

*The Manchester Anglers' Association*

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I must read a paper on the subject which our good Secretary has announced, though I like the one I chose better. It was simply "Some Trials of an angler." I had constructed and was about to elaborate a little joke in which the phrases "Some Trials of an Angler" and "The Trial of some Anglers" might jingle and remind us of a party of defendants whom I saw leave the "Lion" in a wagonette, grave with the knowledge that they were in conflict with the Lord Chamberlain, or some such august personage, on the subject of stage plays. The Secretary's title has spoiled both the jingle and the joke, and it now means to me that I have no chance of being let off under the "First Offenders Act". Your Worships I have been here before and so must throw myself on the mercy of the Court and proceed.

We anglers have a trying time; I do not mean that we are always trying to catch fish; that is not true and it would be punning. The untruth is a popular one we have refuted it a thousand times by the riverside. We have demonstrated so frequently that we are unwilling to demonstrate further, that angling and catching fish, have nothing on earth to do with one another. As to the pun, we hold with Oliver Wendell Holmes that Homicide and Verbicide, i.e. "violent treatment of a word with fatal results to its legitimate meaning, which is its life, are alike forbidden. Manslaughter, which is the meaning of the one, is the same as man's laughter which is the end of the other." I am here neither to tell untruths nor to make puns; I say that we are not always trying to do anything. We do what we set out to do; we are anglers and we angle; that is all. We know the pleasures of our craft; health, good fellowship, rest, excitement; of these and many other good things, we have written, spoken and sung and they are yet the subjects of but a half told tale, for we meet tonight on the threshold of the best season we ever had. It is for me to submit to you that we have our trials; that there is another side to the picture; shade in it, if you like, as well as light; trials which do not pass with the seasons, but which to the reflective angler (and by hypothesis, we are contemplative men) weigh more heavily as the years which bring the philosophic mind go by. Let us get to the heart of the matter though the consideration of those lesser trials, which, as exemplified in my own brief experience, are common to us all.

I have risen in the very small hours of the morning, have seen Hulme as Wordsworth saw London from Westminster Bridge "with all its mighty heart being still, "that I might breakfast at the "Lion" at half past eight and alas, have had to spend hours at Blackburn Station, which should have been spent at the river side, because the 5-30 a.m. from Victoria, misses the connection with a regularity little expected on the L. and Y.



I have, that I may take the cream of the season's sport, gone to Horton for the first day allowed by our rules, and have been able to walk with perfect safety across the frozen waters of the tarn. I have fished with a good wind behind me and been exasperated many times in the day, by finding my tail fly fixed over the barb, in my stout fibred Harris Tweed, fixed centrally between the shoulders; I have tried to get it out with both hands, I have fastened upon myself with the "half-nelson" but I have had to wade ashore, to take off my basket and indeed only not my trousers. I have thought sadly of the littleness of manhood and a university degree as I have found a school boy with four or five brace of good fish, when I have had only one, and of such doubtful size, that I suppose I killed it only because it was so badly hooked. I have left my rod tops, my fly book, my flask behind at home; have fished in leaky waders, and when proud that they were new and watertight, have tumbled in the river. I have known the lunch of an angler left on the bank (in reliance, I suppose upon the Proverb "As safe as a bank") to be eaten to the last sandwich, by the fox terrier of another angler. I am able to recall this incidence without pain owing to the circumstances that I was the other angler. I have been sorely tried by hearing that Dr Johnson once described fishing as an occupation whose salient points were, a rod "with a worm at one end and a fool at the other." Johnson of course never said anything so silly. I have known an angler afraid to go home, because he had lost his net, he explained when we said that we thought the loss of a net an insufficient reason for staying out all night, that it had been a peace offering that morning from his wife, at the close of a war waged to find out whether it were true that he would leave her and go fishing all day and every day, if he felt so inclined. I have known my basket never grow an ounce heavier through the long day, and am conscious that over a score of seasons, I have lost all the heaviest fish I hooked. I have seen the credulous smile on the faces of my fellows, my dear friends, as I have told them of the capture of trout, trout whose rapid growth in two year old ponds, was only exceeded as they grew from 10 to 20 year olds in my powerful memory. The posthumous growth of fish is not the least of the wonders of natural history. Its study, in relation to ethics, might be the subject of a paper to be read before this unique gathering of honest Anglers. To the reader whoever, greatly daring, he may be, I venture to suggest the following ground plan; as the newly caught trout is to the satisfaction of the man who catches it; so is its increase in weight after death, to the moral decadence of the man who caught it, many years ago. This is a digression; but the fact is that the trial of being doubled is a thing of the past for Anglers. Truthfulness is after all a relative matter, and since golfers, motorists and certain half penny papers arose in the land anglers are found to be veracious. The man who says today, that the only time he ever heard an angler speak the truth, was when one called another a liar, is so far behind the times, as probably to be unaware of the death of Queen Anne.

Thus far I have touched upon such trials as can be matched in the experience of you all, and have alluded to the ancient slander which in old days made "sufferance the badge of all our tribe." I come now to consider two trials which are possibly only (true) to me. The first has brought it about that I am considered a hopelessly eccentric person by a fairly large circle of acquaintances, a man who is happy when others are

wretched, and vice versa; blessing when others are cursing, but not in this case vice versa. It is the opinion of many, an opinion wide spread and deep rooted, that because I am an angler, I like no days that are not pouring wet, and that I am never really comfortable, save when I am wet through. I have provoked a discussion among my friends, similar to the Shakespearian problem of Hamlet's mental condition. Men meet me, have done so any time these last twelve months, wet, ill tempered, muddy (even though Manchester mud does not show on black clothes) and when I have said that the weather was beastly they have looked surprised a kind of, "I should never have thought that of you," look, "they thought I liked this sort of weather," and the reason, only that I was a fisherman and fishermen like rain. Now I put it to you, how has a man one who loves to be at one with his kind, felt, going about Lancashire on business during the past year, with a reputation for liking this sort of weather. My feelings have been of such a nature as to keep me indoors as much as possible to avoid the rain and the idiotic remarks of any non angling friends. Rain has its uses; the literary critic of our only humorous paper once said, that if he were alone in a large house on the wettest day that ever was after reading ten pages of Mr Hall Caines' "Christian" he would put on his Mackintosh and shooting boots and go for a walk. A walk in the rain has its pleasures, and ladies find it matchless for the complexion I believe. In a classical passage Mr George Meredith has given a description of which all anglers and other healthy minded and bodied men will feel the power. "Rain" he writes in the "Egoist", "was universal, a thick robe of it swept from hill to hill, thunder rumbled remote, and between the muffled roars, the downpour pressed on the land with a great noise of eager gobbling, much like that of a swine's trough fresh filled, as though a vast assembly of the hungered had seated themselves clamorously and fallen to on meals and drinks in silence save for the chaps. A rapid walker poetically and humorously minded gathers multitudes of images on his way. Any rain, the heaviest you can meet, is a lively companion when the resolute spacer scorns discouragement of wet clothes and squeaking boots. The taking of rain and sun alike befits men of our climate, and he who would have the secret of strengthening intoxication must court the South West with the lover's blood." Wonderfully true. I pity the man who has never known the beauties and pleasures of a wet day. This is one thing, but to be wet weather sportsman, a selfish man, one who wants all the rain to himself, who hates the sun and blue sky, which others love, this is another thing altogether. Of course we want water in the rivers, but I for one, am satisfied with inches and feet less than a flood, for years ago I and a good brother of the angle swore a vow on the butt ends of our rods that after our experience, we would catch trout, with a worm, in flooded water **no more**. We dislike wet weather; on occasion we can describe it; waterproofs which even hook up for wading are futility and we do not take a lonely delight in the record breaking of rain gauges.

I pass on to another trial and a more grievous one; like the last it consists in a misunderstanding of us. But it is not now a mere question of our likes and dislikes, it touches one of the faces of our character. We have our virtues; modesty being one of them, we may not dwell upon them here; let a tardy word speak of them, and we will blushing suggest that we are flattered, but what do you think of the bludgeoning wrong, which attributes patience to us. How many times have we been pityingly approved for our patience? How many of friends and brave, reckless, bubble reputation at the cannon's mouth sort of fellows tell us that "fishing is too jolly slow for them"? Our brothers they are, these ignorant bucks to the dear kind old ladies who admire us as anglers for our patience. We go into the drawing room when they are calling on our wives (these dear recording angels who know for a minute, how late dinner must be to make us into surly impatient bucks), we have returned from Horton only the day before, are looking well, tanned by the glorious winds of the Yorkshire Moors, having humped many miles killed some fish and had a varied and exciting time. Our greeting includes a reference to our appearance of well being and we respond proudly "Yes I've been away fishing for a few days." I affirm at this point I have seen faces fall, and have detected in them, surprise, pity, disappointment. You, whom they thought of as a sportsman, to be a fisherman! They thought that you stopped ugly rushes at football; spent your Saturday afternoon being rubbed in the mud and being asked whether you would have it down; they thought you "climbed some giddy Alpine height and shrieked "Ecelsior" amidst the snow," they saw you in admiring fancy standing up to fast bowler on a bumping wicket, or winning at Ping Pong the championship of Peckham. Admiration must change its color; "Ah I always like to meet fishermen, they must have such patience". We know what they think, these bright young men and dear old ladies; they have no knowledge of our sport; they think idleness patience; they picture us sitting hour after hour, drowning worms, watching floats, having nibbles and bites, as fish were mosquitoes or dogs, solitary, slow pulsed, sedentary men, rising now and then to kill an eel which swallows itself and spits itself out, as it dies hard. Well I have made my choice; I will bear this trial bravely, until rheumatism and sciatica send me hobbling to the pit or the canal, with a mixture of honey and dough. I will let my friends of any age and of either sex, lavish their admiration on the men, who achieve the distinction of being sportsmen and wearing gaiters, and endangering human life with a gun; or by knowing the Christian names

of the best half backs and centre forwards in the "League". I will forfeit these things for the life of the river side, for the spring of the rod, the heightened line, the rush, the struggle, the landing of the trout; for the pipe, the friend, the music of the stream, the flash, the song, the comradeship of the Kingfisher, the thrush and the water ouzel. But Mr President and gentlemen, but apart from the trial of being misunderstood, of knowing that the belittling of our sport in the common mind, is allied with almost a contempt for our brotherhood, there remains as well the guilty knowledge that the virtue of patience, in its manliness and reality, is no matter of course possession of the angler. To be regarded as a dull, easily pleased, weakling, who takes his pleasure very sadly, a mere babe in the world of sport, nourished on excitements so mild as to be scorned by a man who lives on the strong meat of lawn tennis and golf; this is a trial; but a sharper trial it is to feel, that in awarding to us the praise due to patient men we are being forced into the consciousness of hypocrisy. We know here in secret conclave, we know it; anglers are not patient. Did you ever hear an angler getting into stiffened brogues? You have heard, in the days you played marbles, your good mother say "Oh! dear me" as she unravelled the skein of wool, with which she was darning your stockings and with which the kitten had been making hay. Did you ever hear an angler getting a three yard cast out of a tangle, on a summer evening, in the dusk? Did he say "Oh! dear me," or was the force of the original lost in his free translation? Did you ever follow a man fishing the up-tree worm? Have you ever climbed a tree in waders? Have you ever tidied your fly book?

But we need not pursue a painful subject into any closer detail. Every man of us knows that while on the one hand the calling of us patient is to utterly misunderstand us, by making our craft which calls for quick wits, resourcefulness and skill, a pale, sickly method of going out to kill something; on the other hand it is to make us a present of a virtue, to the possession of which we have no claim. We are once wrongly blamed and wrongly praised; we cannot get "the beast" as Dickens called the British Public to estimate us at either our true worth, or at our true worthlessness; we are better and worse than it knows. I cannot suggest any direction in which a remedy is likely to be found. The wife of my bosom never said "now do take care of yourself," when I went on a fishing expedition until I startled her into a knowledge of the risks I ran, by a graphic account of a narrow escape from drowning which I had in "Whirling Lumm". She is now persuaded that when a man goes fishing, he carries not only his rod but his life in his hand; has his heart in his mouth many a time during his absence from her and does not pass his time "in the twilight on a bucket upside down". A succession of such episodes told with a touch of exaggeration, which without suggesting untruth will give the vividness and interest to the narrative inseparable from anglers' tales; may communicate to the home circle first of all, and subsequently to others, the truth that there is a very great deal more sport in angling than is implied in the phrase "pulling in when the float goes down". We claim that every true constituent of true sport is found in ours; they call us patient because they think that there is nothing in it—no skill, no danger, no excitement. If only it might happen that in the future, we brought home fishes neither few nor small, that as we caught them over again in terse narration we could weave into the story a thread of adventure, the story of Othello and Desdemona might be repeated, we should speak

Of most disastrous chances  
Of moving accidents by flood and field  
Of hair breadth scapes"

We should be loved not for our patience, but for the dangers we have passed, and the truth would filter into the public mind, that so far from being milksops, anglers have as good title to be counted "terrible fellows" as that great and rather contemptible multitude, whom nobody calls patient, but many quite mistakenly call sportsmen. How we are to be known in our true darkness, as well as in our true light, I do not know; it was a golfer who said as he broke cleek, niblick, and driver across his knee, that "that it was better to break his d—d clubs than to loose his d—d temper," we in our impatience do not go this length; we break a cast whose tangle is a specially provocative one, now and then; but no man is an angler who does not love his rod so dearly as to spare it, at his angriest. Yet we are impatient men and walk the world, conscious of a glitter about us, which is not gold as the Character of patience is given to us by those who do not know us under trial. Time alone can bring it to pass that others will see us as we can see ourselves, our sport some day receive its merited dignity, and we shall no more be credited with a virtue which we do not display, either by the river side, or when we are sorting our tackle. I should be glad if the unburdening of my heart in this paper, might bring nearer by half an hour, the time when we shall no longer be regarded as living embodiments of the virtue of patience spending our well earned holidays almost immovably fixed to a fishing basket cunningly contrived to also serve as a seat; and shall no longer be judged deliriously happy, when, and only when, we are soaked to the skin.

--- *Finis* ---

## *Anglers I have known.*

*Rev E S Richardson*

*February 15<sup>th</sup> 1907*

Anyone who has wandered along the banks of a trout stream - and he who has not done so is either to be pitied for lack of opportunity or to be blamed for lack of sense - will quickly come round some corner and have seen a heron standing in the stream. He is silent, alone motionless, save when for an instant there is a stroke of the bayonet beak, and a trout is swallowed down the long throat into the creel, which is a portion of the bird's anatomy. Another corner and another biped, but this time, as Carlyle would say, featherless. He too stands in the river, a solitary and not unpicturesque figure, and he too, not without skill, is trying to gather spoil from the river for the creel on his back, spoil which after the exercise of certain culinary arts, he proposes heron-wise to swallow. I would have you observe the solitariness of these two figures, and then I would warn you against the danger of drawing too hasty inferences. Away among the treetops is the heronry, where fishing exploits are recorded, where anglers meet, and where the enjoyment of social life is understood. Our other solitary, too is gregarious. I will not say that there are human heronries; the girth and shortness of the human leg and neck make such an analogy not humorous but absurd. Yet I will emphasise the clubableness of anglers, and declare that no one loves his fellow man better than he who hates him as he hates the east wind, when he sees him wading down stream when he is fishing "up". There are rooms in a thousand village inns and one room at least in a grand hotel, whose walls had they lips as they are reputed to have ears—would tell that the angler, though he should know little of fishes, knows much of his fellow man, that comradeship and angling belong together; and that he must surely be a somewhat commonplace person who can find no more specialised subject on which to talk to anglers than "Anglers he has known." Bear with me then in these recollections which only carry me back to the days when many of you were strapping young fellows carrying with a light step your heavily weighted baskets. Accept too the expression of the regret I sincerely feel, that so few of the good men and true who I meet tonight will find themselves as individuals in what will follow. I am more than sorry that I attend so few of these social gatherings and as the reason I dare hardly plead the exacting nature of life's duties before an audience of laymen. They, good souls, cling to the hoary superstition that a parson's year has in it but 52 days: that it is composed of the Sundays on which he is on duty, and of the Sabbaths on which he is off. Or, should they, of their charity, give him the full compliment 365 or 366, they are convinced that they are truly and sharply divided, between those on which he is angling, with small success—at Horton—and those on which he is doing nothing at home. My preamble is making wood, and I must cut it down and see whether there may be fruit.

Charles Lamb did not speak kindly of anglers, tho' I think he felt kindly towards every child of man. He wrote to Southey of anglers as "those patient tyrants, meek inflictors of pangs intolerable, cool devils." We partly forgive him as we know that he had worm fishers in mind, that his idea of angling was probably that of doing eels to death, and we wholly forgive him when we remember that he could speak of "An Isaac Walton's morning", that of course, "The Compleat Angler" was in his library, and that he said of it, "it would sweeten a man's temper at any time to read it." I think of Lamb tonight, however, for his well known recollection of his father. "I knew this Lovell" he says, speaking of him "a man of incorrigible and losing honesty". A notable character sketch, and I cannot forget tonight that I am an angler of heredity, reinforced almost by an exercise of parental authority. I was not in my teens when I was presented with a trout rod, a small fly book and a net accompanied by no phrased sentiment, but with a wish that I might get as much keen pleasure from trout fishing as my father had done. I might have hesitated to include this personal remembrance had I not felt that my father was a type of angler, which, so far as "working the thing" is concerned, has not survived in the evolutionary process of this generation. In spirit he was, well, an angler; a type which will survive just so long as rivers run to the sea. But how seldom now a days we see a twelve foot rod, gradually tapering butt, a length of twisted hair between the reel line and the cast, a Broughton Poet, with its blood red hairs from a calf's tail. Dyed hair of course for I do not suggest that the plumage of the calf was blood red in my boyhood. The men I knew in those days fished down stream to a man, they threw, unless distance lends distance to the opposite bank, a very long line and they simply let it swing round. Were there so many more trout, 30 years ago than now as to account for the fact that in spite of unscientific methods my father and his contemporaries killed heavier baskets in the Eden than I have ever done? Or has the education of trout gone on so fast in the overstuffed school in which they learn, that a pounder then would rise at a fly thrown by a man who stood over against him and stared him in the face, while today we outflank him and drop the more dainty morsel lightly, and even dryly, over him in vain? I have seen the methods in which I had my first lessons little practised of late; I have renounced them myself; I can almost



moralize on the advantage of a short rod, when a clumsy friend steps on my rod top and breaks a few inches off it, but bags and baskets remain constant, I feel that either men, or fishes must have changed for the worse, when I look into the one which I carry and compare its emptiness with what I have many times seen in my father's basket long ago. Thinking back to the same times I knew then a man who had as a boy been thrashed for wading without waders, and for staying out at night, not that he might smoke tabs, or that he might keep company, but that he might fish. "Of course he went and died, which is just what the best men do". He was the greatest enthusiast I ever knew, and a successful one. Times I suppose were even more spacious then and he tied every fly he cast; and, naturalist as he was, his patterns were what he found on the water or on the grasses by the river side. I am glad to have known one such man, his like I have read of, but have never met.

I have been out with two professional fishermen. One was on the Coquet. I used to miss him almost at once on reaching the water. Now there are, I know, men, who love you dearly, but who dissemble their love on a fishing day by leaving you in the morning and giving you no sight of them the day through. They are keen sportsmen; they go out to fish; and will talk in the evening when the business of the day is over, as Sarah Battle would read, as a recreation after her whist. But this man was a poacher. For long I wondered not only why he left me, but why he caught so many trout, and I relatively so few. My modesty of course was ready to explain that he was the better man, but my reasoning faculty clamoured for further explanation and this was at last forthcoming to the effect that he was in the habit of scenting the beck and baiting his hook with salmon roe.

The other was at Hawes. He made flies for me and together we went fishing on the same length of water. His was the only rod that I ever have seen whose butt was positively worn by the grasp of a hand. A well marked hollow showed clearly the wearing effect of a thumb upon wood. Now of all men whom I have known he was THE one who could catch trout. There was something uncanny about his success. His own simple account of the matter was probably the correct one, that long years had made him so familiar with the river that, standing at any spot, if a trout were in a cast of him, he could be sure of the place where he would be lying. He is a curious type of angler, the man who has a standing agreement with the people at the Hall that they will pay him a shilling a pound for trout all the season through. As in the first case he may become a poacher; or as in the second, a good naturalist, an excellent fly tier and an expert angler with rod and line. It is obvious that in such men sport is likely soon to become merged in business, as that which is first a means of enjoyment becomes a means of livelihood.

