

THE NATIONAL ANGUILLA CLUB

BULLETIN

Volume 5, Number 2.

May 1968

40

CONTENTS

Editorial	..	..	..	..	..	..	..	..	..	9
The Age & Growth of the Eel	..	..	..	..	..	..	..	..	..	10
Northants. Group Rotary Letter	..	..	..	..	..	..	..	..	..	13
Notable Eels: Cambridgeshire	..	..	..	..	..	..	..	..	..	15
Cheshire	..	..	..	..	..	..	..	..	..	16
Cornwall	}	..	..	..	..	..	..	..	..	17
Cumberland										
Derbyshire										
Devon										
Correspondence	..	..	..	..	..	..	..	..	..	18

EDITORIAL

Last month, the forthcoming Public Inquiry on the Thames Fishery Byelaws and the need for all good anglers and true to take a hand in angling politics of this kind, were very much in my mind, and that is what I wrote about. Good, stirring stuff! Would I have been so outspoken, I wonder, if I had known that a week or two later, I should be having my arm twisted - remorselessly and with devilish skill - to stand for the Executive of the National Anglers' Council? Would I? I don't know; but with my own stirring words still sounding in my ears, I was hoist with my own moral petard!

Well, the die is cast, now. And on reflection, I know that I would have written the same words. We cannot escape the consequences of our convictions simply by keeping silent about them. It is a weighty responsibility and one I bear with humility. It is also an honour and one which I feel reflects in no small measure to the credit of this great Club of ours.

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Speaking of honours, the recently-formed Fisheries Society of the British Isles held its first meeting on April 26th., and I had the honour of being the first angler to be invited to read a paper. I described some of the work we have been doing together on eel fishing, and the paper seemed to be well received by the audience of distinguished scientists and eminent anglers. It is an excellent thing for our Club to be represented on such an occasion, and incidentally it is also an acid test of the validity of our work.

Excellent papers, all of great interest to scientists and anglers alike, were read by Dr. Franklin (The metabolism of toxic substances by fish); Mr. Lloyd of the Ministry's Freshwater Fisheries Laboratory (Pollution research); Mr. Forster of the Marine Biological Assn. (Long-line sea fishing experiments); Mr. Pyefinch, also of the Freshwater Fisheries Laboratory (Work in Loch Leven); and Dr. Went of the Irish Dept. of Ag. & Fish. (Movement of Irish salmon). But in many ways, the high spot of a great inaugural day was the film presented by Dr. Payling of Oxford University about the fish louse, Argulus. This film can only be described as a breath-taking experience and if ever you have a chance to see it, believe me - it is not to be missed!

The Society will be holding an Autumn meeting on September 28th. - a Saturday, to make it easier for anglers to attend.

*

I heard a little story the other day. It concerns a devoted eel-fisher who, at the end of his days, passed over (as they say) to the other side. There he was met by a ghostly ghillie, who silently guided him to a very eely-looking pitch with tackle all ready and waiting. The old angler lobbed out a deadbait, got a sizzling run immediately and was soon in to a bigger eel than he had even dreamed of. The eel fought furiously but eventually came to bank, and the old angler had scarcely begun to enjoy the incredible sight of it before the ghillie was pressing a freshly-baited rod into his still trembling hands. He recast, got another classic run, and in due time just such another eel. And then yet again. And again.

As he banked the fourth great eel, the old angler glanced up at the ghillie.

"It's not like this all the time, is it?" he asked.

"Yes," said the ghillie, "it is."

"Hell!" said the angler.

"Right first time!" said the ghillie.

- Terence Coulson

THE AGE & GROWTH OF THE EEL

(The following is taken from the Synopsis and Discussion of the paper by Dr. Sinha and Dr. Jones, J. Zool., Lond. (1967) 153, 99-117, slightly shortened and with a few alterations to preserve the sense.)

Synopsis

The growth of 1,100 eels from the watersheds of the Rivers Ffraw, Rhyd-hir and Glaslyn in N. Wales was investigated. Because of difficulties of sexing eels, it was possible only to compare the size of females with that of eels with lobed organs (some of the latter are potential females). Generally, female eels grow faster than the others. There was little difference in the growth of eels with lobed organs even though there was a great difference in the eel population density in the three localities. But, in any one locality there was a large range of growth. It is suggested that the competition for food is most acute amongst the smaller size groups. As they grow, eels tend to become cannibalistic and find small eels and elvers an easy source of food.

