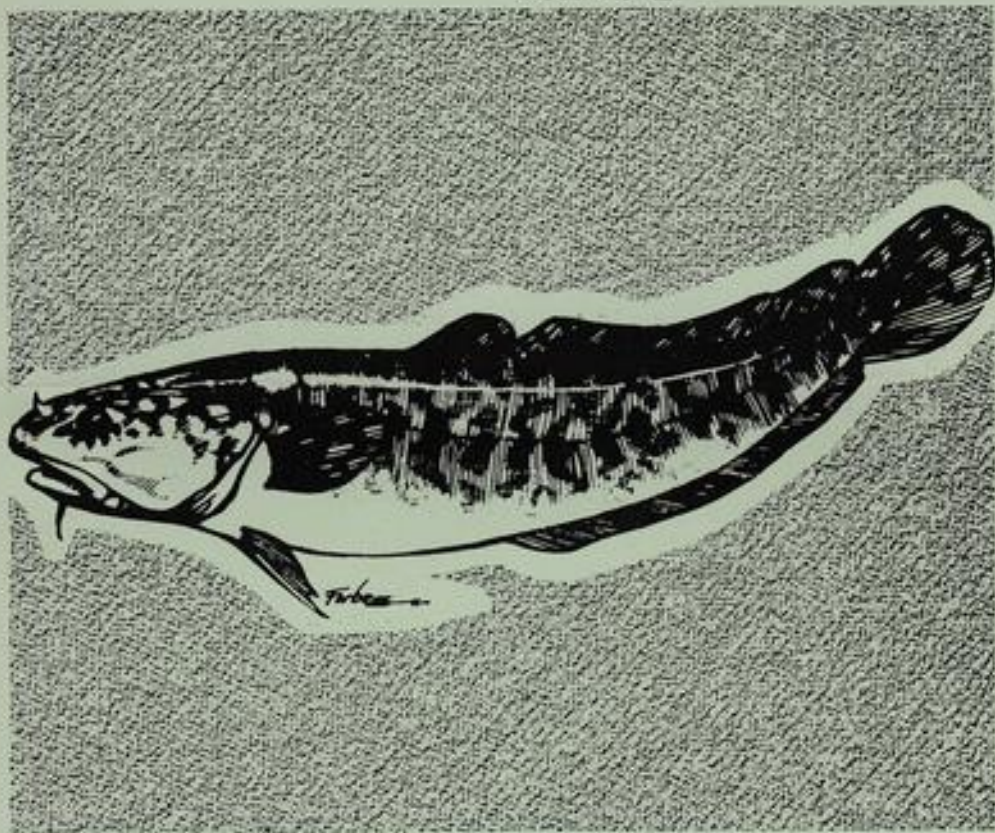


BRITISH ICHTHYOLOGICAL SOCIETY

DC 4/6/72

BRITISH ICHTHYOLOGICAL SOCIETY



NEWSLETTER

BRITISH ICHTHYOLOGICAL SOCIETY

(founded 1960)

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The objects of the Society in accordance with its constitution are as follows:-

To promote the study of Ichthyology and to provide facilities for ichthyologists.

To assist ichthyology through the medium of Society publications.

To provide a means of communication for ichthyologists, anglers, skin divers and aquarists.

To assist any organisation which helps to further knowledge of fish and fisheries.

Subscriptions:	Annual	£2
	Life	£25

Subscriptions 1st January.

To the Treasurer. Cheques, P.O.s and Money Orders payable to:-

British Ichthyological Society.

Vice-President, Major S. Luen, T.D.

Burbot Project Officer.

David Marlborough, B.Sc.,
60 Newfields,
Welwyn Garden City, Herts.

(070 73) 29038.

Applications for membership should be addressed to Mr. Marlborough.

The burbot on the front cover was drawn by the late David Carl-Forbes and stands as a tribute to the memory of a great artist and fellow ichthyologist.

BRITISH ICHTHYOLOGICAL SOCIETY

NEWSLETTER EDITORIAL - APRIL 1977

There is considerable evidence that the efforts being made by the Secretary and the Treasurer to improve the membership and stabilise the funds are bearing fruit. Although it is too early to give facts I am optimistic. This is especially pleasant for we begin to see that the plans we have for new booklets, with authority behind the authorship, to replace the previous literature when it has been disposed of, might be activated sooner than we expected.

Meanwhile there are a number of copies of the excellent works "Pond Hunting" and "Freshwater Fishes" which are for sale at cost plus postage and are a real bargain in the light of what is being charged for far less authentic work these days. The advertisement on another page gives details.

The planned new works will be better produced and in a different format, when we do initiate the project, which will not be until the autumn at the earliest. They will of course be proportionately more expensive, although we are looking at ways of producing authentic work aimed at the enthusiastic amateur biologist at a very low figure compared with current prices.

We are also continuing to review the production of a new and simplified correspondence course which would be at not more ambitious a level than G.C.E. "A" and projected in the main for comprehensive education in the sixth form.