Passing to anglers whom I have known in much larger numbers, I am glad indeed that they are so many, but with their forms and faces, their sayings and doings, not to mention their tackle, I know not how to get them into my picture. I have wondered whether I might classify them according to their professions. Doctors for example who change their flies as they change their medicines, exhibiting a coch-a-bonddhu as they exhibit calomel, and hoping that the orange body may conceal the hook from an extra large trout as the add the orange syrup to disguise the physic from an extra good patient. Parsons: men who regard the wet day that prevents their people from coming to church with the same displeasure as they regard the east wind that prevents trout from rising. Men, who are accustomed before all else to have their own way or know the reason why, who, when the basket is empty as evening comes get as far as seeing something must be done, but can think of nothing more practical than the ordering of a Slang Dictionary from the "Times Book Club." Business Men: men who keep accounts of cotton and iron at the office and of household expenditure in the home; who have something to say to the wife about the size of the fishmonger's bill but who, in country places, carry about small trout in large baskets which are literally the expenditure at Hardy Bros. Proves it, worth their weight in gold. Rich Men: men who believe that every door is barred with gold, and opens but to golden keys, and who are puzzled by the possibility—proved—of a heavy purse and an empty basket. Who think that De Quincey was inspired when he thought of "Murder as a Fine Art" and who think that the man was rogue who sold them the "Lancashire Murderer", made of aluminium with eleven triangles, a spinning bait, for seven and six pence; it becomes part and parcel of their knickerbockers from June to June but trout seem to have no stomach for it. Lawyers: men who are delighted to find parchment leaves in the fly book, who are interested in the distinction between the feather from a dotteral's wing and that from a young starling. Tweedledum and Tweedledee are in many angling matters each others learned friends. Men too in the court or office are delighted when things are in a hopeless tangle, but find that speech itself gets beyond the bounds of law when certain things are in a hopeless tangle by the riverside. Scientific Men: men who have calculated to an ounce the weight that certain woods of certain length will raise a certain height and are working at the question regarding the want of control, in running water, of a ten foot rod (a) of split cane (b) of greenheart, over a nine ounce trout. These men, I understand, are about to set a brilliant generalization before the world. They are persuaded that physical deterioration is not confined to the genus homo in Lancashire. They have found it unmistakeably present among the trout of a Yorkshire stream. During two

seasons 90% of the fish they have caught have in length been under the 8 inch limit, and they are quite expecting that this season they will fully be able to establish the connection between this fact and the rejection of so many men by recruiting sergeants.

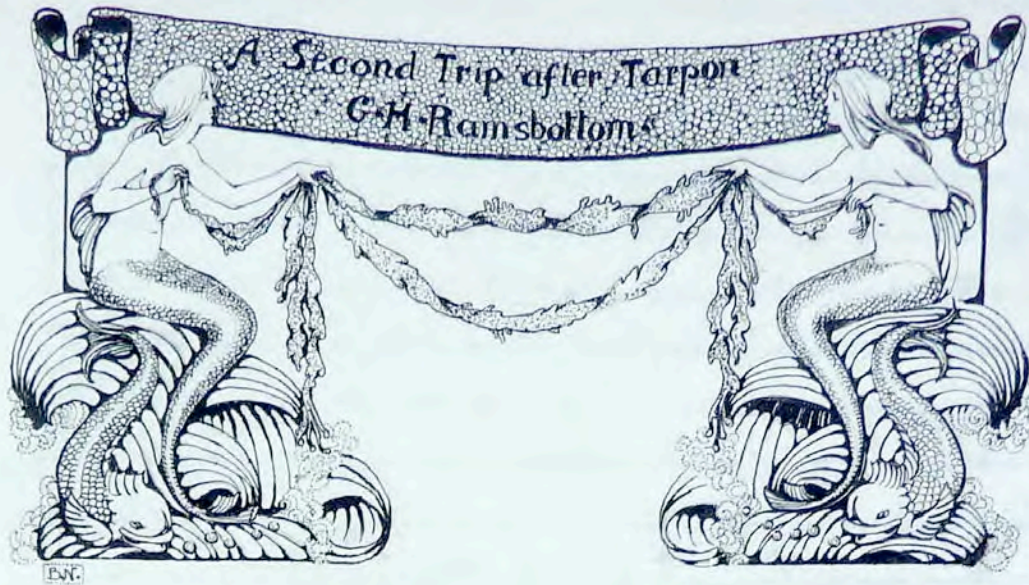
And so on Gentlemen, I must really apologise to you for letting these rough notes that I made under the impression that I might classify anglers I have known under their callings in life. I have shown them to you, first, because they are not mere creatures of my imagination, but are points noted down during a somewhat careful observation of facts of human nature by the river; and second because they will remind us that ours is a catholic sport. There is no class of man in which its devotees are not found. The anglers we have known are the men we have known, and their characteristics are not fishy but human. Friendship is one of those things that defy analysis, one of the best things, that is, and to describe individually the anglers whom an angler has known is really to describe those, who, approximately enough, he has grappled to his soul with hooks of steel. For example I know a man who angles well because he does most things well; who is a delightful companion by the river side, because he is a delightful companion by the fireside; in old days when runs were wanted he could get them, when goals were wanted he could kick them, if twenty three were wanted to win, he would go into the middle pocket off the red eight times. As a boy he used to wonder what the men were doing whom he used to see from railway carriage windows standing in rivers. It was my privilege to inform him on this on this point, and now like the prentice who carved the famous pillar in Rosslyn Chapel, he has far outstripped his master. Standing in the river or kneeling on the bank; fishing the fly dry or wet; spinning the minnow upstream in low water, or downstream when the froth and colour of porter are there; he can and does catch trout. long in the leg and in his stride long, he has a way of going off on the morning of a fishing day like Kipling's cat "by his lone self" and the sense of irritation which this begets in me is increased by the knowledge that when I next see him he will have two fish to show for every one of mine. Success does not spoil a good man as an angler—or for that matter—but he must be good—and my friend as doubtless yours, will gladly give the last fly of the pattern which is killing, from his box or book to me or to any man; and he makes no delight in that infinity of the sportsman, the wiping of other men's eyes. He will sit quiet as an angel child while men recount exploits far less worthy of chronicle than his. In a word he's a good fellow, and my knowledge of him as an angler is only my knowledge of him with his goodness breaking out in his favourite sport. I remember on one occasion when I and the third man without whom an angling expedition is tame and incomplete, even though his presence might not add much to the nett result i.e. to the fish taken, I remember when we had gone out for the day leaving, as we felt, our best man behind at the inn, rather badly broken down as we thought from the effects of a slight lung hemmorage (sic) the previous day we toiled in the Tanat with very small success. We admired our natural surroundings, but we saw little of the famous tortoise shell fin. We returned rather sorry that we had no exciting adventure, nor a good basket between us, the sight of which would cheer the invalid but we found on reaching our quarters that he had killed a brace of beautiful grayling, a pound a piece, in the stream below the bridge, when, during the morning he had gone out for about half an hour.

This is the kind of thing that some anglers whom we have all known do, in defiance of the weather signs, which tell there is no hoped of sport; in the face of the fact that men who have been staying at the inn for a week affirm it to be no earthly good, they go out and return presently with fish. You watch them, you catechise them, you examine their tackle: Your rod and gut and flies are better than theirs and you have known all that they can tell you since you were a boy. There is a stage in which there is no consolation but it passes and the years make it possible for many an angler I have known to find refuge from the comparison between another's success and his own failure, in the recollection of the things he used to do. Money is powerful to the verge of sublimity in the angler. Mnemonics are mixed up with multiplication table. When the memory of other details of years past are waning, the weights and measures are more to us as the years pass, and we see with perfect clearness that the comparison of what men are doing today and what we used to do is in our favour. I have known anglers who have lived in the past and have learned to lie quite fluently about it. Should the wind blow in April from the North East and your fingers be nearly frost bitten as you come in, empty in creel and stomach for lunch, they who have not been out tell you that they will never forget a day—it was at the time of the Franco Prussian War, when they killed seven pounds of trout on just such a morning, only it was snowing. Should it be a boiling August afternoon, with thunder clouds everywhere, these men sit on the bank and smoke while you fish and perspire and recall a day during the drought of 1868, when with the lightening playing round their rod, they had splendid sport. There is the angler as optimist. In the morning "we're to early for them": at noon "they always knock off for an hour or two in the middle of the day" during the afternoon "they haven't been on the feed all day, they must rise at sundown": and when they have not risen but the moon has "it'll rain like anything in the night, we shall have a grand day tomorrow." This is the kind of man we cannot spare, he keeps us going: we never are but always

to be blest, the brotherhood of anglers cannot spare any of its optimism it needs it all. I do not like the opposite type though I know well the man who represents it. He frequents angler's haunts and his thesis is that there are no fish in the river; if you should show him any number of trout from the bridge, well, the very clearness of the water which enables you to see them, makes fishing hopeless; if trout are rising they are midging and you might as well throw your hat in: or the clouds are like barristers' wigs, or the fish are gutted or expecting rain, or the river's simply fished to death. I wonder that this man does not give it up: there are plenty of occupations, unhappily, that would suit his temperament admirably, and he is a certain failure in a sport whose followers live upon hope during those many days when trout do not live upon anything.

I spoke earlier of the successful enthusiast: him I admire: but the enthusiast who is a failure, I love. We all know the man who never catches fish, never expects to catch them, and I believe if you knew his secrets you would find he never wants to catch them. I call him the salt of the earth, and I very much doubt whether there is another calling in the world where the cheerful failure can make himself so thoroughly at home as among anglers. It says something for them that they can show hospitality to a type of man who stands for philosophy, in an age which is failing through breaking its neck to succeed. I understand I have kept you over long with what I fear are trivialities. We gather the men we know as life passes, and the group of such men is the richer, the more interesting, and the more lovable because it includes that cluster which the enjoyment of the pleasure of angling has brought round each of us. When we were at school among our friends was the boy whom we bowled out in the house match, as well as the one who did our latin verses for us. And now that we are men, there are the friends of the counting house and the parish and there are those of the riverside and the village inn. Well I venture to prophesy that should the time ever come when we must relax our grasp upon our business and our pleasure also, should it happen that, by the dying fire, failure should seem to be written over a good deal of it, we shall love to hear the voice that can remind us that there was a day; it was in 1905 when we killed more trout than any other man. There will be no man whom we will so gladly welcome to our homes and see across the hearth rugs as the men who helped us splice the broken rod when the prospect of a day's sport was hanging in the balance, the men who heard what we said when we broke a lace as we were putting on our brogues and who friends though they were could not keep their faces straight when, after a desperate stagger, we tumbled in the river. They will be the anglers we have known.





I feel that some sort of apology is due from me to this Association for again taking the floor on the subject of Tarpon fishing. It looks much like paucity of idea on my part, but I assure you the fault is not mine. You must lay the blame on our worthy and hardworking Secretary, whose voracious appetite for papers is only equalled by a Florida shark's liking for anything it can get hold of, for he would not leave me in peace till I had promised to fill some date this season with another Tarpon yarn.

**A Second Trip after Tarpon  
G. H. Ramsbottom**

I feel that some sort of apology is due from me to this Association for again taking the floor on the subject of Tarpon fishing. It looks much like paucity of idea on my part, but I assure you the fault is not mine. You must lay the blame on our worthy and hard working Secretary whose voracious appetite for papers is only equalled for a Florida shark's liking for anything it can get hold of, for he would not leave me in peace till I had promised to fill some date this season with another Tarpon yarn.

Since first I was out in Florida in 1901 I had often looked longingly at my old broken Tarpon rods and wondered when they would again be put into trim to tackle those silvery monsters of the Gulf of Mexico, when about November 1905 I received from the proprietor of the Fishing Inn at Useppa a list of the catches for the past few seasons. I could hold out no longer but wrote right off to engage a room, and if possible my old Negro guide, Alf Whitehead. Receiving a favourable answer to both requests, I overhauled my tackle taking the rod down to Hardy's to have the broken iron wood tops replaced with good greenheart (and well they stood for I did not manage to break either of them). On March 21<sup>st</sup> I sailed for New York, landing early on Wednesday 28<sup>th</sup> in quite genial weather. Thursday I spent a good part of the day at Vam Hofe's tackle store investing in a spare rod, hooks, lines, sinkers and a harpoon, and yarning with the old man over past days and future prospects, for I found he was bound for the fishing in a few days. I left the following afternoon by the Pennsylvania and Atlantic Coast Lines for Punta Gorda. The run south is not particularly beautiful at any rate after one leaves the Pennsylvania Line; the Southern States are mostly flat and the large tracts of cotton fields covered with last year's dead bushes looked very dreary. Much of the country is swampy and the trees mostly pine and cedar are on the small side. The State, is however, going ahead fast, and I was surprised to find how many small towns (or villages as we should call them) had sprung up since last I was here. The turpentine industry is thriving, and one sees hundreds of trees that are tapped for resin. The old turpentine forests which are past yielding are being cut or burned down, and the land drained and cultivated and thousand of tons of fertilizer are being brought by rail into the State. This I found to my cost for the line was so crowded with freight trains, that our express was about three hours late into Jacksonville, with a result that I missed my connection south on Saturday evening and had to stay overnight there again in Jacksonville noticed the go aheadness of the American; last time I was here, just after the fire, the town was a mass of blackened ruins, now it is a bright little city with fine wide streets, good hotel and other buildings and small public gardens. Sunday morning, nine o'clock, found me at the depot waiting for the train to start for Lakeland and Punta Gorda, here I tumbled across another Englishman who was also going to try his luck with the Tarpon and after a distinctly uncomfortable run in company with a crowd of Sunday drunks, we arrived at Punta Gorda at ten p.m. We put up at the hotel and were made tolerably comfortable. The night was cool and we were quite glad to sit by a fire after supper, but in spite of the low temperature, mosquitos bid us a much too hearty welcome after we retired for the night.

Next morning we were up and had an early breakfast. As we left the dining room a young fellow came up and asked if we were going to Useppa, for if so, a private launch belonging to the Taxidermist was over from the Island, and would take us back. This was alright especially as the "Harvey Line" boat we intended going by was not ready to start, something having gone wrong with the works. The "Harvey Line" consists of two or three very third rate small petrol launches, the engineers being anyone they can get hold of; the result is, these liners make the run from Punta Gorda round the Islands to Fort Myers with a most unwanted irregularity, and one may get letters and provisions every day, or only once or twice a week, just as the fates are willing. The cause of the delay on the morning in question, so I was told, was that having broken the shaft the engine had been taken out for repairs, and put back wrong end about, this the engineer did not find out till he began to start her up for the morning's run. But it didn't trouble us much the mails and baggage being transferred to the "Naturalist" we were soon on our way across Charlotte Harbour for Useppa Island a distance of about 25 miles. Landing at the little wooden quay we were met by the manager of the Inn who gave us a cordial welcome and conducted us up the White Shell strewn path to our new quarters. Useppa one of the many small Islands which dot the waters of Charlotte Harbour is owned by a Chicago man and here he has his winter residence. The hotel was built a year after I was out first. It was very clean and comfortable, but the feeding left much to be desired. Of course it is no easy matter catering for a crowd in a hot climate, when all provisions have to be brought some 25 miles by water, on boats that only run when the spirit moves them, (like the Harvey Line.)

Before going further, it might be as well to give a short description of the fish, fishing grounds and the methods of fishing.

Tarpon (*Megalops Atalanticus*) is to all intents and purposes a gigantic herring, I know our friend Mr Glass will object to my calling him so, and scientifically he is correct, for there is a small anatomical difference which separates the Tarpon from his humbler but more useful cousin from Loch Fyne, still I do not think you could form a better idea of the fish both in form and colouring, than you imagined him to be just a very large herring. He is covered with big tough scales, some of them as large as the palm of one's hand, and so strong it is impossible to drive the point of the gaff through them. The back, when the fish is fresh from water, is of a pale sea green colour, this quickly changes after the fish is dead and becomes bluish black with opalescent tints.

The sides and gill covers are like burnished silver and the underside nearly white. The Dorsal fin is comparatively small, the last ray being elongated and almost detached from it, this ray is about a foot long and is known locally as the whip. The tail is powerful and deeply forked; he has the undershoot jaw, similar to the herring, a hard bony mouth, and no teeth to speak of.

Tarpon are found off the north coast of South America, round the Gulf of Mexico and some way up to the eastern coast of the States. They work in from the sea into the shallow brackish waters at the mouth of the rivers, and even some distance up them, feeding on shoals of mullet and other small fish; possibly they also spawn in these same waters, but so far the point has not been definitely settled. Young Tarpon of about herring size have been caught, some on the fly in pools connected with the sea on the Florida coast and islands. Last season several between 12 and 20 pounds were taken in Boca Grande Pass when trolling. At the other end of the scale Vam Hofe's 213 lb. fish taken some years ago in Captive Pass still holds, I believe, the authentic record. No doubt they run even larger, in fact, I have seen fish rolling in the water which I am quite certain would easily break this record, only so far no one has been fortunate enough to land one.

Fishing for Tarpon with rod and line was first attempted at the mouth of the Peace River, Punta Gorda and after in the Caloosahatchee river at Fort Myers. It was mostly all dead gorge, or (as the Americans call it) still fishing, for the Tarpon's mouth is so hard that it was thought impossible to strike them hard to drive a hook in over the barb if using a trolling bait. Eventually some enterprising sport, after breaking a large amount of tackle succeeded in catching and successfully landing one of these fish, fairly hooked in the mouth on a spinning bait and so Pass fishing or in other word trolling came into favour.

I do not think much description of the tackle necessary. The short stiff rod, multiplying reel, with leather brake, capable of holding 200 yards of line, large single hooks and piano wire trace, they are all on the table to speak for themselves. Vam Hofe's latest reels are provided with a powerful, adjustable, friction check, but this I think unnecessary except for old men, or weak folk. One rod with two tops and one reel is all that is absolutely necessary, but it is very handy to have duplicate tackle it may save much time (to say nothing of language) in the case of a breakage. A good supply of hooks with traces attached, a box of sinkers, stout gaff and heavy revolver about complete the outfit. My advice to anyone going out to the fishing for the first time, would be buy your tackle at Vam Hofe's New York; you will have to pay for it (it will make a hole in a twenty pound note) but he will sell you good stuff and just what you require.

Not very long ago the West Coast of Florida from Fort Myers to Tampa was the only place frequented by Tarpon fishers; now there are several resorts. Aranzas Pass, Texas, is a favourite fishing ground and off the many keys or islands, south of Florida, they are also caught. At the mouth of the Panucho River, Tampico, Mexico, there is, I believe, very good fishing; there are lots of fish and they run large; there are draw backs however. I was told by a Doctor of an English steam yacht that had just arrived in Boca Grande from Tampico that the fishing was good, better in fact than in Florida waters, but the hotel accommodation was poor, the guides and mosquitos very bad, and the chance of yellow fever considerable. On the other hand judging by that most interesting book of Mr Churchill's just published (which by the way contains some of the best photographs of leaping Tarpon I have ever seen) the quarters are not so bad, and no case of yellow fever has been known for the past few years. As the only tarpon fishing I have had has been in Florida waters I will restrict my remarks to these. Charlotte Harbour is a large shallow bay on the West Coast of Florida some 40 miles long by 15 broad, running from Punta Gorda in the north to Fort Myers in the south. The mouth of the bay is guarded from the fierce storms by the Gulf of Mexico by a natural break water of small low lying islands covered with palmettos and other dwarf trees, many of them fringed with mangrove bushes. Between these islands the tide rushes in and out from the Gulf with varying forces, depending on the width of the pass and also the strength and direction of the wind. Boca Grande Pass between La Costa and Gasparelle is the favourite fishing ground and the next pass south, Captive runs it a close second with many. Quite a number of men go down to the river off Fort Myers for the still fishing, but they are mostly old anglers, who do not care for the extra excitement and hard work which may be encountered in pass fishing owing to the vagaries of the gulf weather.

Now doubt you are wondering how long I am going to be before I get to the fishing itself, the fact is if you have to wait as long for the description as I had for the reality (because I caught my first fish last season) you will by that time forgotten all about this paper and probably wending your ways to lovely banks of our Horton waters, there to try your skill on its speckled beauties, for it was no less than three weeks after I arrived at Useppa before the first fish was landed. However I think I might in the mean time run you up to the Pass for a trial spin. We were not long in getting settled down in our quarters at the Inn; there were only some dozen anglers to begin with, half English half American. My old guide Alf was there to greet me with an even broader smile (if possible) than usual. He informed me with pride that he had a new boat, given him by one of the American anglers. The prospects of fishing, he said, were good, for though no fish had yet been

caught the Pass was full of them in spite of the cool weather. The Inn was some 5 miles from either Pass and the usual thing was to arrange the night before which Pass most of us wished to fish and at what time we would start in order to catch the tide right (About an before and after slack tide, generally being considered the best). Next morning the petrol launch would be waiting ready to tow the boats down to the fishing ground, the anglers took their seats in the launch and the guides each in his own boat, hung on astern sometimes forming quite a long queue when some 12 or 14 boats were in tow; and it was a pretty sight to watch them handling the small craft as the launch swung in and out of the channels especially if there was any sea on, when a mistake might have meant an upset. But here we are, after about three quarter of an hour's pleasant run; in Boca Grande. Some few minutes before arriving all eyes are on the look out to spot the first tarpon moving, the launch pulls up in the middle of the pass, the small boats come along side, each to receive its own party and away we scatter to try our luck. On the way down the guides have been busy preparing the bait, which consist of strips cut from the side of a three pound grey mullet and fashioned in the form of a small fish about 6 inches long and 1½ inches wide. The point of the large single hook is passed through one end of the bait so that it lands on the bend of the hook and wobbles, not spins, when drawn through the water. My guide was quite right to be proud of his new boat; I remember it well. It belonged to an American sport who was very fond of small boat sailing, she was double ended skiff 19 feet by 4 feet 3 inches decked at either end for about 3 feet, had a four inch water way and combing all round and was provided with a centre board. She was a good little boat, light to handle and fast under sail but rather too fine fore and aft for rough water when she was very wet. The boats are provided with a chair for the fishermen, on the front of which is screwed a rawhide socket to receive the end of the rod after the fish is hooked. We take our seat, the hook is baited and as the tide is still running out strongly put on a sinker or two; the fastened to the swivel with soft wire or string, so that when the fish is stuck the jerk liberates them for it is thought that the weight on the trace helps the fish to throw the hook from its mouth. The guide rows up against the tide for a mile or so then stops and slowly zigzags across the Pass as the current takes us down towards the open gulf. We sit facing the stern and let out 30 or 40 feet of line. This should bring the bait somewhere near the bottom. Most people believe in fishing near to the bottom, others right on top; generally I did not fish quite so deep as many of them and had very good luck, but have also taken fish right on the surface using no sinkers at all. We throw some water on the line and hold the rod across our knees, the right hand grasping the butt with the right thumb pressing hard on the leather brake, the left hand taking hold about 6 or 8 inches above the reel, and usually I took a couple of turns of line round the rod and held it with the left hand, so as to be certain there was no chance slipping it until I got a strike. I believe one of the reasons for so many fish that are struck being lost is that when the fish are not taking freely and one may have been hours or days sitting patiently, rod in hand, for the strike that does not come, it is most difficult to keep one's attention and fingers riveted on the rod and line and, of course, it is always just at that moment, when one is looking over one's shoulder to see what some other boat is doing that the fateful tug comes, wildly on clutches the rod and makes a frantic endeavour to strike, but the line slips as it feels the weight at the other end and when after a splendid leap in the air the silvery monster returns to his native element hookless and free, one may cuss one's luck, but the angler is bound to feel the fault is his, for not having been on the lookout.

