, it never failed to amuse visitors because they did not realise there was a fish in the tank.

At maturity this fish exhibits glorious colouring, examine the photograph and imagine all those glittering scales are greeny blue and the edge of the dorsal fin outlined in brilliant red and you will gain a little idea of the magnificent spectacle he provides.

At breeding times they are absolutely fearless in the protection of their babies.

Cichlasoma Festivum (*Sick-la-so-ma fes-ti-vum*)

Length 4", breeding temperature 80-85°. F.

Festivum is one of the more difficult Cichlids to breed chiefly because they are particularly 'choosy' about a mate, mostly it is the female who is 'difficult,' and unless you invest in several fish you will not find a pair that will agree, in other words, it is almost impossible to set up a pair and force them to mate. The outstanding feature of this fish is of course the heavy dark streak stretching almost from the mouth right up into the dorsal fin. They have extensions to the ventral fins somewhat the same as Angels, but short in comparison. These fish, like several of the Cichlids, have very little colour even when in breeding condition, and are somewhat disappointing in this respect, except that at breeding time the dark streak is considerably denser in colour and the vertical stripes are very much in evidence. It is interesting to note that the fish in the photograph being out of breeding condition the vertical stripes are hardly discernible.

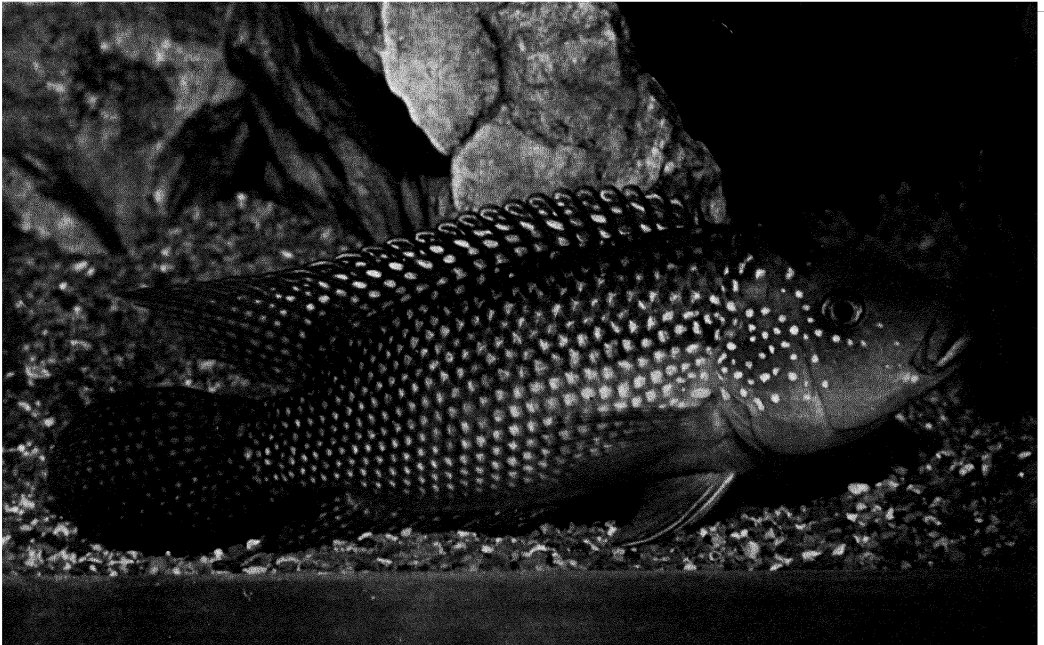
A fish that is well worth breeding as they are seldom in good supply.



Cichlasoma Biocellatum

Female fish with round tip to dorsal fin

JACK DEMPSEY



Cichlasoma Biocellatum

This is the male fish, note pointed tip of dorsal fin

JACK DEMPSEY

Geophagus Brasiliensis (*Jee-o-faagus brasil-e-en-sis*)

Length up to 6", breeding temperature 80° F.

Here we have another of the brilliantly coloured Cichlids. As young fish even up to 3" or so they seldom give any promise of the magnificent colouring they will attain as they age. They have a dark central spot which is common to many of the Cichlids, but their principal colouring is seen in the deep orange of the fins and the bright red edge to the dorsal with many iridescent scales on the body similar to the Dempsey.

As will be seen in the photograph, which is a female, this fish has a rather different shaped body to most of the Cichlids and I think it can be summed up by describing it as more graceful than the average run of the Cichlids.

Breeds very much the same as the other Cichlids, but it is not so prolific. Best results are obtained, and this applies to most of the Cichlids, by mating a pair almost evenly matched in size.

Etroplus Maculatus (*E-tro-plus mac-u-lay-tus*)

Orange Chromide : length 3", breeding temperature 82-84 F.

Here is a Cichlid which is usually in short supply, due no doubt to the fact that for a Cichlid it is shy and retiring and therefore not easy to breed. You will do best with these fish by providing a flower pot right at the back of the tank, if it can be screened by plants so much the better.