I have put into this "News" a column called "Ichthypost" in which all correspondence to me will be published. The promise to ensure that your contributions will have priority in publication is re-affirmed.

We now approach the end of a year with the Annual General Meeting. This year it is to be held within the generous hospitality of the Mystery of the Company of Fishmongers in their palatial Hall at the foot of London Bridge on the City bank of the Thames. This holds promise, for those of you who can reach London for the event, of at least a glimpse of the home of the oldest City Guild in the world. The original works of Canaletto and other seventeenth century artists of scenes of the Thames are well worth the journey. May 20th, 7.30 pm if you please.

Finally let me draw the aquarists' attention to the amount of space we have given and intend to give to their studies. It is a demand of the constitution that the Society shall maintain and encourage the study of aquarian pursuits and I aim to meet that demand. Let the ink flow from the pens of those of you who keep fishes for fun and study and I will ensure the transcription of those writings into type for you who engineer the knowledge of air pumps, temperature controllers and the like.

The next News Letter will contain a report and some comments on the papers given at The Coarse Fish Conference recently organised by the N.A.C. and the N.F.A. at Liverpool University.

EDITOR

"ICHTHYPOST"

The following was received from J. McAngus concerning some work he was asked to do for the Great Ouse River Division of the Anglian Water Authority and was submitted for general interest:

REMOVAL OF PERCH FROM MEPAL GRAVEL PIT

At the request of the Mepal Fly fishing club I removed unwanted stocks of Perch from their gravel pit fishery at Mepal (O.S. TL425830) by trapping. Nine traps of three different types were used and the results logged to determine the most efficient type. The traps were laid in batches of three (one of each type) to discover the most effective area's to trap. Water temperature was recorded to discover at what temperature Perch were most easily caught. Traps were laid in batches of three consisting of:-

- A.1. Grafham type trap with two openings set at 2".
- B.1. Grafham type trap with two openings set at 1"
- C.1. Jarvis type trap with one opening set at 1.5"

Five separate sites were trapped with one batch of three traps on one site at a time. Traps were first laid on 29.3.76 and were lifted a total of 18 times between 2.4.76 and 9.6.76 after which the club bailiff took over operations.

Samples of Perch caught were sent for biological examination and after being pronounced disease free all fish caught were transferred alive to the adjacent gravel pit (O.S. TL422830). This belongs to the Cambs County Council and the warden, Mr. E. Calvert had requested some re-stocking.

Fish were caught in increasing numbers as water temperature rose, and the Perch seemed to prefer the trap type C for spawning on and this proved the most effective during this period, although after spawning trap type B was slightly more successful.

Sites were trapped two lifts out of four with the exception of site one which was trapped every time. Sites one and four were most effective, both were in deep water, the only shallow site tried was not a success.

A grand total of 1,834 Perch were caught during the period, and 1,739 were re-stocked at the adjacent gravel pit.

For the future I would prefer to use trap type C at spawning time and a mixture of trap types B and C thereafter, for sites I would concentrate all attentions on sites one and four.

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Dear Editor,

At long last I am able to write to you with some thoughts and opinions that the January issue of the BIS Newsletter has stimulated.

I was very pleased to learn that the society was still on its feet - albeit staggering a bit!

I have sent the Treasurer my 1977 subscription and hope that other members will also ignore the committee's generous action in waving the fee. No society can function without a sound financial base on which to build.

I should be interested in the proposed correspondence course for, although reasonably knowledgeable in an amateurish way, I should derive both pleasure and benefit from following some formal instruction in ichthyology.

Would it be possible to have some directory of members? I should like to know of any member living in this area.

Regarding your piece about non-indigenous species, there can be no doubt that, in almost every case, the introduction of these alien forms into any other environment is a disaster - if not a catastrophe.

I am not an angler, although my three sons fish, so I am not very sympathetic to their viewpoint in this matter.

However, as an aquarist, I am interested in non nature temperate fishes, having several varieties at the moment.

I look forward to the next issue of the Newsletter.

Yours sincerely,
DAVID H. CLARK

125 Little Ilford Lane,
Manor Park, London, E12 5PM

We shall try and publish a members register when we are reasonably certain of a stable membership in 1978. In the meantime here are three members in your area:

T. Eatherton, 4 Wallend Road, East Ham London, E.6
I.M. Hall, 41 Richmond Crescent, Highams Park, London, E.4.
P. Ireland, 5 Sinclair Road, Waltham Forest, London, E.4.

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SECRETARY'S REPORT

If anyone is to receive a rocket about the late delivery of this April's edition, it is me! So before you all blame the Editor let me make it quite clear that it was NOT his fault.

There is little to report this month. The Society still continues to improve as the days go by. Our 'patient' will soon be out and about encouraging more people to take a special interest in their fishy pursuits. A number of requests have been received concerning the correspondence course but until it has been updated and simplified it is a little pointless starting people only to find that they give up from frustration! From the letters received to date there are many people who want to find others with similar interests living nearby so that they may work together. With this point in mind I hope we shall produce a new Directory of Members very soon and circulate it with the newsletter.