After all there are lots of excuses for allowing one's eyes to wander from the rod if tarpon are not on the move. The Pass itself on a bright breezy morning claims attention, the brilliant green water changing to dark blue as the depth increases out into the Gulf, flecked here and there with masses of white foam, large masses of white showing where the swell from the Gulf meets the tide rip from the pass. One spot in particular roars and seethes like a boiling cauldron, if there is any wind and should a fish take us through it, it means a wet shirt. On either side the Pass is bounded by the dazzling white shores of La Costa and Gasparelle, mostly composed of finely powdered shell. Beyond this again a background of green Palmettos and other trees, all the colours being rendered more vivid by the clear blue sky and blazing sun overhead. On Gasparelle is the lighthouse, the keeper's and doctor's houses and now worse luck (I must give the prose as well as the poetry of the scene) a railway pier which they were busily making whilst I was there; this railway is being constructed to enable them to bring down phosphates which are mined in many parts of the States, to ships that lay inside Charlotte Harbour just off the inlet to the Pass. Up to the present this cargo has been brought down on lighters from Punta Gorda, some 20 miles away. I am only afraid that once the is made it will soon be followed by a small town and a larger hotel, goodbye to the charms of the place.

But let us get away from railways and artificial manures and return to the Pass, which is no less charming. Now the colours seem even more striking, reflected as they are from the mirror life surface of the water, the white flecks of foam are replaced by the white and grey forms of pelicans which fly or drift about in their droll old fashioned manner on the look out for small fry. They take little notice of the fishing boats, knowing by experience they will not be molested. But what is the splash that disturbs the stillness; we

look round in time to see a king fish returning to the water after making a leap of 6 or 8 feet in the air. He has evidently just made dash through a school of silver mullet. Our attention, however, is called to our own rod by a sharp hard pull and away goes the line 50 yards or more almost before we can strike. We look out eagerly to see a fish break the water, but he keeps below the surface and we come to the conclusion that it is only a king fish or a channel bass. In spite of the heavy tackle, for a few minutes his rushes are fast and furious, but soon weight tells and we bring alongside not without a great show of reluctance on the part of the fish, a 20 pound king which is gaffed and carefully covered up in the bottom of the boat, for he is good to eat. The king fish belongs to the mackerel family and is a handsome fellow with dark blue black and mother of pearl sides, in weight he runs from 10 to 40 ponds and on light tackle gives very good sport. We have just baited up again and started fishing, when there is a shout from one of the other boats, we look round in the hopes of seeing a tarpon in the air, but no, only a rod bent double and angler using bad language. We shrug our shoulders either a shark or a jew fish. As we are doing nothing ourselves we keep an eye on the other boat and noticing the line is plump up and, feel sure it is a jew fish. After 3/4 of an hour or so of hard pulling the guide makes for the shore and at last hauls up on the beach two or three hundred pounds of greenish yellow sea perch. The hook is extracted and the heavy mass of fish pushed back into the water, probably to provide food for some roving shark. Another splash with a different sound makes me look round the tide this time being on the turn of flood; my guide says in an excited sort of half whisper there's a bunch, there they come, and sure enough there were tarpon in plenty, they seem to be coming in from the gulf in small shoals of 5 or 6 and were breaking the water in all directions, not jumping, but rolling like porpoises, their burnished side flashing in the sun, so near did they come that often we were splashed with water, thrown up by their tails, and once or twice they even struck the oars and boat; but as to our bait they would have none of it, we tried fishing high and low, all with the same result, not a strike did any of us get, though the pass was just full of fish. At last towards evening we gave it up, the launch came along and one by one we hitched our boats astern and returned to the inn, to dinner and bed, hoping that next day, at any rate, we would land that first fish.

I will not weary with describing the doings of each day for they were all much alike. We fished hard for hours but always the same result. Any number of tarpon showing but no strikes, at the same time you must not think the rods were altogether idle, for we had lots of sport with other fish king fish, channel bass, groupers, etc. to say nothing of sharks. One day we had been out fishing the early tide about 4-30 in the morning and were being towed back to the inn to lunch, the small boats astern as usual, when a shout from my boy who was last on the tow line made us look round. He had cast off the line and together with a Negro from one of the other boats was making tracks for a small bay we had just passed; we soon saw the reason for this. He had spied a devil fish or grand ray basking in the sun. Before we could turn and come up with him he had thrown the harpoon. There was a great commotion the wing like flippers were suddenly raised from the water until they almost met over the fish's back, to come down again with a thundering splash. Then he sounded and was off with a rush that made the water boil off the bows of the small boat as it was dragged along at the end of the harpoon line. I was rather sick at being left out of the fun, but everything had happened so quickly, that I could do nothing. The ray headed for the Pass and was making tracks for the open gulf as fast as it could go. We told the launch engineer to follow, but he did not seem to relish the idea, the weather was not looking very settled, and he had a welcome dread of gulf storms, also he said he was short of petrol. At last we persuaded him to make for the boat and had not gone far when fortunately the fish played into our hands. He was evidently tired of towing the boat out to sea against the strong flood tide and turning round made right towards us. Alf was hollowing for another man to give a hand, and as the fish passed us managed to swing the boat alongside the launch and I tumbled aboard. It was a case of three men in a boat (with a vengeance) and in tow of the devil for he was off again, but away from the Pass thank goodness. Then he sounded and kept quiet for a while in which time we had made ready another harpoon and line. Gradually the strain on the rope told and he came nearer the surface till I could see him like a great black cloud directly beneath us. I stood up with the harpoon ready and when he was within six feet off the top and a little to one side, let him have it as hard as I could drive. There was a great swirl in the water and I could see the white of his underside as he turned and rushed off again. Fortunately these monsters are not vindictive for had he taken into his head to go for us, we should have had to beat a very hasty retreat, or have had the boat smashed to splinters under us. The only danger was he might upset the boat as he towed us first in one direction then another for the wind had arisen and there was quite a nasty little sea on. Then one of the harpoons drew out and we had to get him near the surface to make fast again. After another spell the other one drew, and we had to do the same again. By this time he was getting played out and so were we, but we could not get him near enough the top to put any lead in him, so we sort of stuck. We signalled to the launch which had not followed us, and was now almost out of sight at last they picked us up; the harpoon lines were



passed aboard, and very soon we had the great ray on the surface and finished him with a few shots. We had been fast in him over an hour and he must have towed us 5 or 6 miles. He turned out to be only a small fish 12 feet across the wings and ten feet from head to end of tail and about two feet through. They have been caught, I believe, twenty feet across. It is not everyone can boast of having brought home the devil's tail as a sporting trophy but there it is on the table. I think, however, it must have had a bit broken off the end, the barb is missing

We had been fishing now for about a couple of weeks, without catching any tarpon, and I was getting rather tired of the amusement, when I heard the Taxidermist, Johnny Jack, by name, was going for a trip into the Everglades on his launch the Naturalist. At the earliest opportunity I suggested it would be as well if he had someone to look after him and he was kind enough to say he would be glad of my company, only remarking he guessed I'd find it a bit rough, and on the following Monday we started. The crew consisted of Jack, a young nipper of 12 to 14, who turned out to be a regular handy man and a very good little fellow all round, and yours truly. I told Jack I should leave him to make all arrangements as to commissarial and would only bring along my own personal kit, this consisted of a comb, tooth brush, tobacco, bottle of whisky, camera and a revolver. These were soon stowed aboard and away we went. A description of the good ship Naturalist might not be out of place here. She was a home made scow built petrol launch, about 30 feet long, flat sided and almost flat bottomed, open all the way but for small poop decks fore and aft and six inch water way along the sides. Over the top was a light sun deck provided with curtains, which could be drawn all round to keep out either the sea or mosquitoes. The engine was single cylinder with a valve gear and doubled up connecting rod, that would make the average tinker weep; occasionally the rudder would drop off, or the tiller lines break, or water would leak in and swamp the dynamo ignition and stop the engine, but in spite of all these little drawbacks, she was the most trust worthy launch on the coast and the way she would dance through a jump of the sea was a marvel. The first day's run down to Fort Myers was uneventful; we landed towards 5 p.m. and were most kindly entertained to supper by Jack's partner, Ike Shaw. Afterwards we made a round of the town and laid in provisions, canned corned beef mash, beans, peas, milk etc. and towards 10 o'clock were on board again. We next proceeded to manufacture a patent spring mattress from portions of old packing cases laid crosswise on the tops of the lockers. I must confess it was not much of a success, the springs were either too strong or too weak, anyway, the result was that we kept awakening to find the sharp edge of a board pressing very hard into the tenderest part of one's anatomy. I believe the boy had the best of it, he slept somewhere inside, or round about the engine. Besides the bed something else kept us awake the mosquitoes were fierce and next morning I vowed I would not go another yard up the river without a mosquito curtain. I found they had one aboard, but it was so full of large holes and was mostly used for sieving petrol that it was useless. We got one fixed up in town next morning and away we went up the river. The lower end of the Caloos Atatchee is very beautiful, it winds in and out between banks covered with luxuriant vegetation, mostly palm tree and white oak; many of the latter overhang the stream and are festooned with long trails of grey Spanish moss, whilst every here and there we pass large orange plantations. As we run higher up the river the wooding become scattered and the signs of civilization more scarce, and now and then a slight splash tells us where an alligator that had been sunning itself on a mud bank had slipped back into the water.

We were on the lookout for these reptiles for the skins are something to the Taxidermist. We see one big fellow about 12 feet long laying in a mud hole some distance from the river, but though we land and stalk him, very quickly he has disappeared. Soon we are out of the woods and the scene has changed completely. We are just entering a shallow lagoon, fringed all round with grass and tall sedges, and in many places covered with lily pads and water hyacinths. Behind us may still be seen dry land and trees, but ahead seemingly for miles and miles is nothing but an immense track of saw grass covered swamp. The river practically loses itself here, but navigable waterways or canals have been cut through as far as the great lake Okeechobee; soon we leave the lagoon and enter one of these canals, which run straight ahead for a mile or two before opening out into another lake. Here we have to mind where we are going for the channel winds in and out between great masses of waterweeds and many times we have to stop and clear our propeller. Again we enter another canal and as it is just getting dusk decide to stop for the night. There is not much difficulty about safe anchorage; we have just come to a place where a small creek enters the canal, at the side of which is a great bed of water lilies. Jack stops the engine and steers the launch right into the middle of the lily pad; there she sticks and it would take a hard wind to move her. The scenery is desolate in the extreme not to say uncanny--- For miles and miles in almost every direction nothing but swamp and saw grass. There is no question of going ashore tonight for there is no dry land anywhere near. Next morning the three of us started off in a crazy little canvas canoe to inspect some hawk's nests built on isolated willow bushes right out in the swamp. As long as we are among the lilies the going was not bad we could paddle; but through the saw grass

it was something wicked. After some very hard work we got up to some of the nests but found them deserted. I took a photo or two then we started off to try and reach others about a mile away. I do not think I have experienced a worse couple of hours than those that followed. The saw grass about 8 or 9 feet so high that we could not see over the top when standing on the gunwale of the canoe. The blades are triangular stiff, and so sharply serrated that they cut like razors, and grew so close together that we could not see a yard ahead. The boy stood in the bow of the canoe with a paddle which he used as an axe to break down the grass; after he had cleared a small patch ahead we fixed our poles in the grass roots and gave a mighty heave, which forced the canoe forward a few feet at a time. I reckoned for the better part of an hour we made about a yard every half minute. We had no compass and so lost our way. The heat was intense; the smell from decaying vegetation was sickening. Ants built their nests in the grass just about level with our heads, and soon we were covered with them and all around we knew were lots of alligators and moccasin snakes, though we did not see them. At last it got so bad Jack called a halt, and said the only way out was to burn the grass. I expostulated and wanted to know what would become of us. "Oh" said he "I guess we will fight it off the canoe" and started to try and fire it. To my great relief it proved too green to burn and we had to work our way out of the swamp the best way we could, eventually more by luck than anything else, landing back at the launch. The same evening we ran up to Lake Hippoches, within a few miles of the Great Lake Okerchihee. Next day we started back. Going down the canals we let the launch drift with the current and fished for large mouthed bass of which we caught quite a number with spinning bait. We saw lots of moccasin snakes, some of them 4 or 5 feet long, which we shot with a revolver. Then we started up the engine and by noon had got back to the river proper when it was quite a relief to see firm banks and green trees again. We landed lit up a fire and made a very good lunch of the fish we had caught. The latter part of the run back to Port Myers was quite exciting for it was dark long before we got through, and without lights we came swinging down the winding river at something like 10 knots an hour. Fortunately, we did not hit anything and arrived back safe about 10 p.m. Earlier in the day, just after lunch, we bagged a gator about 8 feet long.

Next day we returned to Useppa (after a very interesting but somewhat tough trip) to find that we had missed much in the way of fishing.

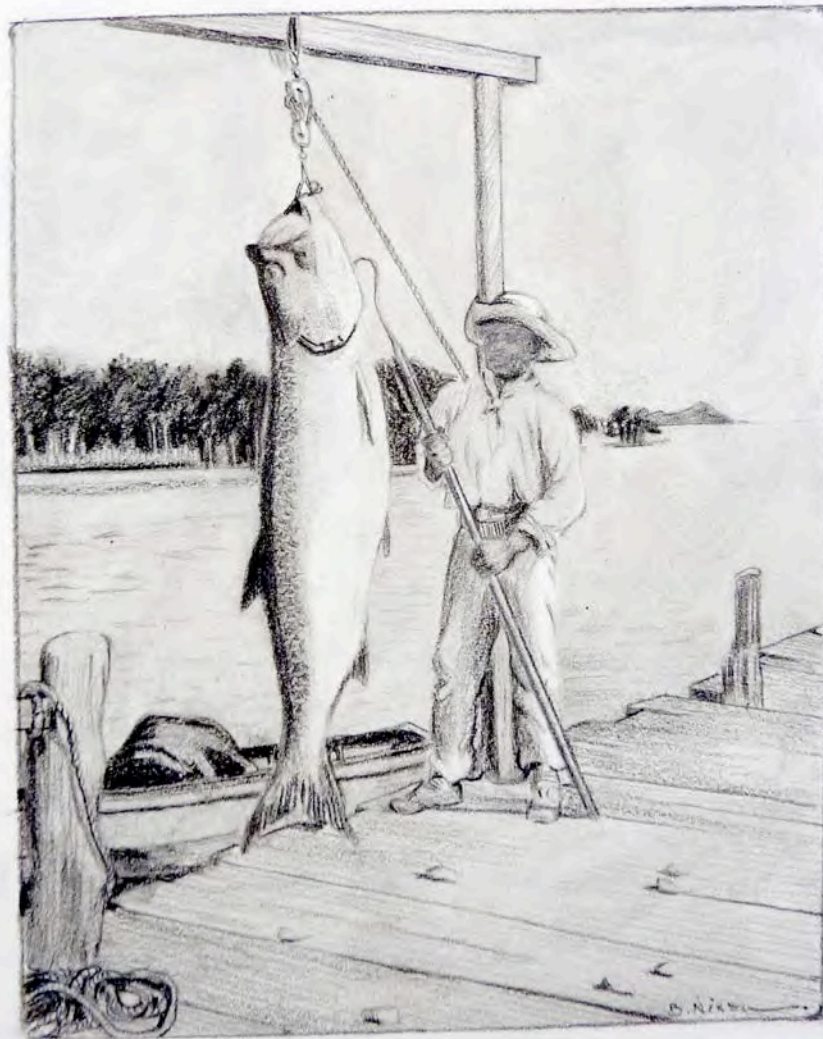
The following morning we were all off to Boca Grande again, and had not been fishing for long when one of the men had a strike, anxiously we watched to see what it was and were not kept long in suspense, for immediately after a fine tarpon leapt some 6 feet clear of the water shaking his head violently to try and rid himself of the hook. Fortune favoured him, we saw the line slacken and the baited hook and sinker fly into the air as he plunged back into the water a free fish, much to the disgust of the angler. Later in the day I had a strike, it was so light I hardly thought it was a tarpon, but one can never tell how they come, and the only thing is to strike and strike hard, and trust to luck. I let him have it as hard as I could and out he came about 40 feet from the boat a jumping salmon is a fine sight, but I think a tarpon beats it hollow. Six feet of burnished silver poised for a moment against a deep blue sun lit sky is a sight worth going far to see; but he is back in the water, and to our great relief the line is still taut. Again he gives a mighty jump shaking his head, till his gill covers fairly rattle. Then finding this no use, he starts short quick rushes often ending them with a leap, in spite of thumb brake he has run off with some hundred yards of line, and next time he breaks the water is so far away, we almost wonder if it is our fish. Gradually we work the boats towards him, and gain some line, when he changes his tactics, runs right towards us and jumps ahead of the boat. Of course the line was slack but evidently the hook has found a safe resting place, and reeling up quickly we find him still there. Twenty minutes of this sort of work has told on the fish, also on the angler, bit by bit we bring him in towards the boat, till he is only some 20 feet away and can see his dorsal fin and tail as he lashes about trying to get his head round. We hold him hard and the boatman rows for the shore, as the fish feels the shoal water, he makes a final effort for freedom running away with another 30 yards of hardly won line and jumping again, but this time is only able to get about two thirds of his body out of the water. As the boat touches the shore we jump out and in a few moments the first tarpon of the season is laying on the beach.

This seemed to break the spell, and as the weather grew warmer the sport improved all the time, often three or four of us would have fish on at the same time, and the guides had to keep their eyes about them for fear they might jump into the boats, a thing I have seen happen more than once. We still had a few blank days, when for some reason or other, the fish would not bite, but it was always interesting out in the Pass. We often saw large snapping turtles, basking in the sun some of them three or four feet long. Vam Hofe landed one foul hooked; then a great whip ray with handsome black and white spotted back would take a flying leap into the air, landing again on the water with a resounding splash. This they do to dislodge the suckers, which hang on to their undersides. Along with hot weather and good fishing came also sharks and mosquitoes. I was lucky myself with the former this trip, but many fish were taken or badly mauled, by these greedy brutes; and many hours wasted and much bad language used by anglers who had the misfortune to

become attached to one of them. Mosquitoes did not trouble us very much on the water, but ashore on an evening they were rather bad. (I learned a new tip for mosquito bites, paint the spots over with "New Skin" and it will take out the irritation at once.)

Some days we could not fish the pass on account of the weather, we had one very hard blow that lasted three days, and spent the time fishing for small fish from the Useppa Jetty, or in sheltered bays among the islands and quite good fun I had catching Sheepsheads, weak fish, Lady-fish and even a small shark on an old 9ft. 6 inches green heart fly rod. Another time we went gator hunting in the Island swamps and brought back four small ones alive, my friend Alfalo who is interested in entomology went out one day with his butterfly net and returned with a rattle snake he had caught in it, so you see sport slightly varied. Once or twice we turned out to fish the Pass at night, but it was rather too uncanny and expensive to be often repeated, leaping porpoises and whip rays are alright in daylight when you can see them, but in the dark when you can only hear them or get splashed with water as they land right along side, is rather too much of a good thing. I had one rather exciting evening experience we had gone out to fish Boca Grande about 9 p.m. one glorious moonlight night. Soon after starting I had a heavy strike, the fish, whatever it was, went off with a long run, and as it did not show itself, I began to cuss my luck for hanging me up in either a large shark or a jew fish, and so spoiling a night's fishing, for I did not wish to cut the line. For quarter of an hour that fish rushed round in every direction. I could make nothing of it except that it was something heavy, for although I was holding him as hard as I dare, he was taking line all the time. At last he came to the surface some distance away and catching a glimpse of moonlight on his silvery side, to my surprise I found he was a tarpon, but what was the reason for him acting so I could not tell. Another ten minutes hard work and I had got back some line when (he) showed again, this time near enough for me to see that he was foul hooked in the back. I was using a new split cane rod and gave it him for all I was worth, gaining a little line. This seemed to have little effect on the fish but the rod began to creak and groan and finally broke short off in the butt ferrule. I thought the fish was lost, but had reckoned without my boy whose black skin held as good a sporting spirit as ever a white man need have. He clambered out into the bow of the boat and kneeling down on the little poop deck, gently took the line in his hands and kept a steady pressure on it. I sat back on the after deck so as to keep the boat trimmed, and holding the broken butt with the reel attached, wound up or let out line as required. I should say that we had already got the top rod aboard so all was clear. This performance went on for half an hour, meantime the tarpon had towed us out of the Pass into the harbour, fortunately the night was dead calm. We went round the bow of a large phosphate vessel and I thought we would be hung up in her cable, but we cleared that alright, then under the stern of our English steam yacht, and from that out into the quiet night alone. But this steady strain was telling on the fish, and once or twice he showed upon the surface within a few yards of the boat. Each time he did, so Alf reached for the gaff, but the fish was too far away. I dare not leave my place to give a hand or I should have upset the boat so I hollered to him to mind what he was doing or he would be over the side. "All right" said he "I guess I'll look out". Again the fish came to the top this time near to the boat, Alf made a stroke with the gaff, the boat made a lurch, there was a great splash and the guide had disappeared. Up he came again one hand on the gun wale the other still holding the gaff with the struggling fish on the end. Gradually he hitched himself up till he got one knee over the rail then seizing the gaff pole in both hands drew it across the boat and lay on it. This brought the fish's head out of the water. I managed to pass the -----?----- along, and in a few minutes both guide and fish were in the boat. This tarpon was hooked right through the dorsal fin and towed us more than three miles out of the pass and weighed 160 pounds. We had several other instances of foul hooked fish, but none that gave such good sport as the last. One that took the bait in the usual way, threw out the hook at the first jump and falling on the line, twisted the trace round his body just back of the head the hook catching on the steel wire formed a running noose which must have pretty well strangled him before he was brought to shore. Another was noozed in a similar manner by the bait but after a hard fight managed to escape. The best day's fishing we had was 17 tarpon to seven rods, and at least double that number hooked and lost. A few of us, all English, with the exception of Vam Hofe continued fishing till May 20<sup>th</sup> when Useppa Inn closed for the summer and very reluctantly we bid adieu to the sun light waters of the Gulf of Mexico and its grand fish.