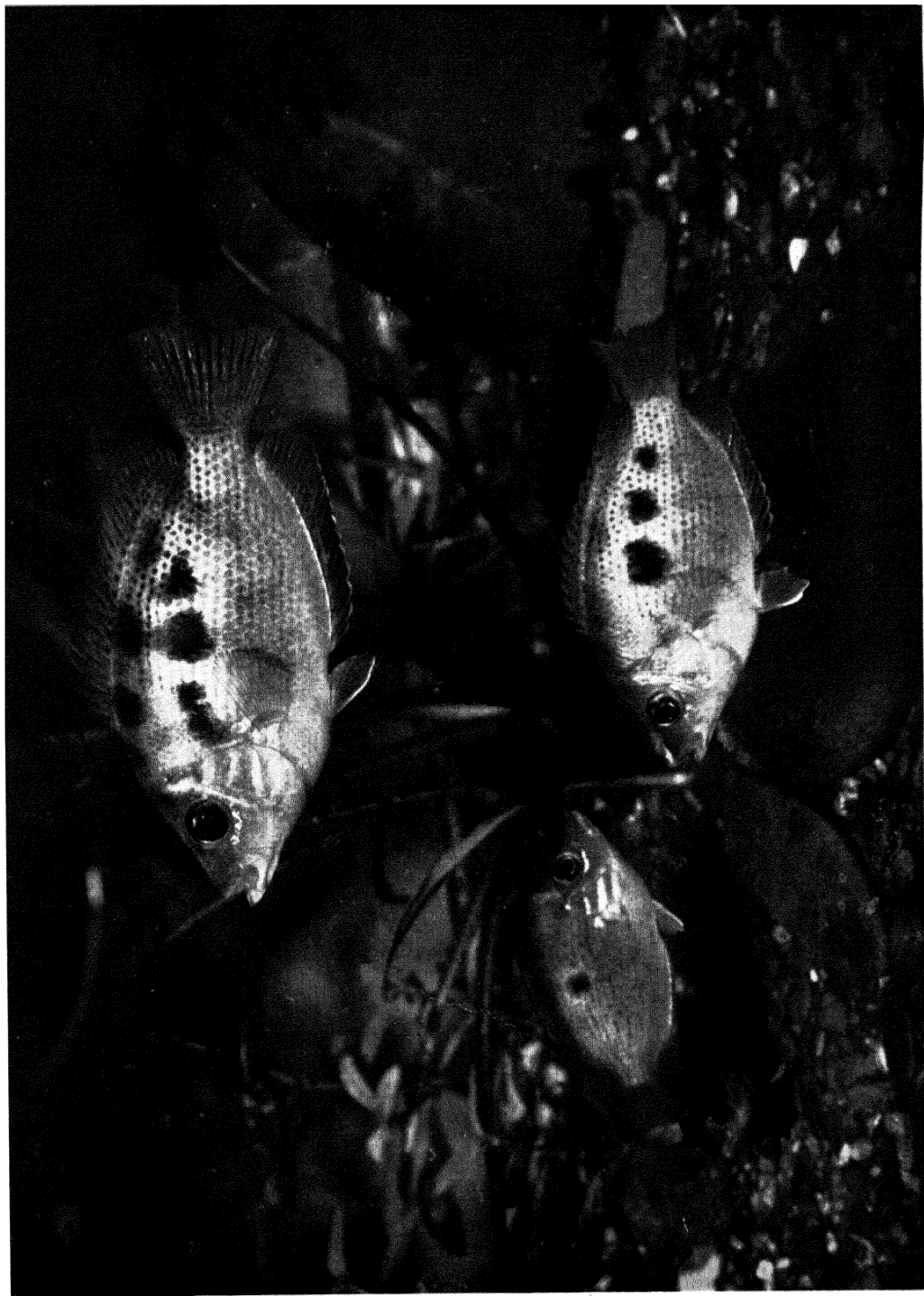
They are very susceptible to changes of water conditions and will do best in old well-matured water. A very beautiful little fish and well worth going to any trouble to breed them, at the time of writing there is an urgent demand for them. As the common name denotes they are a sort of deep suffused yellow when in breeding conditions.

Not easy to sex, the male being rather deeper in colour at all times. Babies are attached by a thread as with Angels. Keep away from their tanks as much as possible when breeding.

Astronotus Oscellatus (*As-tro-no-tus os-sel-la-tus*)

Marbled Cichlid : length up to 10".

Here is a Cichlid that is quite different in appearance to any other member of the family. Importations have been frequent during the last two or three years, and having been reasonably priced, the fish has become popular, at least popular for a Cichlid. At about 6" or so long it is very spectacular, its skin appearing to be of soft suede leather, the marbled markings from which it is commonly named are not always in evidence, they can fade out almost completely while again the whole fish will glow with reddish markings. They vary very much in disposition some quite tame and others very 'scary' !



ORANGE CHROMIDES

Etroplus Maculatus

Astronotus Oscellatus (*continued*)

This fish has been bred on very rare occasions, I believe only once in this country. Two or three years ago I owned what I fondly imagined was a pair, but although they went through all the motions bulldozed away at the whole of the gravel and at one time piled it in a huge heap at one end of the tank, and when tried with a large flower pot actually moved this around the tank it never came to anything, and I was forced to the conclusion they were two females.

By this you will gather that they are very difficult to sex, there are no sexual characteristics that I have been able to discover, as for colour they can change to such an extent one can hardly believe it is the same fish. It is possible of course that they will not breed until of maximum size, the two I had were 5" and 6" respectively. I showed the larger one at the 1951 N.A.S. the largest that had been exhibited up to that time, since then some real monsters have been shown, still I have heard no news of breeding them. The one case I heard of which I was not able to fully confirm was from small fish of 4" or so, and I understand that the babies died.

Symphosodon Discus (*Sim-fo-so-don disk-us*)

Pompadour Fish : *length up to 8", breeding temperature 82-85° F.*

Here without any doubt is the new 'aristocrat' among aquarium fish. Not by any means 'new' in the literal sense—the fish has been known for many years—and they were available before the war, but with the promise of further importations in the near future and the hope that our fortunate friends who obtain them will be lucky enough to breed them leads me to believe that before long they will be within reach of the average pocket and it will be every fish-keepers ambition to own a pair of Pompadours.