With this newsletter is a reminder about the forthcoming AGM on 20th May, 1977 for those of you who have not received direct communication.
REMINDER - REMEMBER AGM IS 20TH MAY 1977 - END OF REMINDER!
It has been said so many times before but I, like all previous secretaries will say it again PLEASE MAKE EVERY EFFORT TO ATTEND. After all, it is only once a year and I'm sure that you can afford one return trip to London. Quite often people will go into great lengths to tell you what they want from a society if they can get together and chat but is seldom, nay it is rare, that the same people will put their thoughts on paper - so let's talk!

LAMPROLOGUS BRICHARDI

by

John Shortreed, Victorian Cichlid Society, Australia

Lamprologus brichardi is endemic to Lake Tanganyika; originally known as L. savoryi elongatus (Treunus & Poll) it was re-named in honour of Pierre Brichard. In its natural habitat, it lives over the same rock slope year after year, in number up to 50,000. The fish is carnivorous existing mainly on a diet of insects, fish and various molluscs.

This is not really a beautifully coloured fish, but its overall effect is one of elegance and grace. Basically, the fish is a brownish - pink with long, flowing fins and a lyre-tail which are delicately tipped with white. This white really stands out when the light is right. There is an elongated black spot at the back of the gill cover and another one (not so predominant) running through the eye. Near the back of the top of the gill cover there is an orange splotch and at the bottom there are faint blue-ish markings. Dr. Herbert Axelrod suggests that these markings are quite individual and will vary from fish to fish.

Sexing this fish can be difficult even with adult specimens; if you decide to purchase fry, sexing would seem impossible. However, if you have the opportunity to purchase adults, there are three possible guidelines.

First, you could go on finnage; Hans Joachim Richter suggests that the males have a slight elongation of the dorsal fin. Second, you could try body shape; technically, the males are larger. Third, you can try using what I call a 'cephalic hump'. Its not really a 'cephalic hump' as on H.moorei or L.furcifer but on the males there is a noticeable rise.

This I believe to be the best guide for sexing adult specimens. However, I believe that it can only be a guide for if you are picking out of a group the individual ages may vary considerably.

The water conditions for this fish are the same as for any Tanganyikan or Malawi fish. As Melbourne water is very soft, the water must be hardened and the pH raised. For my fish, I used salt water and shell grit; about $\frac{1}{4}$ of a cup of shell grit and about 2 litres of salt water to a standard 2 foot tank. I have tested the hardness, about 280 - 300 ppm, but I am not too sure of the accuracy of the test. Further, the pH of my water is about 7.5 and, with the addition of the shell grit, it should rise a reasonable amount.

When I brought my five fish home from the dealers, I put them in a standard 3 foot tank. The next day a bond had been created between two, and the other three were cowering in the corners! To prevent any losses I moved these three to a smaller 18 x 15 x 12 tank; the next day a further bond was created between two of the trio and the third, a female, was dead. I have read somewhere that this bond has been created between two males and one female. I subsequently transferred the pair in the 3 foot tank to a 2 foot tank. I had been told that these fish required a larger tank to spawn but this I found was not the case. In each of the tanks already mentioned I had several spawnings.

Maintaining this fish has created no problems; I adopted Ken Schulz's theory of no changes in water, only topping up. I have only had to transfer one pair to a larger tank because it was too crowded with fry and the parents had removed the gravel from the undergravel filter causing the water to become cloudy.

continued

Mainly, the food which I fed the fish were live adult or young brineshrimp. To supplement this, tubifex and worms were occasionally used when available. Flake and pellets were also used but both were not taken with much enthusiasm. At no time was any beef heart used, however, people have told me that they have used it and had no problems - I preferred to leave it alone.

The spawns of which I have had eight, have never been observed. All of them were laid within a cave of rocks or a flower pot. Others have observed that the fish will spawn out in the open but I wonder if this is out of the ordinary? Temperature has played a great factor in the spawnings. (The following is reprinted as in the original and is unclear quite as to what temperatures were recorded - Ed.)

One pair was kept at a temperature of about 50 which fluctuated about 5° either way. Of the four spawns here I have had a continued growth in the size of the spawns from about 15 to about 50. Whereas, the second pair in the 2 foot tank kept at a constant 75°, the four spawns have increased from 2 to about 20. Furthermore, the sizes of the individual fry is remarkably different. The fry which were kept at the higher temperature are more than double the size of the other fry.

The eggs, once laid, did not remain on the rock very long, maybe two or three days. Here, Ron Edwards observed that the fry hung by threads upside down. This I observed with only one fry and it was only there for a short while. The rest of the eggs were there one hour and gone the next. This could seem to suggest that the parents take the fry (possibly breaking the shell of the eggs!) and deposit them in an area of safety. About 6 - 7 days later they become free-swimming.