I had intended calling this paper "Tarpon and Trout" for after leaving Florida I had a week or two at the Lakes, Maine, fishing for Rainbow trout and land locked salmon (*salmo sebajo*). But I fear the big fish have already monopolized too much time, so the little fellows will have to take a back seat. I have trespassed to far on your patience so will hurry back to New York and boarding the good ship "Baltic" with fair wind and following sea return to Merrie England, home, and the pleasant company of the Manchester Ang



•TARPON•FISHING•





E. R. AUSTIN — OCT. 15. 1907.

Those who know Norway are aware of a great number of lakes, some of them very large, on the higher plateau of the country some two to three thousand feet above the sea.

My last trip with Mr. Heywood was through the Amedal so well described & illustrated by him in his paper read in 1903, a route little frequented by travellers particularly of our nationality, the last Englishman appearing in the visitors Book at Buvas Brenna having been there 13 years previously, of the ubiquitous name of "Smith."

On arriving at the end of that valley where it debouched on the mountains we found & fished a huge river called the "Lagen" & some of the lakes from which it emerged.

Our curiosity was excited to see more of the river above these lakes & we determined the next time to make a short cut from the Hellingdal to the high ground where our travels through the Amedal ended.

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## Fishing on the Upland Lakes of Norway

E. R. Austin      October 15<sup>th</sup> 1907

Those who know Norway are aware of a great number of lakes, some of them very large, on the higher plateau of the country some two or three thousand feet above the sea.

My last trip with Mr Heywood was through the Numedal so well described and illustrated by him in his paper read in 1903, a route little frequented by travellers, particularly of our nationality, the last Englishman appearing in the visitors Book at Buvas Brenna having been there thirteen years previously, of the ubiquitous name of "Smith".

On arriving at the end of that valley where it debouched on the mountains we found and fished a huge river called the "Lagen" and some of the lakes from which it emerged. Our curiosity was excited to see more of the river above these lakes and we determined the next time to make a short cut from the Hallingdal to the high ground where our travels through the Numedal ended.

To my mind one of the great charms of Norway lies in the travelling overland, so when it is my good fortune to go with our old campaigner Mr Heywood, which has happened every three years since 1994 in which year memorable year of my fishing life we landed at Stavanger and travelled through the delightful route of the Bratlandsdaal, past Odde and over the high pass to Stalheim and the Noerodal to our goal Hegg. The sea voyage on a well found steamer is always a pleasure (provided you are a good sailor) and forms a fitting prelude to the delight of Norway and its overland travelling.

To be able to start when one pleases and to stop when and where one pleases is delightful. After travelling along a valley for the best part of a day one arrives at a station which looks inviting and having noticed near by a pleasing stretch of river, for at the bottom of every valley there is always a road and a river, we decide to stop for the night and after dinner we take our rods and try the river. If it proves successful we have a turn next morning before starting on our way and very often we keep our rods standing and sample the river as we go when any likely pool turns up. It is this free and easy style of travelling that goes far to make a pleasant holiday—fresh scenes every day, fresh faces and fresh mountains for as one travels up from the seaboard the mountains run higher and higher and appear like old friends to welcome one.

My travelling companion, when my three years comes round, bestirs himself to find a fresh line of route leading generally from Christiania in the direction of Hegg which has always been our goal and where one always meets a welcome after our long journey overland and on this occasion made enquiries through the proprietor of the hotel at Naes in Halingdaal and learnt of a man in the upper waters of the Lagen river who could give us the fishing we were in search of, so in July 1905 we again set sail from Hull to Christiania on a glorious July day. A rather boisterous passage across the North Sea on the Saturday brought us under the lea of the land on Sunday morning with a following wind and bright sunshine made a fine ending to our voyage. The usual landing at Christiania on the Sunday evening and an early start on Monday morning brought us to the end of our short railway journey to Kroderen whence you are carried by steamer to Gulvik along a pleasant winding lake. Here our friend at the hotel at Naes had sent a conveyance to take us further and a long day's travelling over what was now a well known road brought us after midnight to Naes.

I may say here that I had always been in hopes of persuading my companion Mr Heywood to write the narrative of this journey but somehow could not get him to put his pen to paper on this occasion and it is left for me to give you a description of our expedition which though not memorable in the way of great things in fishing yet was unique for I think I am safe in saying that none of our members have yet given us a description of the "Upland Lakes of Norway."

We eagerly looked out the first thing to see what the weather was like for we had another long day's travelling before us and were delighted to find the sun shining gloriously as I think it can only shine in Norway. Before starting from Manchester we had serious consultations as to provender, bearing in mind in our previous expedition through the Numedaal for five days we got no meal and we have thought ever since that it was a dish of pancakes that saved our lives helped by a providential store of chocolate. So we laid in a store of meat lozenges and sundry tins of compressed meat, determined not to be caught again. The comestibles packed in a hand basket were the bane of our existence after landing for it was one package more than our usual impediments and early on in our journey after getting into our railway carriage at Christiania the wretched thing was missing and it was found that I who had been deputed to look after what might prove our salvation had left the basket on the floor of the booking office at the station.

At Naes we were introduced to our host of the next few days Herr Stamnaes a great strapping fellow of 45 or thereabouts who to my extreme pleasure spoke English as well as we did ourselves. He, we learnt, had spent several years in America though unlike the majority of his countrymen had returned permanently to his native country. In our previous expeditions we often came across English speaking Norwegians who

had come across the Atlantic to see their friends and who one and all said they were delighted to revisit their native place but not to stay.

There was a great deal of preparation for provisions had to be carried up the mountain for a week's stay and it was 10 o'clock before we got away our host leading the way with a saeter cart loaded with boxes and baskets not forgetting sundry bottles of beer and whisky and ourselves in the stolkjaerres. The last beverage is not to be had as a rule at any of the Norwegian country hotels but our host said he had provided a couple of bottles of what proved to be very good spirits, for which he told us he was not allowed to ask for payment, but the little difficulty is got over by charging an d extra day's lodging etc. on the bill.

The road we traversed was the reverse way of our journey three years ago from the tops of the Numedal and the features of the country were familiar, though it is extraordinary the difference of going up a valley to coming down. We had about 2,000 feet to climb so there was a good deal of walking at some of the hills but in this lovely mountain air it is always a delightful change to get on foot. At about one o'clock a halt was called at a road side farm where our host had already arrived, he having taken a good hour's start. Here we were an object of much curiosity as few but natives travel this out of the way road, particularly when sundry boxes were opened to provide us with lunch. A few hours further we came to "Buras Brenner" a solitary hotel with bungalows around the place being a "sanatorium" for Norwegians. Here it was we found a welcome repast after three days in the wilderness three years ago, a photograph of the hotel appearing amongst the lantern slides shown by Mr Heywood for his paper of that expedition with the author of this paper standing in the porch looking contented enough after sundry good meals of meat. We had now reached the level of the lake we had previously fished and a curious stone shaped like a letter T appeared quite an old friend. Here it was that our boat man had brought us after various postages three years ago and where we had waited for some time for a conveyance of some sort to take our baggage further, which turned up in the shape of one of the universal saeter carts which was also the subject on that occasion of one of the photos.

At this point we had arrived at a plateau some two or three hundred feet above one of the large lakes we had previously seen and then a farm road through the wood on a steep descent gave us one of the most delightful experiences of Norwegian travelling. Mr Heywood was in front with one "stalkjaerre" and I brought up the rear in the other with our baggage. The road was up and down and the way the little ponies took the downward slopes was a revelation. There were plenty of boulders at the sides of the road with only just enough room for the wheels to pass and now and then I could see Mr Heywood shot up in the air as his wheel hit one, which was a hint to me to look out. One particularly hard bump I well remember shot me off both seat and feet, another landed me on the little rail at the side and broke my pipe in my pocket. Talk about switchbacks they were not in it as we had to steer clear of boulders and anything more exhilarating in the way of a ride I never enjoyed. One final spurt brought us to the edge of a lake, our lake, apparently the road ended here, and there was only a boathouse to be seen. Here we had to wait an hour or more for our host with his slow going "saeter" cart and then with a great deal of packing in a big boat we got afloat. It seemed incredible this quiet warm evening that we could be 3,000 feet above the sea, but there (were) no mountains around us of any height and we were in fact on the top of one the numerous plateaux abounding in Norway. It seemed incredible also to hear from our host that the ice the previous winter, which only cleared off in April, had been a metre (3ft. 3inches) thick.

A pull of six miles, our host being helped by a stout boy, brought us in sight of our destination Storholmen some idea of which we had gained from some photos sent to Mr Heywood, but we were scarcely prepared to find such a little Paradise in this out of the way spot. Imagine an island rising some 25 feet above the water with convenient landing place and crowned with fir trees amongst which nestled our host's house. A typical Norwegian bungalow with a large hall open to the roof with a fine chandelier of elk horns hanging in the middle and a balcony serving for access to an upper room. A door leading off the large room was our bed room with two of the country box beds in it, everything most clean and comfortable which was later accounted for by the appearance of a tall Norwegian maid called Gulrig strange to say with dark hair a thing not often seen in Norway.

It was near sunset when we landed and on walking through the trees we noticed a curious humming sound amongst them the reason of which we found later. That humming sound was mosquitoes and a lovely night we had of it. We were astonished to find next morning that in this out of the way spot we had landed on a veritable Fish Farm. With infinite patience our host had blasted a promenade round the steep side of the island towards the main lake looking westward, for netting purposes and he showed us a cave blasted out of a solid rock fitted with double doors in which he stored a supply of ice sufficient for his summer needs and we were never without a supply of cooling drinks. In this cave he stored the freshly caught trout until he could pass them for market. Further on amongst the trees he had fitted up a "Smoke House" in which he could cure two hundred fish at a time. For these smoked fish he could get double the price of salted fish. For

the former he got 2 Kr. 20 per kilogramme or about 15d, per pound of our money. For the salted fish about half this figure and his annual catch was about 2 tons. This seemed incredible until we saw the scientific style of his netting, described later on.

The first morning our host took us over his domain and one could not but envy his delightful existence. The island was covered with pine with here and there a small clearing one of which was devoted to potatoes and we were amused on seeing some small cans and hollows in ----- (the ground) round each stalk and that they carry up cans of water and water each plant separately.

He had three boats available and first of all our host took us to the head of the lake about a mile beyond the island, where a small river ran in and where plenty of fish were rising, but we only got a few small ones try how we might. Later on Mr Heywood and I went out and fished along the shores and again in the evening but with like want of success. In view of our troubled night our host to our extreme delight brought out a few yards of mosquito netting which some Englishman a year or so back had brought with him and left behind. By cutting this in halves we each managed to make a miniature net, which suspended from the ceiling by a cord protected our heads from the ravages of the mosquitoes but the nets were so small and suspended just above our heads that it was a work of art to turn round without leaving an opening for the brutes to enter. Never did I wriggle round as carefully on any bed as on those nights and it was ludicrous to hear the rage of these pests when they found they could get so close as to smell us for nets were only a few inches from our faces. One night Mr Heywood called out "Have you heard the rage these beasts are in at not being able to get a taste of the blood of an Englishman". You could hear the gentle buzz of the enemy circling round for an opening of attack, then silence for a moment, which meant that the enemy had settled on the netting. Then another buzzing and another moment of silence, followed by a high pitched note of disappointment at which we used to laugh heartily. It was of course necessary to close the windows at sundown, for then the skeetoos came out in their millions and to go to bed without lights also to pin the lace curtains most carefully (for we had such articles of civilization) before opening the windows the air being very warm. The difficulty was to get into bed then in the dark without disarranging the net which you had previously tuckr4d round the two ends and top of your pillow, but with practice we managed to crawl under the net from the front and pull the clothes up most carefully. By morning only a few wandering skeeters were to be seen and our troubles were over for the day to recur with setting of the sun.

Although the lake is covered with ice a metre thick in winter; it seems incredible that at this altitude the water in July should have temperature of 62 degrees at eight o'clock in the morning when Mr Heywood took his bath in a charming little bay in front of the island used for landing from the boats. Much to our surprise we were fed like fighting cocks. What do you think of elk and deer steaks most deliciously cooked with variations of capercailzee and ryfier (our ptarmigan). In an out of the way place like this where the milk had to be brought on human backs over the mountain from the next valley, a tramp of four hours, this was a source of wonderment to us until we discovered amongst his other accomplishments our host was an expert "canner" have learnt the art in America where he had spent some years in the Salmon Fisheries of the Pacific Coast. He got his tinned sheets from Christiania and positively cut out the tins and soldered them up himself. Having done something myself in the soldering line in a small way this struck me very remarkable until I saw his complete assortment of tools for the purpose. Amongst other things he filled up the long early winter evenings (for it was only three months in the year he used to shut up the establishment and retire to Christiania) with making his nets and on the shore we came across a big copper on a fireplace on which he told us he used to boil the stuff for preserving his nets. A more ingenious individual I never met or one who turned his spare time to better advantage. During the summer months with at times practically no darkness the life must be a delightful one but when one considers the long winter evenings and the equally short days the prospect was not alluring.

We took to minnow fishing with a small silver bait. Our success almost made amends for our want of success with the fly. Pulling quietly along the beautiful shore between pine clad islands in the glorious sun shine and the gentle breezes was most delightful and some fine fish we caught to our landing nets. Running up to two pounds the fish were most beautiful in shape and color and what was most remarkable out of eight fish on the floor of the boat, at one time, we discovered there were apparently five different kinds of trout some of them so different to our recognised patterns of trout that we could scarcely bring ourselves to believe that they were trout at all, some almost devoid of spots and others most brilliantly marked. More than once our host gave us a specimen of his mode of fishing and most curious it was. Round the west side of the Island where he had made the promenade already mentioned, he had cleared the bottom of big stones and odd branches of trees by constant dredging. Then from a point round the top end of the island out of sight from the point where we stood he and his boy would pull out with the net on the boat to a distance of about 100 yards, leaving one end of a line fastened ashore. Then he would cast the net which was about 30 yards



long and weighted to sink to the bottom, the usual corks being fixed along the top edge to keep it upright, and pull for the shore with the other line, landing at a considerable distance from his starting point. The boy would go to the first line round the corner and at a sign from his master would begin to haul in his line. We could now understand the meaning of the various coloured tags set at regular distances along the lines. When our host came to No. 1 tag he would call out the number so that the boy round the corner, out of sight, should know the pace to pull his own line in. Success depended on hauling the net in fair and square and it was thus our ingenious friend managed it. As they hauled the lines in they approached each other at a slow pace until they came together at one of the cleared spots on the shore, of which he had several along the island, and the ends of the net came to hand together generally with two to six fish in the meshes. Everything seemed to depend on hauling the net in square and the absolute freedom of the bottom of stones and water logged sticks. Once when we were looking on, a small piece of tree came in the net and not one fish. This showed us the difficulties we have to encounter in netting the tarn with its soft weedy bottom probably in lumps which would lift the net in places and let the trout away underneath, a difficulty perhaps to be got over by having two nets a little distance apart. One evening he took a fish out of the net more like an eel than a trout and a ghastly colour, I asked him if he had got hold of an eel, but he said this is a sick trout which had not got rid of its ova and ripping it up showed us a few milk white eggs. This happens to our fish in the tarn sometimes as was found last Easter by your President, a fish found floating on the water was cut open and found to be full of dead roe.

To anyone fond of minnow fishing this would be an ideal spot for a holiday but we soon got tired of it, and Hegg and B .... with their superb opportunities of fly fishing always seemed to be calling us to move on. We had always determined however to get on the large river called the Paalsba where it emerged into our lake and lower down called the Lagen mentioned in Mr Heywood's paper on the Numedaal and shown on the screen, so one fine day we set off in our boat pulled by our athletic host and loaded with a goodly supply of lunch. It was a glorious day with scarcely a ripple on the waters of the lake and the pull down the pineclad shore was delightful. Some distance down our host took us to see his hatchery, built mainly of wood like all buildings in Norway, on a small mountain stream under the shade of the pines. Here he hatched out about 10,000 ova, a sensible plan of helping to earn his living. Leaving this we passed along under Elephant point as we had christened it. Looking from our island down the lake the hill on the right shore was exactly like an elephant's head with the trunk outstretched and just where the eye should be was apparently a piece of bare wet rock which when the sun caught it looked exactly like the glistening eye of the beast. This point some four miles from the island was the limit in this direction of our host's fishing and he had to land some little distance further down to ask permission of the next proprietor for us to fish the mouth of the river. This as we expected proved to be a huge volume of crystal clear water and as we rowed up the stream, which at times required all the power of our oarsman, we could hear the roar of falling waters. Here we took to the fly but with, however, moderate success whether from shore or boat, no doubt owing to the bright sunshine and low water, so after lunch my companion and I having our waders on determined to make for the upper waters of the river. Fortunately the undergrowth was not thick but the walking in the heat was very trying. So we emerged on the river higher up at the foot of a magnificent fall, the water pouring over the fall with a deafening roar. As may be imagined it was only here and there one could cast a line and then with boulders the size of houses all round, with the water tearing along at terrifying speed. Thus we went on for a couple of miles only to find as fast as we passed one waterfall there was still another and another beyond until we gave up in despair the idea of reaching the lake above. We could imagine what a magnificent sight this river would be when full of water with the melting snows. The sun was blazing hot and we were mighty glad our host was such a capable oarsman, but even he got hot in spite of his perfect condition. Another turn in the evening with the minnow brought our fishing to a close and with many regrets we left our island its Robinson Crusoe kind of existence the next morning. On our way back by the same road we had come, but this time all down hill, we said to each other that had there been some descent sport with the fly we should have had the most enjoyable time but there is always wanting something in this earthly career of ours.

Our great desire now was to push onto Hegg. It was just a week since that we had landed at Christiania and this was Sunday afternoon. The Landlord of the hotel at Naes was away that afternoon so we pushed on to Fauske a spot we always halted at as being one of the few spots where big fish were to be got. We had rested here three times on previous expeditions and our land lord the old "chunnerer" as we had christened him did not seem a bit older but chanted and chunnered in just the same style as before. The next morning took us to the small lake a couple of miles from the hotel up a side valley but the fates were not propitious this day. No wind and a blazing hot sun spoilt what chance we had of getting some big fish try how we might and our baskets were light. It was here on one previous visit three years back that Mr

Heywood landed a four pound trout or more correctly speaking I landed him for he could not get the beauty into his net and I had to scuffle him on the sandy beach with my net.

The next day found us on the high road for Breistolon and Hegg and a day of disasters it proved to be. We had not gone half a mile when the boards of the stolkjeerre under our feet dropped out. A few miles further on the iron eye on the holding the short trace used in Norwegian harness broke and we had to sit by the road side with our belongings whilst the boy, the son of the landlord "another chunnerer", got on the pony's back and went to a farm a mile or two back to borrow another collar. However it was a beautiful day and we possessed our souls in patience. Then we came to the next station and rather unwisely, as it proved decided to change conveyances. Some two miles before we arrived here we passed a troop of hobbled horses by the road side and after giving our orders we beheld a damsel going full speed down the meadows in the direction of the horses we had seen and an hour later she rode up bare backed and straddle legged on one of the beasts. We were impatient to be off as it was early afternoon and we intended dropping off about two miles from Breistolon to fish the river, but our troubles were by no means over. About 3 or 4 miles along the road, our damsel previously mentioned being our Charioteer, I remarked to Mr Heywood "I believe this beast is going lame in that off fore leg". He got down to behold the beast had cast a shoe. We were too far on the way to turn back with perhaps another hour's wait whilst another horse was hunted down so it resolved itself into tramping it for the next ten miles leaving the trap and the maid to bring along our luggage. Not many miles along we ran into a pelting storm of rain and on arriving at our fishing we had to crawl under the lee of a rock to get our waders on whilst we sent the conveyance on to the hotel two miles further on with instructions to send a conveyance out for us at 8 o'clock. It was abominably wet but we had some good sport with the fly for which our souls had so long hankered. Another day spent at Breistolon showed us that the river had quite recovered its character for good fish after the clearing out it had received some six years back at the hands of the Navvies making the new road from Hegg. The evening found us arrived at our old comfortable quarters amongst our old friends and settled in our old bedrooms, our pretty landlady being now the mother of three but not looking much the worse for it, our old friend Knat as hearty as ever.