The growth of some continental eels has been related to temperature but this is not confirmed by experimental work. Nevertheless eels eat little or nothing at low temperatures as is shown by the large proportion of eels with empty stomachs in the samples taken during winter.

Discussion

From the analysis of the data on age, length and weight, it is obvious that the growth of Yellow eels shows much irregularity. Consequently there is a wide length range in each age group with considerable overlapping. Similar conclusions have been reached by other workers both for the eel and for other species.

Range in weight of R. Ffraw eels of the same age & of the same length

MALES			FEMALES		
Age group	Length (mm)	Weight (g)	Age group	Length (mm)	Weight (g)
VI	342	83	VI	390	112
VI	342	91	VI	390	119
VI	342	72	VI	390	131

Under natural conditions, size variation is apparent even at the elver stage. In the Ffraw, for example, the elvers ranged from 67 to 81 mm in length and those from Epney-on-Severn from 55 to 77 mm in length, as found by Strubberg in 1923. If it can be assumed that elvers arriving together at a river have travelled and fed together with equal opportunity, it can justifiably be suggested that the difference in their size is genetic not environmental.

Not only is there a great range of lengths in eels of the same age, it is found that eels of the same sex, length and habitat have considerable differences in weight, as is shown by the examples given in the above Table.

The growth of eels in the small Welsh streams can be summarised as follows.

First, in all rivers, the females grow faster than eels with lobed organs from the same locality, because they are always bigger than lobed eels of the same age.

We are as yet unable to account for this, because sex determination does not seem to be related to the attainment of a certain size. We have shown that

eels may have definite sex organs at a length of 36 cm., but we cannot explain this. Long-term, large-scale experiments must be carried out before these anomalies can be explained. It is equally strange that males migrate seawards at an earlier age than females; Jones found in Lough Neagh that the male Silver eels were 6-12 years old (average length, 40.5 cm) and females 10-22 years (average length, 50.2 cm). The oldest Silver eels were not the largest. From these few facts alone, it is clear that we know little about the growth of eels.

Secondly, the small eels of the Rhyd-hir grow poorly until they reach age-group II and from that time the growth improves. Most of these eels were taken from the brackish water at Solomon's Bridge where the population density was very high; for example, 1,150 eels were caught in a stretch of water about 105 yards long, 3-4 yards wide and 1-2 feet deep. In the Ffraw and Glaslyn, only 250 eels were caught in a similar stretch of water.

Thirdly, the best growth was shown by the female eels from the Ffraw. As 90% of these were caught in Llyn Coron of the Ffraw river system, it may be assumed that a still-water environment favoured growth because more energy is expended while feeding in moving water. That this is so may be reflected by the poor growth of female eels from the fast moving Glaslyn and Rhyd-hir.

A comparison of the growth of the Welsh eel with that of eels in other British waters shows that:

- (i) comparing with Marcus's work in 1919, the smaller eels of the Ffraw show better growth than those of the Severn. Unlike the females, the lobed Ffraw eels have poorer growth than the "males" of the Clare River;
- (ii) growth in the Ffraw is better than in Hornyold's Worcs. pond, but poorer than that found in Norfolk by Jespersen in 1926;
- (iii) growth in the Ffraw is about the same as that found by Frost in Windermere.

It appears that females in lakes have a better growth rate than those in rivers, yet the females of the Worcs. pond show very poor growth.

When compared with continental eels, Welsh eels show poorer growth than those from Germany Holland, Italy and France and it has been suggested that this is caused by over-population, lack of food and low temperature.

The difference in growth of eels in different countries or in different localities in Britain is not unduly great when compared with the range in the growth of eels reared experimentally in ponds. Eels reared at 230 per hectare in a warm shallow rich entropic lake in Russia reached an average length of 42.4 cm and an average weight of 170 g at the end of the third year of life. Eels in the experimental pond at Comacchio grew to an average length of 55 cm and an average weight of 190 g at the end of their fourth year. For eels to attain such sizes in British waters would take 8-10 years.