Several people have suggested that when this fish is about to spawn again the fry should be removed because the older fry would eat the younger. I have never removed the spawns, in fact I had about 125 fry (some up to an inch long) plus the parents in a small 10 gallon tank. My theory here is that when they start starving, the older fish have no alternative but to eat the younger fry. There are two reasons for this: first, the rearing of the fry in nature is a community affair where all the community will fend off predators. Second, I have not lost a single fish and I have fed them copious amounts of young brine shrimp.

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Editor's Note: The following article is reprinted from a letter sent to The Basingstoke Aquarists Society and subsequently published in their own magazine 'Forum'. Any comments you would like to make may be sent to me for forwarding.

THE PLECOSTOMUS, A KILLER?

A few years ago an adult plecostomus was introduced into my tank, and all went well for the first two weeks, then the trouble started. What, at first, was thought to be white spot appeared, but recognised treatment failed to cure it. The spots were smaller than those of white spot and affected all parts of the fish. Many fish died, including the plecostomus.

Some months later a friend's tank was similarly affected, the plecostomus was removed and the disease finally cleared up. I had nothing more to do with this species until a couple of months ago when I purchased a young specimen.

Again, after a couple of weeks, the dreaded disease appeared and no effective cure.

continued

While trying to resolve the problem, I learnt that a Gent who kept fish long before some of us knew they existed, always insisted that the plecostomus was capable of giving off a fluid which affected other fish.

While this unhealthy state existed in my own tank, I was interested to learn that another aquarist friend had just experienced the same trouble, about ten days after introducing the plecostomus into his tank.

My own tank cleared, apparently in its own time. The plecostomus has now been transferred to another tank and I am closely watching results.

No lead on this matter has been found in publications on fish or diseases.

Well, is it coincidence, was the elderly aquarist on to something, what is the disease and its cure? I would be interested in comments from other aquarists.

Mr. R. Hewett.

** * * * *
BLUE SHARK RECAPTURED

A male Blue Shark tagged at Kinsale on 11th August, 1975, as part of the Inland Fisheries Trust's tagging programme of certain species of marine sport fishes was recaptured on 1st March, 1976 after being 204 days at liberty.

It was recaptured by a Korean fishing vessel at a position - latitude N.29.5, Longitude W.29.07. This is about 750 miles west of the Canary Islands and about 600 miles south of the Azores, During its period at liberty the fish had travelled approximately 1,700 miles as the crow flies.

A Thornback Ray tagged in Brandon Bay, Dingle Peninsula on 12th August, 1976, was recaptured in the same bay on 26th October by the Dingle trawler 'St. Anne' after being at liberty for a period of 75 days. When originally tagged it had a wingspread of 11 inches and had added 4 inch to its wingspread before recapture.

(Reprinted from a press release issued by The Inland Fisheries Trust Incorporated - Ed.)

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THE SMELT

(Reprinted from Thames Water Authority

REGIONAL FISHERIES ADVISORY COMMITTEE, 26TH MARCH, 1976)

1. Distribution and Natural History

The smelt is related to the family Salmonidae and like many fish of that family it has strong migratory tendencies. The species is found along European coasts from the Bay of Biscay to the Baltic and Southern Norway. It is primarily an estuarine and inshore fish, although there are a number of populations which have become land locked in freshwater. Such landlocked populations may be a very important element in the food chain, but none are known to survive in Britain.

The fish mature at 3-4 years and congregate around river mouths in Winter. In spring they enter the rivers and run upstream to areas where the water is just brackish or even quite fresh, although still tidal. Spawning takes place over sandy bottoms from March to May: in Britain normally in April. The eggs are adhesive and take from one to three weeks to develop according to temperature. The young fish spend most of their first Summer in the estuary feeding on copepods and fry of other fish and reaching a length of 5-7 cm (2-2 & 3 quarters inches) before moving out to sea. Adult fish are variously reported as reaching a length of 18 cm (7 inches) by Muus and 45 cm (18 inches) by Wheeler. It is reported that many of the adults die after spawning. Even in unpolluted estuaries the occurrence of good runs of smelt is very sporadic. This probably reflects very variable success of spawning, or high mortality in most years of the young fish during their first summer.

2. Smelt in the River Thames

Because of their habit of spawning in the higher tidal reaches, the smelt was one of the earlier species to decline with the deterioration of the estuary. Formerly there had been an important commercial fishery, but Yarrell, writing in 1836, reported that "formerly the Thames from Wandsworth to Putney Bridge, and from thence upwards to Hammersmith produced abundance of smelts, and from 30 to 40 boats might then be seen working together, but very few are now taken, the state of the water, it is believed, preventing the fish from advancing so high up".

Following the improvements in the sewerage systems and the introduction of chemical precipitation at the rain outfall works during the 1890's, there was a considerable improvement in the quality of the water in the estuary and a corresponding re-appearance of several species of fish, including smelt. Maxwell, writing in 1904, reported large shoals between Richmond and Teddington and said that they were providing good sport for juvenile anglers. Maxwell also noted that the habit of smelt of forming very dense shoals during their upriver migration made them very vulnerable to overfishing with nets. The Royal Commission on Salmon Fisheries in 1902 recommended a yearly close time for the species. In recognition of this, the 1914 edition of the Port of London Authority byelaws established a close season for smelt from the 25th March to the 27th of July.