The ten days that I spent at Hegg were decidedly not up to the mark of previous years as regards fishing, but Mr Heywood's water further down the river at H..... made amends for here we got some lovely fish, much to the surprise and disgust of the old Admiral Bosanquet, who had the new length below and was the last of the "Pedder" syndicate who some years back had tried to secure the Hegg Fishing for themselves with the result of upsetting the riparian owners who promptly doubled their prices to our landlord at Hegg and compelled all visitors on what had, for years back, been free fishing for all who stayed at the hotel, to pay for every day's sport they had. It was great satisfaction to us to learn that the syndicate has completely exhausted their fishing, the old Admiral being the last of the gang.

There is an end to all good things and ten days later found me on my travels home, "solus" for Mr Heywood was staying some time longer. I passed over the old familiar ground and water and on Saturday found myself our old friend the good ship Eldorado. Whilst waiting at the gangway looking at our passengers coming on board I was delighted to our (sic) old friend and brother angler Arthur Hutton coming along with his wife after a five weeks trip to the salmon fishing further north and providing pleasant companionship on our voyage home. This ends my narrative not replete with great fishing exploits but full of fresh experiences which I trust have given as much pleasure to you here present to listen to as it has been to narrate them and hoping it may be my good luck next year to again sally forth with my old fishing companion Mr Heywood on an equally delightful expedition.





A beneficent Providence has so willed that mortals are unable to foretell the future. The present we may regard, & when we look back upon the past our memories always seem to tell us that things are not what they were. Some one once remarked to the late editor of "Punch" that that periodical was not so good as it used to be. "It never was," replied that gentleman, "things never are as good as they used to be."

And so in this train of thought a contemplative angler & his wife found themselves one sunny evening Bayeux in Normandy, & were shewn the famous tapestries by the most polite gentleman in charge. There were exhibited the wonderful embroideries worked by the fair fingers of Matilda of Flanders, wife of our first King William. A remarkable record of patience & perseverance accomplished at a time when most people in this country were unable to sign their own names. Every little corner filled with representations of birds animals & fishes & the history of the Norman Conquest written in the Latin tongue - all finished 800 years ago.

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## Oppien's Haliunticks

J. M. Lea

A beneficent providence has so willed that mortals are unable to foretell the future. The present we may well regard, and when we look back upon the past our memories always seem to tell us that things are not what they were. Some one once remarked to the late Editor of "Punch" that that periodical was not so good as it used to be. "It never was" replied that gentleman "things never are as good as they used to be."

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Eight hundred years before that period (or 1600 years ago) there lived in Anazarbus, a city of Cilicia, an aging philosopher who was one day so much engrossed in his studies that he failed to put in an appearance when the Emperor Septimus Severus chanced to visit the city. The noble Emperor resented the philosopher's absence and when the latter excused himself on the grounds of study the Emperor was not satisfied with the explanation. Emperors were emperors in those days and the philosopher was banished to Malta (then called Melita) and his son Oppian, a cultured youth of great promise devoted to his father, went with him to share his exile. Agesilaus was evidently a learned man and taught his son something of books and the wonders of nature. Oppian turned his knowledge to good account, and instead of a petition to the Emperor for his father's release he made no complaint but took up on himself the task of writing the natural history of the fishes of the Mediterranean and the Black Sea. The work he hoped would be found worthy of acceptance and he dedicated it to the Emperor and his son Caracalla. Thus we have to thank the anger of an Emperor for the wonderful work which we are dealing with tonight, and in doing so there is a fear of rushing in where angels fear to tread. The old language in its beautiful completeness is so unlike the modern system which prevails—the telling of the most material facts in the fewest possible words—that it is difficult to do any thing like justice to the subject. My friend Mr Percy Burn has also been through the books and has helped me in finding many a "gem of purest ray serene" for which I am profoundly grateful to him.

Oppian wrote several poems in his short life and the work which is before us is one of the best and most interesting and most artistic. So far as fishing is concerned the whole of this history called Oppian's Haliuticks has been preserved. The term Haliuticks means books treating of fishes or the art of fishing. It was written by Oppian in Greek about A. D. 200 and was translated into beautiful English verse by two Oxford students Mr Diaper and Me J. Jones and the translation was printed nearly 200 years ago, in 1722 at the Sheldonian Theatre Oxford, which building stood then much as it stands today. The frontispiece of the book is embellished with an engraving of the Theatre. On the table is a copy of that edition and as you may see is in excellent condition and the type is, really, easier to read than that of many books which have been printed even this year. Mr Diaper commenced the translation but died before completing it and in honour of his fellow collegian Mr J. Jones translated the last three books.

So much for explanations. But at the outset of our criticism must be expressed regret that among the 150 or so fish mentioned in the five books into which the work is divided no trace can be found of our favourite fish, the trout, or the salmon nor is there any mention of any fish being caught with a fly, we may therefore safely say that fly fishing does not appear to have been in general practice at Malta in A. D. 200.

It is quite clear that Oppian was a very careful observer of Nature and he must have possessed a vivid imagination judging from the brilliant fancies in which he indulged, but these have the merit of being possibly more entertaining than his facts.

His purpose and his objects are clearly defined in his opening verses as follows:--

"I sing the Natives of the boundless Main,  
And tell what kinds the Wat'ry depths contain.  
Thou mighty Prince, whom farthest Shores obey,  
Favour the Bard and hear the humble lay.  
While the Muse shows the liquid Worlds below,  
When thronged with busie Shoals the Waters flow;  
Their diffring forms and ways of Life relates,

And sings their constant Loves and constant Hates.  
What various Arts the finny Herds beguile.  
And each cold secret of the Fisher's Toil."

He contrasts the pleasure of the Huntsman with the unceasing toil of the fisherman and points out that the former

"----- on himself he not depends alone."

The fisherman compared with the hunter has a rough time of it in a leaky boat, tossed by tumultuous waves and gathering storms and is without the friendly shelter of the leafy coverts.

"No sheltering coverts here the Swain befriend  
When clouds condensed in noisy Streams descend  
No tree from cold bleak winds, or falling Sleet  
Nor shade secures from Autumn's sickly Heat.  
Here to the scented Game no dog can guide;  
Their native fish the circling Eddies hide,  
And through the trackless Deep unseen they sportive glide  
Besides loud threatening storms and sudden winds,  
He meets vast Whales, and monstrous nameless kinds  
The slender woven net, vimineous Weel.  
The taper Angle, Line and barbed Steel  
Are all the tools his constant Toil employs;  
On arms like these the fishing Swain relies,  
But fishers live although exposed to Harms  
They have their pleasures and the Sea its charms."

Oppian appears to have been a deep thinker and to have inherited some of his father's philosophical manner of regarding all things, and keen lover of Nature as he undoubtedly was, realised the impossibility of man reading the riddle of the Universe. He called upon Neptune:

"Whose Commands control the Seas,  
Can curb the tempests and the waves appease,  
And all ye Ocean-Gods, that peaceful reign  
Low in the Depths of the unfathomed Main."

For permission to discover the hidden stores of knowledge in the waters. Then begging the Muse to "tune his artless Tongue" he sings the following magnificent lines:-

"But ah! how great the task! for who can know  
What creatures swim in secret depths below?  
Unnumbered Shoals glide thro' the cold Abyss  
Unseen, and wanton in unenvy'd Bliss  
For who with all his Skill can certain teach  
How deep the Sea, how far the Waters reach?  
Foolish th' attempt. None can the Space define,  
The Depth retires beneath, and mocks the sinking line.  
Three hundred fathoms sounded arte the most;  
Such is the knowledge which our Labours boast.  
To comprehend the whole we fruitless seek;  
Our Souls are finite, and our Reason weak.  
And yet we guess the Wat'ry World exceeds,  
In num'rous offspring and in various Breeds  
More kinds may roll beneath in briny Floods  
Than graze the verdant Fields or range the Woods  
But whether Earth or Seas in kinds excel  
The Gods, and sure the Gods alone, can tell.  
For human Reach has certain limits set;  
Men, who too curious search, themselves forget.  
We ought to know our Bounds, nor grasp at all  
But curb the wish, and the mad thought recall."

The first book deals principally with the haunts of the various fishes of the deep—he mentions about 150 altogether and tells us where they may be found. He describes their wandering propensities and touches on the story of the survival of the fittest and the manner in which one kind preys upon another. It is interesting to note that he is aware of the autumnal migration of eels but unfortunately does not go fully in to detail and gives a minute description of the manner in which eels, who he says know no sex, produce eelets, but remarks that the reproduction of the Whiting remains a mystery,

In Halford's and other books in the history of the May Fly we are told that the female has no mouth and that she pays out her existence the same day she deposits her eggs, and most of you will have seen her wings and empty shell by the banks of the Dove and other rivers—of her body there is nothing left after she has laid her eggs but the transparent outer skin. A similar tale is told of the male of the Queen Bee who drops lifeless from the clouds when the purpose of his existence is accomplished. Opien mentions a fish called the Preke which my knowledge of Fish lore does not enable me to trace. Possibly it is unknown to our shores. Its fate is not unlike that of the May Fly and the Male of the Queen Bee. The poet's words are:

"The Prekee's amours, our softest pity move  
Whose certain natural death is only love  
Once, and but once, the niggard Pow'rs allow  
The luckless pair congenial bliss to know."

When the Preke sinks exhausted on the sands the little shell fish, late his usual prey, tear him to pieces. The female does not survive the birth of her offspring.

"Fate stints their Life; that term they cannot pass  
One rolling year concludes the shortened space  
Ere the swift Chariot of the Gold havid sun  
Has told the days, and all his Circuit run,  
Fond suicide the dear Destruction prove  
Of luckless Marriage and disastrous Love."

It is interesting to note also how many names of fish are like land creatures, such as the Sea Lion, Sea Hyena, Sea Eagle, Sea Hawk, Sea Wolf, Sea Mouse, Sea Ruff and also Speckled Fox Hound, but Sir Thomas Browne is quoted in the preface as rightly observing "tis a vulgar error to suppose there are fishes in the sea analogous to all creatures of the land."

He has a great admiration for the Dolphin of whom he says:

"Kind generous Dolphins love the rocky Shore  
Where broken Waves with fruitless anger roar."

He tells us in all seriousness that Neptune has fallen in love with the Neriad who indiscreetly coy fled from his embrace but that the Dolphins discovered her secret haunts where "she bashful hid her charms and that Neptune found and clasped her struggling in his arms." Hence the Dolphins with just ambition claim uncommon gifts and more than vulgar fame. And that they were men transformed by Bacchus and by Neptune loved. The Dolphin bears twins that frisk round their parent and sport by her side. He likens the sea calves offspring to the Dolphins and rises to the sublime in the verses descriptive of the parents love for the young and says the mother:-

"Clasps the dear child and shakes the pleasing Toy  
Talks idly fond, bids him admire his home  
And gay amusements of each furnished room  
The listening Infant turns his little Eyes,  
And void of reasoning Thought by smiling look replies.  
Good Gods! how tender is the parent Love!  
Their ravished Hearts what earning Transports more,  
All kinds that move in Ocean Earth or Air  
Alike the charms of Piety revere  
Fondly the savage licks her shapeless young  
And smoothes his Ringlets with her scurfy Tongue."

Then after a few lines of touching language of the care of Birds for their young and fish for the helpless fry he says

"Not men alone their lovely offspring prize  
Sweeter than their lives, and dearer than their Eyes,  
Unreasoning Souls the same Propensions move.  
Man can claim no Prerogative from love

One instinct runs thro' all."

Another fine picture is given in the death of the lioness in defence of her cub:-

"When doubtful staggers own the killing wound,  
Regardless of herself She looks around,  
O'er the dead cub her sinking head reclines,  
In death defends, nor at her fate repines."

And Again:-

"How passionate the Swallow tells her wrong,  
When some fell Serpent has devour'd her young,  
Or Churl pulled down her Nest? The sorrowing flies,  
Chatters aloud, and long repeats her fruitless cries."

Strange is the history of the Torpedo or Cramp Fish whose binding force stays the swiftest fish who feel a numbing torpor, the parts contract, the fluids all congeal and one touch contracts the nerves and clogs the blood. This fish may correspond to the Electric Eel. Then there is the little Prawn, which avenges itself, up on the Sea wolf by wounding the roof of its mouth and setting up an irritation which causes death. The Toad which must be the Angler Fish

"Within her jaws a fleshy Fibre lies,  
Whose whiteness, grateful scent, and worm like size  
Attracts the Shoals and charms the longing eyes  
She to allure oft shakes the tempting bait;  
They eager press and hurry on their Fate.  
But as they near approach, with subtle Art;  
The wily Toad contracts th' inviting Part  
Till giddy numbers thus decoyed she draws  
Within the circle of her widened jaws."

Could any description be better?

The Broad Backed Ray prefers man to all other food and "When possessed of a fat Corpse they scorn the meaner feast." The method adopted is to watch the pearl divers at work and when the unfortunate man mounts from the secret chambers of the deep the Ray takes up his station right over him so that the diver cannot reach the surface. Should the man try to go forward, the Ray goes forward, should he try backward, the Ray goes backward and so by stratagem the "Spreading Ray obtains the noblest prey."

Another interesting portion of the second book is that in which the Crab's attack upon the Oyster is described. The Crab notes the Oyster agape on rocky beds and gently props open the shells with a pebble and soon makes an end of the unfortunate mollusc,

The Sea Owl is an interesting fish who sleeps all day and hunts during the night time. He is one of those unfortunate creatures who don't know when they have had enough and eats till he "busts". The mention of this fish gives Oppian an excellent opportunity of lecturing his fellows which he does in as half hearted manner:-

"Like him luxurious then their vigour waste,  
The Throat to tickle, and indulge the Taste.  
But future pain and lawless joy begets  
A train of Ills succeeds the transient Sweets  
While ill tim'd Feasts and midnight Revels please  
Continu'd Meals improve the hid Disease,  
To Poyson turn the undigested Food,  
And treasure up their Ills in tainted Blood.  
From cruder Meals unactive vapours rise,  
And Spirits clog and cloud the languid Eyes  
Ridges of Fat the manly Form disgrace,  
And bloated Veins enlarge the purpled Face.  
Reason's weak light from noisome Fumes retires,  
And too much Fewel choaks the Smother'd Fires.  
Men too unwise let go the slackened Rein,  
But they who think will lewd Desires restrain,  
Check the Emotion, and the Wish control,

And shun the fate of the luxurious Owl."

He also tells of Scorpions and Sea Hogs and the Ray like Fire Flare all poison fish the latter of whose poison is more deadly, he says, than any deadly juice fermented from cursed herbs by the revengeful Persians.

Great praise is given to Barbels who are said to be just and kind, they harm no fish nor prey on their own they are Heavens peculiar care.

The Largo and the Dark Dy'd Wrass are inconsistent lovers but the Beetle is true to his vow and grateful to his spouse "No change he seeks nor leaves his dusky Fair Propitious Hymen joins the constant pair."

All other fish, he says, roam for food pursue the weak and are by the strong pursued, they constant watches keep all the night long nor give one unguarded moment to sleep.

There seems to be an exception to this in the Adonis Fish who was so called from his beauty and was fond of sleeping up on dry land.

Every Angler knows the Fisherman's curse.

Says Oppian:-

"So when full ears scarce hold the ripened Grains.  
And of rude Gales the whisp'ring Field complains  
When Reapers pine with Toil and Sultry Heat.  
The buzzing squadrons scent the grateful Sweat,  
On ev'ry Part they light, roam busy round  
Tickle the Face, and raise the ruddy would,  
The Peasant fans them off, but they again  
Wanton return, and strike the itching Pain  
Boldly impertinent the Lab'rer vex,  
Buz round his Eyes, and bask upon his Cheeks  
Nor will the restless swarms their sport forgo;  
Till dead they fall pressed by the quicker blow;  
Or cloyed with pleasure wing their silent way,  
An shun the cool of the declining Day."

Oppian declares that fishermen are divided into four classes and describes them briefly.

"By those curious have their Art defin'd  
Four sorts of Fishers are distinct assign'd.  
The first in Hooks delight; here some prepare  
The Angle's taper Length, and Twisted Hair;  
Others the tougher Threads of Flax entwine  
But firmer hands sustain the sturdy Line.  
A third prevails by more compendious ways,  
While num'rous Hooks one common Line displays.  
The next with Nets wide-wasting skim the Seas,  
But different forms, with different Prospects please."

The third section sounds uncommonly like poaching with night lines or perhaps may refer to the "otter" or to cross line fishing. There are several kinds of nets in use as among those mentioned are the Casting Net dragged in a circle, the Hoop Net, and the Heave Net, and also the weel or Wicker Work Basket.

Mr Ramsbottom when reading his interesting paper on Tarpon fishing in Florida exhibited the piano wire trace to which the hook is attached. The Ancients were well aware of the necessity of something stronger than hair or line next to the hook as the following passage shows:-

"But the fleet Amie, and the Foxhound know,  
What kind effects from swift compliance flow.  
They the first summons of the Hook obey,  
Nor stay till force commands the painful way;  
Prevent the extended Line, and fastening tear,  
With grinding Rows of Teeth the crackling Hair  
Hence taught the Fishers arm their lowest line,  
And next the Hook the ductile wire adjoin."

You may remember that the bait used by Mr Ramsbottom was a strip of Mullet and so it is not surprising to find that 1600 years ago it was well known that "Mulletts pleased the Shark's judicious Taste."



They also baited with Prawns and Shrimps and this method is simply stated in one line---- "Baits for the large the smaller shoals supplies."

The ground baiting which the coarse fishermen deem so necessary has been handed down through the centuries since Oppian's time and it is twice mentioned. In the first reference we are told that he throws Sea Perch or Crows to the Anthies as "as first pledges of future correspondence." The second method consists of throwing a shower of Pills of odorous cheese and flour paste in to the water as done by the canal bank fishermen to-day. Later on he gives them one with a hook which they take and die with sad thoughts up on man's duplicity. The tackle makers of the present day supply us with patent artificial minnows and various spinning contrivances as if they were something quite new. But we know quite well that what we have discovered was known long, long ago. Here is the spinner of 1600 years ago:-

"Others on ruder Force along rely,  
And sturdy Limbs their artless Labour ply.  
Impatient they despise the formal cheat,  
The tedious course of Flattery and Cheat  
Their first Repasts the dire Rewire conceal  
Of toughened Brass, or more impassive Steel.  
With double point the surer weapon bends,  
And diffrent ways its deadly Jaws extends.  
A strong close twisted cord affix between  
In equal poise sustains the dire Machine  
A living Sea Wolf best supplies the Bait  
If dead his jaws receive the plummet's Weight.  
New life deriving from the pressing lead  
The unconscious Mimic rolls, and nods his head."

From this third book it is well to quote two excellent maxims which are just as applicable today as they were long ago. The first is "Success in Silence fishers always find." The dry fly angler knows well the advisability of approaching the river quietly when stalking his fish. The second explains how it is the old hands bring in such heavy baskets "Judicious art with long experience joined inform the ready dictates of the mind." The fifth and last book contains a long and interesting account of the manner in which the whale was killed. The tackle is, to say the least of it, rather strong. It is thus described:-

"A sturdy knotted Rope the toil demands,  
Prodigious Line; no thicker on the sands  
Strung on the biting Anchor's Circle binds  
The Merchant's Ship, victorious o'er the Winds.  
Nor insufficient be its length to stray  
In distant Deeps obsequious to the Prey.  
Such be the Hook as from its rooted Seal  
Might tear a Rock, nor suffer from the Weight.  
Sprung from one Stem diverging Arches bend,  
Branching averse the distant Points ascend,  
Wide as the destined Jaws; a brazen Chain  
Hangs next the Steel, impassive to sustain  
His grinding Teeth; loose round their central Pole  
The middle Links with easy Circle roll.  
Hence, when the Monster, active with his Pain  
Scours through the Deep, and eddies all the Main,  
Untwisted the compliant Links obey  
The mazy struggles of the flouncing Prey.  
Two lumps of sturdy Beef the Points surround  
Transfixed with brawny Fat the shoulder crowned,  
Or liver's quaking mass beslimed with Blood  
To Fishes Taste no despicable Food.  
The fishers, breathing martial Rage, prepare  
The Fauchion Lythe and triple wounding Spear,  
With every nocent Form, the sooty God

On sounding Anvils gave the flaming Rod  
 Mute as the Finny Shoals that glide below;  
 The Troop embarkt, with silent Pace and Slow  
 Divide the Waves; be every Tongue confin'd  
 But Hands and Eyes expressive of their mind.  
 Their oars the dimpled surface gently sweeps,  
 Cautious of Noise, least haply to the Deep  
 With apprehensive Fears the Prey return,  
 And leave the Swains their frustrate Hopes to mourn.  
 When near enough advanced before the Prow  
 The sage Director sends his Baits below  
 The whale with a Glutton's transport spies,  
 Distends his Jaws and grasps the fatal Prize  
 Deep in his yielding Throat on either side  
 The barbed Points their Bloody way divide  
 Stung with the sudden extacy of Pain.  
 The Wretch indignant gnaws the brazen Chain  
 With vain attempt; but when the spreading smart  
 Shoots in his Nerves and boils around his Heart;  
 Furious he plunges to the dark Profound,  
 And fondly strives to lose th' inherent wound.