Unless something unforeseen occurs such as discovering the fish in numbers from a yet unknown source—it has always been a rarity for collectors—the price of Pompadours will be high for a long time and I am afraid beyond the reach of any except the most opulent fishkeeper. But it is only a question of time, I can remember when seven pounds was considered a fair price for a large Angel Fish.

They breed in a similar manner to the Angel and are in many respects alike excepting of course that the Pompadour has the supreme advantage at breeding time of gorgeous colouring.

Pterophyllum Eimekei (*Fer-ro-fil-um eye-me-key-i*)

Angel Cichlid.

Ask the average fishkeeper which is the most popular Cichlid and most of them will name anything except the Angel. The Angel is indeed so popular that the fact that it is a Cichlid is often overlooked.



MARBLED CICHLID

Astronotus Ocellatus

Pterophyllum Eimekei (continued)

A great many people have been disappointed when introduced to the Angel, the name has led them to expect something wonderful, actually *Pterophyllum* means winged leaf and I assume that is the reason for the common name of Angel.

Actually there are two Angel fish the other being *Pterophyllum scalare* which is generally described as the true Angel. *Scalare* is seldom available, and the great majority of Angels on sale are *eimekei*.

Pterophyllum eimekei is the fish I shall refer to and has red eyes, blue on the ventrals or feelers, and a certain means of identification—small black dots on the side, some with more than others.

Once you have a mated pair they will breed freely and are very prolific, a proof of which is the low price of small Angels. Today baby Angels are at most three or four shillings each, before the war they were twice that sum, in the late twenties ten pounds a pair was a fair price, in 1936 I sold some fairly large fish at two pounds ten shillings each which was then considered cheap.

To get a pair, that is the stumbling block, there is no certain method of sexing that I know other than growing them on to breeding size and actually seeing the breeding tubes or ovipositors, even then it is not easy to identify the particular pair from among several and you may net them and find you have caught the wrong ones as they are so much alike. Once you have got a true pair, self mated, they are invaluable. My own private theory of the reason why it is so difficult to obtain a pair is that there are vastly more females produced than males. Over and over again I have seen two fish that kiss and carry on like a pair, both displaying breeding tubes, and laying and fanning eggs which are infertile, and they have both proved to be females.

The breeding tube of the male has a sharp pointed tip, in the female it is blunt and round, as indeed with all the Cichlids, but it is not easy to distinguish in the Angel.

The only way to obtain a pair of Angels other than paying the price for a mated pair is to use that old fishkeepers ingredient, patience. Purchase a number of young Angels, at least six, eight or nine would be better, keep them well fed and in a tank to themselves for something like eight or nine months, they will then begin to show something of breeding proclivities, and a sharp eye should be able to identify a pair.

One point I would stress in the keeping of Angels. Provide them with a deep tank, at least 15", 18" or more would be better, and you can afford to lessen the front to back dimensions as Angels seem able to ignore the higher water pressure involved and will do quite well indeed in a tank of 3' in length with a



POMPADOUR FISH

Symphosodus Discus

Pterophyllum Eimekei (*continued*)

depth of 18" and a width, that is front to back, of 12". They will not develop properly in a shallow tank or for that matter in a small one, and they become distinctly nervous in a tank where their 'feelers' are continually likely to touch bottom.

Now as to breeding conditions. The tank must be planted, and best for the purpose are Vallisneria, straight or twisted, and Giant Sagittaria, my experience has been that if Giant Sag is provided they will prefer to spawn on this plant to the exclusion of all else, even the Amazon Sword. If you propose to take the eggs away to hatch in another tank I still think the natural plant is to be preferred to anything artificial you can provide.

With the exception that they deposit their eggs on leaves Angels spawn in similar manner to other Cichlids, when the babies hatch they hang by a thread to the leaf and vibrate as do other young Cichlids, instead of the parents moving them from nest to nest Angels pick off mouthfuls of babies and spray them on to another leaf. In theory they should carry on and look after the babies as do other Cichlids, and indeed some Angels do, and obviously they must in their natural waters but alas the Angels that care for their babies in the aquarium are very few and normally you will have to remove the eggs.

It is worthwhile however to give your pair a chance to prove their worth, especially so if they are a pair which have been selected as aforementioned and they are in a roomy tank and appear comfortable. If a day or so after spawning they appear to be eating the eggs do not be unduly alarmed, it is their habit as with all Cichlids to eat the infertile eggs, and if they eat all of them there is a distinct possibility that you have made a mistake and have two females in the tank as all the eggs will prove infertile.

You can prove this by waiting until they spawn again and then removing the leaf carrying the eggs to a specially prepared tank. This tank must be of fair size, I suggest it should be a 24" x 12", perfectly clean with no sand, placed in a situation not too light, at least shade the tank to cut down the light particularly if it is possible for the sun to shine on it. The water which should be only 4" deep must be taken from the parent tank *at the same time* as you propose to move the eggs.

Lay the leaf on the bottom of the tank, eggs uppermost in a position where it can be closely observed by examination with a magnifying glass and within a few hours you will see whether the eggs are fertile. Infertile eggs become white within a short time. Arrange very gentle aeration in the tank to keep any fine suspended matter in the water in constant movement to prevent it settling on the eggs. Keep the temperature steady around 80° F.



Baby Angel Fish

Properly reared they should be this size at twelve weeks old.

Pterophyllum Eimekei (*continued*)

Within seventy-two hours the eggs will hatch, the fry will remain attached to the leaf by a short thread and will vibrate at intervals in the peculiar manner of Cichlids. This is the most critical stage and the aeration must be slightly increased, the fry are covered in a sticky substance and they are liable to stick together and die, the aeration tends to keep them apart and also prevents any suspended matter settling on them. In effect you are using aeration to provide the attention given by the parent fish when fanning the eggs and fry and separating them on to other leaves.