The improvement of the state of the estuary was not maintained after the First World War and no records of smelt are available until 1966, when they were again taken in the Dartford area in the course of the surveys carried out by Dr. Wheeler of the British Museum into the fish taken on the intake screens of power stations.

Continued

Since 1966, smelt have been taken in most years at one or other of the power stations in the estuary. They have been caught most frequently at the stations on the lower estuary, particularly West Thurrock, but it must be pointed out that the frequency of occurrence is a poor guide to the presence of the species since the numbers taken will vary with the intensity of sampling effort and with the fluctuations in water demand at the power stations. West Thurrock is the only station which has been consistently running at near full capacity and this is the site where the collection efforts of Metropolitan Pollution Control Staff and of scientists from Kings College, London University, have been concentrated.

The specimens have been recorded by Dr. Wheeler from Fulham power station, and as he has pointed out these are of especial significance, showing that from time to time the smelt is able to penetrate through the main zone of pollution in the estuary and reach the relatively cleaner water above central London. These have been isolated incidents among the records of more than 70 individuals spread over the last 10 years and although 1975 has been a good year for smelt in the Thames, it is probably too soon to conclude with certainty that suitable conditions now exist for a locally breeding population to re-establish itself. Dr. Wheeler is now undertaking some further work on Thames smelt and further information on the population of this species can be expected in the future.

WEIL'S DISEASE AND TETANUS

The Ministry of Agriculture, Fisheries and Food issued the following Press Release on Weil's disease and tetanus and we would bring it to the notice of our members.

Weil's disease is caused by bacteria called leptospirae which live and multiply in the kidneys of rats. In the early stages it has many of the characteristics of jaundice and can be mistaken for it. Nearly half of the rats in this country are infected by the disease at some time or another. It does not seem to harm the animals themselves, but by being voided continuously in the urine of rats, these bacteria provide a constant source of infection for man. If the bacteria are deposited on water or some other damp, non-acid medium such as mud, they will remain alive and infective for a long time. Consequently people such as farmers, agricultural workers, and land drainage workers, whose work takes them into damp, rat-contaminated places, are more liable than others to contract Weil's disease.

The bacteria most often enter the body through cuts or scratches, or through the thin mucous membranes lining the nose and mouth. It is, therefore, most important that all cuts, grazes, or otherwise abraded skin, especially on the hands or forearms, should be kept securely covered. Wherever possible, rubber or PVC gloves and waterproof footwear, preferably gum-boots, should be worn where there is a risk of contamination. Gloves must be worn when handling rats, alive or dead. Hands and forearms should be thoroughly washed before eating, drinking or smoking.

These precautions will give protection against the disease, but the only way to eliminate it is to get rid of the rats.

Tetanus (lock jaw) is another disease to which those whose work brings them into contact with the soil are particularly vulnerable. Although not many cases of tetanus occur, it is a dangerous disease that can cause death. Spores of the causative organism can lie dormant in the soil for long periods and can infect even a trivial wound or scratch."

BIOLOGICAL SURVEY OF OXEN HOATH LAKE

The following Biological Survey of a lake which is leased to a Kent angling society is of interest because it is a particularly well set out summary of a professionally executed project. It relates to an estimated total fish kill which occurred in 1973. The club decided to dredge and obtained Sports Council grant aid of £6,000 on a £12,000 project which included rebuilding of a retention dam and flume. It is of particular interest also because it records the result of a Rotenone poisoning designed to exterminate the remaining fish before restocking with a new and disease free stock. Editor.

This survey was carried out to examine possible changes in the invertebrate fauna of the lake after dosing with 'Rotenone' to eliminate fish prior to restocking.

Methods

Sampling was carried out at three stations using a pond net. Three three foot sweeps of the net were used to collect each sample. In an attempt to make sampling as quantitative as possible. The samples were sorted in the laboratory, and the invertebrates present identified and quantitatively assessed.

The zooplankton population of the lake was also sampled, using a plankton net drawn across the surface of the water. The zooplankton were identified and qualitatively assessed in the laboratory.

The populations were sampled at 13 days before application, and 5,17,39 and 63 days after application. The Rotenone was applied on the 15th April.

An additional investigation was conducted into the diet of the fish present in Oxen Hoath before application.. Examples of each species were caught on the day of application, and their stomachs removed for examination. The stomach contents were sorted and the food present identified as far as possible and the amount estimated.

Discussion

The initial effect of the Rotenone was to reduce the invertebrate population, both in quantity and diversity. Certain classes of invertebrates disappeared soon after application and were absent from the first post-application sampling. Crustacea, certain species of corixidae and two species of snails were the most affected. Other groups, such as the Hirudinea (leeches), the bivalves and the Oligochaetae were reduced in numbers.