At equal Intervals along the line,  
 Capacious Skins the wily Fishers join  
 Swoln with imprisoned Air; from Upper Day  
 They sink unequal to the rushing Prey,  
 But still with faint reluctancy contend  
 To fly the Deep and o'er the Waves ascend.

Eager to mingle with their kindred air.  
 The different scenes of Misery and Rage  
 The afflictive Skins their restless Slave engage  
 On these he flies, with corresponding Pace  
 They flie as soon and baulk the fruitless Chase;  
 Fearful they seem and conscious of the Foe  
 If he returning seeks the Sands below,  
 As swiftly they return; he rolls in vain  
 Contending with necessity and Pain;  
 With fond attempt th' alternate Toil renews  
 Drags from above, or from the Deep pursues."

In these modern days we set trimmers for pike in some quiet bay with a wind off shore and never give a thought to their history. But the use of trimmers for Whales is, one thinks, unknown at the present time when harpoons are fired from guns with great accuracy. To return to the Whale a boat makes for the shore and moors the fainting captive to a rock and then all the boats surround him with much shouting and then the men attack him with "Jauctions and Scythes and triple wounding spears the double biting Axe, and the Barbed Dart, with" ev'ry nocent Pow'r of Vulcan's Art" Faint at last with wounds, hacked all over he is towed to shore and a landsman, who hates the sea, raises his voice and gives an oration in which the principal point appears to be a wish that he himself may never have to mount the floating wood, to rise on waves and dance across the flood in search of gain.

The Shark is easily caught. A tattered rope end, unadorned with hooks, is thrown over board and the Shark rushes at it and his teeth are entangled in the flax. The Sea Tortoise or Turtle when in deep water defies the fisher altogether, but when he is found in shallow water the fisher will "with vigorous Jerk invert his horny Chine, and lift the Concave to the Skies Supine." A curse will fall upon the man who harms the Dolphin and Oppian once more sings loudly his praises of that noble fish. Equally loud are his verses of

indignation against the Thracian and Byzantine fishermen who attack and slay the dolphins. They are capable says he of staining their hands with their brother's blood.

The last pages are given up to a description of the work of the divers who gather sponges. One curious passage asserts that the diver's jaws "an aromatick juice contain that darts a splendour through the gloomy main." Liquid air we know something about but liquid light is something new.

Thus ends Oppian's Halieuticks. The work was dedicated to the Emperor and he was so pleased with it that he asked Oppian to name his own reward. The modest youth asked only for his father's release from banishment. This was granted at once and Oppian received for each verse or line one gold slater, worth in our money 16/4. As there are 3506 lines in the work he would receive about £3,000 a very considerable sum of money in those days.

This paper must end as the book before us ends, with eleven lines which are of the best:-

"Thus the cold secrets of the watery night  
Jove's scepter'd Charge, removed from mortal sight  
What studious Nature laboured to conceal,  
To thee, the muse all knowing durst reveal,  
But may thy ships on easy waves be borne,  
And may the winds still change for their return  
Large tribute may be fruitful seas afford  
In living subjects to their Roman Lord.  
May Neptune's Arms, unshaken by the Main,  
The deep foundations of the earth maintain  
And keep the world secure for Caesar's reign."





## Svenningsdal.

by Abel Heywood.

Svenningsdal (Svenningdal) House is on a great estate of 2,000 square miles extent, which lies, the greater part of it, about one degree south of the Arctic Circle (66 degrees 20'). It was formed, or rather the syndicate or company that obtained it, to be devoted to sporting and also trading purposes. The scheme failed, as I understand, but a considerable portion of the estate is now let for such purposes, by a Norwegian gentleman, who either owns or is the agent for it. The rest of the estate, I believe, to be taken over by the Government, which was jealous of so large a tract of country being in the hands of foreigners. There is a good deal of fishing water including some Salmon fishing in the Vepsen river, and in the addition to the trout fishing about which I should try to give you some information, there is elk shooting, ptarmigan and willow grouse shooting, as well as some water fowl and a few woodcock and snipe. The "great northern diver" builds in several places on the estate and we saw many of the birds "Lom" as they are called, flying and calling high up in the sky; shooters seem to kill one now and then, as a specimen I presume, for they are said to be useless for food.

Our party consisted of our fellow member Mr George S. Woolley for a long time our Treasurer, and whom for shortness I will speak of as "George", of Mr Shepherd whom I shall speak of as "Walter", and myself to whom I do not need to give a name. Walter and I were on the ground a fortnight before George was able to get away.

We obtained all possible information before any of us left home and Walter was informed by a correspondent who had been to Svenningsdal that the fish in the lakes readily rose to the fly, indeed much more readily than they took minnow. This suited me entirely and the map showed that the two other lakes that we were recommended to visit were not far away and that there were rivers also that we could fish. The ground looked a bit rough on the map but we looked forward to visiting Maivand and Fiplings Vand as the other lakes are called, as at any time we might take it into our heads to do so.

It is rather a far cry to Svenningsdal, you go first to Bergen, which you reach on Thursday morning, then on Thursday night at about 11 o'clock you go on board the Trondhjem which on Saturday afternoon leaves you on a desert island called Selven as you do not want to go up the Trondhjem Fj. and lose two days which you would do. A north going steamer is timed to call at Selven at the time the Trondhjem one arrives

and if they were not together the one waits for the other. In my case I was there first and a barge took me to the land. I enquired as to how long the Masjoen boat which I wanted would be, but the man said he did not know and I sat down on the rocks to wait. In about half an hour I saw the steamer come round the rocky corner of the bay. I got into the barge again and by I reached the side of the steamer I saw Walter waving his hand to me from the deck. He had come from Trondhjem where he had been staying with friends.

The steamer made many calls at unknown places, delivering and receiving goods and passengers and on the Sunday afternoon we saw the chain of hills called "The Seven Sisters" which is one of the objects of interest to North Cape voyagers. An hour or two after, we were at Mosjoen. We landed in small boats and on the quay a man spoke to us and informed us that he was from Mr Paulsen of Fellingfars and could take us on to the latter, which is about half way to Svenningsdal, that evening if we wished. The whole journey inland is about 40 miles and as we knew from our experience of Norway travel that we could manage that in one day we preferred to stay the night at Mosjoen, especially as we wanted to purchase some stores there. So we were conducted to the little hotel.

The mention of stores reminds me of some other matters I must explain Svenningsdal House or Villa as they foolishly called it was let to us furnished, including bedding, table linen, cutlery and so forth, but every scrap of food we should require had to be taken there. The agent informed us that we could get bread at Fellingfars and that the postman could bring it for us on his weekly delivery, that we could get some flesh meat in the same way and that there were two farms, not over a mile away from our house where we could get milk and perhaps eggs, certainly nothing more. We were told too that two boatmen were engaged for us who would live in a house adjoining ours.

The provisioning of the expedition was mainly left in the hands of Walter and he provided a cook and housekeeper from Trondhjem whom he and Mr Woolley had employed before in a similar capacity. This person Grete by name (short for Margrete) we shall probably hear more of she was the most important member of our company. She helped Walter with the stores getting all sorts of things the men would have forgotten and she went a couple of days ahead of us in order to have everything in ship shape by we arrived. I also brought a supply of tinned things for lunch and a boiled ham, and George when he came brought more.

The morning after our arrival at Mosjoen (Monday) we left after making our purchases in a light two-horse carriage to drive the 25 miles or so to Fellingfors. There would be no possibility of a change of horses on the way, so at 8 o'clock we set off taking only our sleeping clothes with us, the rest of our luggage following by cart. We had a fine warm day and the drive was for a good part through thick woods of pine and birch, part of it too, though not the greater part, by the side of the beautiful stream the Vefsen (Vefsn) when we had fine grassy banks and large prosperous looking farms.

At about one o'clock when we were still some distance from Fellingfors we saw gentleman coming up from the river with a rod and we enquired after the sport. We got into conversation with him and he invited us to come and lunch with him, his lodge being close by. We accepted and were received by Mrs Kynke the gentleman's wife; with great kindness she gave us an excellent lunch. I was able to give the lady some information as to the names of the wild flowers growing about the house for which she seemed to be very grateful. I also photographed the beautiful Fiskirm Foss which is close by the house and long before I came home was able to send her a print of it.

An hour or so after leaving we reached Fellingfors where the country is open and beautiful and a couple of miles further on came to the wide river which flows in to the Vefsen and comes from the Halfjeldalen. Over this river there was formally a floating bridge but it was washed away by flood and the crossing now has to be by a small boat. Arrangements had been made by Mr Paulden for a horse and stol-kjarre to meet us on the other side and to take us onward and by we were rowed across by a girl and our luggage (which had by this time arrived) was over a considerable amount of time had been spent. However we went on in our stohl-kjarre leaving the luggage to follow.

The road was all the way through forest and was awfully bad. Mr Austin has travelled on such a road, it is exactly of the same description as one we traversed together a few years ago to Bunus Brenna. We were jolted to pieces, the wheels now rising over stones, now sinking in bog, crossing streams by means of trees laid across other logs or sometimes going through streams. There were one or two mile posts which in addition to distance from Mosjden informed us that the road was a "Privat Vei" but we heard that a government road is being surveyed for and will shortly be commenced.

At 8-30 in the evening we came to the end of the road which appeared to commit suicide by running in to a lake. There is what is called a ferry there and except a boggy bad Indian trail sort of narrow track, there is no way but the water way to Svenningsdal House. We enquired from the boat man if this was the Svenningsdal but he said no, it is only a tarn. The man had only a small boat so he could not take any luggage but as it was some little distance behind us he said he would return for it and bring it up to the house

as soon as it arrived. The tarn is about a mile long and at the top end of it is a short and narrow river which the boat cannot ascend but a small channel just wide enough to take a boat and which reminded us of the Magic river at the White City has been cut near the river and up this our man towed the boat for about 60 yards until we reached Lower Svenningsdal Lake, which is about 1½ miles long. At the far or top end we saw our house standing out like a Border Castle on a tree covered hill some height above the lake and removed some little distance from the thick forest which every where came right down to the water's edge. The house looked more imposing still by we reached it but the ascent from the lake is rough and steep and overgrown with heather, whimberry, malteberry and dayberry as thickly as it could possibly be. It is not unlike Robinson Crusoe's island, which Mr Austin told you about. By we arrived it was half past two and of course broad daylight; we had had no food since lunch and were very glad to enter our house. Grete met us at the door with "Velkommen" she had got something for us to eat but gave us the unpleasant news that her chest containing all the provisions purchased in Trondme had been lost on the way. There was scarcely anything in the house so it was clear that until my luggage arrived with the provisions I had brought we should have to fast or something like it. She boiled us some eggs however, made some toast and coffee and very thankful we were for that.

We found the house to be plain and comfortable with good beds clean sheets and blankets and mosquito net curtains. There were also coffin shaped baths in some of the bedrooms. The principal living room is a large one about 27 by 18 feet with a German billiard table in it and a large stove in which Grete had made us a comfortable fire. Leading out of the room is one we called the work room and another the dinning room. The back hall from which the stairs spring leads out of the same room.

At about one o'clock, still daylight just as we were giving up the luggage as a bad job, Grete came in to say that the punt was coming. Shortly afterwards the things were carried up and Grete's lost chest was with them. So we are saved from starvation now and let me say here and then dismiss the subject, that Grete henceforth provided us we know not how with excellent breakfasts and dinners, did everything without any hitch, never forgot anything and was as Walter remarked—a nailer at puddings and pancakes. As for fish, she could make it into more things than I can remember so that trout scarcely palled upon us; she also kept the place beautifully clean, even washed some of our linen, indeed she was such a treasure as is not often met with. She was also good tempered and pleasant and always ready to laugh and joke. It is to be wondered at that we should break into poetry and on a well known model concoct an ode of which a single specimen verse will suffice here:-

Who fries, roasts, stews, cuts up and boils,  
Who morning, noon and night time toils,  
And all three selfish men who spoils?  
Why Grete.

Now as to the fishing. The first thing we found was as we had begun to fear that the fishing was almost entirely from trout; and second, from experience and what we did not anticipate, was that it was at this time of the year all or nearly all halling. I had three rods but they were all doe fly, my tackle was for fly, and the two or three minnows which I happened to have brought, I hardly knew how to use. Fortunately Walter was wiser he was accustomed to Norwegian lake fishing and was fully equipped with everything required and he kindly helped me out; and here, in order that you may understand matters I ought to briefly describe the lakes. There are two of them the Upper and the Lower which are united by a very short river on which is a dam, constructed some time ago for raising the level of the Upper Lake and which is now in very bad repair. We were told by our boatmen Karl and Elias that the Upper was the best one and in it we generally fished. It is about 2 or 2 ½ miles long and somewhere near the centre the sides approach pretty closely together. This place we used to call the waist and both above and below it the shape is a very wide bulbous one. To troll up one side and down the other occupied pretty nearly a whole day with the interval for lunch. The feeding river is at the end furthest away from the house but it is not a fishing river and a few hundred yards up from the lake is a very large foss.

I soon became acquainted with trolling; it is a very simple business, but Walter had some tackle I had not seen before. He had a steel wire trace with a sort of spring swivel, which enabled him to change his bait in a moment. I had to be content with a gut trace, which I think I like quite as well as steel and to enable me to change pretty quickly I fixed a short gut line about a foot long to each minnow I intended to try with a loop at the free end. I had a long loop at the foot of the cast so that it would easily pass over the minnow and the hooks and I slipped the nooses together in the ordinary way. We began with phantoms, I having to borrow, but by writing to Mosjoen I got a supply of my own in about two days. I also used a metal minnow, but the phantoms beat it hollow. Walter had one or two Hardy's Crocodiles which are made in two patterns

the best of which I called a rat trap because its spikes reminded me of something of the trap kind. Either of these two crocodiles is baited with a small sprat, a bait which is also sold by Hardy and generally the sprat would catch five times as many fish as either yellow or blue phantom, rubber minnows, or what our old friend Harker used to call "a bit of tin". Finding this to be the case we telegraphed to George to bring a supply of crocodiles and sprats and what the authorities in Manchester thought of a demand of that kind coming through their hands I have not heard.

When George and the tackle arrived ten days afterwards we found that the tackle and sprats were too large but as he had one or two smaller ones with him and Walter managed to find more in his capacious fishing box, which is the size of a peddler's pack we managed pretty well particularly as I suggested that we might cut in half longitudinally. This we did, as bait became scarcer we pieced bits together on the rat trap which did as well as entire baits and on one occasion I caught a trout with the two heads of bait that had been thrown away.

We generally weighted our lines when fishing the upper lake as it is pretty deep, for this purpose we used Yardine leads when we had them but a piece of a gimlet which I found in the tool box and lashed to my cast, I found to do just as well.

Trolling is idle work. You let out your 30 yards or so of line, put the butt end of your rod at the bottom of the boat and wait till a fish run the line out, then you wind him in and repeat as before. I sometimes took a book out to read between bites but neither the reading or the fishing was quite satisfactory. If you cannot give up your whole attention to fishing you had better not fish at all. One day the book was "As you like it" and I told my friends that I had come across a passage that was just descriptive of our lot, it is where Touchstone reaches Arden with Rosalind and Celia and he says "Aye now I am in Arden, the more fool I; I was at home, I was in a better place; but travellers must be content."

As well as trolling the minnow, we trailed flies, large ones, and one day I got three fish on at one time, fishing in this way. We also cast flies on a smaller size in the shallower parts of the lake and sometimes did pretty well, but ten fish with the fly was the largest number any one of us ever took in the day and that fell to my lot. Still, I think, if we had stuck to fly all day on some of the favourable days we had we should have got as many or more fish than we took by pulling all round the lake, but the men were impatient at slowly paddling the boat about while we cast the fly; they preferred to be working—so did I—that was why I preferred to be casting. We employed two boats each day, two of us going in one boat and the other in the second one and as the man occupying the latter could use two rods he generally took as many fish as the two men in the other boat.

To detail the catches day by day would only be wearisome but as may be supposed we sometimes caught many and sometimes few. The average weight of the fish was three quarters of a pound and the largest one taken was only two pounds. Walter and I arrived a fortnight before George and the fishing was at its best then, whether because the weather was better which is the fact or that we were at a better time in the season, I cannot say. However during the first fortnight we used to bring in 19 to 26 pounds the two of us, but after George's arrival the three never exceeded that weight. Amongst us we took about 500 trout from the two lakes, principally the upper one, of the average weight recorded above.

In the short river between Lower Svenningdal lakes and the tarn already mentioned we got with the fly perhaps a dozen very fine trout of a lighter colour than the majority of those taken in the lakes. There are, however, apparently two varieties, but only affected by habit; the most common are very dark in colour but iridescent in appearance and with brownish bellies, sometimes these are yellow all over looking in the water as you get them near the boat almost like gold fish; others are the light coloured, red spotted beauties such as we get at Hegg where the trout are, I think, the most beautiful in the world. Possibly the lighter colour is merely owing to the fish living in shallower water than the darker coloured ones.

The condition of the Svenningsdal trout was very excellent though there is not much vegetation apparent in the lakes and we did not often see them rise at flies. Indeed flies were scarce except on hot days when clegs, horse flies and mosquitoes enjoyed themselves thoroughly. That the trout are ready feeders was shown by our taking three or four which disgorged the bodies more or less digested of leamings which they must have taken while swimming over the lake.

Svenningsdal House is most beautifully situated and from our windows on every side, views that never failed to excite our admiration were always before us. The views, however, are all through trees, if we turn our eyes towards the lakes; and though these add to the interest of the scene they do not make beautiful pictures for the artist or even the photographer. We can to some extent forget the trees when we gaze on the resplendent waters (the artist can leave out as many as he chooses) but the photographer cannot, the trees are more obvious than the landscape and the result is always a disappointment.

The banks of the lake are, as has been mentioned, clothed with birch and pine down to the water's edge and beyond the first line of hills rises a second on which we see the trees diminishing in size both from distance and from growth, until the region of trees is passed and we have grassy slopes and bare rocks sometimes rounded by long past ice sometimes broken and precipitous and generally with huge patches of snow upon them. This second line of mountains which rises to two or three thousand feet, has occasionally a distant white peak rising above it, which in the clear atmosphere seems as near as the closer hills though it may be some miles in the distance.

From the north end of our house we see rising from near the end of the lower lake a mountain which we call "our" mountain but which the map calls "Brieskarfjeld" which is a never ending source, to us, of admiration and delight; it is not a high one, 3,500 feet, but we see on its side all the effects of changing climate that various altitudes produce and all the colours that the hagg and morass and grassy plain cause. This colour may be at one time green of every shade, at another purple, another golden, as another it is hidden in cloud but it is always beautiful. During our last days at Svenningsdal when the autumn was coming on all the greens were becoming gold and red like a glorious Turkey Carpet that was miracle to look up on.

As we make the circuit of the upper lake we are struck by the number of skeletons of defunct trees and of roots tossed up into the air like branches, it is quite a phenomenon and one we could not understand. Anyone wishing to study the varied forms of tree roots should go to Svenningsdal. Karl explained it to me. He said that twenty years ago the dam was in use to raise the surface of the lake in order to make the floating of logs down to the Vefse river easier. The height was raised about six feet, the scheme failed, but the water remained long enough to kill the trees it reached. It is the skeletons of these poor things that we now see holding out their gaunt hands and feet in every possible position of agony and grief and spoiling the beauty of this charming lake.

Trolling day after day over the same water is, as I have said is not exhilarating. I confess I was very tired of it though I got a little relief now and then by fishing the fine river that flows from the tarn and which has of course come through the lakes. The result so far as sport was concerned was, however, not satisfactory. It is very strange how all the fish in the lakes should be of fair size and all those in the river should be small, but so it seemed to be.

After George had been with us about a week, viz on the 16<sup>th</sup> of August we decided to pay a visit to one of the other lakes already mentioned. Mairand. It is not altogether a simple matter, for provisions of every kind required have to be taken with us, carried over the intervening ground and boated over intervening water. The river at the head of Svenningsdal Lake flows from the lake Kjerring (old woman) which is over a mile distant and a very hard mile too. Kjerring Vand receives the waters of another lake Sefri Vand a stream of another mile in length uniting them. Then 100 yards up the series is a third lake the lower Mainand from which Stor (i. e. great) Mairand is separated by a neck of land another 100 yards or so wide.

Arrangements have been made for man and horses to carry the things and for boats to carry us over the lakes. Our own boats took us to the head of our lake where an old man father of our Elias met us. He was to have brought a horse but did not and the three men had to shoulder the luggage and walk off with it. They set off very fast up the hill following a narrow track through the forest, which soon lost itself in bog and morass. Kjerring Vand is 225 feet higher up than Svenningsdal. The way is terribly rough and boggy but it is not long and in half an hour or so we reached the Vand where we found the old man's boat on the shingle ready for us. He has a farm near the head of the lake, which we reached after forty minutes pulling. Then came another scramble up a similar track to the last, through forest and bog. The walks through the forest were most interesting and remarkable not only from the thickness of the pine and birch trees, but on account of the density and variety of the undergrowth, none of it very high, but about that of ordinary heather. The principal plant is Dogberry (Cornel) now in flower an irregularly shaped white corolla with a bunch of black stamens which grows in immense quantities and which before we left the neighbourhood was crowned with vivid scarlet berries; the leaves of the plant a beautiful fresh green, which as autumn advances become golden yellow. Mixed with the Cornel are great patches of Beech Fern with Heather and Crowberry called Kreklig Boer. Then there are the Wimberries in great profusion, some of the leaves of which have already become bright scarlet in colour; in boggy places there are plenty of Cloud Berries (Moulte Boer) not yet ripe. There are bright yellow patches of Bog Aspedel and snowy patches of Cotton Grass. Then of woody plants there are dwarf willow and birch. Of the lower order of plants there are mosses in great abundance, red, white, green and yellow. Lichens great and small grey, brown or golden, cling to rocks and stones and fungi of all sizes and all colours lift up their rounded heads wherever they can find space. Some of the trees grow in apparently impossibly stony or rocky spots, and fallen dead trees lie prone here and there across the path,



or lean against their fellows when they have become too weak to hold up their gaunt bleached skeletons. Along part of this wondrous way there are telegraph posts and wires for it is the high road to Namsos.