Of the 17 species of *Anguilla*, 12 are either tropical or sub-tropical and all breed in tropical or sub-tropical seas. Eels have been reported to be able to live in warmer waters than many other fish and to be peculiarly averse to cold (one report states that in Denmark, eels cannot be caught on baited hooks until the water temperature reaches about 10°C). In the present research efforts to catch eels by long line in winter were fruitless and clearly show that the eels were not feeding in winter; this was confirmed by the large proportion of empty stomachs in our winter samples. Japanese eels apparently lose their appetite when the water temperature is below 14°C and Japanese workers suggest that artificial feeding of eels in stock ponds should be stopped at water temperatures of 10°C or lower. American eels react similarly to low temperatures. Thus it seems that the eel is a warm water species and

that its feeding activities show a seasonal rhythm which depends on temperature. This clearly accounts for the much better growth of the more southerly eels which live in warmer waters and thereby have a longer annual feeding period. This is supported by experimental work in which eels were kept in two tanks, one maintained at 5°C higher than the other; both lots of eels were fed to excess, yet the eels in the warmer water showed the more rapid growth. Clearly, temperature plays an important part in growth.

With other species, feeding has been found to be dependent on temperature and on day-length. In the rivers investigated in the present research, there was no significant difference in the temperature or in the day length but there is a wide difference in the density of the eel populations. Where population was dense, cannibalism may result. It has been stated that even when food is plentiful, eels may adopt cannibalistic habits. Consequently, in overpopulated waters the larger eels by feeding on smaller eels may not suffer from overcrowding, even though the competition for food amongst the smaller eels may be intense. That this is so is supported by the poor growth of the smaller eels and better growth of the bigger eels in the thickly populated River Rhyd-hir. Thus it may well be that the limiting factor of the growth of Welsh eels is, in fact, not overcrowding or lack of food but the physical factors such as temperature and day length.

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Comment: The above paper is full of fascinating food for angling thought. For example, the conclusion that eels are cannibalistic is one which is fully borne out by our own experience. An eel of 1:15 which I caught from a salt-water lagoon in 1966 had two eels measuring 13" and 7" in its stomach, and several members have made similar observations. Mr. A.Chandler who gave us much valuable information about L. Ness before our expedition there in 1965 thought that eels' blood and body fluids may have a specially exciting effect on eels. In practice, however, when we tried small eels and portions of eel as baits at L. Ness, we found that the effect was to reduce the twitches and abortive runs caused by small eels; and although we caught no big eels, we speculated that small eels or eel-flesh might possibly be a useful "selective" bait for the bigger eels in waters with a large eel population where small eels were a nuisance. Presumably, the bigger an eel is, the greater the chance that it may have turned cannibal, so the speculation seems well worth investigating in more detail (see Mike Muse's comments on p.13) so as to give some rate-of-catch data and get a definite answer.

The conclusion that overcrowding of eels in a water may have its main effect in limiting the growth of the smaller eels yet have relatively little effect on the growth of the bigger eels is highly relevant to our problems but needs careful assessment. It seems possible from the data in the paper that, although the growth of the overcrowded Rhyd-hir eels improves as they get bigger yet they may still not "catch up" with the eels which got a better start in life in a less crowded and competitive water. Still, the paper suggests that we should do well to review any ideas we may have on relative prospects in high- and in low-rate-of-catch waters; in other words, perhaps waters where small eels are a nuisance could still hold good prospects for big eels if suitably selective methods are used. It is a moot point.

There are a great many other interesting talking-points, too, and correspondence arising from this paper would be particularly welcomed for publication in future issues. Further material from this and from a subsequent paper by Dr. Sinha and Dr. Jones will also be published in future issues. - Editor.