When the yoke sac is absorbed, within four days, the baby fish will be free-swimming, looking as a friend of mine expressed it like a cloud of daphnia. Cut the aeration down as much as possible now and commence drip feeding infusoria, at the same time drip feed additional water into the tank at the rate of half-a-gallon each day.

At this stage the fry do not resemble Angel fish at all, and it will be two weeks before their bodies begin to deepen and flatten and they assume the familiar Angel shape. At a week old introduce snails and some form of plant such as Elodea Densa or Myrophyllum to give them a sense of location, get them on to brine shrimp, micro worm and a little very fine powdered dry food. At two weeks commence with shredded tubifex and once on this you can consider that the rearing troubles are over.

You must now give them ample room, in fairly short stages spread them out to a maximum of four fish to a gallon of water. This is the only way you will keep them growing to make fine fish, and in this connection I would point out the absolute necessity for care in netting and handling. Carelessness in this respect will result in many misshapen and crippled fish. No doubt you have all seen them at times, fish with twisted or half dorsal fins, twisted bodies, and even with holes in the body. I include a photograph of an Angel with a perfect hole right through the body, difficult to say how this could occur but my theory is that a tiny piece of grit settled on the body at a very early stage and became embedded in the mucous covering and which eventually worked its way through leaving a hole which grew larger as the fish matured.

The most controversial point on the subject of breeding Angels is the water conditions. This fish has been bred in widely diverging conditions but I am certain from my own experience that to keep and breed them successfully the water must be distinctly acid. I am no advocate of adding acid to the water as a short cut to quick results, it has been done it is true, but I prefer a more natural method. In preparing a tank for Angels I lay a good $\frac{1}{2}$ " of soaked peat on the bottom and cover with $1\frac{1}{2}$ " of sand, fill up with two-thirds tap water and one-third peat water obtained by soaking peat in water and straining



Just beginning to hatch, five babies can be seen.

Angel Eggs on Leaf.

Pterophyllum Eimekei (*continued*)

it. By this method you obtain a natural p.h. value of around 6.8 which will remain fairly constant by the action of the peat layering.

Angels are temperamental, there is no doubt about that, and very susceptible to changes of water condition, particularly so as they mature, but comparing them with other aquarium fish I would say they are less liable to disease than most, given good conditions and familiar surroundings and they will—as the other large Cichlids—live happily for years.

They cannot tolerate foul water and will die very quickly in bad conditions which other fish would stand for a much longer period. Neither can they stand very low temperatures, I would say that 65° is the lowest temperature for them and it is possible you may have trouble at that if it is prolonged. A temperature which fluctuates from the low seventies to eighty suits them best. Angels are at their best in well-planted tanks and clear water and once settled down are as fearless and as tame as any of the Cichlids.

That the Angel is as fearless as any of the Cichlids I have received definite proof. A pair of mine were breeding in a tank 24" deep, the eggs had been deposited in a clump of Giant Sagittaria, I put my bare arm down into the tank to part the plants and see exactly where the eggs were. I felt one of the fish make a vicious attack on my hand and I was surprised when I withdrew it to see a small gash about $\frac{1}{2}$ " long on the back of my hand which was actually bleeding.

The feeding of Angel fish is particularly important, they are very choosy at times and the answer is to provide as much variation as possible, not easy during the winter months I admit, and then you will have to fall back on tubifex, garden worms and baby guppies. I keep two or three females and a male guppy in the Angel tank, they are very fond of newly born guppies and it keeps the Angels busy searching for them, a good point as they are inclined to 'mope.' Garden worms provide the very best food to bring them into breeding condition, but they must be small worms cut up fine as the Angels mouth is not very large. In summer any aquatic creature that is alive and small enough for them to swallow will be taken readily, mosquito larvae and glass worms especially so, but always remember that the majority of Angels unlike the other large Cichlids will not gorge themselves, they prefer to feed little and often, very occasionally they will relish a small quantity of 'meaty' dried food. On the whole they are not difficult fish to keep in good condition providing they have a variety of diet.

With the valuable co-operation of Mr. Perkins we have been able to include a photograph of Angel eggs as they were laid on a leaf and showing the commencement of hatching.



Young Angels

With plenty of room and good food they should be this size at eight months



The young Angel mentioned by the Author showing hole through body

Haplochromis Multicolor (*Hap-lo-crow-miss mul-ti-color*)

Egyptian Mouthbreeder : *length about 2"*.

The Egyptian Mouthbreeder is a delightful little fish in itself quite apart from its truly amazing breeding habit, and one that I strongly recommend to my readers, it is seldom in good supply and deserves to be more widely known, and a ready market is to be found for young Mouthbreeders.

They will breed in a community tank but you are more likely to lose the female as she hardly dare let the babies out of her mouth to feed. A small tank to themselves is the sure way to breed them.

The pair will scoop out a shallow depression in the sand and the eggs are laid and fertilised in the typical Cichlid fashion, there the similarity ends for the female then picks up the eggs in her mouth and retains them. As soon as you observe this phenomenon and you cannot make any mistake about the bulging mouth of the female when carrying eggs, remove the male from the tank, otherwise he will pester her continually and obviously she has to rest as much as possible to cope with her arduous task. I imagine in the wild state the male seeks pastures new and the female retires to a quiet hiding place to incubate the eggs.

