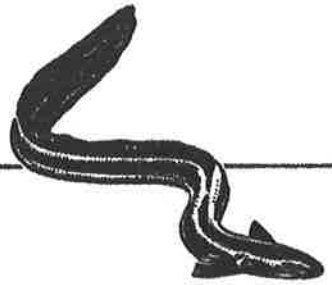

The National Anguilla Club

BULLETIN

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N.A.C. Bulletin.

EDITORIAL.

Christmas comes but once a year - so the saying goes
But this year what we'll celebrate goodness only knows.

Voltage cuts, coal shortage and petrol running out
And if we can't go fishing - then there's nowt to crow about.

If there be nowt to crow about, maybe we can reflect
And dream of warmer, summer days, the year in retrospect.

Take heart my friends for things will change, as things are likely to
And for these cheerless winter nights here's something you can do.

Drop Dr A.Hawkins a line - with articles galore
And maybe keep us going -'till it's Summer time once more.

Those among you who know Alan quite well will be saying 'God, he has gone mad'. So I ought to explain. This editorial is being written by yours truly, A.J.S. I can almost hear you sighing with relief, saying, 'Ah - that accounts for the mad prose ' I still think it's a good idea to award a medal or something for the best angling verse of the year. Then, Maybe, I will be able to beat Watson after all. John, that is your cue to burst into verse.

Seriously, I think the year has proved to be a good one for us all. Not that we have all caught mighty writhing monsters, but in another way. I mean the way in which you have all shown how tightly knit and well co-ordinated is the N.A.C.

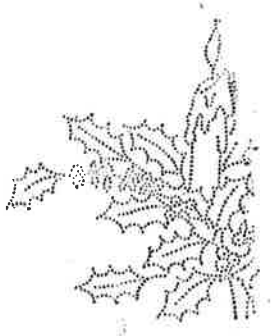
Many thanks for your letters and words of kindly encouragement throughout 1973. There are times, naturally, when replies to your letters have to wait a few days so that I can give the other Club work my full attention, but I do endeavour to reply to all letters as early as possible. So keep on writing in the New Year ahead, not only to me but to all your other angling colleagues in the NAC.

A few of you have written saying how very much you enjoyed the A.G.M. The time just flies past at our meetings and I never seem to get the time to chat to you all. The management of the Motorstop wrote apologising for the coldness of the bar, but these things are apt to happen once in a while and I do not think that the low temperature did anything to mar our meeting. My tape recording of the minutes proved to be excellent, and I will issue the copies of same as soon as they are ready.

There are several things which I look forward to next year. Our Spring meeting, for it is the forrunner of the eel fishing season. The NASG Britsh Angling Conference. To catching a ten pound eel, and, of course, to meeting you all again by the water.

I speak for the whole Committee when I wish you all A Very Merry Christmas, A Happy and Prosperous New Year and Tight Lines.

A.J.S.



RESULTS FROM INDIVIDUAL FISHERIES, 1967 - 72.

by A.F. Hawkins.

As older members will know, we used to publish lists of fisheries ranked according to the median weights of the eels they produced. The lists included all waters from which 5 or more eels had been caught, and the last set was published in the 'Report on the 1970 reporting scheme' (1) covering the years 1967 - 70 inclusive.

Since then, Terry Coulson has kindly updated the tables to include results for the 1971 season, and I have data from 1972 to hand, and will soon have results for 1973 as well. In other words, it is high time for another set of tables!

Unfortunately, there is one snag here. I have not yet been able to go through our past Chairman's files to abstract all the details needed to update the tables completely. This causes problems with waters which were fished both before and after I took on this job, and for which results are available for both periods. Without knowing the precise weights of all the pre 1972 eels from such waters, I cannot add on the newer data to provide a single estimate for the median weight - or the quartiles, for that matter. Medians, in this sense, are not additive, and have to be re-calculated each year.

Despite this problem, it seemed worth while to go ahead and publish some figures at this time, in the knowledge that somewhat incomplete information is nevertheless better than none at all. Tables A,B and C which follow, therefore,show waters producing five or more eels from 1967 - 72 ranked in order of median weights; table A gives the overall result for all bait types, while tables B and C show results for worm and dead baits respectively. Waters which produced 5 or more eels both in the 1967 - 71 period, and also during 1972 are given two entries in the tables, the letter a indicating pre 1972 results, and b indicating 1972 figures. In such cases, the ranking is given according to whichever time period produced the largest number of eels (N in the tables). Waters which have had to be left out of the tables at this time fall into two classes. Firstly, there are undoubtedly a few cases where past and present results each cover less than 5 fish, so that neither qualify for an entry alone. Taken together, the total would be over 5, but without the past results to hand they must be left out. Secondly, there are waters already in the Tables for which two or three more eels were added in 1972. Here, only the pre 1972 results can be given.

Notwithstanding these deficiences, the Tables cover nearly 80 waters, and we may enquire how best to make use of the information they contain. A detailed discussion on this topic has been printed already (1), and I trust older members will forgive me if I repeat some of this information again.

1. It should be remebered that median weight is only one of several ways of assessing the potential of a water. Rate-of-catch is another important consideration (also included in the tables) and when trying to estimate the potential of a particular water, it is as well to bear both points in mind. Thus, for example, in table A, the Grand Union Canal, with a median weight of 2:9, stands well above Stanley Park with a median of 1:1 - 1:9. But the rate-of-catch figures are greatly in favour of Stanley Park, to the extent that for 2lb plus eels, and probably 4lb plus as well, a given amount of effort is likely to be better rewarded at Stanley Park than on the GUC. Whether the same holds true for the real busters of this world is another matter, of course.

A median weight based on only five or so eels is unlikely to be particularly reliable; indeed, discrepancies between 'a' and 'b' results (tables A - C) suggest that quite substantial variations can occur even with comparatively large numbers of eels. Therefore, we should be cautious of paying too much heed to results from waters with less than, say 10 eels, and be prepared for some errors in estimates based on much larger samples.