From the NORTHANTS. GROUP ROTARY LETTERCycle 4

Gentlemen:

It is said that the best laid plans of mice and men (with special reference to eel men) oft do go astray and I think I can speak with authority on this score. That being so, I am making no formal plans for this coming season but will take my fishing as I can. I shall be trying out new tackle and will have my eyes open for better brands of trace material and monofil lines. I'll be using a 12 ft. 6-8 oz. specification surf rod, in addition to my usual gear, with a surf-size multiplier and braided line, and - always supposing there's something to write about - I hope to write about the new system in article form, later on. As things stand, I believe the multiplier will prove to be a better proposition than the fixed-spool reel.

I love canal fishing of any kind, and no doubt I shall spend some time on the Grand Union. However, I have a decided preference for still-waters and I expect I shall spend most of my time at Butler's Pit and similar waters. My interest in tenchfishing makes it almost imperative that I combine this with my eeling, and it will be interesting to see the results of fishing baited pitches. When fishing baited pitches for tench, the net result is often a load of slimy chicken-hearted things which can then be converted into a suitable mash for eels. I refer, of course, to that scourge of serious anglers, the blubbery bream!

This year, too, I shall be doing extensive swim clearance with a view to livebaiting, a technique I have not so far used and about which a great deal remains to be learned. The more I continue to eel-fish, the more I am appalled at the number of fish we have to slaughter each season, due to the problems of gut-hooking, and while we do obtain valuable information from such fish, it does not seem to me to justify the numbers killed each season. In the coming months, I shall be thinking of new hooking rigs and trying them out, and I hope that others in the Club will try and tackle this problem. The first rig I shall be using is not new to Club members, but I do feel it was not given sufficient time to determine its worth. The rig I refer to is the double-hook flank mount for deadbaits, devised by Fred Wagstaffe and Jim Gibbinson.

In the line of baits, I've already mentioned that I'm hoping to use livebaits this coming season. I'd be interested to hear from anyone who knows where to obtain large numbers of small lampreys, as I feel they could be a very useful bait for eels. Another "new" bait on my trial list is eels! Arthur Sutton recently had a very encouraging result while using some small eels. Fortunately, I do know of an excellent source of elvers via the Wild Man of Lincolnshire (you guessed: Dave Goodrum!)

I shall be trying out a new type of bite alarm, too, always providing I can find time to get them finished.

This year, I hope to meet more of our members, and all my old friends, and get more eel fishing in. I also hope to get my Session Reports right first time, and that I don't make poor old Terry Coulson cry over them any more! Having made my New Year Resolutions in public, I expect to be severely trounced by the Sec. for breaking them in the near future!

Finally, I would like to wish all members of the Club a successful and prosperous New Year, especially the new Committee whose tasks we can all lighten if we pull our weight.

Mike Muse

(contd. overleaf)

(Northants Group Rotary, contd.)

Making plans is no problem, but following them up sometimes presents a little difficulty! Still, my plans for the coming season have already been formed - the first being to do a darned sight better than I did last season!

I intend to fish various waters. The Grand Union Canal will be one of them, but my main assault will be on a lake at Harlestone village just on the outskirts of Northampton. This lake has not been fished for eels in the last ten or twelve years, to my knowledge. The odd eel up to 3 lb. has been taken by bream anglers, but apart from this, I have no idea what the potential is.

Experimental work is going to play a major part in my Summer fishing, mainly with baits and hooking arrangements. I shall be doing a vast amount of pitch preparation and heavy pre-baiting periods.

I want to try to induce the eels to feed freely on liver, the reason being twofold: one, the ease with which liver is obtainable; and two, using liver enables one to strike as soon as a run develops and with a reasonable amount of success in hooking them.

Livebaiting is out because of the vast numbers of pike present. I shall be trying a surface bait such as a strip of lung on one rod every time I visit this water. Another bait I plan on giving a fair try is strips of cow's udder fresh from the slaughterhouse whilst it is still saturated with milk.

I shall be trying out some other trace materials; in fact, it's part of a fly line and line backing. I'll still be using plastic-coated wire, but ready to try anything that looks worthwhile testing.

This season, I shall be concentrating on the eel more than any other fish, even the carp. I must push my present weights up; besides, I never kept Terry in Session Reports as I should have done. (I plan to rectify this, Terry! I only hope there's something worthwhile to put on them.)

One final comment: I hope all Club members have a good and enjoyable season.

