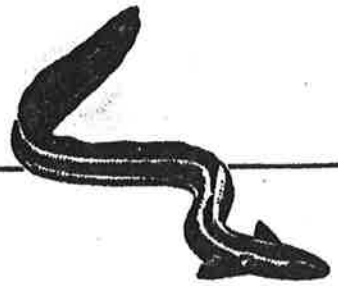

The National Anguilla Club

BULLETIN

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EDITORIAL.

Only the other day I thought to myself that if the Thames received an elver influx on the scale of the Severn, all the probelems of the Home Counties eel fisherman would be solved. At least, in about twenty years they would.

So it was with no little interest that I learnt of the proposals of the Water Resources Board (now disbanded and merged with the Dept of the Environment) who, if they cannot ship elvers across, are advocating the next best thing in the shape of an aqueduct to link the lower reaches of the Severn and the Wye with the headwaters of the Thames. Of course, it will all depend on the form of the aqueduct, and the pumping system used. Nevertheless, elvers can sometimes survive pumps - consider Abberton Res - and should the scheme ever come to pass the prospect of a much needed boost to eel stocks in the Midlands is a pretty one indeed.

This Thames - Severn link is all part of a package delivered by the Water Resources Board, who were set the task of planning to develope our National water systems to cope with an estimated doubling in demand by the year 2000. The scheme they preferred(and they considered several) has, at its core, a fairly profound change in thinking about water supplies. Urban water, they say, should come less from large storage reservoirs, and more from our existing river system. In future, the role of the reservoir, particularly new ones, will be to regulate river flow - storing water during wet periods, and releasing it to the river in drought. The scheme offers attractive economies in water use; it means that water can be stored in times of surplus, for example,and use of existing river systems to distribute the water is much cheaper than laboriously digging new channels.

Nevertheless, some new channels will be needed - hence the Thames Severn link - to connect an area of surplus with one of deficit. Several other links are suggested also, to obtain maximum use of our rainfall. Should they be constructed, they cannot but assist the eel to get into places it has never been before.Think, for example, of the way increased boat traffic between the Nene and the GUC appears to have increased the number of young eels in the canal - simply because the locks are used more often.

The scheme has been soundly critisized in the angling press. It is argued that sudden inflow of cold, chemically different, reservoir water at the head of a river puts fish off the feed, and disturbs the ecological balance. It may well do so, but to use this as a platform to oppose the whole idea is to miss one very essential point. A river used to supply drinking water is a reasonably clean river. It has to be, for there is no economic way of removing many of the more incidious industrial wastes once they are in the system. Thus, a consequence of the Water Boards scheme is that, for the first time in most parts of the country, it will be absolutely neccesary to maintain clean rivers. Indeed, one part of the proposal is a detailed investigation of the Trent, to see if the water quality can be improved enough to be used as an Urban supply. And there are already fish in the Trent.

The situation is, however, by no means as simple as this. Increasingly, our river water is becoming subject to multiple re-use. Consider, for example, the Thames, where every drop of water is taken out, used, cleansed and returned on average about ten times between source and estuary. At all points on the river upstream of consumers further along the chain the water has to be clean. It would not be desirable for the inhabitants of Oxford to poison the population of Reading by their sewage! In a paradoxical way, this multiple re-use works against the twin ends of pollution and abstraction; as long as there are more consumers downstream, no authority can take all the water, or pollute it too grossly.

One way and another, I think the long term trends in our river water quality are not too bad. Of course, we shall have to put up with irregular flows, and many

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of our smaller rivers will be still polluted or abstracted. But for the major systems at least, clean water will be a necessity. It will be a hollow triumph for the conservationists, who, in fact, will have had nothing to do with it; as in all other things, changes will be dictated more by economic necessity than by what is desirable.

Alan Hawkins.

EEL FISHING ON THE NORFOLK BROADS. By Dave Smith.

Our eel, friend Anguilla, has a salt water cousin in the conger. I have been interested by the manner in which members of the British Conger Club catch big eels. The success of the operation appears to depend on eager holiday makers visiting the West Country with a desire to slaughter as many fish as possible coupled with the desire of the local skippers to make lots of lovely money by satisfying this blood lust.

A nice unnatural natural habitat for fish of all sorts, including conger of all shapes and sizes, is a good wreck. The Cornish coast abounds with the remains of ships that have seen better days and these house plenty of fish. When a new wreck is discovered by a skipper he is assured of a few weeks of good fishing and will return to harbour with a boat full of satisfied customers and fish. After a few weeks the sport (?) begins to fall off and, if the skipper is growing accustomed to his improved income, said skipper looks for a new wreck, leaving the old new wreck to nature and the few remaining fishes.

As far as the Conger hunters are concerned the wreck in now primed and in they move. A boat is chartered. The skipper probably prefers this because the pressure is off - these fools are not interested in filling his vessel up to the gunwhales with millions of fish, just one or two. What is more to the point, he can still live in the manner to which he has become accustomed. In this way, the recently caught record conger was taken and, no doubt, so will be the first 100lb conger.

What, you are now thinking, has all this got to do with eel fishing on the Norfolk Broads ?. Very little really, but I'll come back to it in a minute.

One of the notable absences from the pages of last years Bulletin was an account of a trip that a few(6) of us had last year to the Norfolk Broads. The fact that it was not reported is indicative of its success - or lack of it. As a social exercise it was an unqualified success. As an ell fishing trip it can be classified as an Anguilla Club failure. A lot of eels were caught, but only two scaled over two pounds, the largest scaling 3lbs 1oz. Two 2lb eels in something between a total of 400-500 RH / 200-250 RH/2. Bloody ludicrous! Because of the lack of good eels we became easily distracted. Arthur Smith delighted in pursuing Specimen Ducks(½RH/3lb+) whilst Ernie Orme prefered the much more relaxing occupation of catching nocturnal potatoes - the bigger ones feed at night!

A few facts did emerge from this trip. Firstly, do not bother to fish the Norfolk Broads for eels - there are too many bootlaces. I am sure my five companions will endorse this view. Secondly,and this wasn't apparent at the time, I for one felt that I had got a step nearer to learning how to catch the better Norfolk eel. So I resolved,to return.