Table A Individual Fisheries. Total results. 1967 - 1972

Class	Water		N	Median	LQ - UQ	RH/E	RH/2	RH/4
2.2	Greystone Lake		9	4:4	3:8 - 6:6	49	49	90
2:2	Trees Pool		17	3:1	2:10 - 3:14	24	26	104
2:2	Deep Hole		5	2:14	1:15 - 3:5	15	25	-
2.2	Abberton Reservoir	a	111	2:14	2:6 - 3:4	6	7	160
		b	73	2:11	2:2 - 3:4	4	4	45
2:2	Elvington Pond		15	2:13	2:3 - 3:9	29	33	220
2:2	Meadowfield Lake	a	20	2:10	1:15 - 3:4	39	55	390
		b	9	2:2	0:11 - 2:15	41	73	366
2.3	Grand Union Canal, Main		29	2:9	1:5 - 4:0	150	250	600
2.2	Fleetwood Reservoir		20	2:6	1:2 - 3:6	60	100	600
2.2	Stiokney Pit		51	2:5	0:10 - 2:14	28	49	1400
2.2	Cartwrights Pit		18	2:4	1:10 - 2:11	44	73	--
2.2	Straits Mill Pit		15	2:2	1:10 - 2:12	8	13	-
1.2	R. Loddon		8	2:1	1:5 - 2:9	11	23	-
2.1	Kingsmead Pit		13	2:1	0:14 - 2:8	190	320	-
2.3	B'Ham-Worcester Canal		6	2:0	1:10 - 2:8	41	82	-
2.2	Adcocks Pond		9	1:15	1:8 - 2:7	26	59	-
2.2	Market Rasen Brick Pit		6	1:14	1:0 - 2:15	29	58	-
2.2	Marshalls Farm Pond	a	24	1:14	1:1 - 2:14	41	82	490
		b	5	0:13	0:12 - 1:0	16	-	-
2.2	Barton Broads	b	12	1:10	1:0 - 2:7	117	280	-
		a	8	2:7	2:0 - 2:15	62	82	-
2.2	E. Halton Brick Pit		27	1:10	1:4 - 2:5	14	34	-
2.2	Fiver Pit		10	1:10	1:6 - 2:0	9	22	-
2.2	Whitemere		8	1:10	1:0 - 3:11	107	214	430
2.2	Newton Pond	a	34	1:9	0:13 - 2:8	18	47	610
		b	9	2:0	1:6 - 2:5	3	6	-
2.2	Stanley Park Lake	b	72	1:9	1:3 - 2:7	5	19	230
		a	24	1:1	0:12 - 1:7	5	40	-
2.2	Sibsey Pool		13	1:9	1:1 - 2:4	36	78	-
2.2	Carters Pit		5	1:9	1:6 - 2:0	4	18	-
2.2	E. Yorks Lake		9	1:8	1:6 - 1:11	19	-	-
2.1	Castle Ashby Ponds		5	1:8	1:2 - 1:10	36	-	-
2.2	Fenhouse Pit		54	1:7	0:12 - 2:6	51	140	910
2.1	Cowick Brick Pit		9	1:6	1:0 - 2:4	36	110	-
1.3	R. Thurne		11	1:6	0:14 - 2:4	16	58	-
2.1	London Road Pit		63	1:6	0:13 - 2:3	20	72	640
2.1	Castle Howard Great Lake		47	1:6	0:13 - 2:0	52	200	1200
2.1	Benniworth Carp Lake (a)		12	1:6	0:13 - 1:10	21	130	-
2.2	Moor Lane Pond (Dringhouses)		18	1:5	0:12 - 2:3	45	120	-
1.2	R. Colnebrook		6	1:5	1:0 - 1:7	4	-	-
2.2.	Balderton East Pit		25	1:4	0:14 - 2:3	33	100	-
2.1	Loch Morar		21	1:4	1:0 - 1:11	41	290	-
2.2	Bolingbroke Pond		11	1:4	1:0 - 1:7	7	-	-
2.2	Tockwith Farm Pond		5	1:3	1:2 - 1:10	19	-	-
1.3	Yorks River Ouse, Tidal		13	1:2	0:9 - 2:4	17	55	220
2.2	Howden Brick Pit		20	1:2	0:13 - 2:3	15	49	-
2.3	Oxford Canal		7	1:2	0:14 - 1:10	22	150	-
1.2	Yorks River Ouse		98	1:2	0:14 - 1:10	3	47	-
3.1	R. Esk		14	1:1	0:10 - 1:10	3	48	-
1.2	R. Great Ouse		149	1:1	0:11 - 1:8	8	94	-
2.1	Benniworth Low Pond (a)		15	1:1	0:11 - 1:8	33	500	-
2.1	Harlestone Lake		8	1:1	1:0 - 1:6	15	-	-
2.1	Hatchett Pond		17	1:0	0:11 - 1:11	44	750	-
2.2	Balderton West Pit		5	1:0	0:6 - 1:10	12	61	-
2.2	Bottomless Pit		27	1:0	0:11 - 1:3	13	340	340
2.3	Old West River		12	0:15	0:9 - 1:4	29	-	-
2.2	Poyle Pit		14	0:14	0:11 - 1:3	17	230	-
2.1	Culverthorpe Hall Lake		6	0:13	0:8 - 1:5	27	-	-

Table A Continued

2.1	Small Crown	6	0:13	0:10 - 0:14	80	-	-
2.1	Piltdown Common Lake	23	0:12	0:6 - 1:15	37	120	-
2.2	Thorpe Pit	10	0:12	0:8 - 1:9	7	34	-
2.3	Nott'm-Grantham Canal	15	0:12	0:4 - 1:8	18	-	-
2.1	Sandbeck Park Lake	32	0:12	0:8 - 1:4	7	120	-
2.1	Llangorse Lake	6	0:11	0:11 - 1:8	58	-	-
2.1	Roswell Pits	66	0:11	0:5 - 1:4	17	280	-
2.1	Clumber Park Lake	19	0:11	0:9 - 0:15	2	-	-
2.3	Irrigation Drain, Sussex	10	0:11	0:10 - 1:0	2	-	-
2.1	Thrapston Pit	8	0:11	0:8 - 0:14	52	-	-
2.1	Butlers Pit	118	0:10	0:6 - 1:4	37	270	2200
2.1	Yately Pits 1 a	13	0:10	0:7 - 1:1	10	-	-
	b	9	0:10	0:7 - 1:4	11	97	-
3.2	Shoreham Dock	5	0:10	0:8 - 0:14	12	-	-
1.2	R. Nene	26	0:10	0:4 - 0:14	3	-	-
2.1	Big Crown	6	0:10	0:6 - 0:11	98	-	-
2.1	Kilpin Brick Pit	6	0:9	0:6 - 1:2	19	-	-
2.3	Grand Union Canal, Low	15	0:9	0:7 - 1:0	24	-	-
2.2	Erics Pit	9	0:9	0:8 - 0:10	14	-	-
2.1	Slaugham Mill Pond	7	0:7	0:7 - 0:10	10	-	-
2.1	Lake Helen	43	0:7	0:5 - 0:10	58	500	-
2.2	Longwood Pit	11	0:7	0:7 - 0:9	4	-	-
1.3	R. Exe, Tidal	5	ca 0:5				
3.1	R. Colne, Estuary	7	0:3	0:3 - 0:5	3	-	-
1.3	R. Dee Estuary	7	ca 0:3	0:2 - 0:3	2	-	-

Table B Individual Fisheries. Results on Worm. 1967 - 72.