Do not disturb the female in any way, keep the tank as secluded as possible, it is little use attempting to feed her, putting daphnia in the tank will worry her and they will eat the infusoria present in the water which will be needed for first food for the babies. In theory they do not eat at all for the whole of the incubation period, and indeed some do not as is patent by the wasting of the body, but I feel it is a good idea to place a small quantity, very small, a dozen or so of tubifex worms in an open space where they can easily be seen, and on some occasions they have been eaten, if they are then replace them, as it is of the greatest importance and will positively ensure success if the female can be tempted to take some food, however small the quantity.

I have never actually seen it although I am certain some females I have had have eaten during the incubation period. Presumably they would quickly disgorge the eggs when they are quite sure it is safe to do so, snatch a mouthful of food and swallow it, and pick up the eggs again.

Say what you will it is an astounding performance and the females are a sorry sight by the end of the hatching period, emaciated almost to a skeleton and appearing to consist of all head and bulging mouth, and I have lost several who have quietly expired in their devotion to duty. My own experience is that the female will die before the eggs hatch. Once the eggs hatch the female seems endowed with new life and after she is able to release the babies from her mouth she will quickly pick up. Again I stress the necessity for leaving



Haplochromis Multicolor

Lower fish is the female

Haplochromis Multicolor (*continued*)

her undisturbed, it must be an enormous relief to her to let the babies leave her mouth, but at the slightest sign of movement somehow or other she signals danger and the whole of the brood scramble back to her mouth, and she will keep them there until she is sure all danger has passed.

Once the babies are free swimming feed with infusoria, etc., as described for the other Cichlids you can congratulate yourself for a brood of Mouth-breeders is an achievement which depends more upon your skill and care than with any of the Cichlids.

Tilapia Macrocephala (*Te-lay-pee-a mak-row-see-fala*)

Large Mouthbreeder : *length up to 7", breeding temperature 80° F.*

I have included this Mouthbreeder although it is very seldom available. Breeding is very similar to the Egyptian Mouthbreeder except with this fish it is the male who takes charge of the eggs and he is not so tenacious in his care of them.



Haplochromis Multicolor

Lower fish is a female



Haplochromis Multicolor

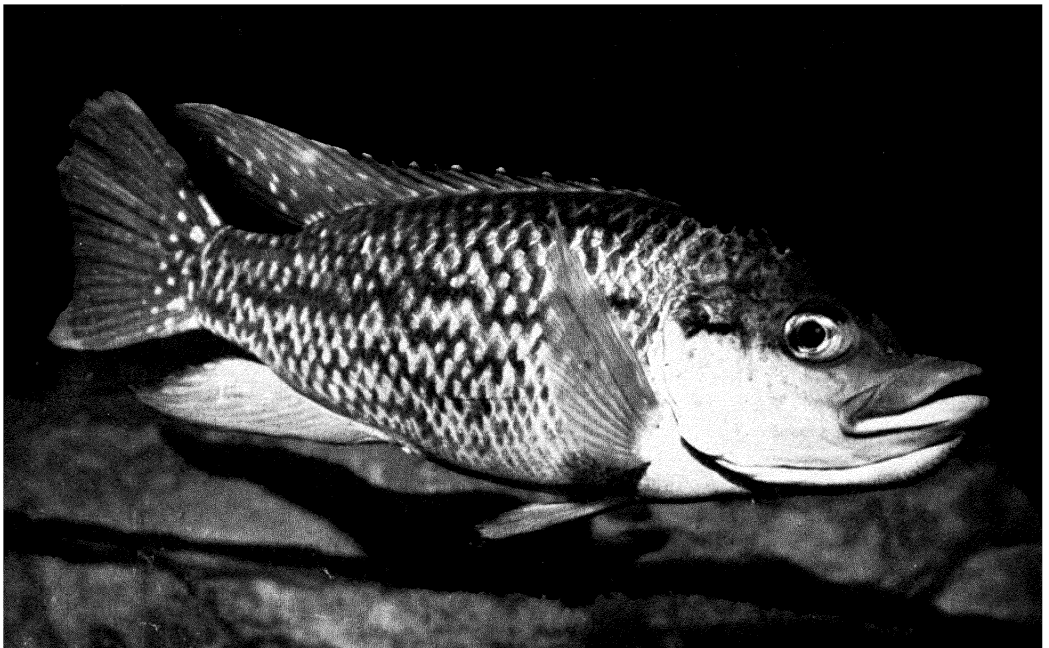
EGYPTIAN MOUTHBREEDER



Tilapia Macrocephala

Note the black head marking characteristic of this fish.

MOUTHBREEDER



Tilapia Mossambica

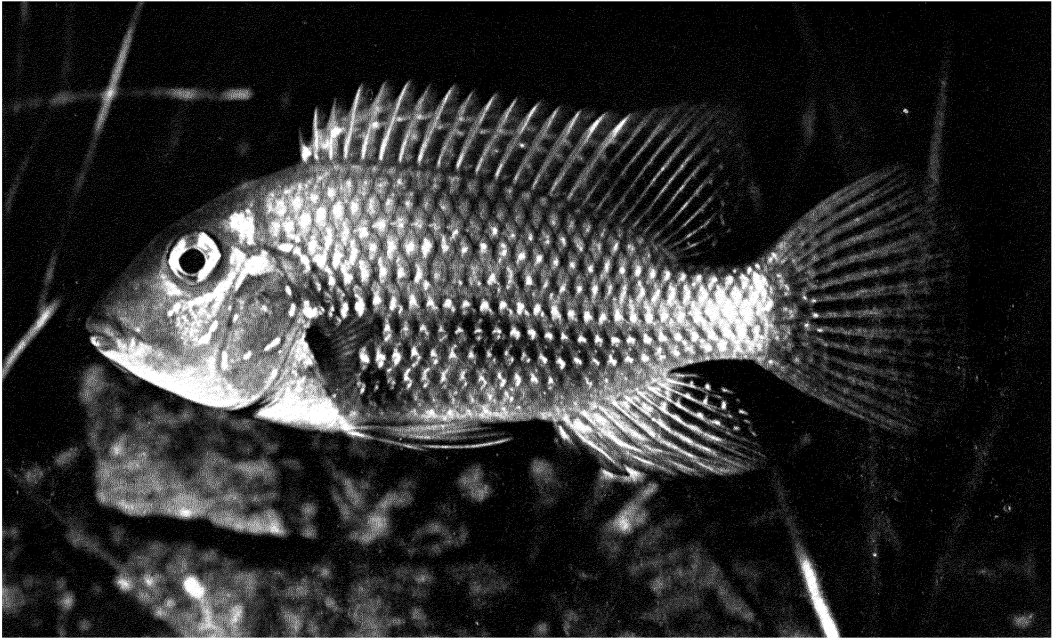
Note huge mouth typical of all mouthbreeders