Phil Shatford

Once again, the G.U. Canal will take up most of my time, but I intend to try other waters, too. Firstly, Emberton Park lakes: these run adjacent to the Gt. Ouse, and they interest me a lot as do any lakes or pits close to the Gt. Ouse system.

Other waters I have in mind are some stretches of the Fenland drains, e.g. Reedfen and Flood Ferry; there are many such places around the small town of March. A problem on these drains would be small eels, but I know of many up to 3 lb.-plus, caught during the day-time by anglers who go out with our local W.M. Clubs (matchmen, mostly; Sunday trips). I shall report later on how these new waters fish; if I get too many blanks, I can always boost my morale by fishing the Gt. Ouse!

Although I have great faith in deadbaits of one sort or another, this year I shall be using livebaits quite often. I know one Club member - Maurice Johnson - has had great success in the past while using livebait. So far, I have neglected this method, but I aim to put that right.

Two good reasons for using livebait on the G.U. Canal are: one, it will eliminate the crayfish problem of continual short pulls etc; two, at Bugbrooke South, I have examined the stomach-contents of four eels, and each have had 2-3 oz. perch inside; I imagine these are taken live, as one had been swallowed tail first.

I have a feeling one of our members will connect with a really big eel this year. Let's hope he lands it. In other words, make sure you are using a TRACE.

Bob Church

Notable Eels: CHESHIRE

<u>LOCATION</u>	<u>CLASS</u>	<u>WEIGHT</u>	<u>LENGTH</u>	<u>GIRTH</u>	<u>DATE</u>	<u>TIME</u>	<u>BAIT</u>	<u>CAPTOR</u>	<u>SOURCE</u>
R.Dee, Chester (below weir)	1.	4:0			May 62		Worm	S.Griffiths	AT 25.5.62
	1.3	9:3			11 Dec 66	05.15	Sprat db	W.Rohr	AT 16.12.66, p. 1.
R.Weaver, Hartford	1.	4:1			Aug 60		Maggot	F.Murphy	AT 2.9.60, p. 13.
Marbury Mere, Nantwich	2.	5:6			Sep 63		Worm	S.Holman	AT 11.10.63, p. 1.
		4:8 $\frac{1}{4}$			Oct 63		Worm	S.Holman	AT 18.10.63, p. 2.
A mere, Whitchurch	2.	6:0	40	8	Jul 64		Worm	W.Lyon	AT 31.7.64, p. 1 (P)
Hurleston Reservoir, Nantwich	2.	4:10	39		5 Jun 67	20.40	3 worms	R.G.Jones	AT 15.6.67, p. 2.
A pond, Runcorn	2.	6:8	40	9	Nov 55		2 maggots	W.H.Astbury	AT 9.12.55, p. 1, Where To Fish, EHTCT.
A farm pond	2.	5:1 $\frac{1}{4}$			Jul 61	day	Worm	F.Wycherley	AT 14.7.61, p. 1 (P)
R.Crouch estuary, Wallasey Bay	3.1	6:5	43		Aug 60		Herring	L.Lake	AT 2.9.60, p. 1.

Notable Eels: CAMBRIDGESHIRE & ELY

<u>LOCATION</u>	<u>CLASS</u>	<u>WEIGHT</u>	<u>LENGTH</u>	<u>GIRTH</u>	<u>DATE</u>	<u>TIME</u>	<u>BAIT</u>	<u>CAPTOR</u>	<u>SOURCE</u>
A gault pit, Guinea Hall, Wicken Fen	2.	8:14							Angler's Handbook, James Wentworth Day.
A gravel pit, Cambridge	2.	5:3			22 Aug 66		Bleak	A.Rolph	A.J.Sutton, verbally from captor.
		5:2			22 Aug 66		Bleak	A.Rolph	
Roswell Fits, Ely	2.1	4:8	37 $\frac{1}{8}$	8	30 Jul 66	00.30	Roach db	R.P.Tingay	R.P.Tingay
Haddenham Lake, Ely	2.	4:0	38		Aug 58			G.Matthews	AT 22.8.58, p. 13.
Gillette's Pit	2.2	4:1	40	8	22 Jul 67	12.00	Worm	J. Gotobed	Ely Stnd'd 14.7.67, p. 17 (P)
A dyke, Wisbech	2.3	27) 23)			Taken on draining the dyke				{A History of British Fishes, Yarrell, 1836

Notable Eels: CORNWALL

Nil.