The decline in the population continued until in the samples taken 27 days after application on 12/5/76, very few groups were left. The only ones present in any great numbers were Oligochaetae, Chironomidae, Hirudinea and bivalves.

During this time, the zooplankton population of the lake had also been affected. Of the five different types present before application, only one remained by the 12th of May.

continued

However, during the period 13/5/76 to 17/6/76, both the benthic invertebrate population and the zooplankton population increased dramatically. Corixidae returned in great numbers; most of these were, in fact, nymphs rather than adults. Many species made reappearances; Planorbis albus, Sialis lutaria, Cloëon dipterum, Gammarus pulex, and most of the previously present Corixidae species. Also, certain new species appeared; Micronecta poweri, Lymnaea peregra, and Oytiscinae. However, the total population has still decreased from the previous date; but there is a great variety of invertebrates present which should start increasing fairly rapidly.

The zooplankton present consisted mainly of Daphnia magna; this species had disappeared immediately after application. The actual individuals present were mainly young D.magna with a few adults.

Conclusions

It can be seen that although originally the entire invertebrate population was badly affected, both benthic and planktonic invertebrate populations have made a good recovery. During the period of one month, the number of taxa found in samples increased from 6 to 18; the zooplankton also increased in numbers, and Daphnia magna is particularly abundant. Both these population increases are probably due to two factors; an abundant food supply, and the absence of tertiary predators.

The contents of the fish stomachs examined indicated that of the three species examined the Rudd ate mainly Corixidae; the Mirror Carp ate a varied diet of Corixidae, Oligochaetae, Chironomidae, Ephemeroptera and Mollusca; the Wild Carp ate Chironomidae and Algae.

Therefore, the groups which are most abundant in the lake at the moment (Chironomidae, Oligochaetae and Corixidae) are those which formed the bulk of the diet of the species of fish present within the lake originally.

RESULTS. ZOOPLANKTON

Species	15/4/76	20/4/76	27/4/76	12/5/76	17/6/76
<u>Daphnia magna</u>	P	-	-	-	A
<u>Daphnia pulex</u>	P	-	-	-	-
<u>Sinicoephalus vetulus</u>	P	P	P	P	-
<u>Chydoridae</u> lsp	P	-	-	-	-
<u>Cyclops</u> lsp	VC	-	-	-	-
<u>Ostracoda</u> lsp	-	P	-	-	-
<u>Harpacticoida</u> lsp	-	C	-	-	P

P - Present
 C - Common
 VC - Very common
 A - Abundant

continued

Results. Percentage Composition of Fauna in Benthic Samples

		2/4/76	20/4/76	27/4/76	12/5/76	17/6/76
ANNELIDA	Oligochaetae	27	17.6	21.9	47.2	40.0
HIRUDINEA	Erpobdella octoculata	0.16	0.06	0.07	-	-
	Helobdella stagnalis	7.5	1.7	3.2	3.6	3.6
	Theromyzon tessulatum	-	0.12	0.07	-	-
CRUSTACEA	Asellus aquaticus	1.0	-	-	-	-
	Asellus meridianus	7.1	-	0.07	-	-
	Gammarus pulex	0.07	-	-	-	0.1
CORIXIDAE	Micronecta poweri	-	-	-	-	0.3
	Callicorixa preusta	0.1	-	-	-	-
	Corixidae nymphs	0.17	0.12	0.07	0.5	13.8
	Sigara concinna	0.46	0.06	-	-	0.2
	Sigara distincta	0.29	-	-	-	0.2
	Sigara dorsalis	-	0.06	0.07	-	0.2
	Sigara falleni	0.05	-	-	-	-
	Sigara lateralis	1.1	0.30	0.29	0.17	1.0
Sigara nigrolineata	-	-	-	-	0.1	
EPHEMEROPTERA	Cloëon dipterum	2.7	0.66	-	-	0.1
MEGALOPTERA	Sialis lutaria	0.05	-	-	-	0.4
TRICHOPTERA	Hydroptilidae	0.40	0.72	0.07	-	-
COLEOPTERA	Dytiscinae	-	-	-	-	0.1
	Halipus lsp	0.05	-	-	-	-
ARACHNIDA	Hydracarina lsp	-	-	-	-	0.1
DIPTERA	Chironomidae	37.4	73	62.5	45	37.8
	Diptera lsp	0.02	-	-	-	-
	Tabanidae	0.02	-	-	-	-
GASTROPODA	Lymnaea peregra	-	-	-	-	0.2
	Planorbis albus	0.46	0.12	0.29	-	0.1
	Planorbis carinatus	0.87	-	-	-	-
	Potamopyrgus jenkinsi	0.12	-	-	-	-
	Segmentina complanata	0.22	0.06	-	-	-
LAMELLIBRANCHIATA	Pisidium spp.	12.7	5.5	11.3	3.4	1.4
	Total no. of individuals in sample	4177	1662	1350	1181	1040
	Total no. of taxa found	24	14	12	6	18

BOOK REVIEWS

by the Editor of the Federation of British Aquatic Societies
Quarterly Bulletin, Spring 1977

When I was at school, being brainwashed into learning all manner of things, there was one way where one could find an inexpensive mine of information on selected subjects - and subjects of interest to many a truculent schoolboy at that. I'm glad to say that these 'mines of information' have stood the test of time and are still going strong, in fact, my own sons have started discovering them too. They are the 'Observer Books' series, and it came as no particular surprise to find that they have a book on Tropical Fishes by Neil Wainwright (Frederick Warne - 90p).