I felt that to ask an Anguilla Club member to accompany me would be taken as a gross insult, so I recruited a lesser mortal, a cousin of mine who once had a go at catching eels but who, through lack of luck, suffered a blank. So the two of us hired a boat for a week in August, since, as I expected, he jumped at the chance.

Now I said in the same paragraph that Norfolk was a waste of effort for the better eels and that I'd learned how to catch them. Please let me explain. Last year the six intrepid Anguilla Club members were in two boats; one tending to fish a new swim each night,while the other was much more conservative and stayed put. It was the second boat which took both of the better eels.

Couple this fact with my little piece on conger fishing and what do you have ? Smith's First Rule of Broadland Eel Fishing.

There is an opinion widespread within the Anguilla Club that the better eels in a swim tend to come on the first session. Smith's first Rule is the converse of this - the longer you hammer away at a swim, the better your chances of a better eel become. With this philosophy, cousin Ron and I set off. I was confident of success, whereas Ron was apprehensive having not caught eels before. This latter problem I discounted for I was of the opinion that if Smith's rule was correct, we would be plagued by bootlaces for the first few nights, giving Ron the opportunity of learning how to catch eels.

On the first night my new found Rule came under severe attack. Ron had the first run. This dissappointed me because I had hoped to show him how to deal with the beasts. He hit it, but was broken by what may have been a very good fish indeed. We then both had simultaneous runs; Ron boated one of $1\frac{3}{4}$lbs and I boated one of 2lbs 13oz. - the biggest of the trip!

For the next three nights we caught small eels and then on the fourth night our second 2lb eel came aboard, this time to Ron. The fifth night was disastrous, with one eel of $10\frac{1}{2}$oz.(Ron caught that monster, so I was the only one to blank out). Since the sixth night was to be the last, I consulted Ron regarding whether we should try again or go to the Pub, since my predictions were now appearing to be erroneous. Ron voted to stay put - there was plenty of time to drink next week.

We had, up to this point, put in some 150 R.H. for 11 eels, two of which were over two pounds. Doubts were creeping into my mind. Was Smith's Rule completely erroneous ? The progress seemed to support the normal rule - the larger eels had come on th earlier sessions.

On the final night we had four eels, three of which scaled in excess of 2lb. According to my Rule, this is how it should have been - the best night coming later. But before I cavort about congratulating myself(and Ron, for having the sense to stay put) I must put everything into perspective - one swallow doesn't make a summer.

Firstly, this years biggest was 2lb 13oz compared to 3lb 1oz last year. In that respect I failed, for I had claimed to be able to get a bigger one. On the credit side, though, in 1972 we were running at about 200 RH per 2lb eel. In 1973 that figure was cut to 35RH/2lb eel.

As for the correctness of my Rule, I feel that there is insufficient data. Had I not fished on the last night I could justifiably throw it away. Had I not fished on the first night, I probably would have revelled in the fact that my theory fitted the situation. One thing is for certain. Both Ron and myself are convinced that had we had another week we certainly would have improved upon 2;13. Furthermore, next year we'll do it. Not only will we improve on 2:13 but also on 3:1.

It may be flashing across your mind that the pair of us are rather small minded, going after eels around the three pound mark, but I am becoming convinced that there are bigger eels to be caught - Alan Hawkins had one over five pounds some years back and the Broads have a record of big fish, so we are not dettered.

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THOUGHTS ON THE REPORTING SCHEME. By Chris J.Bowyer.

The first thing I would like to say is that I am in no way critisising the present reporting scheme, but only suggesting ways in which we might improve it.

I think we all study the Bulletin articles on the results of our reporting scheme, and try to use these results to help us catch big eels. Unfortunately, a great number of facts are missing. For a start, the reports only show the overall returns on any one water and not the individual catches of each angler who visits that water. But it is obvious that some anglers can catch big eels far better than others.

As most members will have found out, regardless of what waters he fishes,

the specially successful angler tends to do better with certain baits than the grand average. Now maybe it is not only due to baits that he does so well, but also due to the precise swims he tends to fish. This certain pitch isn't something that he always puts down on the session report as the angler could be one of the lucky ones who says " I've got a sort of feeling about this spot". More often than not the swim turns up trumps. To the successful angler, the important features of the swim may be so obvious that he does not bother to record the important details on the session report. But there are other anglers who never notice these pitches, they just have to plod on hoping for the best.

In my opinion (and I have studied the Special Report Issues very carefully) every conceivable piece of evidence should go down on the report. For example, wind direction, air temp, phase of the moon, barometric pressure and a thousand things more. Then there are the things we can't see, like the position of under-water weed, rocks, contours of the lake bed, what insect life or small fish are present, and so on. As it is, these are split into two categories (session reports and water questionaires), and missing out some information is almost unavoidable on the Session Reports. We are not getting the best out of Session Reports, we are finishing up with incomplete data.

All this data can be collected over a number of years, some recordings being discontinued to make way for others. For example, on session reports for waters where we have already spent several hundred hours, water temp, air temp, bait and bait size could be dropped because, as I see it, we should have enough information on these things. It may take up to ten years to reach this stage, but it seems that once we have got beyond it, the information keeps on repeating itself.

Now take a look at a new line in data collecting that I did last year. I took a piece of graph paper and marked it off as in Fig 1. On the graph I recorded air temperature, taken twice daily always at the same time, and also recorded barometric pressure. Thus, I finished up with two graphs of temperature, one for each time of the day, and one for barometric pressure.

Once the lines are drawn in, they give a very good picture of weather build up during the week before each fishing trip. I am sure that changes in weather are some of the most important factors in deciding whether one will have a big catch of eels. As it was, I did not get enough rod hours in to come to any definate conclusions, but the small amount of evidence I did get showed that almost all of my best catches were made when there had been a rise, rather than a fall, in pressure, coupled with a steady rise in air temperature.

Going back to session report analysis again, I wonder how much of it is actually used in conjunction with fishing trips. Very little, I would think, and I am as much to blame as the next. Take the last Anguilla Club trip, for instance, just about everyone was using dead bait of one form or another, or worm, yet in the session report analysis on stomach content molluscs and water insects of some kind represented about 50% of the eels previous dinner. So surely, when the sport was so slow, had we given the previous analysis a little thought and used molluscs we might have come up with the right bait for the occasion.