Class	Water		N	Median	LQ - UQ	RH/E	RH/2	RH/4
2.2	Greystone Lake		9	4:4	3:8 - 6:6	48	48	87
2.2	Abberton Reservoir	a	111	2:14	2:6 - 3:4	5	6	150
		b	71	2:11	2:2 - 3:4	3	4	43
2.2	Meadowfield Lake	a	20	2:10	1:15 - 3:4	32	46	320
		b	8	1:8	0:11 - 2:15	30	60	242
2.2	Straits Mill Pit		14	2:4	1:10 - 2:12	7	12	-
2.3	Grand Union Canal, Main		29	2:0	1:0 - 4:0	120	240	480
2.1	Kingsmead Pit		11	2:0	0:10 - 2:2	91	170	-
2.2	Carters Pit		5	1:9	1:6 - 2:0	2	9	-
2.2	Fiver Pit		5	1:8	1:6 - 2:0	4	9	-
2.2	E. Yorks Lake		7	1:8	1:8 - 1:13	14	-	-
2.1	Stanley Park	b	61	1:7	1:2 - 2:1	5	16	282
		a	21	0:15	0:12 - 1:6	3	35	-
2.1	Loch Morar		6	1:3	0:12 - 1:6	35	-	-
2.1	Cowick Brick Pit		6	1:3	0:15 - 1:6	20	-	-
2.2	Fleetwood Reservoir		11	1:2	1:0 - 2:7	26	73	-
2.3	Oxford Canal		7	1:2	0:14 - 1:10	14	99	-
2.2	Marshalls Farm Pond		14	1:2	0:8 - 1:6	10	73	-
2.2	Whitemere		6	1:2	1:0 - 2:0	59	176	356
1.2	Yorks River Ouse		82	1:1	0:14 - 1:7	2	56	-
2.2	Howden Brick Pit		5	0:15	0:8 - 1:0	9	-	-
1.3	Yorks River Ouse, Tidal		12	0:14	0:9 - 2:4	11	32	130
2.2	Balderton East Pit		16	0:14	0:12 - 1:15	19	75	-
2.2	Moor Lane Pond,		13	0:14	0:10 - 1:11	22	96	-
2.1	Benniworth Low Pond		6	0:14	0:11 - 1:1	30	-	-
2.2	Castle Howard Great Lake		23	0:13	0:4 - 1:5	23	-	-
2.2	Bottomless Pit		24	0:13	0:11 - 1:1	9	220	220
2.2	Newton Pond	a	14	0:13	0:8 - 1:0	5	74	-
		b	8	1:12	1:6 - 2:5	1	3	-
2.2	Thorpe Pit		10	0:12	0:8 - 1:9	7	34	-
2.1	Clumber Park Lake	b	19	0:11	0:9 - 0:15	3	-	-
2.1	Llangorse Lake		5	0:11	0:10 - 1:2	34	-	-
2.3	Nott'm Grantham Canal		14	0:11	0:4 - 1:2	12	-	-
2.3	Irrigation Drain, Sussex		10	0:11	0:10 - 1:0	1	-	-
2.1	Thrapston Pit		8	0:11	0:8 - 0:14	16	-	-
2.2	Stickney Pit		19	0:10	0:5 - 2:2	16	61	-
2.1	Yately 1	a	11	0:10	0:7 - 0:15	6	-	-
		b	9	0:10	0:7 - 1:4	7	64	-
2.3	Grand Union Canal, Low		15	0:9	0:7 - 1:0	21	-	-
1.2	R. Great Ouse		27	0:9	0:8 - 0:15	8	220	-
1.2	R. Nene		25	0:9	0:4 - 0:14	3	-	-
2.1	Sandbeck Park Lake		21	0:9	0:7 - 0:12	4	-	-
2.2	Erics Pit		9	0:9	0:7 - 0:10	7	-	-
2.1	Kilpin Brick Pit		5	0:8	0:4 - 0:14	7	-	-
2.1	Slaugham Mill Pond		7	0:7	0:7 - 0:10	5	-	-
2.2	Longwood Pit		11	0:7	0:7 - 0:9	4	-	-
2.2	Fenhouse Pit		7	0:6	0:5 - 0:9	15	-	-
2.1	Piltdown Common Lake		12	0:6	0:4 - 0:9	18	-	-
2.1	Lake Helen		31	0:6	0:5 - 0:8	11	-	-
2.1	Butlers Pit		34	0:5	0:4 - 0:8	22	760	-
2.1	Roswell Pits		26	0:5	0:4 - 0:6	6	-	-
3.1	R. Colne Estuary		6	0:3	0:3 - 0:5	1	-	-
1.3	R. Dee Estuary		5	0:3	0:2 - 0:3	2	-	-