With 90 species described fully, with others alluded to, it works out at 1p per fish/information sheet. Sections on basic aquarium management, breeding, scientific nomenclature, external characteristics and a Bibliography are additionally included free of charge!

Each of the detailed species are allocated just over a page of description and if no illustration accompanies the text in monochrome, then a full colour plate is included in a 16 page centre section. These illustrations by Baz East are not vague 'artist's impressions' but taken from real life.

Species are listed in alphabetical common name order (hooray for Booklet No.91); although the author confines his choice of species to those 'long established favourites of the aquarium', certain odd species stand out - the Croaking Tetra, the Bishop Fish and the Pigmy Sunfish, the latter perhaps only a 'tropical' species on very sunny days. However, each fish is more than closely scrutinised with full details of the culture necessary not only for the successful maintenance of the species in captivity but also for propagating the family.

Excellent value from all points of view - and the companion volume on Freshwater Fishes should be worth considering too.

Many of the more comprehensive books on aquarium keeping include some reference to the natural habitat of the species under review; often there is a pictorial representation of the area concerned, either a photograph or a map of the terrain, showing the distribution of the fish. Whilst giving some insight into the real-life surroundings of species, it only skims the surface and one jungle creek looks very similar to another from the depths of an armchair.

FISH COMMUNITIES IN TROPICAL FRESHWATERS by Dr. Rosemary Lowe-McConnell (Longman - £11), although not primarily aimed at the aquarist, really lays bare the natural environments to the minutest degree. It is hard not to imagine one is a fish battling for survival, hunting for food, searching for a mate - often in turbid waters - such is the descriptive power of the author.

River systems, lakes (both natural and man-made) are all fully explored, from the mighty Amazonian system with its water volume of eight times that of the Mississippi to the tiny soda lakes of Africa, pH 10.5, 40% salinity and a temperature of 39°C - only 2° below the lethal value of the inhabitants! The seasonal changes in all these waters are scrutinised, their effect upon the immediate landscape, and of course all the associated problems which the fish have to overcome in order to survive.

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The other side of the coin traces the reactions of the fishes to the varying conditions. Growth rates are plotted against available food supplies, breeding behaviour which, in addition to the normally expected spawning process, also includes the ways of communication between the species either by colour pattern changes, chemical signalling and even the use of self generated electrical impulses. Within the crowded pools and creeks (not every fish has the equivalent space of the Amazon in which to live) community problems are bound to arise, and schooling actions, predatory problems and their solutions by the would-be victims, diseases and parasites, and the evolution of communities add further to the complex jigsaw of aquatic life expertly put together, and taken apart, by Dr. McConnell.

Part of the book is concerned with the growth of fish as a source of food for mankind, so naturally any understanding of the fishes problems during their growth period can help man to help himself by providing just the right environment in which to raise his future provisions.

Turning to the aquarium front, the book will certainly be of use for those aquarists seeking to set up the 'biologically-correct' type of community tank as full details of the smallest local environments are fully covered. Should you feel your fish aren't producing as many young as you think they should, you can check their fecundity from useful tables; for instance, Anableps anableps only has 6-13 embryos whilst an Oscar may embarrass you by producing up to 13000 young.

Excellent line drawings complement the text, covering many diverse subjects and even photographs from satellites are used to detect varying water conditions in river systems. Just another example of the range of sources used to provide a sound scientific foundation for the book.

The asking price may seem high to a hobbyist, but this work draws together all the fish's points of view and the aquarist would do well to consider these and thus expand his knowledge of his chosen charges.

Highly recommended - it will always be out on loan from your Society's library, so get your own copy!

The 1st edition of a new magazine from the Tyne/Tees Area Association: The Fishkeeper - - a North-East Aquarium Magazine - is a glossy-covered mini booklet with a selection of fishy articles and news and views from the North East corner of England. The quality is extremely high and one suspects a professional hand in it somewhere and the fact that at least three valiant people are self-confessedly involved gives one the impression that there is some serious intent.

In this opening issue, at least four species of fish are described, a Quiz, TTA & Society News page, techniques of showing, a cartoon and a letter, plus a report on the recent Belle Vue Show all add up to a very creditable effort; if it progresses in the same vein, then it should become a much sought after publication, at its modest price of 15p.

No dates of future publication are given but further details may be obtained from any of the Editorial Staff - Copy Editor, Brian Hisbridger, 13 Chesterton Road, Biddick Hall Estate, South Shields, Tyne and Wear NE34 9TW;
J.E. Attwell (Society News), 34 Hatfield Place, Peterlee, Co. Durham and
C.A. Enwright (Advertising), 27 Longacre, Houghton-le-Spring, Tyne and Wear.