In my opinion, when everything has been sorted out, the best addition to our reporting scheme has been the water questionaire. Taken in conjunction with session report dataalready available for our waters, these surveys will help us sort out a high percentage of the problems that face us in finding a good water, picking the right spot, and knowing how to fish it to obtain the best results.

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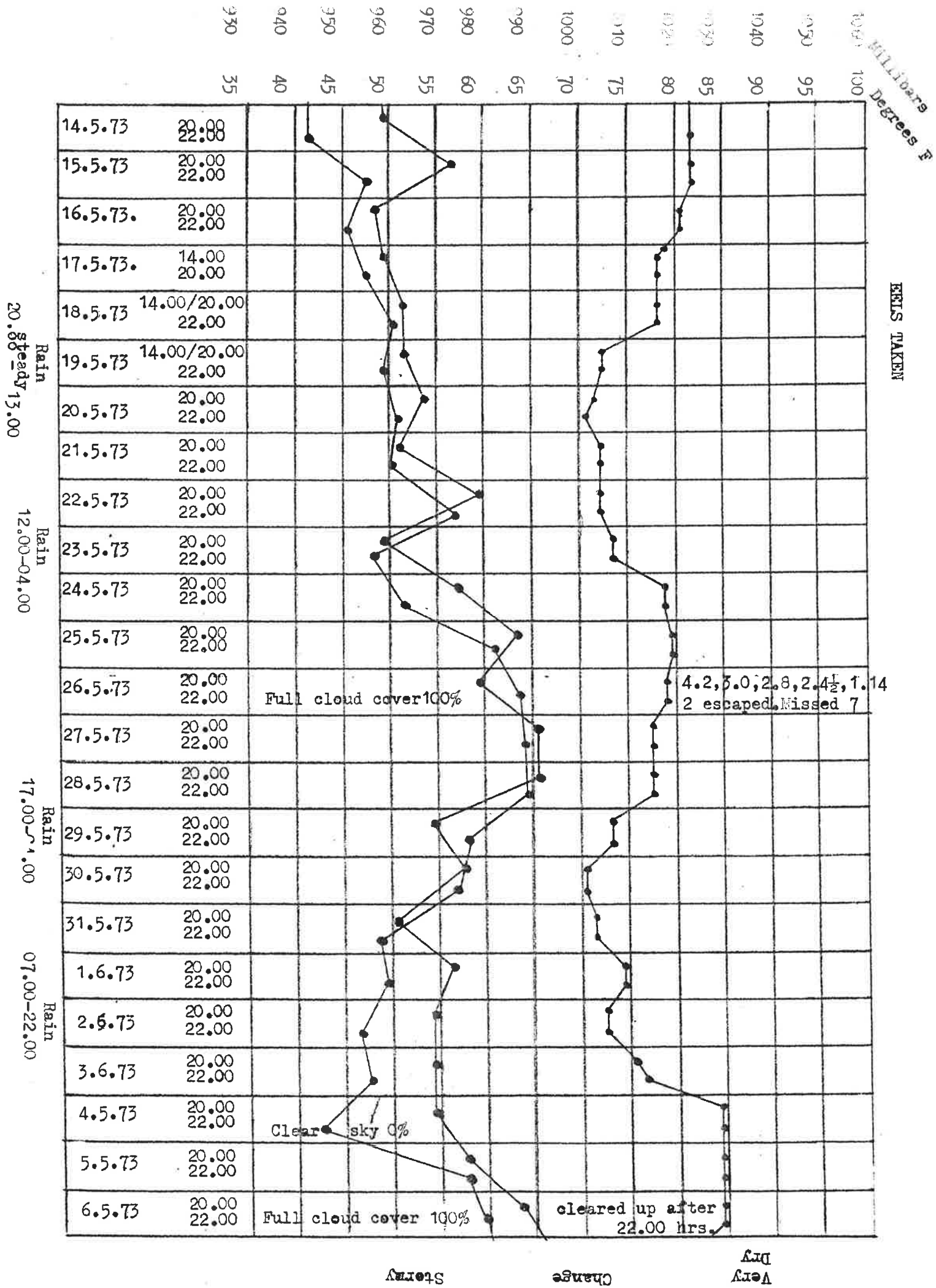
EDITORS COMMENT.

Challenging words, Chris! I think members will agree that there are many interesting and important points in this thoughtful article., and several of the basic assumtions behind our session reporting scheme are dragged out for questioning. About time too! I our work is to develope and progress, instead of stagnating, we must rethink the project in depth from time to time.

All in all, Chris's article deserves a detailed and considered reply from the Club analyst (me). And rest assured, that is what it will get. But it occurs to me that an immediate formal reply might stifle discussion from other members. Most of you hold strong views on the subjects Chris has raised - let's hear them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Rain steady 13.00
Rain 12.00-04.00
Rain 17.00-21.00
Rain 07.00-22.00
Full cloud cover 100%
4.2, 3.0, 2.8, 2.4½, 1.14
2 escaped. Missed 7
Clear sky 0%
Full cloud cover 100%
cleared up after 22.00 hrs.
Very Dry
Change
Stormy

and get a lively debate going. For my own part, I will undertake to give my views in the next issue.

Except for one thing. I feel I must correct Chris on one point. It is not true to say that members on the last Club trip spent all their time fishing DB or worm. Several, admittedly not by design, spent quite a while fishing a bright red rubber eel, or a sand filled inner tube, or other miscellaneous items of hardware. They caught no eels.

Alan Hawkins.

A NIGHT FISHING RAID.

By A.J.Sutton.

You will undoubtedly know that certain angling Clubs and organisations outlaw night fishing of any kind. They go to extreme lengths to see that this bad practise just does not take place. Of course, there will always be (I hope) those to whom night time angling is a way of life, and these anglers will attempt to fish at night even if it does mean breaking some silly rule. What follows here is my own account of such a 'raid' - one which actually took place. I work with a chap who used to take part in such raids before he repented, and this tale, gleaned from what he has told me, is as factual as I can possibly ascertain. Of course, I can not name individuals, or the organisation concerned. But there are no prizes for guessing.