Erratum, add

2.1	Clumber Park Lake	a	9	0:9	0:7 - 0:12	2	-	-

Table C: Individual Fisheries, Results on Dead Baits, 1967 - 72

Class	Water		N	Median	LQ - UQ	RH/E	RH/2	VRH/4
2.3	Grand Union Canal, Main		5	3:10	3:2 - 4:7	170	170	850
2.2	Fleetwood Resevoir		9	3:7	2:5 - 4:0	96	110	430
2.2	Marshalls Farm Pond		10	3:2	2:8 - 3:14	84	84	420
2.2	Trees Pool		15	3:1	2:11 - 4:0	26	28	97
2.2	Deep Hole		5	2:14	1:15 - 3:5	15	25	-
2.2	Elvington Pond		14	2:13	2:5 - 3:9	30	33	210
2.2	Stickney Pit		30	2:8	1:14 - 3:0	33	45	1000
2.2	Newton Pond		20	2:4	1:12 - 3:2	27	45	530
2.2	Cartwrights Pit		17	2:4	1:11 - 2:11	41	64	-
2.2	Moor Lane Pond, Dringhouses		5	2:3	1:12 - 3:7	100	130	-
2.2	Market Rasen Brick Pit		5	2:3	1:4 - 2:15	30	50	-
2.1	Castle Howard Great Lake		24	2:0	1:8 - 2:8	79	160	950
2.2	Adcocks Pond		9	1:15	1:8 - 2:7	24	54	-
2.1	Piltdown Common Lake		11	1:15	1:1 - 2:7	55	120	-
2.2	Barton Broads	b	9	1:14	1:0 - 2:9	128	290	-
		a	7	2:9	2:2 - 3:0	65	76	-
2.2	Balderton East Pit		9	1:14	1:7 - 2:6	59	130	-
2.2	Fenhouse Pit		45	1:12	1:0 - 2:15	55	120	250
2.2	E. Halton Brick Pit		26	1:12	1:6 - 2:5	14	32	-
2.2	Fiver Pit		5	1:12	1:2 - 2:12	14	34	-
2.1	Stanley Park Lake		7	1:12	1:11 - 3:0	20	47	141
2.1	Lake Helen		12	1:10	1:2 - 2:9	140	340	-
2.2	Sibsey Pool		13	1:9	1:1 - 2:4	35	75	-
2.2	Howden Brick Pit		15	1:8	0:13 - 2:8	17	42	-
2.1	Benniworth Low Pond		7	1:8	1:4 - 1:15	31	220	-
2.1	Benniworth Carp Lake		9	1:8	1:1 - 1:15	21	94	-
2.1	London Road Pit		59	1:7	0:15 - 2:4	21	69	620
2.1	Glasson Dock		5	1:7	1:1 - 2:0	13	67	-
1.2	Yorks River Ouse		16	1:5	1:1 - 2:0	10	38	-
2.1	Loch Morar		10	1:5	1:2 - 1:12	49	490	-
2.2	Bolingbroke Pond		10	1:5	1:0 - 1:7	8	-	-
1.2	R. Great Ouse		81	1:4	0:14 - 1:11	9	69	-
2.1	Sandbeck Park Lake		11	1:4	0:13 - 1:10	14	80	-
2.1	Hatchett Pond		9	1:2	0:15 - 1:11	52	470	-
2.1	Harlestone Lake		7	1:0	0:15 - 1:7	8	-	-
2.1	Roswell Pits		35	1:0	0:11 - 1:6	24	210	-
2.3	Old West River		5	1:0	0:11 - 1:5	48	-	-
2.2	Poyle Pit		11	0:15	0:11 - 1:7	17	180	-
2.1	Butlers Pit		80	0:12	0:8 - 1:7	40	230	1600

2. Although there may be errors in individual cases, it is the Authors' opinion that these tables, taken overall, do provide a rational basis for some preliminary selection of waters to fish. It is clear that the range of eel fishing quality covered by the Tables is quite enormous, ranging - to take a couple of sound examples - from Lake Helen with a median weight of only 7oz and a slow rate-of-catch of 58 RH/E, to Abberton Resevoir with a median nearly 7 times as great, and a rate-of-catch nearly 12 times as high. Of course, it may be argued that, in principle at least, even a mediocre water may suddenly turn up a record breaker. As a proposition in logic, this cannot be disproved completely. But such evidence as exists does point fairly strongly in the other direction. Thus, the proportion of waters that have actually produced a 4lb plus eel (as evidenced by the presence of a RH/4 figure) progressivly dwindles as one goes from the top to the bottom of the tables. Indeed, a substantial number of the bottom $\frac{1}{4}$ of Table A have not yet produced a 2lb plus eel, never mind a 4lb plus! Conversely, the water which has to date produced the largest Anguilla Club eel, Greystone Lake, sits comfortably at the top of the Tables, and most of the other waters members rate highly for very big fish occupy lofty positions also.

Thus members may look at the waters they fish, and see how they fit into the overall scheme. If their waters do not occupy a position in the top $\frac{1}{4}$ or so of the tables (a median of over about 1:9 overall, or 1:2 on worm, or about 2:3 on DB), then they may wonder whether it is about time to look round for other fisheries. Of course, there are many reasons why a change may not be indicated - an especially favourable rate of catch is one, and an insufficient number of eels to make a judgement is another - but in the absence of such reasons a new venue may well be indicated.

3. By taking all bait classes into account, table A runs the risk of not comparing like with like. For example, practically all the river results for the Loddon, Great Ouse, Colnebrook and Tidal Yorkshire Ouse came from dead bait fishing; other waters contain eels caught on both worms and DB, and waters like Abberton, for example, have been fished almost exclusively on worm. It is well known that DB eels tend to be larger than worm eels, on the average, and so the rivers quoted above may occupy a rather inflated position in the overall table. Their true value may be better appreciated by reference to table C, for DB results only; here they occupy relatively lower positions. In other words, if sufficient eels are available, tables B and C should also be consulted when trying to make a judgement on a water's potential.

Results for worm and dead-bait can also be revealing in that waters may well occupy rather different positions in the two tables. Thus, on DB, Stickney pit occupies a high position with a median of 2:8; on worm, the converse is true, and the median is a lowly 0:10. In a case such as this, the inference may be that Stickney holds a large head of bootlaces, along with respectable numbers of bigger fish. Here, dead-bait has the advantage in selecting against small fish. Conversely, the tables also contain examples where the advantage (in weight) for DB is not so marked, eg Stanley Park, and rate-of-catch figures may then provide the appropriate criteria for bait selection.

4. Further refinements in the assessment of waters requires that factors such as time of day, time of year when the eels were caught, bait size and many others should be taken into account. It may be possible to do something along these lines in the future, but it is outside the scope of the present report. In the meantime, may wish for further details of the fishing results from particular waters, and such information as I have (from session report data) is available on request.

5. So far, our examination of the tables has been concerned with individual fisheries, showing how we might use them to draw some preliminary conclusions about the particular waters we each fish. It is also worth while looking at the other side of the coin, and using our tables to see if we can also make useful generalisations about our fisheries.

One obvious general question is to enquire what effect water class (left hand column of tables A -C) has on eel fishing results. Inspection of table A shows that the number of waters in each class are as follows:-

Class	Type of Water	Number of waters
1.1	Upland River	0
1.2	Lowland River	5
1.3	Tidal River	4
2.1	Lakes etc with an outflow	25
2.2	Lakes etc without an outflow	33
2.3	Canals and drains	7
3.1	Estuaries and Creeks	2
3.1	Salt Lagoons	1
3.3	The Sea	0
	Total	77

Thus, of the 77 waters listed, no less than 58 (75%) are lakes of class 2.1 or 2.2; it seems worth while, therefore, to compare results from these two classes of still water. For the remaining classes, numbers are rather two small to try and draw useful conclusions at this time.