Notable Eels: CUMBERLAND

<u>LOCATION</u>	<u>CLASS</u>	<u>WEIGHT</u>	<u>LENGTH</u>	<u>GIRTH</u>	<u>DATE</u>	<u>TIME</u>	<u>BAIT</u>	<u>CAPTOR</u>	<u>SOURCE</u>
R.Eden, Warwick Bridge	1.	5:8	36		Aug 61			F.Barlow	AT 1.9.61, p. 20. FG 9.9.61, p.839.

Notable Eels: DERBYSHIRE

Nil.

Notable Eels: DEVON

R.Exe, Exleigh	1.	4:0	35		Jun 61	day?	Minnow lb	K.Hill	AT 16.6.61, p. 1 (P)
Slapton Ley	2.2	6:4	39		22 Sep	26		An angler	FG 2.10.26, p.360.
		6:0			Jun 57	Rudd lb	A.Bailey	AT 5.7.57, p. 1. E:HTCT.	
		5:12			Aug 53		N.Dobson	E:HTCT.	
		4:10			Jul 55		J.Opie	E:HTCT.	
		4:4			Jul 55		J.Opie	E:HTCT.	
Taunton-Bridgewater Canal, Taunton	2.3	6:2			Jun 59		Piece of eel	F.Sweeting	AT 26.6.59, p. 1.
		5:8			Jun 59			J.Sweeting	AT 26.6.59, p. 1.

CORRESPONDENCE

PRESSURE GROUP

From Eric Hodson: "Have you done any work at all on barometric pressure and its effect on the feeding pattern of fish? What bit of work I have done on this subject seems to indicate there is some connection between the barometric pressure, and particularly changes in barometric pressure, and a fish's willingness to feed."

From Ray Brown: "My own opinion is that barometric pressure cannot affect the eels unless they are absolutely stationary for a length of time, as they have no reference pressure to start from - if you see what I mean!"

**I have never thought it very likely that changes in air pressure could have a major effect on fish, because they are so small compared with the large changes in water pressure they habitually subject themselves to. But many experienced anglers think there is a correlation; and the British Conger Club told me some years ago that barometric pressure was the only thing they had been able to correlate with catches. With Conger catches! Certainly, there is some factor we are not yet taking into account - think of all those blanks when "conditions seemed ideal". Fish have no reference temperature to start from, either, do they? An interesting debate - but perhaps our reporting work this year will tell us what the eels think about it!

SWIMS

From Stan Hill: "At present, the location of a big-eel swim is anybody's guess. For instance, at L. Helen, I like getting a bait right under those trees, if I can; whereas another is quite happy to cast his bait into a snag-free swim. We know that the eel is a hunter by night and therefore he will pick up the scent sooner or later. But I feel that if a big eel is 'laying up' during the daytime in snags such as I've mentioned, then he might be tempted out of his lair during the lighter hours, if we cast the bait near enough. What do you think?"

From Dave Goodrum: "Anglers these days know a great deal about the movements of many species and can often predict where certain fish will be feeding under certain conditions. I don't think we know much about the eel's movements. When fishing pits with both deeps and shallows, I have often wondered whether I am fishing the wrong blessed swim! I tend to go for the deep water, but this may not be wise because I feel that on warm summer nights it could be a good bet to fish the shallows. Small rudd and roach feed over the shallows in warm weather, and I should think a lot of eels wander into the shallows after these small fish after spending the majority of the daylight hours in the deeps. In pits with both deeps and shallows, we often get runs around dusk and dawn, but not many in between; might this be not because the eels aren't feeding, but because they aren't in the deeps where our baits are? In other words, maybe we catch eels in the deeps at dusk before they leave for the shallows and at dawn when they return to the deeps. This is just guesswork but there may be something in it?"

**Two thoughtful points. I think the Stickney eels behave in just the way Dave Goodrum suggests; except, perhaps, on very brightly moonlit nights? Our swim studies may give some answers.