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The organisation had decided it was nigh time that they had another 'night raid' possibly because they had not of late had the chance to prosecute any anglers. Some three weeks later, during which time the persons making the raid told as many other people as possible about said raid, giving the game away in grand style, the plans had been laid. Ten stout hearted men would be required. This number was deemed neccesary to deal with the ferocious type of angler afoot at night and especially as there might even be two of them! The ten stout hearted fellows had previously met in a pub to decide when and where to meet. There was a snag. Two of these fellows were on night shift at a local factory. It was decided that they would 'go sick', as they would get paid for being off sick and because they found a night raid much more exciting than assembly work.

Came the night of 'the raid' and our ten raiders meet at the local railway station. They were being paid for their nocturnal duties but, they decided, they might as well get as much out of it as they could - so, knowing that the chance of a ticket collector being on duty at the other end at this time of night were small, they felt no need to purchase tickets for the journey.

Seated in the carriage, they decided to find out how much of an armoury they had between them. Two had taken the wise precaution of carrying axe handles, one had a flick knife and one a dummy pistol. The other fellows were of such proportions that they felt no need of weapons, although it was agreed that they were 'asking for it'. All carried bright 'police type' torches, while between the ten they could muster two transistor radios in case the night was dark and they needed to feel near to civilisation. No tickets needed - good - they could indulge in a 'couple' to keep out the cold prior to proceeding to the river. Actually, it was not a river but a canal, and one where they held no durisdiction, but It's all in the game.

Fortune was not with them however, for no sooner had they arrived by the water than it started to rain. They covered the three miles of bank in record time and were not surprised that they had found no marauding anglers. After all, who would be silly enough to fish at night anyway, especially if it was raining. The last train home had already gone. What were they to do.? A hut was found, but it had a padlocked door. The axe handles came in handy and they were soon inside in the dry, but it was still cold. They had some timber on hand but it would not light on it's own - but ah, here were a couple of workmens boiler suits. They should burn and so start the wood going. After all, they WERE dirty boiler suits.

The fire soon blazed and, with the radio going, things were not too bad. During the night they had two visits from irate local inhabitants. The first visit was made by a worthy gent who turned out to be the local lock-keeper. He complained of the noise the party were making, stating that the noisiest night anglers he had ever met were quiet by comparison. Our stalwarts dismissed him, saying later " The silly old sod didn't know what he was talking about. After all, it wasn't that noisy ".

The other visit was from a lady who lived for six months each year in a riverside chalet in order to enjoy the peace and tranquility such environment affords. Such tranquility was shattered this night and was made no less annoying and upsetting by the language she was treated to. She was told to 'go and get stuffed '. The utterance was meaningful it that it did not imply a visit to the taxidermist. This good lady, who had often afforded me the hospitality of her summer abode in order that I should enjoy a cup of her spendid coffee, now treats all and sundry with disdain, seeing them as hostile and felonious. I now have to take my own coffee!

The night passed, and our band of 'do-gooders' travelled home, a journey for which - this time - they had to pay. They were not dismayed however for on arriving home they shared equally the spoils of the night in the form of one hundredweight of desert apples. That the apples were one month away from being ripe didn't seem to bother them any. The apples had been carried home in three sacks thoughtfully left there by the workmen. Your guess where the apples came from is as good as mine. As a consequence, a private road which used to afford easy and convenient access to the middle reaches of the stretch is now closed to all.

On the same train home, but not coming into contact with the raiding party, was a youthful, goodlooking and pleasant angler (me)! He had but one sin to hide. He had caught nothing. He was as content as any mortal can be and he had harmed neither man nor property. BUT, he had been night fishing. Shame on him.

And full marks to our raiding party when, two weeks later at a meeting of water bailiffs, they reported the unruly behaviour of persons by the water at night and of damage to a workmens hut. Whereupon the angling organisation decided that they must, in future, step up the frequency of night raids on this particular venue.

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THE NATIONAL ASSOCIATION OF SPECIMEN GROUPS.

In an open letter to your secretary, Eric Hodson, secretary of the NASG, says how very pleased he is at the growth, both in numbers and in activity, of the National Anguilla Club. Eric says how very pleased he is with the co-operation between Brian Crawford, Alan Hawkins and himself.

Of Alan Hawkins, Eric says " I can well imagine that Alan would strike enthusiasm into anyone. I am looking forward to hearing his paper at the Conference ".

Several Groups have come forward with offers to take some of the work load from Eric, a fact which is much appreciated by him. In fact, although in the latter part of last year Eric was seriously considering resigning as Secretary, he now anticipates carrying on as Secretary of the Association. There is no doubting the fact that Eric has been the driving force behind the Association, and it is hoped that he will continue in his present capacity. Of course, as one man he can do little, but with a lot of goodwill and some adequate backing from member groups, there is much that the Association can and will do.
At the rear of this Bulletin you will find a list of Groups making up the Association.

A POTPOURRI OF THOUGHTS FOR 1974.

A.J.Sutton.

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I usually commence my eel fishing with at least one 'madbrian'idea which I endeavour to give a fair trial during the course of the summer. Such ideas are the result of much day dreaming during the winter months.

This winter, despite even more day dreaming than usual, I am without such a wild scheme in mind. At least, not one with which I aim to make the front pages of the angling press! However, looking back over past ideas which have been given a try, I realise that some of them, although showing promise of results, were never given a thorough enough trial and were dropped for one reason or another.

I recall myself and George Moss pumping a sloshy liquid concoction of cheese and milk into our dead baits, and how during the next few trips we really 'hit the jackpot'. Then followed a very lean spell during which we seemed to drop the idea. Perhaps not deliberately - but it became forgotten.

I recall too Dave Goodrum and myself, after a long lean spell at Lake Helen, deciding to use live baits. I remember how those next few sessions brought a host of runs for Dave and I, while others slept soundly in their bed chairs - their baits remaining untouched. And of the few runs we actually connected with, and of the constant flow of mail the following winter with letters in almost every post by which means Dave and I exchanged ideas which might lead to the hooking of a better percentage of the eels which tore away with our live baits. Alas, the next season found us fishing pastures new. And because we could again take eels on orthodox methods the live baiting was not taken up again.