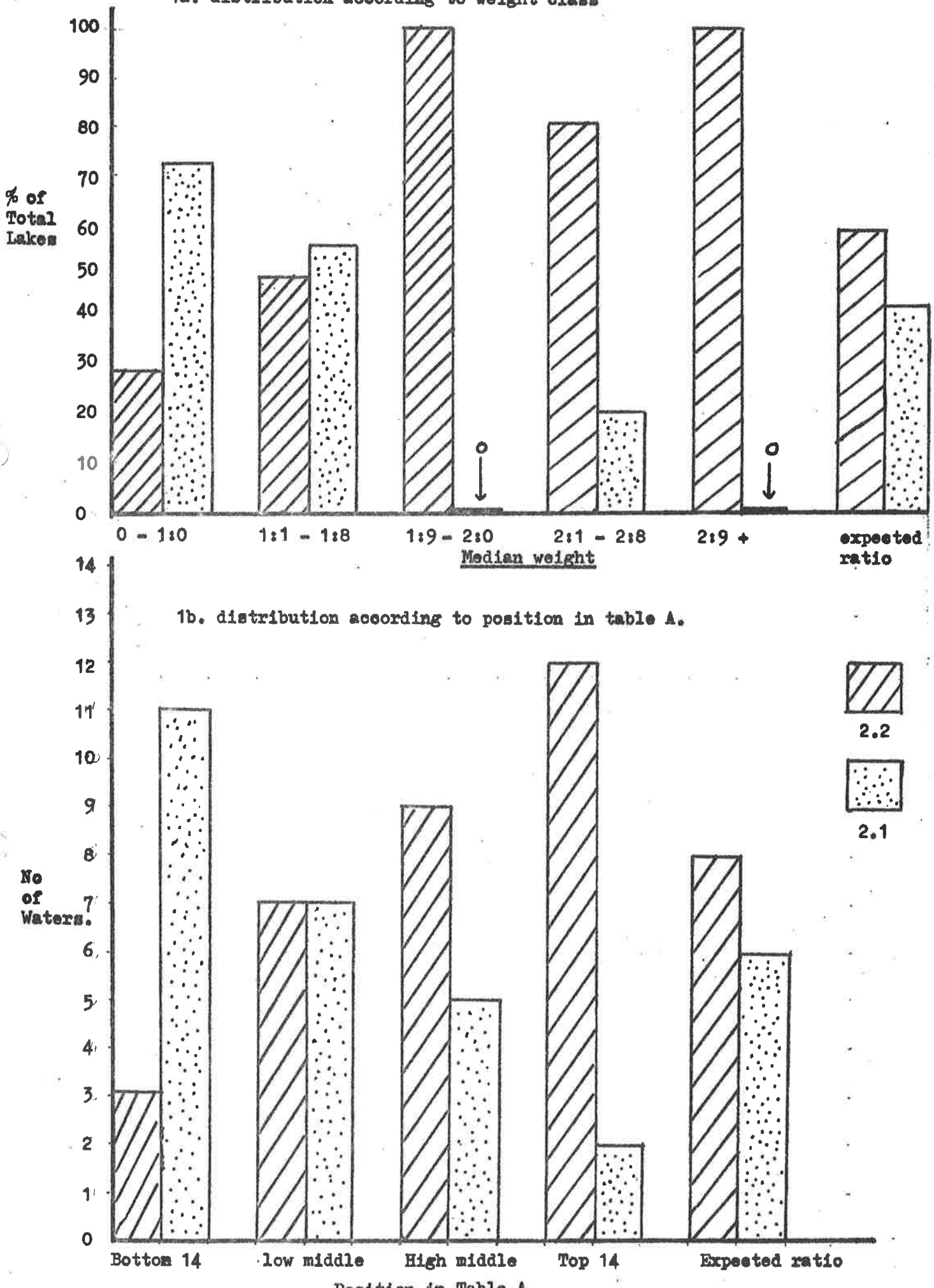
A quick glance down tables A - C suggests that 2.2 waters are more numerous near the top of the lists, whereas 2.1 waters occur more frequently towards the bottom of the lists. Confirmation of this impression, at least for table 1, is given in the histograms drawn in Fig 1a and 1b.

A word of explanation is needed here. Unfortunately, there is no completely unambiguous way of dividing up a list like table A to show differences between 2.1 and 2.2 waters. Because of this, I have done it two ways, and illustrated both results in the top and bottom diagrams (1a & 1b). Taking these in turn, the top diagram shows the result when the waters are divided into equal weight classes - median weights of 0 -1:0, 1:1 - 1:8, 1:9 - 2:0 and so on. For each class, the histograms show the proportion of 2.1 and 2.2 waters in each group (as percentages). In the bottom diagram (1b) the table is simply divided into 4 equal chunks of 14 2.1 and 2.2 waters. (Abberton resevoir and Greystone lake are ommitted for reasons given in earlier reports, (2)). Thus the diagram shows the relative number of 2.1 and 2.2 waters in the bottom 14 lakes on the list, then the next 14 and so on up to the top 14 waters.

By considering both types of analysis, we largely get round the problem of how to divide the table, as the advantages of one method largely cancel the disadvantages of the other, and vice versa. Thus the chief disadvantage of the first - weight class - method is that it leaves unequal numbers of waters in each group. In fact, since most waters are clustered in the middle, with medians of about 1lb plus, the numbers in in the upper weight brackets particularly,get a bit thin on the ground. But the method does have the advantage of expressing a result in real terms, i.e. median weights. Conversely, the chief advantage of the second method is that there are equal numbers in each group. But the groups do not represent anything meaningful in weight terms, and the range of median weight covered by each group is not the same.

Fortunately, both methods give the same answer, and we need not bother too much about the intricacies of the methods used to get it. As we go from left to right across each diagram, the number of 2.1 waters decreases, and the number of 2.2 waters increases. At the far right of each diagram is shown the result we would expect to get if there was really no difference at all between lakes with and without an outflow; as there are 33 2.2 waters in the table, and 25 2.1 waters, we would expect always to have a few

Figure 1. Relative advantage for 2.1 and 2.2 waters.



more 2.2 waters in each class than 2.1. You don't need to be a statistician to see that the distributions we actually get are very different from the 'expected' result, and that the likelyhood of so big a difference occuring by chance is very small indeed.