MOUTHBREEDER

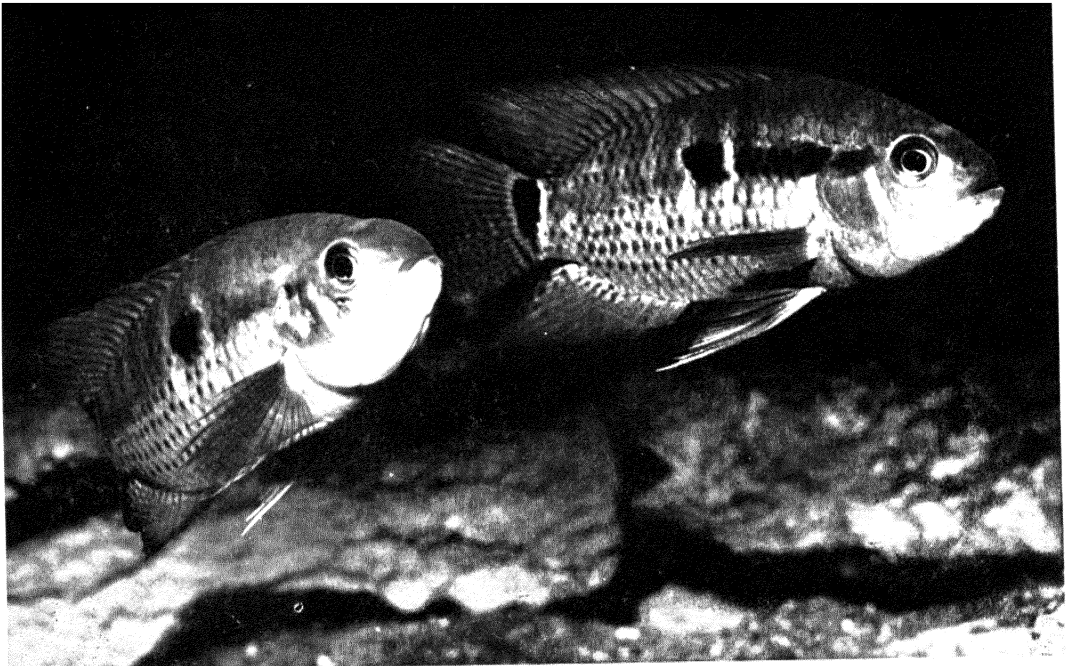


Aequidens Maronii

KEYHOLE CICHLID



Geophagus Brasiliensis



Aequidens Portalgrensis

BROWN ACARA

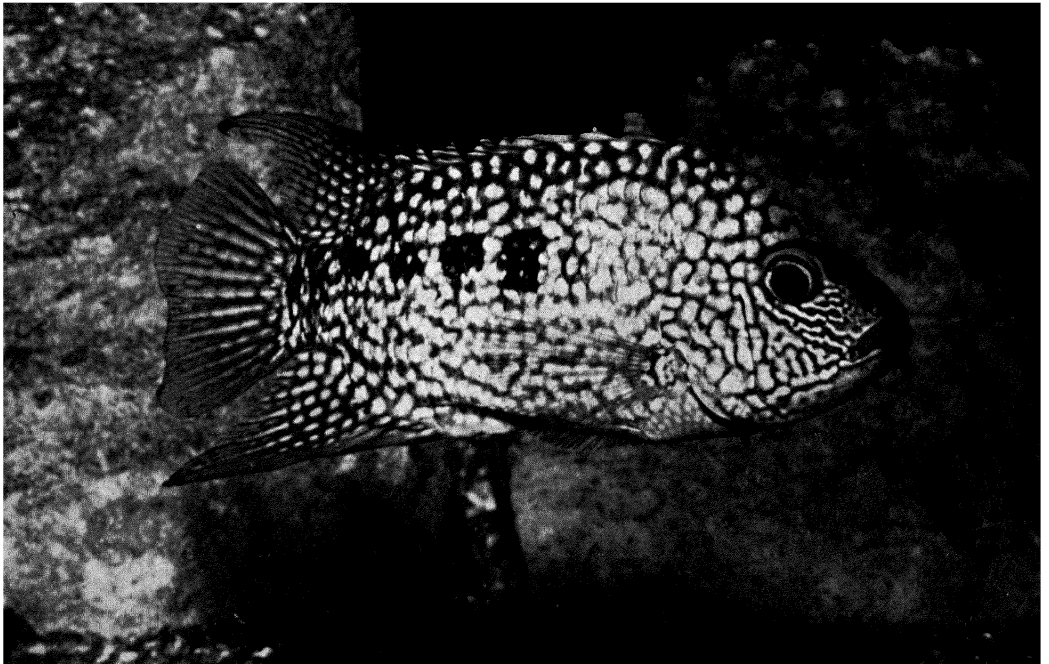
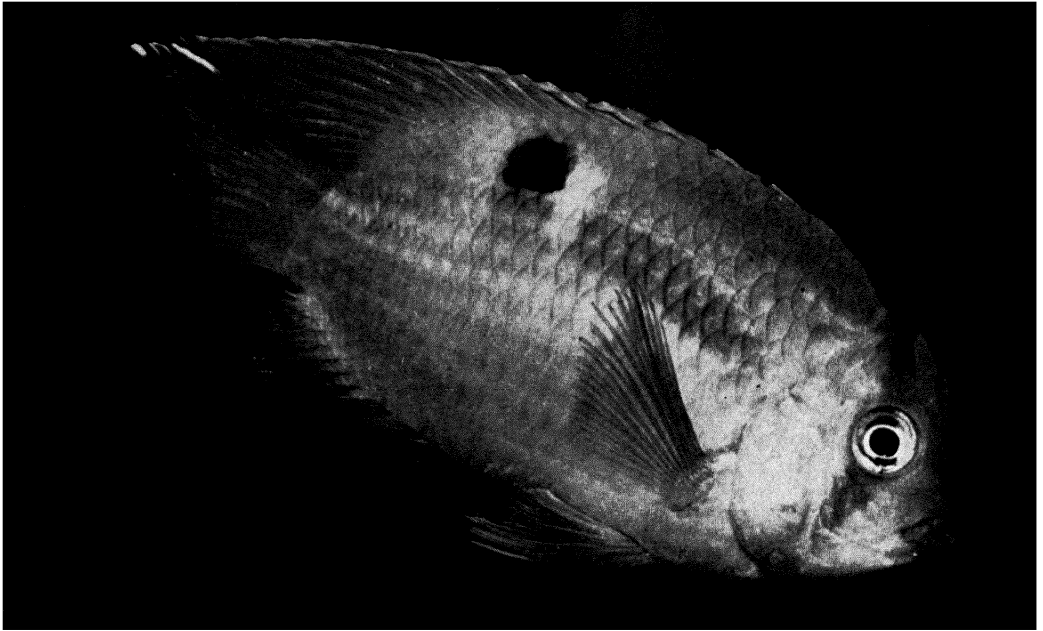


Tilapia Zillii

One of the large mouthbreeders



Pelmatochromis Annectens





Cichlasoma Festivum

FLAG CICHLID

The Dwarf Cichlids

Introduction

The Dwarf Cichlids are of comparatively recent introduction to the aquarium keeper and received an enthusiastic welcome, and were acclaimed on every hand as the Cichlid that aquarists had long been seeking.

Events however have not turned out quite as was expected, the rank and file have not taken to the 'Dwarfs' and I am afraid that horrid word 'Cichlid' is the cause. It is true that they are to a certain extent pugnacious, particularly the females but as they are quite small very seldom more than two inches long when fully grown they do but little harm if any. In a community tank other fish become accustomed to them and the extent of their aggression is a sudden dart at a fish that gets too near to them and in my opinion is more in the nature of defence rather than attack. Most of the males are of a peaceful disposition despite their fierce appearance.

The real attractiveness of the Dwarf Cichlids is that they can be bred and families reared in small tanks. They are quite easy to sex, in most varieties the females are much smaller than the male and have little if any colour, the exception is *Apistogramma ramerizi* and with these male and females are about the same size, a little over two inches long when fully grown, and both are beautifully coloured, the male only slightly more brilliant than the female.

Unlike the larger Cichlids who generally speaking share the duties of parentage, with the Dwarfs, it is the female who cares for the eggs and schools and protects the brood. The male paying little attention once he has fertilised the eggs. In the confined space of a small tank it is necessary to remove the male after spawning, if he does not eat the eggs he will constantly worry the female and probably cause her to eat them.

Experience has taught me that it is best to remove both parents. On only one occasion have I left the parents together after the spawning and the result was only eight youngsters.