Recollections of Jack Bellamy's method come to mind. Jack used piano wire- really stout stuff. The wire protruded for some fourteen inches from the anal vent of the dead bait - the idea being that when an eel took the bait, crosswise, the line connected to the wire was held well away from the eel. I never knew Jack to experience an 'abortive'run. The idea held promise and I must try it. But never did!

I was warned, years ago, that my crunching about with gravel underfoot was destined to put any decent eel 'off' for some hours to come. I did heed that warning and the years which followed were among the very best in my eel fishing experience. And yet, I now find myself crunching about with the best of 'em: WHY ? I suppose I fished other waters where there was no gravel to worry about - and like so many others the practise was lost to me. If I were to experience another season like 1973 then I may well be shocked into once again paying attention to such detail.

I look forward to Henry Hansen continuing his experiments with an emulsion of Pilchard oil, and to joining him in such experiments. It's an avenue worth exploring and, as such, ought to be given a fair trial. Alan Hawkins has said that our members are NOT stereotyped in their methods. Let us PROVE they are not. Let our Committee know of any idea you think is worth a try. It does a lot of good chewing over these ideas - leading perhaps to several members trying out such schemes as are devised. Without a little effort we would NEVER know. And, far from being routine, it adds excitement to be trying something a little different, however 'madbrain' it may appear.

Our Bulletin is the ideal medium by which we can inform fellow members of various ideas, so if you have a pet idea let us know by way of an article in the Bulletin. I would repeat what Alan has already said, that if you do not think you are capable of writing an intelligible article, then we are here to help, and between us we can make some very enjoyable reading

If just one idea out of a hundred bears fruit, then the effort put in to trying the fruitless ninety nine will have been more than justified, and we will be the richer for it. A few random thoughts. Hope they set YOU thinking.

A COMPARISON BETWEEN ABBERTON RESERVOIR AND STANLEY PARK LAKE. 2.

By A.F.HAWKINS.

In Bulletin 10; 2; March 1973, we published a detailed comparison between Abberton Reservoir and Stanley Park Lake. Apart from the usual measurements of Medians and Quartiles etc, the article broke new ground in the Club's Reporting Scheme by using the weights of the eels actually caught to try and estimate the frequency (and hence rate of catch) of eels bigger than had yet been taken from either water. In this case, 5 & 6 lb eels.

There were two reasons why we were able to do this. Firstly, sufficient eels were taken from each water in 1972 to give us enough data to work on(72 from Stanley Park and 73 from Abberton). Secondly, we found that the weight of the eels fitted a well known mathmatical distribution, the NORMAL distribution. The normal distribution is a bell shaped curve, which rises to a peak at the arithmetic mean, and falls away smoothly each side of this peak. It can be defined absolutely by just two measurements, the Arithmetic Mean and a thing called the Standard Deviation. Thus, about 30% of the observations deviate from the arithmetic mean by more than 1 standard deviation, about 5% deviate by more than 2 standard deviations, and so on.

Therefore, if we can show our eel weights fit the Normal distribution, we can calculate the expected frequency of eels of given sizeses.For example, to calculate the expected number of 5lb+ eels, we first measure the difference between the arithmetic mean and 5lb. We then divide the answer by the standard deviation, to give us the number of standard deviations an eel of 5lb represents. We then look up this figure in a set of mathmatical tables to find out what percentage of the eels we catch should exceed this number of standard deviations.

Doing this for the 1972 data, we found that our eel weights fitted the Normal Distribution extremely well, and we came to the surprising conclusion that Stanley Park may be a better bet for really big fish than Abberton Reservoir. Surprising, because the average weight of Abberton eels is much bigger than at Stanley Park. But, at Abberton, the eel weights are clustered tightly around the mean, and numbers fall off very sharply as we get into the higher weight classes. At Stanley, however, the distribution does not fall off nearly as quickly. This is reflected in a larger standard deviation and hence a greater expectation of very big eels.

Of course, such predictions were no more than predictions, much like giving odds on a horse race. One thing that would help would be a second set of data to try and confirm the first. Fortunately, we can do just that, for, in 1973, John Watson, aided and abetted by Alan Billington, caught a further 69 eels from Stanley Park, while Chris Davy and Terry Jefferson took a further 45 from Abberton.

Hence, the rest of this article compares 1972 and 1973 results and gives overall predictions for the numbers of 5 and 6lb eels.

Starting on familiar ground, medians, quartiles and rate-of-catch are set out in table 1. For Stanley Park, the improvement in eel weights made in 1972 was not continued in 1973. 1973 figures are slightly better than 1972, but only just. However, there was a substantial drop in rate-of-catch, and John and Alan should consider whether the swims they fish are becoming exhausted, or, indeed, whether the whole lake is running short of eels.

At Abberton, by contrast, things have hardly changed at all over the years, and there is no suspicion that fishing pressure has altered the success rate at this water.

Turning now to weight distribution, block diagrams(histograms) to compare 1972 and 1973 are set out in Fig; 1. In each, the number of eels are plotted for successive weight classes (in ounces). For Abberton, the 1973 data do not look so regular as those for 1972; this is partly because fewer eels were caught in 1973 (45, as opposed to 73) and partly because the weight groupings happen, by chance, to suit the 1972 figures better than those of 1973.

Fig; 1. MEDIANS and QUARTILES for STANLEY PARK and ABBERTON RESERVOIR.

STANLEY PARK.

	1967 -71	1972	1973.
MEDIAN	1:1	1:9	1:10
L.Q.	0:12	1:3	1:3
U.Q.	1:7	2:7	2:10
RH/E	5	5	21
RH/2	40	19	63

ABBERTON.

	1967 -71	1972	1973
MEDIAN	2:14	2:11	2:14
L.Q.	2:6	2:2	2:3
U.Q.	3:4	3:4	3:5
RH/E	4	6	3
RH/2	4	7	4

(continued from Page Eight)

For both years, however, the weight distribution shows an overall 'Bell Shape' as for the Normal distribution.

For Stanley Park, however, the situation is rather more complicated. In both 1972 and 1973 there was a peak near the start of the distribution, followed by a long tail into the higher weight classes. This is called a 'Skew Distribution'. To make it into a more useful Normal distribution we need to do a little legitimate mathematical trickery; in this case, to transform the weights into Logarithms. This is done for the bottom diagrams in Fig; 1 , showing that the log transformation gives a more symmetrical diagram.