Through such a track we reach Sefri Vand (which is 1,000 feet above the sea) in about 45 minutes and here find one of the Maivand boats ready for us. As we got together our things I discovered, oh dreadful to relate, that my travelling bag containing sleeping things and a cloth change was missing and then remembered that in the haste of getting away it had never been carried from my room. Fortunately it contained clothes only and I managed without them with a little kind help from Walter.

Sefri Vand is separated from Maivand by a narrow neck of land over which flows a little river far too shallow and steep for the boat to pass and our men had to drag it over about 100 yards. Thick branches of tree at every 6 or 9 feet distances had been roughly laid down and over these the boat was easily dragged. Little Maivand takes fully an hour to row over and then we are put out on a boggy hill side and had to walk through a swampy piece of land for a quarter of a mile to a hut, the object of our journey, a wooden shanty at the top of a tree covered hill, not so high as that at Svenningsdal.

It was now about five o'clock. On entering the house we found it to consist of a kitchen in which there was a stove a bare sitting room which was never used, for there was no fire place and two bedrooms with two beds in each. There was also a sort of pantry leading out of the kitchen in which there was one bed. Our men at once made a fire there was any quantity of wood about and we soon had some good coffee. We then carried down the mattresses and blankets for our beds and arranged them round the stove, put our things in order and then, as there was a little time before us decided to try the fishing two rods were put together and we took out the one boat we had, passing the rod with each fish. We were out about two hours and got seven fish weighing  $9\frac{1}{2}$  pounds the largest  $3\frac{1}{4}$  and the next  $2\frac{1}{4}$ .

Maivand is a large lake 1040 feet above the sea and is beautifully situated. It has many islands, some of them large; the hills around it are not so large as at Svenningsdal, but there are some fine ones in the distance. The evening was very cold and when we returned to our quarters we remained in the kitchen on account of the stove. We made a pleasant meal of the provisions we had brought and then to bed.

By next morning our boat had been carried across the land, so that we had our usual two. Walter and I went in with Elias to pull and George with Karl in the other. We fished without leads, there being many shallow places, I with a Rat Trap and Walter with a phantom, he having broken his crocodile. At lunch time I had seven fish weighing 12 pounds largest  $3\frac{1}{2}$  pounds. Walter had four weighing four pounds and George had four weighing  $7\frac{1}{2}$  pounds largest  $3\frac{3}{4}$  pounds. In the afternoon I gave up the rat-trap to Walter and fished with George, with Karl to row. I used blue phantom and got five fish weighing six pounds largest  $2\frac{1}{4}$  pounds. George had five weighing  $4\frac{1}{2}$  pounds largest 2 pounds and Walter who fished alone had ten weighing 12 pounds largest 2 pounds.

Our men cooked the fish for us, cleaned up the place and the knives and forks, they were very willing handy fellows. Our roof was not quite water tight and the house was much colder than that at Svenningsdal but we did very well although the house like everything on the estate is going to rack and ruin.

The number of plants to be seen, though there is the usual variety of berries, is very much less than in Svenningsdal and there are scarcely any small birds, though our men assured us that on the mountains there were plenty of ptarmigan and we saw and heard "Luni" occasionally.

The second night was very cold and it was necessary to use all the blankets we had. Elias had slept in the little room I had called the pantry last night, but would not do so again, it was so cold, and let in rain so badly, so both he and Karl took the boat as the latter had done on the first night to the farm on the side of the Little Maivand and slept there.

After breakfast next day which as usual was cleverly prepared by our men, I took Karl in one boat, the others being together with Elias. It was a beautiful day with clear sky and bright warm sun, but very little wind. Karl rowed me to an entirely different part of the lake to that I had fished before and I did very little good. I had no "rat-trap" for the baits were exhausted and I had to fish with old battered phantoms and in the end with the "bit of tin". I got five fish weighing only  $3\frac{1}{2}$  pounds. The others had between them six fish weighing nine pounds the largest two pounds two ounces. After lunch we packed up and prepared for off having taken in the two full days 53 fish weighing 69 pounds. The average weight was much reduced by my last unfortunate morning's fishing.

While we walked over the bog again one of the boats was carried to the lower lake. The weather being beautifully fine we made more rapid progress than we expected to have been possible and in consequence were not met by Elias's father and we walked in to the old man's farm on Kjering V. just as he was about to set out from there, he did his share of the rowing and the carrying. Svenningsdal by we reached it looked very pleasant and we were glad to be landed at the boat house near our castle again. Grete too was

very glad to have us at home again and gave us a kindly welcome and what was almost as pleasant an excellent dinner.

Whether we were out of humour with our own lake, after the larger fish of the last few days or whether the season was rapidly changing, I do not know, but we did badly in it and four days later we set off to visit Kvanli on Fipling Vand, this time taking Grete with us, who walked in a pair of Walter's boots, which were the nearest to a fit for her and certainly did not look very elegant on the lady. This was Thursday August 22<sup>nd</sup> the day was fine but with a very high wind from the south, a head wind for us, so that it was very hard work for us to reach the head of the lake. It was 11-30 when we got to the head of the river. Here we found a strong young man Elias's brother with a horse and sledge, the latter made entirely of wood. This clumsy looking contrivance went over rocks, stones, tree roots and even bogs with extraordinary success.

Our route for some distance was the same as on the former excursion and we made such excellent progress with the sledge that by half past twelve we had reached Elias's father's farm. Here the same horse continued with the sledge while another was loaded as a pack horse. We took our lunch here whilst the arrangements were being made and at 1-30 set off, at once commencing the steep ascent of a boggy hill in which tree trunks had been occasionally put down as resting places. The way was terrible for roughness but much worse for wetness over much of the way we had to jump from tuft to tuft in the bogs. Had the day not been fine the journey would have been almost impossible. The woods where they occurred were very thick and it was quite wonderful to see how the horse made his way through with the sledge jumping and plunging and scraping and he often enough sinking almost to his knees. At the summit of the hill, reached at last, is a tarn, which is 552 metres above the sea and the course we took was some 200 feet higher. The tarn drains to Kjoerrings Vand, but another smaller tarn near by drains to Fipling Vand. The latter water is 364 metres above the sea. The stream for the latter tarn was in the main the course we had to follow. It was a steep descent and quite as wet as the ascent. At the foot of the hills we came across the track that leads to Knahli (Kvanli?) which is only two miles away, soon after we found ourselves in a hay field where the few haymakers abandoned their labours and accompanied us for the rest of the journey in a sort of triumph. Our destination was reached at five o'clock. Kvanli is the name of the farm that is close by our house, it is only a poor, wretched place, and our house which is as plain and ugly as a house can be is a palace compared with the farm. We found in it a large sitting room, almost destitute of furniture with a "feisen" as the fire place, which is like a blacksmith's smithy, is called. Leading from this room is a smaller one which we used to keep our stores in. to the left of our fireplace is the door leading to the kitchen where there is another feisen. Upstairs there is one large bedroom with two beds in which Walter and I slept, a small room leads out of the large one and in it George slept and there is a small room at the head of the stairs or ladder which Grete occupied. Our men slept at the farm or I think in the barn.

Grete soon got things in order and gave us Aftersmad consisting of a tin of beef, tea, bread and butter and marmalade. We ate tremendously and then turned out for a short time to look round. A large island in the middle of the lake is exactly opposite our door. The lake here is about 1½ miles across, to the south it stretches about two miles in a northerly direction about 4 or 5 miles; it is a large sheet of water but the bank we are upon bends over towards the east and seems to enclose the water much earlier than is the case.

Next morning was fine but cold. We got out in good time, George and I taking one boat with Elias, Walter and Karl the other. We all fished natural bait this time and met at one o'clock at the southern extremity for lunch and rest and while the others smoked I gathered a good many Mulsi berries which grow here in great quantities, though there were not a great many ripe and one had to walk about a bit to get a handful. Still, while we stayed, a fresh crop ripened daily and I was never short. I need not detail how we fished up the lake and down the lake, of course we fished everywhere we could. There are at our end a good many rocks and islands and we fished around and along them all. In the evening George had six fish weighing five pounds. I had seven weighing ten pounds and Walter had 19 weighing 25 pounds, the day had been very cold and we came in at five o'clock.

Next day, Saturday, George had one boat alone with Elias. Walter and I were in the other with Karl. At night Walter had six weighing seven pounds. I had ten weighing eleven pounds and George 16 weighing 19 pounds, one of the latter nearly three pounds. The next day was cold again, thermometer 49 in the morning. This time I was alone with Elias; the morning was very bad, there being no wind, but later a breeze freshened things up. At the finish George had seven weighing ten pounds. Walter had five weighing eight pounds and I 13 fish weighing 18 pounds.

Monday August 26<sup>th</sup> was our last fishing day and was wet more or less all day. During the night a very large herd of cattle had been driven here on their way from Mosjoen to the nearest railway whence they were to be taken south. It must have been a most arduous task to keep them together on such a way and we heard that some three or four had been lost. The ground looked quite strange and much improved by the

presence of the cattle and they on their part seemed to be happy enough in the rich pasture they found themselves in. The day was again dull and cold and the baskets were not large, George had nine weighing  $14\frac{1}{2}$  pounds. I in the same boat had 7 weighing 11 pounds. Walter eight weighing 13 pounds, total 24 fish weighing  $38\frac{1}{2}$  pounds. Our total catch at Kuanli was 113 weight  $151\frac{1}{2}$  pounds or an average of one pound and  $5\frac{1}{2}$  ounces.

Notwithstanding the bareness of our house we were very comfortable at Kuanli. Our fine, big fireplace was a grand place to sit round in the evenings, we had plenty of fire wood, plenty of spirits, animal spirits I mean of course, plenty of appetite for our food, plenty of food for our appetites, plenty of good stories to relate or to listen to and plenty of thankfulness for our good fortune. And we must not forget and did not forget Grete our provident and diligent servent, our joys would have been as Tom Hood said "wingless and all dead" but for her. She actually gave us that night at dinner a dish of prunes and cream and where she procured them we have never discovered. She gave us some stewed meat too one night. She is a marvel.

To remind us that our time was nearly up, we saw as we sat at dinner, Elias's father arrive with the horse that tomorrow was to drag our sledge with our belongings back to Svenningsdal. We were all packed up and off next day by 10 o'clock; a fine bright beautiful morning. Karl tried to lock up the premises, but the front door would not close and really it was not of the least importance for the glass panel was out and anyone who wished could have got into the house through the aperture.

Our route home was not the one by which we came, the two together would almost describe a circle. Our first four and a half was through a birch forest very beautiful indeed in its changing colour, with an under growth as thick as ever and even more brilliant than before, the reds and yellows having become more and more marked. Then we reached the open, and passed many rocky tarns. Nearing the summit of the hill, Karl looking back towards the east, told us that in that direction we might walk 12 Norwegian miles, that is about 84 English, without seeing house or man. Whilst staying here examining the wondrous landscape through our glasses we saw two or three men in the distance driving three out of the four cows that had been lost on the journey to Kuanli.

By 12-45 we reached a Lap encampment, which we were told we should come across. There were two or three tents one much larger than the others and we saw four men and three women who were all quite friendly and could speak Norwegian. They did not seem to be very distinctly of the happy character the men indeed were rather like Irishmen. The older man, who was more eastern looking than the other men and one of the girls had very distinctly oblique eyes. Most of them were of olive complexions but one girl had light hair blue eyes and fair complexion. They had a flock of 800 reindeer with them and though they were about a mile distant from where we were, we could see them quite plainly through our glasses. The older man of the Laps had a binocular himself, a strange tribute to civilization. Karl told the woman we should like to photograph them, so they changed their clothes and smartened themselves up as women will always insist upon doing. Then they invited us into the large tent and gave us coffee, into which they put a slice of reindeer cheese and it was not bad coffee notwithstanding the cheese. The tent was quite roomy and we sat comfortably round it on reindeer skins. The cooking utensils were hung around and there was a hanging shelf on which were a number of cheeses. These are made in a sort of basket, round in shape and very beautifully made. I wished to buy one but they would not sell.

Soon after leaving the Laps we reached the top of the hills and came in sight of our lake, which looked to us very near, though it took us a couple of hours to reach it. We could see our castle and with the glasses our Union Jack, braving the breeze. The way down was very sloppy but we reached home by three and were welcomed by Karl and Grete who had hastened on in front while we were busy in the tent. Grete had already made lunch ready and after taking it we changed every stitch of clothing and were comfortable.

I need not say much more. Our time was soon up when we bade farewell to our faithful men and took Grete home to Trondhjem . after a pleasant time there with Walter's friends and relations George and I took steamer to Bergen arriving only one hour before the Eldorado sailed for Hull.

Whether the expedition was an enjoyable one or a successful one, I may leave each of you to decide for himself, for I have endeavoured to let you all know as much about it as I know myself.

Manchester Anglers Association.  
 March 17<sup>th</sup> 1908

Instead of the usual March meeting the members of the Manchester Anglers Association paid a visit to the Manchester Museum, Owens College, at the invitation of Dr. Hoyle, and had the privilege of inspecting the specimens of the various fishes in the collection.

Dr. Hoyle gave a most interesting lecture on "Queer Fish". He said that he would say nothing on that occasion about salmon, trout or grayling before so many expert fishermen, but he would take them to the lesser frequented regions especially to the deep sea, where were found many curious fish. For example there was a spiny fish which was covered with spines like the common hedgehog; it came to the surface & inflated itself with air, & then the spines stood out straight, but usually they were flat against the skin. The pipe fish was another interesting fish & was about as thin as a penholder, & the male carried the young about in a sort of pouch. Protective coloring was given to many inhabitants of the deep, & the pipe fish when entwined among the weeds was almost invisible. Nature gave this power also to the pycnoplouys, first cousin of the sea horse. But the best examples shown by Dr. Hoyle were the brilliantly colored fish which lived on the coral reefs, & which were the possessors of very bright colors. The perciphatmus had eyes on the top of his head so placed that he could see in practically every direction. This fish came from

The tropical sea, stepped about on the seashore, & from observations of the fact that it usually kept its tail in the water it had been thought that the tail served as a respiratory organ, as when the tail was ramished the fish could not live so long. It subsisted largely on sea slugs & nature had given the sea slug eyes in its tail so that it could avoid danger. The next of these curious fish was the climbing perch, which was able to climb up the banks of streams, & had been found some feet up the hanks of trees. It came from India, and doubtless this faculty was useful to it enabling it in time of drought to make its way to other water if its own stream was dry, and a curious organ in proximity to the gill helped in the operation of breathing during the journey. It was suggested that it climbed here in order to see where the nearest water was. The archer fish, from East India, had the interesting power of shooting out from his mouth a drop of water which brought down with great accuracy flies on the grasses on the river banks or flying over its surface, & on this account was often kept by natives as a plaything. The question of the breeding of eels has troubled the scientists for many years, & it had only quite lately been shown that eels breed in the deep sea, & the young were jellies-like transparent creatures which became smaller until they changed into the hazy eels or elvers, which then made their way up the fresh water streams.

Although fishes produced eggs it was little known that there were such things as fishes nests. The Goby made a nest by means of an empty mussel shell laid on the sand with the inner side downwards, with sand scattered over to cover it.

It was believed to subsist on ooze gathered into the mouth & nourishment obtained by extraction of the matter therein contained. Some of the deep sea fish possess well developed eyes & have their own installation for making light, there being 12 or 15 different types of luminous organs; a section of one optic apparatus was shown. Among the curious fish which used lures for catching their prey the common angler fish (*Lophius piscatorius*) attracted the most attention. It looks almost invisible when lying at the bottom of the sea & opens its mouth & waggles a flexible feeler as a bait & when unsuspecting prey come near they are immediately swallowed. It is a shallow water fish. But the deep sea angler possesses a luminous lip to the flexible bait.

Among other matters were two specimens brought by a member, a grayling and a pellow from Loch Neagh the latter being often sold by fishmongers as grayling. A visitor also brought some splendid specimens of young cruci diles and two fine skeletons of fish from British Guiana, which are interesting as they show a curious representation of the crucifixion.





It is just 21 years since you honoured me by listening to a somewhat long paper that I wrote on "The Rivers about Rhayader," & it is very pleasant to see here tonight not a few of those who were members of the association then - nearly a generation ago!

It is a proof, if proof were needed - of the abiding friendship & brotherly love that angling begets in us: friendship not only towards one another but towards our common pastime & our common Association.

Well, twenty years is a long time & in it many changes may come; but it does not often happen that twenty years completely alters a river & a whole countryside & obliterates all the old landmarks. Yet that is just what has happened in regard to "The Rivers about Rhayader." A reference to the old ordnance map shows you the little town of Rhayader as nestling amongst the hills of Radnorshire, close to the meeting of four rivers. From the S. & comes the Awdry to flow into the Nye coming from Henllymmon on the S. at a point some 2½ miles above the town. Thence, flowing

## Rhayder Revisited

By  
Dr Henry R. Hutton

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Well twenty years is a long time and in it many changes may come; but it does not often happen that even twenty years completely alters a river and a whole countryside and obliterates all the old landmarks. Yet that is just what has happened in regard to "The Rivers about Rhayader." A reference to the old ordinance map shows you the little town of Rhayader as nestling amongst the hills of Radnorshire, close to the meeting of four rivers. From the N. E. comes the Marteg to flow into the Wye coming from Plinlimmon on the N. at a point some 2½ miles above the town. Thence, flowing just beside the old Church and under the town's bridge, the Wye falls over the ledges of rock below the bridge where the Salmon ladder is fixed. It is this fall that gives Rhayader its name "Rhaiadr Gwy" or the waterfall of the Wye. After passing the town the Wye makes a grand right angle bend at the foot of the hill Gwastaden and runs due west to meet at the salmon pool, the Elan and the Claerwen, these rivers coming from the rolling hills of the N. W. and W. have joined forces at the great pool four and a half miles to the west of the town at the foot of the garden of Cwm Elan House, once the favourite resort of the poet Shelly.

It is the valleys through which these rivers (the Elan and the Claerwen) ran that have been converted into vast reservoirs for the purpose of affording a water supply for the city of Birmingham. Beautiful as these lakes are—it is impossible to think of them as reservoirs—it was with a sad heart and great longing for the rivers I had known so long and loved so much, that I visited Rhayder early last July. I had a double purpose in view in making the expedition. I wanted to see the place for myself and wanted to learn about the fishing, and I wanted to ascertain all about the latter in the hope that I might by so doing help my brother anglers. This tonight you are giving me the opportunity of doing. There had been heavy rain for some days and the rivers were in flood as I travelled up the Wye Valley from Builth Road, but as I neared Rhayader the sun came out gloriously and the rods of the fishermen flashed again as they cast for salmon in the pools below the town. The guard of the train remembered me, and at each little roadside station hurried to my carriage to tell me some of the local gossip and fishing news. It had been a bad season so far, cold and wet, with wind and much snow. My old fishing companion had died a violent death, stunned on a rock when bathing in a rough sea on the Welsh coast. The Reservoirs were full of good fish and the fishing would be good if the weather would be more summer like. I had no rod with me. I had intentionally left it behind me lest I should be tempted to stop and fish at the first pool in the river and never really see the reservoirs nor learn anything about their possibilities for sport. So I hurried to the Lion, ordered a trap, had a little chat with the Birmingham Corporation Agent, bought a few flies reputed to be very good on the lakes, eat a hurried lunch and drove off to revisit my old haunts.

A couple of minutes brought us in to the country road that skirts the riverbank. Never in all my life, I think, have I seen such a profusion of wild flowers as I did that day. The spring had been a late one as you remember, and the summer flowers had begun to blossom while yet all the spring flowers were in bloom. In shady places the primroses and the wild hyacinths were still far from rare, and in the marshy meadows the golden marsh marigolds blazed in the sunlight, while from the hedge tops the summer roses scented the air and the foxgloves raised their stately heads from every sunny bank. Long stretches of the roadside were white with a carpet of the lady's bedstraw and every spring and summer flower was to be found for the seeking. The presence of Birmingham soon made itself felt. The road had been widened in places and improved, a pleasant looking little Hotel had been built and a little further on the ugly iron roofed cottages of the workmen—a perfect village of them showed themselves in the bottom of the valley and just beyond them was the great white face of the Caban Coch dam 566 feet across at the top and rising to a height of 122 feet above the river bed; holding up eight thousand million gallons of water in a lake 3½ long. The reservoir was full and the water running over the dam in its whole length, was broken by the wind and projecting stones in the face of the dam, into thin sheets and fine spray that gleamed with a dazzling whiteness in the sunshine. It was a sight not easy to forget! The road rises sharply here and the lake with its blue surface, its graceful curving outline and its back ground of rolling hills sloping down to the wooded margin comes in to view with an unexpected suddenness.



To the southwest stretches the blue expanse of the great Caban Coch reservoir with the smaller Dol-y-mynach lake beyond it, and around the head of the hills away to the north for six miles or more do these lakes extend, with only the great walls of masonry to show that it is not all one great lake. Sometimes half a mile across sometimes little more than the old river bed and as I saw them that day blue with an almost Mediterranean blueness with here and there little dancing waves where the wind caught the surface, and in other parts glassy calm and dimpled over with the ever widening circles made by the rising trout.