Their broods in any case are not large, anything around a hundred is good. I have come to the conclusion that the best method to produce the largest number is to either remove both parents from the tank, or to remove the eggs to another tank of which water conditions and temperatures are approximately the same.

Most aquarists will obviously prefer to remove the parents, but if you do this you have to make certain there are no snails present in the breeding tank, not easy because even small snails will find, as assuredly they will, and eat the eggs. You will probably think that it is just as difficult to remove the eggs, it would be so and even impossible if they have laid their eggs on the glass of the tank or dug a hole and deposited them on the glass bottom, in this case there is no alternative but to remove the male and leave the female to guard the eggs and rear the brood. You may be lucky and she will rear the majority.

Fortunately all the Dwarf Cichlids seem to prefer to lay their eggs on a clean rough surface, and I have found that the most successful method is to provide them with a well-scrubbed flower pot, it need not be large, one about four inches or so across the mouth is ideal, enlarge the drain hole so that the fish can swim through and lay the pot on its side on the floor of the tank. Place the pot at an angle so that you can see inside and on top of it and at the same time partly provide a refuge. The reason for this is that it is unpredictable where the eggs may be laid, it may be the floor, the roof or the top of the pot, and you need to be able to see the eggs as soon as they are laid. I have even had them excavate underneath the pot, the female did this and the eggs were laid, but she defeated her own object as the male could not get into the hole, being considerably larger than the female, to fertilise the eggs, however this was an extraordinary case and she did not make the same mistake again.

Normally the female will lay the eggs on the floor, roof or top of the pot. They are not laid in anything like so symmetrical a design as the large Cichlids do, and the eggs are laid much wider apart which probably accounts for the fact I have noticed that practically every egg is fertile.