So far so good. By eye, 1972 and 73 data for the two waters look reasonably similar. Now, having calculated the mean and Standard deviations for each water and each year, let us test our theory that we have a normal distribution. In other words, we can use our formula to calculate the expected number of eels above or below a whole string of different weights, and then compare these results with the numbers we actually got. If they agree, we can say the Normal distribution does fit our data, and we can use it to estimate eel numbers outside our range - (5 and 6lb fish). If they do not agree, we can go no further. The relevant facts are set out in Table 2.(see page Ten).

As the table shows, for both waters, the agreement between observed and expected figures is extremely good. Therefore, let us extend our predictions into the unknown, to calculate numbers of 5 & 6 lb eels. For Abberton this works out as

1972 1 5lb eel in every 750 caught.
1 6lb eel in every 50,000 caught.

1973 1 5lb eel in every 750 caught.
1 6lb eel in every 50,000 caught.

For Abberton, therefore, 1972 and 1973 agree precisely. This is(for the analyst) very comforting, and no more needs to be said at this stage.

TABLE 2. COMPARISON BETWEEN ACTUAL RESULTS AND NUMBERS PREDICTED FROM THE NORMAL DISTRIBUTION.

ABBERTON RESERVOIR.

	% BELOW 1972						% ABOVE.		
	1:2	1:9	1:15	2:5	3:1	3:8	3:14	4:4	4:10
ACTUAL	3	6	19	30	37	14	7	3	1
PREDICTED	2	7	16	31	31	16	7	2	1
	% BELOW 1973						% ABOVE		
ACTUAL	0	7	15	27	40	9	7	0	0
PREDICTED	1	5	14	27	35	16	7	2	1

STANLEY PARK

	% BELOW 1972						% ABOVE	
	0:6	0:12	1:0	1:4	2:0	2:9	3:4	4:3
ACTUAL	3	7	16	35	30	20	7	1
PREDICTED	2	7	16	31	31	16	7	2
	% BELOW 1973						% ABOVE	
ACTUAL	0	7	19	26	32	26	14	1
PREDICTED	(0)	8	18	31	35	21	10	4

(continued from page Nine)

For STANLEY PARK, the figures work out as;-

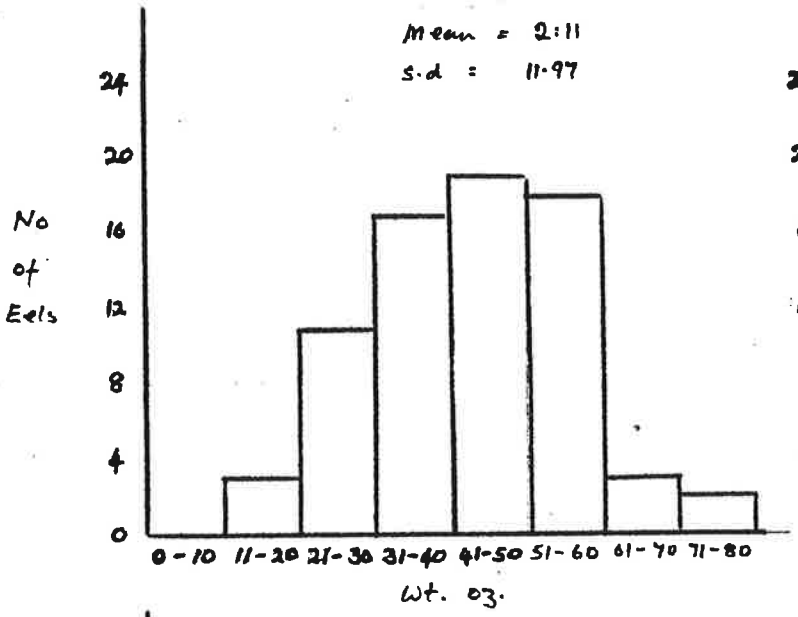
1972 1 5lb eel in every 125 caught.
1 6lb eel in every 400 caught.

1973 1 5lb eel in every 60 caught.
1 6lb eel in every 150 caught

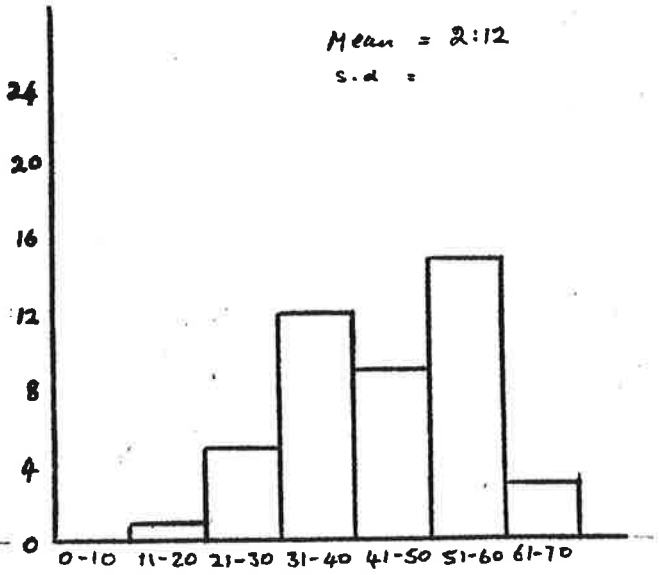
Thus, for Stanley, there was some discrepancy between 1972 and 1973 results, although, in an excersise with as much uncertainty as this, the differences cannot be considered as very large. Close inspection of the results for 1973 suggests the more optimistic forecast arose because of unexpectedly large numbers of eels in the 3 - 3½lb range, giving, in Fig; 1, something of a second peak in the distribution, and increasing the size of the standard deviation.

Probably the best thing to do with Stanley, therefore, is to combine 1972 & 73 results to get an overall estimate. This is shown diagramatically in Fig; 2 (also Abberton). Working on the combined figures we get a revised estimate for Stanley of 1 5lb eel in every 100 caught
1 6lb eel in every 250 caught.