The difference between lakes with and without an outflow is, of course, not a new discovery, by any means. It has, for example, been remarked upon in past report issues (1). Nevertheless, I do not think that the size of the difference has been widely appreciated before; if our tables are to be believed, the advantage for lakes with no outflow seems very large indeed. Thus only 2 (8%) of the 2.1 waters on record have a median weight of over 1:8, whereas no less than 19 (58%) of 2.2 waters have medians greater than 1:8. The angling significance of this is too obvious to comment upon.

Why should this difference occur? One possible explanation lies in the results of a recent Anguilla Club otolith reading exercise (3), which showed that, in general, eels caught from 2.2 waters tended to be older than those caught from 2.1 lakes. The inference drawn at the time was that if the eels are older, they ought generally to be bigger. But whether the age difference observed is enough to account for the differences shown up here is another matter; it is my opinion that it may be part of the explanation, but there may be other factors as well.

6. Still on generalities, another important question is whether the rate-of-catch changes as we go from the bottom to the top of the tables. There is a widespread feeling, I believe, that the bigger the eels, the slower the sport. With the number of waters we now have on record, it seems reasonable to make a first attempt to answer this question.

At this time, I have confined my attention to the 2.1 and 2.2 waters of Fig 1, i.e. the results for lakes etc from table A. Below, I have set out rod-hour per- eel figures to correspond to each of the histogram classes in 1a and 1b.

Table 1. Rate of catch v. median weight, (corresponds to Fig 1a)

	Median Weight				
	C-1:0	1:1-1:8	1:9-2:0	2:1-2:8	2:8+
RH/E a *	29	34	24	51	31
RH/E b	30	30	34	66	27

Table 2. Rate of catch v. position in table A, (correponds to Fig 1b)

	Position in Table A			
	Bottom 14	Low Middle 14	Upper Middle 14	Top 14
RH/E a	28	28	27	43
RH/E b	28	28	33	46

* As for the histograms in Fig 1, a word of explanation is needed for the rate-of-catch figures above. Just as there were two ways of dividing up table A to compare 2.1 and 2.2 waters, so there are two ways of expressing RH/E figures - hence the "a" and "b" columns above. The first method is to add up all the rod hours for a given group of waters, and divide by the total number of eels caught - this gives the figures entered alongside "a". The second method is to add up the individual RH/E figures for each of the waters in a group, and divide by the total number of waters in that group - "b" figures. As before, the advantages of one cancel the disadvantages of the other, and vice-versa. Thus, method "a" has the advantage of taking all the data into account, but the disadvantage of giving greater weight to waters with the largest number of rod hours, or eels caught. Method b, on the other hand, gives all waters equal weight in the analysis, but this may be regarded with suspicion because very sound data, from waters with large RH and numbers of eels, is equated with much more shaky data from waters with few hours fished

and few eels caught. There is no way out of this dilemma, and the best thing is to consider results from both methods.

Fortunately, as for Fig. 1, the two methods agree very well (incidentally serving as some confirmation that the data is meaningful). Whichever way we look at it, the advantage, in rate of catch, for the waters at the bottom of the table is very slight indeed - surprisingly so, in fact.

Of course, averages such as these disguise extremely big individual variations between waters in each group; one only has to look at Tables A - C to observe remarkable differences between waters close together at all points within the lists. Thus, an average rate of about 30RH/E should not be taken to indicate that this is what we are going to achieve every time we go fishing! What it does indicate, taking the broadest possible view, is that we do not have to sacrifice much in the way of sport to catch bigger eels. In other words, water selection appears to be all important, and eel fishing is remarkable in being one of the rare cases where, it seems, you can both have your cake and eat it.

*

EMULSIFIED PILCHARD OIL.

by H. Hansen

Foreword.

Many of us have watched our pilchard oil float to the surface in a great glistening cloud, and wondered whether it might not be better if it stayed near the bottom where the eels are. By preparing an emulsion, Henry Hansen may have solved the problem, but it occurs to me, before printing his fine article on the subject, that we may not all be aware quite what an emulsion is. I think a quick definition may be in order, so that we can all appreciate the following piece. Briefly, an emulsion is a way of solubilising a normally insoluble product. To achieve this, one makes use of compounds known as surfactants -soaps, detergents, etc. Such compounds are made up of long-chain molecules, one end of which is highly soluble in water (hydrophilic) and the other end is soluble in oil (lipophilic) By suitable mixtures of surfactants with oils, we can break the oil into tiny droplets, each of which is surrounded by a ring of surfactant molecules with their oil soluble ends buried in the oil droplet. The other ends of the surfactant molecules, sticking out from the droplet, are water soluble, and so can carry the droplet into "solution" in water. Such droplets may be either more or less dense than water; will disperse rapidly through water, and need not rise to the surface. (I hope organic chemists amongst us will forgive the above potted definition). ED.

I had thought about the possibilities of emulsifying pilchard oil a few years ago, but did nothing about it until last year. It was then that I had the good fortune to spend a weekend with Arthur Sutton; he also mentioned it and said that he had been considering emulsions for some time. I believe Arthur had the Thames in mind for his emulsified oil, as he was (and is) not completely satisfied with the way pilchard oil 'works' on a river. Whereas I thought of it for stillwater, as I never fish moving water. In a river, for instance, when using standard pilchard oil, the bait hits the water and sinks and a high percentage of the oil immediately floats to the top and away, serving no purpose whatsoever. Then the small proportion left is washed out

intermittently and this after a short distance downstream of the bait also rises to the surface and washes away. It would seem obvious that the emulsion would be far better than the oil, as when it is washed out of the bait it would travel downstream along the bottom. In fact, the emulsion should form a large cloud drifting downstream - far more likely to interest an eel than the odd, intermittent, oil droplet.

Standard pilchard oil in water, as it is immiscible, floats to the surface, and its surface area (which governs the smell) is not very large. But emulsified pilchard oil exists in very small spheres, or droplets, and consequently the surface area is greatly increased. It can be calculated (by myself, who is very bad at maths!) that this increase in area is approximately a million times ($X\ 10^6$!). And this is assuming that the emulsion is a very poor one! Similarly, it can be expected that the increase in smell will be of the same order, times 1,000,000!

At the moment, only preliminary tests have been carried out (due to a shortage of pilchard oil, which has since been rectified) but several things have become obvious. The formation of a water/pilchard oil emulsion is possible only if certain chemicals known as surfactants are used. A surfactant, when in water, splits into two parts; one of these dissolves in the water and the other joins onto the oil droplet. As many as possible try and join onto the oil droplet, and the only way this is feasible is if the overall shape of the particle is a sphere, with a very large surface area.