As soon as the eggs are laid, they are fertilised as they are with the large Cichlids. The flower pot can be gently lifted from the tank and carefully placed in an already prepared tank which is free of snails. If old water is available to fill this tank use it by all means but I have used new water neutralised by the peat method with complete success. Place the pot in such a position that the eggs can be readily observed with a magnifying glass.



DWARF CICHLIDS

Shown a little over maximum size, male in foreground

Apistogramma Agassizi

At a temperature around eighty degrees the eggs will be hatching in seventy-two hours and under the glass you will observe that the tiny babies are born with stripes, a perfect camouflage which would make them very difficult to see were it not for the fact that they set up the same peculiar quivering at intervals as do the babies of the large Cichlids. Wherever the eggs are laid, as soon as they hatch, the babies slide down to the sand even from the top of the pot without harm, and the only way to see them is to watch patiently through the magnifying glass until they start this queer quivering movement. They maintain approximately the same position at the bottom of the tank until the yoke sac is absorbed after which they begin to scatter in search of food and are very, very difficult to see until they grow large enough to be obvious and then you will be pleasantly surprised to find there are nearly as many baby fish as there were eggs, which by the way can be easily counted if they are laid on the top or floor of the flower pot.

For the first week ample infusoria must be provided, always being careful not to add more until the water is comparatively clear, indicating that the babies have nearly exhausted the supply. By the end of the week newly hatched brine shrimp can be fed together with micro worms. At this stage they begin to grow fast provided feeding is adequate and most of your



A Pair of Manacara Anomala

[Photo by DAVID NEWBERY

Note the intense colouring of the female which was assumed on introduction to the male.

troubles are over, when they can begin on tubifex at four weeks old you can safely say they are reared.

When they have reached this stage it is absolutely necessary to provide adequate room for the babies to grow. Work on the basis of not more than thirty to a twenty-four by twelve inch tank. Do not make the mistake so many fishkeepers do and leave them crowded too long, if you cannot provide room for them it is far better to give them to someone who has room for them. It is quite possible you will lose the whole brood if they are crowded, no matter how they are fed, and at best they will be stunted in growth and will never make good fish.

Nanacara Anomala (*Nan-a-car-a a-nom-ala*)

Maximum length, male 3", female 2", breeding temperature 80° F.

This Nanacara is the only one that is normally available, and is included for that reason. In young fishes the sexes are very much alike but the males can easily be selected when about four months old.

The males are normally slatey blue and at breeding time have an orange edge to the dorsal fin. Females have no fixed colour or pattern, and can produce an extraordinary range of subdued colour and patterns at will, very similar to the female *A. Pertense*.

The female takes charge of the eggs and drives the male away from them, and if they can be induced to spawn on a flower pot it is wiser to remove it and carry on as described elsewhere.

Apistogramma Ramirezi (*A-pisto-gramma ram-i-rezi*)

Length 2", breeding temperature 80° F.

Ramirezi when mature is a really brilliant and colourful fish and in fact it has been suggested that it rivals the Neon Tetra for colour. Personally I would not go as far as this but the scintillating blue and red of the body and fins certainly equals if not surpasses the colouring of any of its larger brethren. Certainly it was the magnificent colouring of this Dwarf that led the knowledgeable to forecast that the Dwarf Cichlids would attain an overwhelming popularity.

Breeds as described for the 'Dwarfs,' although on two occasions, same pair by the way, eggs have been deposited on *Cryptocoryne* leaves, but the same pair also spawned on a flower pot. Rather timid for Cichlids at breeding time and they should be given a well-planted tank, and well-matured water. Both parents are inclined to eat their eggs and it is safer to remove them as described.

Apistogramma Ramirez (*continued*)

Sexes are very much alike but at maturity males can be distinguished by the first three rays of the dorsal fin which are definitely longer than the females and are similar to a plume. Another sex indication is that the belly of the female assumes a very rosy hue at breeding time but I have found this is not true of all females. In my experience the broods are not large and I should say that one hundred or so is exceptional.

Apistogramma Pertense

Length, male 3", female 2", breeding temperature 80° F.

Apistogramma pertense is a pleasing little fish and I believe I was the first to breed them in this country. I exhibited a breeders' team at the 1951 N.A.S. The male is considerably larger than the female and has a rather pleasant but subdued colouring of blue and yellow. The female has little or no colour but an amazing repertoire of patterns of dark brown on her lightish brown body. They breed as described for the Dwarf Cichlids and when preparing to breed the female is a great digger, being too small to move sand or gravel bodily as the large Cichlids do, she removes the compost in her mouth, I have seen a female I had dig a hole in this manner so that she was completely hidden, it was amusing to watch her suddenly appear from the hole deposit a mouthful of sand at the side and disappear into the hole again.

Why they should go through such a performance is a puzzle because invariably after all this digging business she would spawn in or on the flower pot provided. The male must certainly be removed after spawning, or the female will spend most of her time chasing him around the tank instead of fanning the eggs.

As I have suggested, removing the eggs is the surest way to success in breeding them.

Apistogramma Agassizi (*A-pis-to-gramma a-gas-sis-eye*)

Length, male 3", female 2", breeding temperature 80° F.

Apistogramma agassizi is almost as spectacular as *A. ramirezi*, the male having really gorgeous fins as can be seen in our photograph. Breeds as the *ramirezi* except that the female is pugnacious like *A. pertense*. Remove eggs as described in the introduction.

No difficulty about sexing this fish when mature, the male besides having a 'plume' on the dorsal fin, similar to the *ramirezi*, has much longer fins and filament extensions on the caudal.