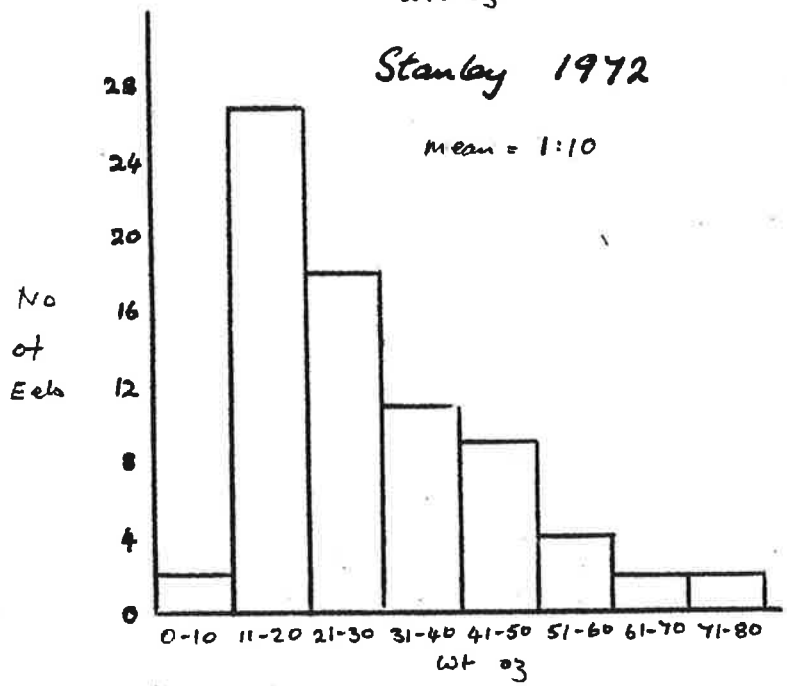
Abberton 1972



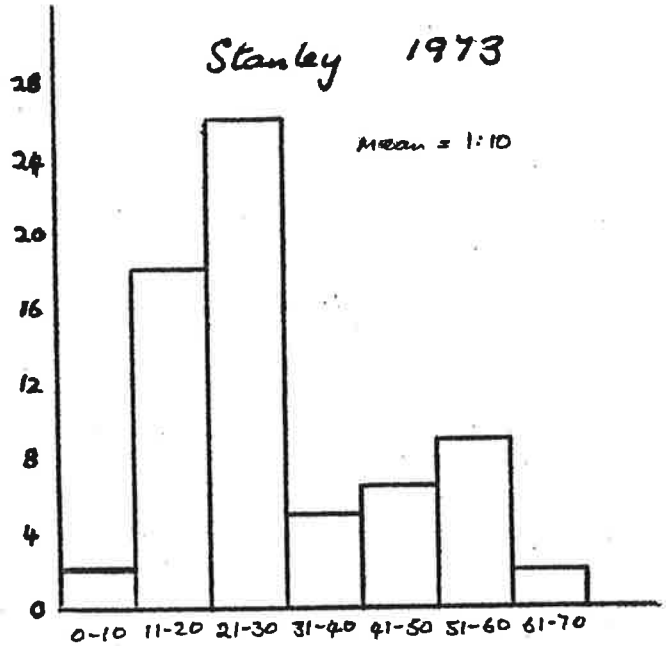
Abberton 1973



Stanley 1972

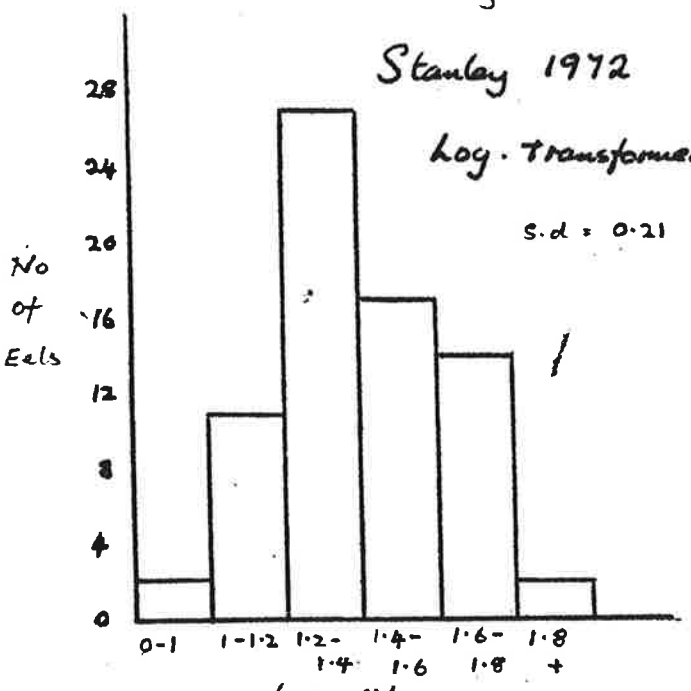


Stanley 1973



Stanley 1972

Log. transformed



Stanley 1973

Log. transformed

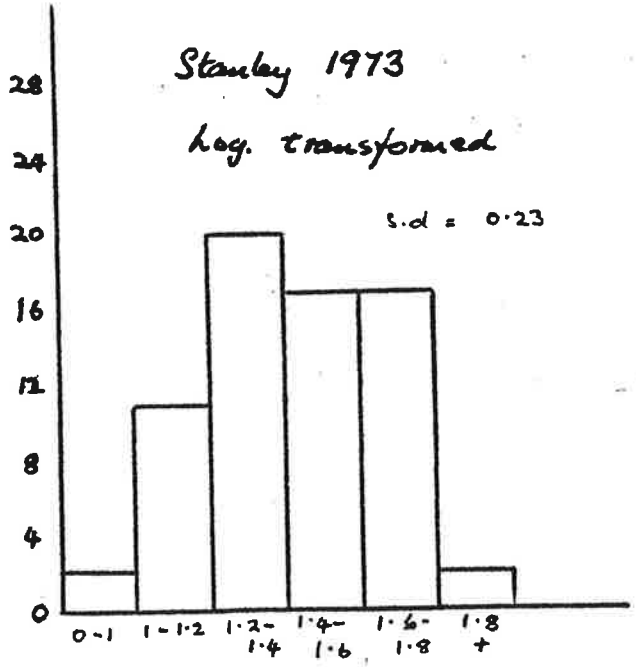
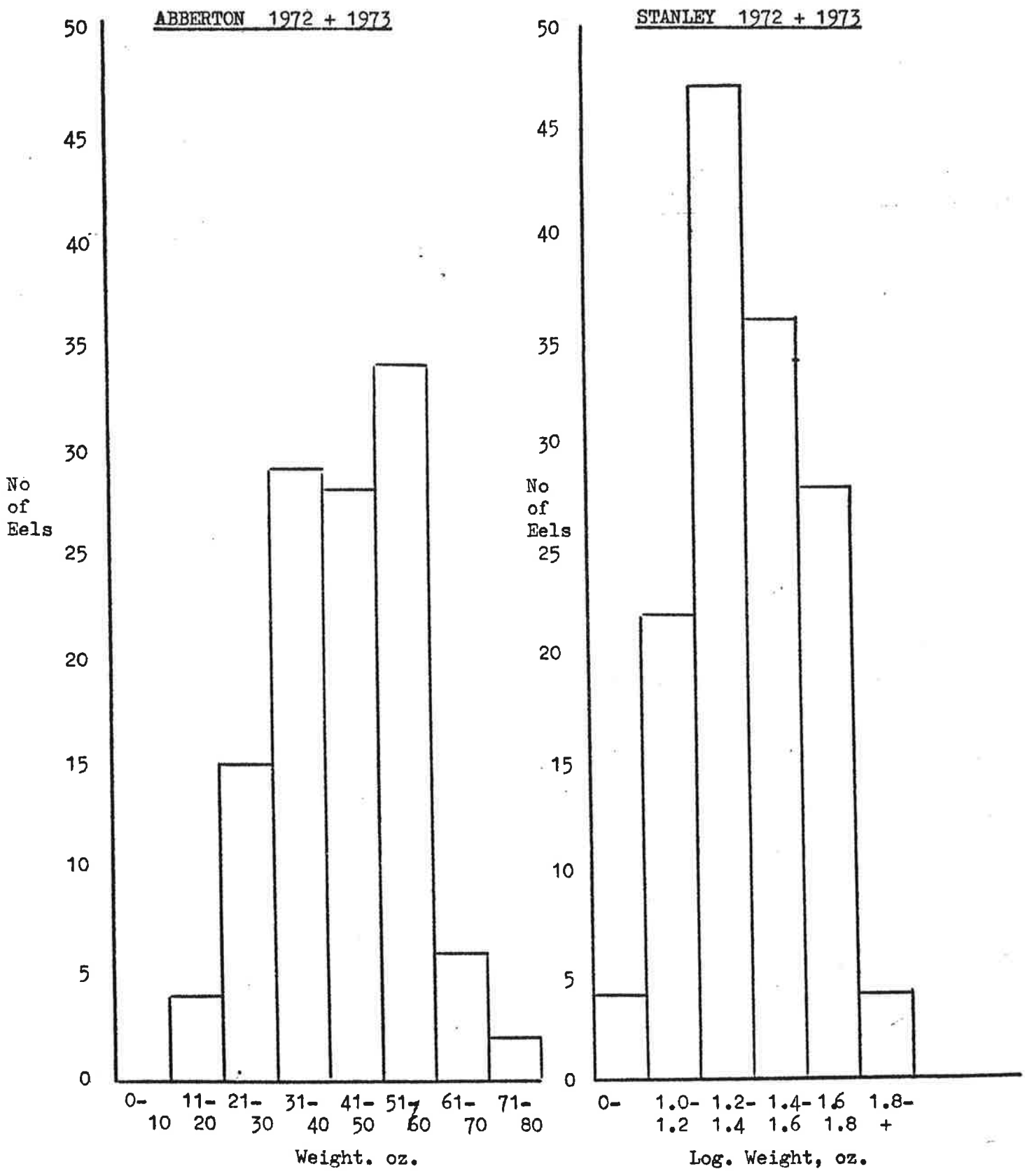


FIG 2.


ABBERTON 1972 + 1973
No of Eels
50
45
40
35
30
25
20
15
10
5
0
0-10
11-20
21-30
31-40
41-50
51-60
61-70
71-80
Weight. oz.
STANLEY 1972 + 1973
No of Eels
0-
1.0-1.2
1.2-1.4
1.4-1.6
1.6-1.8
1.8-+
Log. Weight, oz.

At this point, as we did last year, we ought to consider just what these results and predictions mean. Are we, in fact, justified in extrapolating beyond our actual figures to produce estimates of events as rare as 5 & 6lb eels ? I think we are, provided that we do not take the answers too seriously. After all, we all ask ourselves whether we will catch a real buster every time we go out. The technique used here employs ALL the data to provide the best possible estimate of how likely we are to succeed. But it remains only an estimate, for all that. It contains three unproven assumptions.

1. 5 & 6lb eels do actually exist in these waters.
2. 5 & 6lb eels are distributed in the same way as smaller fish.
3. Conditions at the water are more or less constant i;e results from next season are likely to be similar if the same methods are used.