The surfactants tried so far are C.P.B. (cetyl pyridinium bromide) and S.L.S (sodium lauryl sulphate) - they are both cationic, which means that they carry a positive charge in water. C.P.B. is not very soluble in water and consequently most of the tests have been done with S.L.S., which is fairly soluble. Anionic surfactants have not yet been tried, as I believe most of them are foaming agents and smell very strongly of soaps. Incidentally, it is worth mentioning that the quality of pilchard oil varies tremendously from make to make and my tests have been done with Ingrams' full strength Cornish oil.

To form a stable oil-in-water emulsion there must obviously be more water than oil present in the system, this would limit the pilchard oil concentration to approximately 40%. Any concentration greater than this is likely to reverse the system, i.e., to form a water-in-oil emulsion which would, of course, be immiscible in water.

I have found that the level of surfactant needed, whilest being very small, is also extremely critical. It is quite easy to add too much, this causes the particles to pass a sort of 'critical point' and coalesce, reforming the original oil/water mixture, i.e., no emulsion! On balance, I think it is best to keep the whole system slightly under emulsified (about 90%).

Now that I have had time to think about it, I believe that a stable emulsion may not be necessary anyway. I think that as long as the oil is in the form of an emulsion when it is cast into the water, then the droplets will disperse so far apart (in the water) that the oil will never have a chance of reforming anyway. By this I mean that it would probably be alright even if your emulsion settled out into two layers after a short while (say 1 hour) It would only need a good shake to the bottle and the emulsion would re-form (be it permanent or temporary).

In conclusion, I would like to state that I believe the use of emulsified pilchard oil would greatly improve our catches. I stress that the information I have written down is purely from my own personal views and results, and consequently I am fully prepared to be shot down by anyone! But a start must be made somewhere, and I would like to think that I have provided it.

EMULSIFIED PILCHARD OIL, 2

by A. F. Hawkins.

Before Henry Hansen sent me the previous article for publication, we exchanged a couple of letters on the subject of modified pilchard oil, and its possible advantages. Not all the points from that correspondence were covered by Henry's piece, so it seemed worth while to add a brief post-script myself.

As I see it, any bait additive should combiine the following properties:-

1. It should be at least as attractive as the natural scent of the bait which it may mask (preferably more attractive).
2. It should spread rapidly and efficiently through the water to lay a clear scent trail.
3. It should leak out from the bait progressively over several hours, not all at once.

Taking these points in turn, it is interesting that, it theory at least, an additive does not have to be more attractive than the natural bait scent to catch more eels. It could work simply by laying a better scent trail. Nevertheless, the more attractive the better. Emulsified pilchard oil, as Henry points out, must contain surfactants, and probaly thickening agents as well (see below). Obviously, the surfactants and thickeners should not be repellent to friend Anguilla, or we could do more harm than good. We may have to experiment on this, possibly with tank fish.

By staying near the bottom, the scent trail from emulsified oil would seem to score heavily over that from standard oil. But I am not quite convinced that this would really be so. Even pilchard oil is slightly soluble in water - actually, there are probably several compounds in the standard product, each with their own separate low solubilities. Clearly, the amount in solution is very small indeed, but eels can, and do, detect very small concentrations of dissolved substances in the normal course of searching for food. As we all know, pilchard oil spreads rapidly in all directions as the bait hits the water. A little must go into solution, and this might be enough. Emulsified oil, on the other hand, may not spread so far - I don't know. Indeed, it may present so powerful a smell near the bait that it actually puts eels off - can we over-scent a bait?

When we inject a bait with normal oil, some of the oil dissolves in, or becomes loosely bound to, fatty tissues in the fish. This is why the bait still smells strongly of pilchard oil even after several hours immersion in running water. Thus, the majority of the oil is released straightaway, but the remainder diffuses out slowly over a long period, and continues to generate the all-important scent trial over a useful time. The question is, how would emulsified oil behave in this respect. We simply don't know and will have to find out.

One point is relevant here, though. As Henry points out, the emulsion is much thinner than normal oil - rather like the consistency of milk. He would probably have to include various thickening agents to achieve the appropriate release rate, and these thickening agents offer scope for modifying the properties of our oil to suit conditions. Indeeed, we may think of a relatively thick product for running water, and a thinner one for still water.

I would not wish to convey the impression that I am against emulsified oil - quite the reverse. It seems very probable that it would improve our chances, but there are a lot of unknowns in the equation. What I would suggest is that Henry continues his experimentation until he is satisfied that he has a product(s) that should work. Then we should subsidise him (out of Club funds) to make sufficient for us all to have a sample. We could then run controlled tests to see if the stuff is better than normal oil.

TROUBLE WITH ALF.

by. D. Smith

Alf moved into our flat last week. I was out fishing (as I had been for the previous three weeks) when he came to view. I was out fishing when he moved in. As a result of this, my room was bare.

I returned midweek, tired and exhausted. My litter was strewm around my room; rods assembled and wiped down in the living room and left to dry. I then went to bed.

At six-o-clock in the evening, I was woken up by the sound of Alf returning from work. His first sight of me (for we had never met) must have been something traumatic. Indeed, had he been several years younger, and the hour somewhat later, he would, no doubt, have believed in the existence of bogey men!

I apologised for my rods in the living room and quickly put them into my room He offered me a coffee which I accepted and while it brewed I retired to the bathroom to cleanse the mixture of groundbait, fish scales and dried extract of worm from my person. On my return, Alf had devoured his food and was washing up. I drank my now cold coffee and rinsed my cup. We then sat down to indulge in some light conversation in order to become aquainted; the conversation went something like this:-

Alf: Youre a fisherman, then?

Myself: Angler, please.

Alf: Angler,then. It's a blood sport, isn't it?

Myself: Yes. (The reader may be puzzled by the affirmative reply, but being experienced in such matters, it often pays to agree - it shuts critics up right sharpish!)

Alf: I don't agree with bloddsports, I'm a member of the anti bloodsport league.

Myself: Thinks - We've got a right one here,

Alf: Anyway, what sort of pleasure do you get from maiming poor innocent fish?

Myself: Well, (leaning back in the chair, removing glasses and adeptly scratching left ear with same) it satisfies the primeval hunter that dwells deep within the subconscious of us all. Some people enjoy sexual deviation, torture, pulling wings off butterflies, robbing old ladies or plain straightforeward murder. I go fishing - sorry, angling. What's your particular bent?