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Thanks to a change in Superintendents, the C.C.I. Aquarium Society is active once again within the confines of Chillicothe Corrective Institute. Reading between lines, it seems that there was plenty of opportunity for information to get into the Society through magazines etc, but no encouragement to allow any reciprocal action by members.

Naturally, the Society depends upon contact with other Clubs and even with the hobby, via manufacturers' kindnesses and this first 'new' issue of their magazine is given over to mainly reprints from their exchanged magazines - which sustained the interest when regulations made it impossible to follow the hobby in any practicable way. However, Carl Maddox - 'El Presidente' to his readers sets a fine example by filling no less than five pages of the magazine with thought-provoking, fishy topics and I'm sure he'd appreciate some exchanges from Britain. His address, as is that of the Editor Don Hall, is C.C.I. AQUARIUM SOCIETY, P.O. Box 5500, Chillicothe, Ohio 45601, U.S.A.

B.I.S. BOOKLETS

'POND HUNTING' by David C. Bowler price 25p. (post paid)

An inexpensive little booklet designed for the pocket or rucksack. Contains a visual key to the main groups of freshwater invertebrates visible to the naked eye or hand lens, referring to illustrations of the commoner animals. Contains also details of habitats and methods of capture. Written by a professional freshwater biologist for the amateur.

'FRESHWATER FISHES' by David W. Perle price 75p. (post paid)

A useful little booklet intended for anyone who wishes to identify fish by the waterside. A simple key leads to illustration and text on each species, one species per page. Covers all native and introduced freshwater fishes, plus migrants and the commoner hybrids. Unique feature is guide to identification in the water. Full scale, fin-ray counts, etc. given.

Both booklets are illustrated profusely with clear line drawings and printed by offset litho.

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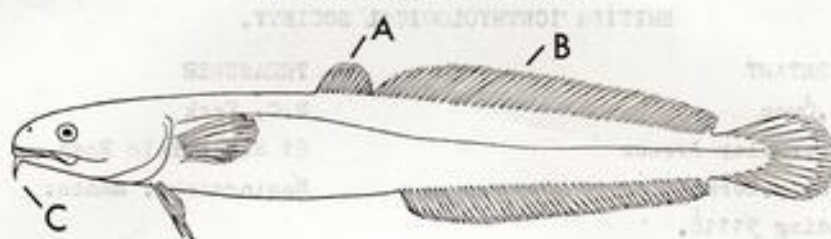
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News of Burbot



You have probably heard of the burbot. One was caught in the Great Ouse River Authority area in 1969 in the Old West River. This was particularly interesting because it had been thought that the burbot was probably extinct in Britain.

Burbot live in rivers in eastern England. They forage for food chiefly during the evening and early morning, but are more active at night than in daylight. Larger specimens are usually found in the deeper parts (especially quiet deep holes or pools) of the river; young ones in shallower water. During daylight they keep under cover, between roots, under overhangs of the bank, or close to obstructions in the bed. They eat all manner of small water-living animals including small fish but none big enough to interest the angler. They are most likely to be caught when fishing on the bottom at night.

Anglers are asked to look out for the burbot, and to report any further catches immediately.

This is what to do:

Identify your fish

1. Has it two fins on the back (A & B) ?
2. Is the first fin short (A) ?
3. Has it a single barbule (feeler) under its chin (C) ?

Keep a record

1. Photograph, sketch, or write a brief description of your fish.
2. Measure or weigh it, write down the details.
3. Note exactly where you caught it (if possible give a grid reference).

Release the fish

We want live burbot in our rivers not dead ones in a glass case. Put it back in the river. Please do not kill any burbot.

Report

Tell your Club Secretary as soon as you can. Give him your notes of place of capture, weight or length, sketch, photograph, or description, and ask him to forward them to the River Authority immediately with your name and address.

Remember

There is no point in killing a burbot. The British Record Fish Committee will not consider claims for the burbot at present. This is on account of its rarity. If you catch one report it. If you find one dead keep the body and report directly to the River Authority.

ISSUED BY THE BURBOT CONSERVATION PANEL comprising:

J. l'Anson, Cambridge Specimen Hunters' Group 20 Fernlea Close, Cherryhinton, Cambridge.

D. Marlborough, British Ichthyological Society 42 Stanborough Green, Welwyn Garden City, Herts. Tele: W.G.C. 29038

F. H. Perring, Cambridge & Isle of Ely Naturalists' Trust 1 Brookside, Cambridge.

A. Wheeler, British Museum of Natural History London S.W.7 Tele: 01-589 6323

A. E. Yallop, Histon Angling Society 32 Ditton Walk, Cambridge.

With the assistance of:— C. M. A. Fennell, Fisheries Officer Gt. Ouse Authority, Gt. Ouse House, Clarendon Road, Cambridge.

THE BRITISH ICHTHYOLOGICAL SOCIETY
(founded 1960)

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