It follows from 3 (above) that a change in tactics could, in fact, totally change the weight distribution and hence estimates of 5 & 6lb fish. 1973 results were derived almost exclusively from worm baits at both waters. For Stanley, at least, past results suggest that a change to DB is unlikely to be of much help; sport gets slower but the eels are no larger. For Abberton, however, there are practically no results on DB. Now it may well be that use of large DB may select a bigger class of eel. If this were so, the probability of getting into the 5 & 6lb class is likely to increase. A respectable number of eels from Abberton on DB - or any other single bait - could give us much valuable information.

Finally, we may again enquire whether it would be better to fish Stanley Park or Abberton Reservoir to take a 5lb fish. Here, we have to bring rate - of - catch into the picture. In 1972, RH/E were practically the same at both waters. In 1973 however, the much slower rate at Stanley puts a different complexion on things. Thus, assuming rate - of - catch in 1974 will be like it was in 1973, we could suggest that a 5lb Stanley eel should take on average 2,100 RH to catch. An Abberton 5lb eel should take 2,250 RH to catch. Thus, using 1973 figures for rate - of - catch, and a combined 1972 + 1973 prediction for frequency, we arrive at the conclusion that there is not much in it. Both waters, our figures suggest, would require a great deal of effort to produce a 5lb eel.

Of course, if next season Stanley Park produced eels quickly again, it would again look a reasonable bet, - and better than Abberton.

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