Alf: That's the trouble with all you maniacs. You all blame your desire for blood on the fact that man is a hunter and that it is necessary to hunt.

Myself: Man is a meat-eater and the alternative to hunting is farming. Are you a vegetarian?

Alf: No.

Myself: I'm partial to a bit of fish, but we don't farm fish very well so we have to hunt them. Sophisticated trawlers, I admit, but we still hunt. To get freshwater fish we have to use rod and line.

Alf: I can see that. But you do it for fun, and surely that's cruel.

Myself. No, not at all. Let's take a trout.Most people go after this beast with an artificial fly. Now, although trout are pretty thick, they are not stupid, and any self respecting trout will know the difference between a real fly and a plastic one, so there is a skill in presenting the fly to try and fool the creature.

Similarly, a roach is a very shy and retiring fish that is difficult to fool!

It's pitting my wits and skill against the fish's natural tendency to treat all free offerings with suspicion. The fish, believe it or not, stands a much better chance of not getting caught than it does of getting a meat hook thrust through its premaxilla.

Alf: That is just my point. You are deliberately trying to maim the creature. How would you like to be hooked?

Myself. I have been, several times, but it heals. Ever been stung by a wasp. If you have, you soon learn to avoid the beggars. It's the same with fish. Once one has experienced the somewhat unwholesome business of being caught it tries its damndest not to be caught again.

Alf: But where is the enjoyment?

Myself. It is very much like the thrill of the chase. You know where the fish are. Problem is to induce them to feed by giving them some free offerings. At first they will be suspicious, but soon, some will feed. You must then present the bait on your hook in such a way that it looks as though it is not on a hook at all. You then wait.

Provided the presentation is right, you know that after a while your float will bob around and evemtually vanish. But you don't know what's there: it could be a little effort, in which case it's trodden on and kicked back into the water, or its a clonker, in which case it gets bashed on the bonve and stuffed.

But by far the greatest thrill is in livebaiting. A poor innocent fish is impaled onto an enormous hook - often the jaw is dislocated in putting the hook into its mouth. This act somewhat distresses the poor creature, and once being placed in the water, it swims in a somewhat erratic manner. Now, most predatory fish are lazy, and will choose weak fish as their victims. So, there is a good chance that the impaled fish will figure high on the menu.

As the fish swims around its movements are further impeded by the fact that it has to drag around a float. This tires it somewhat further.

Evenutally, either the predator comes along or the livebait becomes a deadbait; in which case another live fish is sent to death's door.

Along comes our predator. The bait realises that, if it is not sharpish, it's going to be eaten. So it frantically tries to swim away. But the float impedes its movement. The float wobbles a lot, and then, as the predator siezes the little fish, it vanishes.

Alf: You batard!

Myself: (grinning) but it's fun.

Just then the door bell rang and in came a pal of mine. 'Coming tench fishing early morning?' he said. 'Certainly, ' said I. 'Reckon we'll slay 'em, don't you?' said I, casting a glance at Alf. 'Ever caught them on a livebait?'

SUTTONS LAMENT (By you know who)

Sometimes too early
Often too late
Sometimes no water
Others a spate.

Plenty of runs
Rarely any eels
Just when it matters
There's dirt in my reels.

Armed with great Lobworms
But they're taking dead baits
I want to cast distance
I've forgotten my weights.

This roll tastse of Pilchard oil
Perhaps there's a leak
Or did I replace
The stopper last week.

Mud on report forms
Ants in my tea
There are fewer eels here
Than in the DEAD SEA.

The one thing eels don't like
Is inclement weather
Whoever saw bright moonlight
And torrential rain together ?

Last year they caught eels
From this swim galore
But while I'm fishing here
They'll catch nothing more.

Perhaps John Watson was here
Or even Dave Ball
In which case I'll pack up
They'll have caught 'em all.

Do elvers enter this river ?
Yes, it's likely they do
But it begins to look like
They carry on through.

Ah well it IS bad
But could be much worse
I'll get home to find that
The wife's lost her purse.

Sometimes it's too warm
Sometimes it's too cold
It is either all that
Or I'm getting too old.

Something less serious.

Scene - examination room at local hospital.
Doctor " Now, Mr Sutton, do you have any sport or hobby " ?
I " Yes Doc, I am a specimen hunter"
Doctor " Get out! You cant have ours.

LETTERS TO THE EDITOR

Professional eel fishing.

(As some of you will know, Ray Brown has announced his intention of trying to turn a hobby into a profession, by catching eels for money in Scotland. I am sure we will all be keenly interested in how he gets on; also, I believe Ray would welcome any advice or comments we may have. Below, I have reprinted part of a recent letter in which he talks of the techniques etc he intends to use.

Incidentally, Ray has agreed to keep the Club's name out of all his dealings - for obvious reasons. Ed)

'I intend to keep the eels in huge wire "keepnets" with ½" mesh, in the loch. (Loch Ness, Ed). I am using traps with ½" mesh, about 3' X 1' X 1', and a 3" one-way entrance to accomodate aspiring Nessies. Attractant will be blood, and pilchard oil-soaked nylon or other man-made fibre, inside perforated zinc containers about 2 - 3" square suspended at the far end of the trap. (I've bought a gallon of P/O for £4.72 from Petproduct Ltd, Albert Street, Redditch.

The traps will be laid in the (Caledonian) canal, or in bottlenecks, as much as possible, but I will have some in the loch at depths from 10 - 100 ft. (found with my Seafarer). I am keeping a record of eels/trap-hour for all depths and areas, also any trends in decrease of catch. I shall make about 30 traps which will be emptied each morning (and evening, if found necessary). Also, I have made arrangements to sell eels in bulk in Birmingham, for £1,200 per ton, any size! Nearer than London. Suppose each trap supplies only 1, 1lb eel each day, that's 30lb/day = £15/day. I'm sure it will not work out like this, more like £1000 per week!!!

Everyone seems to be falling over backwards to help us. Even tentative offers of financial or other assistance. But, everyone seems to end up with sceptical pessimism To them I say no-one ever succeeded without trying. And if I fail, I'll be glad to have tried!

Linda and I are looking for a 16 -18ft caravan (tourer) to convert into a habitable residence, shower, TV etc. If you hear of any going cheap, let me know.

I shall certainly not mention the NAC, or use the notepaper in my dealings. I can understand your concern, after working for years building up a suitable working image.

144, Siddley Avenue,
Stoke,
COVENTRY

D.R. Brown.