All along the lakes, on one side or the other, runs a good road; and here and there, as shown on the map are little fisherman's shelters, where bicycles can be stored for the day, lunch can be eaten, and even a horse stabled safely, provided the key be obtained in Rhayader beforehand. There are moreover, three Bungalows, also shown on the map, which are let by the season or by the month. I can hardly imagine anything more delightful, as a holiday, than a month spent at one of these Bungalows in the quiet of those hills, with the lakes and streams to fish in and with a good carriage road right up to the doors of the house.

One thing I ought particularly to mention. The fishing is entirely from the bank; no boat being allowed on any of the Reservoirs. The minnow is allowed to be used on one or other of the lakes each year. In this way it is hoped that the large cannibal trout may be captured and the general excellence of the fishing preserved. The ruler and regulations are strict, particularly as to the making of a true return of fish caught, and as to the doing of everything possible to avoid polluting the water and making the banks unsightly.

The Lion is a comfortable little Hotel and very nice apartments are to be had. I went over some charming ones at Miss Lloyds on the Penybont Road.

Tackle and locally celebrated flies are to be had at the shop of Mr Roberts, chemist and photographer, from whom I obtained the photographs you have just seen, and last but not least every information will, I know, be most kindly and willingly given by Mr Jones, the Corporation's estate agent. To him I am indebted for the loan of the large map and the reports and other printed matter that I have brought for you tonight.

To you who go there for the first time, Rhayader will, I believe, have as many charms as it has for me who know it so well. And for you there will NOT be the almost jealous longing for the deep, rocky pools in the gorges in the hills, the long rippling shallows beneath the overhanging oak trees and above all the pervading sense of nature undisturbed by man, as there must ever be for me who knew every bend in the river and every pool and to whom the place was endeared by countless associations with some of the happiest and most peaceful days of my life.

# "Salmon Scales"

as Indicative of the Life History of the Fish.

A paper read before the Manchester Anglers Association by J. Arthur Hutton  
Feb'y 16<sup>th</sup> 1909

## Introduction.

Anything and everything that tends to diminish the numbers of our noblest of our migratory fresh fish in British Waters, is deplorable, both from the point of view of the Sportsman and of the Economist. River pollution of all kinds, excessive netting in salt and fresh water, destruction of spawning fish, lack of wise legislation in regard to our Salmon fishing industry, all have had their sway in times past and with dire results. Fortunately of late years the nation has awoke to the fact that it has been squandering a vast national asset in the shape of fish food, and endeavours are now being made to regulate our Salmon fisheries to the best advantage of all concerned.

One has only to cross the water to Ireland to see how much a country can lose by neglecting what might be a valuable industry. There are no finer rivers, no better spawning grounds in any part of the world than are to be found in that country. As far as natural advantages are concerned, there are no reasons why the hundreds of thousands of pounds, which Sportsmen annually spend in Norway should not be dispersed in Ireland. (It has been estimated that upwards of £200,000 are annually spent in Norway by British sportsmen.) A valuable industry providing work for thousands might be created, if only Irish rivers contained a sufficient stock of fish to annually replenish their now fast emptying waters, there are now very few Salmon rivers in Ireland which will afford sport to the angler or repay the expenses of netting.

Little as we know of the life history of the Salmon, one fact we are sure of. The fish ascend the rivers and tributaries to deposit their ova and to reproduce their species, and on the number of fish, which are able to reach the best spawning grounds, the whole industry must depend. It must necessarily be to the interest of all who intelligently investigate the question to advance any legislation that may tend to increase the number of spawning fish, and thus bring this valuable form of food within the reach of the multitude, and I would remark parenthetically that the interests of the sportsman and angler are not antagonistic, as is often supposed, to those of the netsman. Their interests are mutual and identical. Under present circumstances, both suffer and it behoves us to try and ameliorate these adverse conditions. If it can be so managed that a larger number of fish are allowed to enter our rivers and reach the best spawning grounds there will be a vast increase in the number of Smolts, with a corresponding large increase, in later years, in the number of mature fish. The sportsman would benefit, but the netsman would reap a far larger harvest. I am firmly convinced that if the weekly close times were extended, the netsman would, in the long run, earn a far better living than he can hope to secure under existing circumstances. It would pay him better to catch many fish by netting 3 or 4 days a week, than few fish in 5 or 6 days.

One cannot have a better illustration of this, than the Herefordshire Wye, which, a few years ago, was practically worthless from an angling point of view. The Board of Conservators, very wisely, prohibited the use of the Draft net in fresh waters, with the result that today the Wye is one of the best, if not the best, Salmon river in England. The number of Salmon in that beautiful river is increasing every year, and the owners of the fisheries are asking and obtaining increased rentals.

Much of the miss-management of our fisheries is due to ignorance of the Life History of the Salmon, and I think therefore, it will be generally admitted that anything that may help us to arrive at sound conclusions on the subject, is of importance from every point of view. It is for this reason that I wish to draw your attention to the comparatively recent discovery that the life history of every Salmon is more or less clearly written on the scales, for those who can read.

Many theories have been brought forward, from time to time, only to be subsequently disproved. We know that the mature fish run up our larger rivers to spawn in their tributaries and also in the main stream. The ova hatch out early in the year, and after a short life in fresh water the small parr become bright and silvery, and descend to the sea as smolts. After that, all is more or less uncertainty. We know the Salmon returns to fresh water, and generally to the river in which it was born. Then only, does it afford sport to the angler. Whilst the fish are in fresh water we can observe their habits, but in the sea we can observe nothing. We know that while there, they increase enormously in weight but until recently, we knew nothing, or next

to nothing, as to the length of their stay in salt water, and as to when and how they fed. One has only to read Mr Willis Bund's excellent little book "Salmon Problems," to realise how scanty is our knowledge of this portion of the life of the Salmon.

It is hard to realise that little over sixty years have elapsed since it was proved that the parr is a young Salmon, and not a separate species of Salmonidae, like trout or grayling. Before this discovery thousands of immature fish were annually captured by trout fishermen, which might have returned later on as Grilse or Salmon, many pounds in weight. There are many today who still do not believe that Grilse, Peel or Botchers are Parr in a more advanced state of growth. I have no doubt that most of you will be surprised to learn that all Salmon do not spawn every year, though anyone who has fished a Spring river, and who has given any thought to the subject, must realise that this is the case. In the early months say January and February, it often happens that one catches an old red Kelt descending the river after having spawned the previous October or November and on the same day and in the same pool, one may catch a gloriously bright "Springer" of 20 pounds covered with sea lice, proving that only a day or two has elapsed since it left the salt water. A moments consideration will satisfy one that it is almost impossible for the latter fish to have spawned in the previous October or November, returned to the sea, and recovered to such an extent that it weighs half as much again, or double the weight of the Kelt, even though both fish are identically the same in length.

I think it will be generally admitted that until the many problems surrounding the subject are solved, and until we thoroughly understand the true life history of the fish, it is impossible to lay down hard and fast rules as to the manner in which we should manage our fisheries, so that we shall not only obtain from them the increased sport which we all so much desire, but that they shall also render the greatest possible addition to our national food supply.

In 1907, a book was published by Mr W. L. Calderwood, Inspector of Salmon Fisheries for Scotland, entitled "The Life of the Salmon", a book, which ought to be read by every angler, and also by all who are interested in the food supplies of this country. A serious attempt is therein made to deal, in a practical manner, with the many obscure problems surrounding the subject, and when any theory is advanced, the facts on which that theory is based are also given. To those who study Blue Books, much of the information given is not altogether new, but as such people are few and far between, great thanks are due to Mr Calderwood for bringing to light information, which was hidden away from the general public in official publications. I must confess, that, to myself, Mr Calderwood's book was almost a revelation, in that it opened up to me altogether new fields for thought and observation, and I realised what help could be rendered by those anglers who were willing to take the little extra trouble required in recording the facts they themselves had observed or experienced.

On this occasion, I do not propose to deal with more than one of the many important points raised by the writer, and that is the evidence afforded by the scales of Salmon as to their previous life history. I should also like to make it perfectly clear that in laying the following observations before you, I lay no claim to originality, for the whole subject has been most admirably and fully dealt with by Mr Calderwood in the fourth chapter of his book. The first investigations of the kind were, I believe, made in Germany with the scales of Carp, but it was the late Lord Blythswood who commenced the study of Salmon Scales, and this was more systematically worked out by Mr H. W. Johnston. Anyone who is interested in the question should read his papers published in the 23<sup>rd</sup>, 25<sup>th</sup>, and 26<sup>th</sup> Annual Reports of the Scottish Fishery Board. Mr Johnston discovered that, as a general rule, the scales not only afforded absolute evidence of the age of the fish, but also showed clearly the length of their sojourn in the sea and the occasions when any fish had entered the river to spawn. In 1905, on the river Tay 6,500 smolts were marked with silver wire loops. A large number of these fish have since been recaptured as Grilse and Salmon, and the scales taken from these fish confirm in the most positive manner all the conclusions previously arrived at by Mr Johnston during his investigations.

After this long preamble, I will endeavour to give you some idea of this most fascinating and interesting question, and I hope by means of the photographs, which I propose to show you, to fully illustrate the various points connected with the subject. The photographs, with one or two exceptions, are of scales of fish caught in the River Wye and the Aa river in Norway.

### *Scales retained throughout Life.*

I must first ask you to accept it as definitely proved that a Salmon does not require new scales to meet the increase in growth of later years. Most of you know that one of the methods of distinguishing large Sea Trout from Grilse is the number of scales between the adipose fin and the median line. On the Salmon one finds from 10 to 12 rows of scales; on the Sea Trout very rarely 12 and generally 13 to 15. The number of scales on a Salmon is constant, and remains the same throughout life, irrespective of weight or age. It therefore follows that a Salmon of 20 or 40 pounds weight has no more scales than a fish of four or five pounds, or than the Smolt or Parr of a few ounces weight. The scales which cover the large fish, and which may be nearly half an inch in diameter, are those with which he was born, although originally they were tiny rudimentary centres, scarcely larger than a point of a needle. Probably new growth would occur to replace lost scales or to repair scars or wounds, but the fact remains that, generally speaking, the Salmon acquires no new scales, and consequently the latter must increase in size as the fish grows in length, girth and weight.

### *Arrangement of Scales.*

On examining the scales of a Salmon, we find that they are contained in pockets in the skin, and are arranged in consecutive lines, slanting in a backwards and downwards direction towards the tail and belly, but closer scrutiny will show that only a small portion of each scale is visible, as they overlap one another like the tiles of a roof. The exposed part of each scale is that lying towards the tail, the posterior portion. Owing to the wear and tear, which takes place from exposure, this portion of the scale is generally speaking of little use for observation especially in older fish. The front or anterior portion of the scales, which is covered by the adjacent scales, will generally indicate the growth and history of the fish. On holding up a scale to the light anyone with good eyesight will notice darker bands or rings at various intervals. Almost all the scales show these markings, but Mr Johnston recommends that the scales should be taken from the shoulder of the fish,

### *Microscopic Examinations.*

For proper examination a microscope is necessary, but one with a high magnifying power has too small a field. I have found a dissecting microscope the most suitable for the purpose, with a lens magnifying ten diameters, though it is useful to have an additional lens of twenty diameters for more detailed examinations. Messrs. Ross supply a moderate priced instrument most suitable for the purpose. All the scales and especially those of fish, which have been a long time in fresh water, are covered with a skin or membrane. If it is intended to photograph the scales, it is necessary to remove this, and I have generally found it best to soak the scales in water for some hours and this membrane can then be easily removed with a camel hair brush. It is not necessary to use preservatives or mountants. I generally take eight or ten scales from the fish, and select the best half dozen, and after cleaning them, place them between two microscopic glass slips (one inch by three inches,) and bind them together with two gummed slips of paper such as are used for bonding lantern slides. I also affix a small label, giving the register number of each fish, date and locality of capture, weight, length girth and sex. This takes far less time than would be imagined, and provides interesting occupation for evenings in the spring or autumn or for summer afternoons when fishing is impossible.

### *Photographing Scales.*

The camera I use is one specially made for the purpose by Messrs. Ross. No microscope is necessary for the enlargement required, namely 10 to 25 diameters. The lenses I use are Zeiss Planar of two inch focus, and one of one inch focus for very small scales. I find I can get better results with a yellow screen. A condenser suitable for an enlarging or projecting lantern is advisable, and the exposure required is only a matter of a minute or two. Anyone who has had experience or photographic enlargement would have no difficulty in working with this camera.

### *Rings on Scales.*

On examining any scale with the microscope we find there is a rudimentary centre, more or less well marked, surrounded by a series of concentric rings or ovals at varying intervals. These rings, or rather ridges, represent the growth which is necessary to cover the annually increasing bulk, like the ring added by a tree for each year's growth, with however, this difference that the Salmon acquires a considerable number of rings or ridges every year. The question naturally arises, how is one to tell the age of a fish.

### Winter Check in Feeding.

Those who have had any experience in Trout breeding know that during the winter months there is a diminution of feeding, and consequently of growth. Also the case with the Salmon, even though it may be still in the sea, which is now generally recognised as being the only place in which they feed, or, at any rate assimilate the food they may swallow, but to this important point I shall refer later.

### Winter and Summer Rings.

A close examination of the scale shows that the rings are divided into series, alternately far apart and close together. The former represent the large growth of the summer, the latter show the slackened growth during the winter. By counting the number of winter bands, we can, with almost accuracy, determine the age of any fish, at any rate up to a certain stage in its life.

### Smolt Scales.

Let us take for example the scale of a Smolt migrating to the sea. We have first the rudimentary centre, surrounded by six to ten very fine lines representing the first year's growth. The last few lines are close together, like a dark band, indicating a check in feeding and growth during the first winter. This is followed by about 9 to 15 similar lines of the second years growth, with a similar winter band. Surrounding this second winter thickening, we find a few more fine lines are sometimes added, denoting the feeding in fresh water in the spring before migration to the sea. These lines are generally present in the scales of all Grilse and Salmon, thus proving that, as a general rule, Parr remain two years in fresh water before migrating as Smolts. I should point out that during these two years, the Parr feed in fresh water like Trout and also there they acquire the bright silvery sheen, which is so noticeable when they are making their first journey to the sea.

### Grilse Scales.

Let us now examine the scales of a Grilse. The first two years fresh water life are generally clearly marked as I have explained above, but surrounding the fine lines, acquired in fresh water, we find rings or ridges of an altogether different character. They are far apart, and boldly marked, and clearly indicate the rapid growth, which immediately takes place when the Smolt enters salt water, usually in the late spring or early summer. This first winter in the sea is generally clearly marked by a dark band, caused by a number of lines being closer together, but this point I will refer to again. We also find that in addition to the few lines acquired in the spring in fresh water, 25 to 28 additional rings are put on in the sea during the third year of the Salmon's life.

Whether one examines the scales of a Grilse or of a Salmon, which has spent the winter in the sea, we invariably find the closer band indicating the check in growth during winter. When magnified or photographed, these winter lines give the appearance of dark bands or lines, and each of these winter markings represents a year in the sea life of the fish. It may be due to poorer feeding during the winter, or to natural cessation from feeding, due to sexual or spawning instinct, even though the fish may not enter any river to spawn. The winter bands are always more or less clearly marked, and we are thus able to ascertain the exact age of any fish, provided we can examine one of its scales. I must, however, point out that the older the fish, the more difficult the deciphering of its scales.

Let us now return again to the scale of a Grilse, which has returned to the river. Following the close lines, denoting the first winter in the sea we find from three to twenty or more summer lines, according to the period, which has elapsed before it returns to fresh water. A grilse caught in early in the season will show few, one caught in autumn several of these summer lines, which are further apart than the winter lines, though not so well marked as the rings acquired during the first summer in the sea. This is only to be expected, for the scales increase in size and area as the fish grows, and consequently each ring added represents a much larger proportionate growth than in the earlier stages. Mr Calderwood gives a table, drawn up by Mr Johnston, of the results of the examination of the scales of thirteen Smolts, which had been marked in 1905, as mentioned above and which were re-captured as Grilse in 1906.

Three were caught in June weighing from three pounds to 4¾ pounds, and having added from 6 to 13 summer rings to their scales since the winter check.

In July five were caught, varying from 4¼ pounds to 7 pounds, with thirteen to eighteen rings added.

Five more were caught in August with 14 to 10 rings added, and varying in size from 3½ pounds to 9 pounds.

I want to emphasise particularly the fact that on examination of the Scales of all Grilse, we invariably find, after the parr lines and the first summer lines formed in the sea, a winter band, thus proving that Smolts do not return as Grilse in the same year that they first enter the sea. The Grilse, therefore, in most instances, is about 3½ years old. This fact was first established by Mr Johnston from examination of the scales, and has since been confirmed by the marking of Smolts in the Tay in 1905, and which were recaptured in 1906. We thus have a capital example of the utility of scale examination in helping us to arrive at the true life history of the fish. It was previously thought by many that the Smolts which migrated to the sea in April, May or June, returned as Grilse the same autumn and consequently had in two or three months had increased in weight from a few ounces to several pounds. This theory has been definitely proved untenable, for the first winter in the sea is clearly marked in the scale of every Grilse. Mr Calderwood gives a table of the weights of 16 Smolts marked in 1905 and recaptured in fresh water the following year.

Dividing these into four lots of four each, and averaging the weights we get the following results.

June 1 <sup>st</sup> to	July 3 <sup>rd</sup>	3lbs. 14oz.
July 4 <sup>th</sup> to	July 14 <sup>th</sup>	5lbs. 10oz.
July 15 <sup>th</sup> to	July 24 <sup>th</sup>	5lbs. 13oz.
July 26 <sup>th</sup> to	August 4 <sup>th</sup>	6lbs. 6½ oz.

The increased average size of the later returning Grilse is remarkable, and the growth seems to be proportionate to the length of time spent in the Salt water.

Mr Calderwood also mentions the case of a Grilse captured at the mouth of the Dee on March 6th 1906, weighing only 2½ pounds. I think we can safely conclude that if any Smolt did return the same year as that it migrated, it would scarcely weigh two pounds.

I now proposed to take you a step further, and to deal with the next year of the Salmon's life. It will probably be a surprise to you to learn that, in many of our rivers a very large proportion of the Grilse do not enter the rivers to spawn. The only rivers in the British Isles of which I have any personal knowledge are the Boyne in Ireland and the Herefordshire Wye. In both of these rivers Grilse are conspicuous by their absence, and yet both rivers have a good stock of Salmon. In 1908, on our fishing on the Wye, we only captured two Grilse as compared with 108 Salmon notwithstanding the water was more or less continuously fished throughout the whole season. It would hardly be safe to base any definite conclusions on the experience of one season, but I am informed by others who have fished the Wye for years that Grilse are comparatively scarce in that river.

#### *Scales of Small Spring and Summer Fish.*

When, however, we come to examine the scales of small spring or summer fish, we find two winter bands, denoting that the fish have spent two winters in the sea without spawning. Later on I will deal with the "Spawning Mark" which is, more or less, clearly marked when any fish has remained any time in fresh water, but for the moment I must ask you to accept the statement that a large proportion of the Smolts do not return as Grilse to spawn.

If we examine the scales of a small Spring Salmon we find first the small lines indicating the period (of about two years), spent as a Parr in fresh water and surrounded by the 25 to 28 lines added during the first year of salt water life, then after the first winter band added in the sea, we find an additional 20 or 30 lines added, the last four lines showing a thickening due to the check of the second winter spent in the sea. Such fish will weigh about 10 to 12 pounds, and will be four years old. It may happen the fish may still further delay its return to fresh water, and may only ascend the river in the summer or autumn. In that case, surrounding the previous winter's band, we shall find a series of summer rings, more or less numerous according to whether the ascent of the river is late or early.

#### *Scales of Large Spring Fish.*

We have now come to the most astounding fact, which scale examination has revealed to us. We have seen that many fish spend the Grilse stage of growth in Salt water, but it was hardly suspected that some Salmon might remain in the sea even a third winter, and not ascend the rivers until they were five years old, and weighing 15 to 20 pounds. In some cases, fish have returned weighing as much as 30 pounds, and showing no evidence on the scales of ever having spawned before. The average spring fish on the river Wye, judging from the evidence of the last season, is five years old, 36 inches long, 18½ inches in girth, and just over 18 pounds in weight, and more often than not is a maiden fish, that has never previously spawned. As I said before, the results of one season's experience would hardly provide data from which to form conclusions. It is, however, interesting to find that on the Tay the average spring fish is much the same in character, although these two rivers are so far apart, and so entirely different in their surroundings, and

although one runs in to the North Sea and the other in to the Bristol Channel. I should also note that the majority of the fish we caught in the Wye were females.

On examining the scales of one of the above fish, we find the same lines as on the small spring fish previously alluded to, viz., two year's river life, two summers and two winters in the sea, and surrounding these lines a further series of 17 to 28 lines, denoting the third summer and winter spent in the sea.

### Age of Salmon.

I have not so far found on Wye fish any scales indicating a further lengthened sojourn in the sea, but Mr Johnston states that it is not very unusual for a fish to spend a fourth year, i. e. the sixth year of life in salt water, without ascending the river to spawn. As far as can be judged from evidence obtained from examination of scales up to the present date, Salmon do not live over eight or nine years, or at any rate, do not enter the rivers or estuaries after that age is attained. Mr Johnston informs that in the winter of 1908 he examined the scales of a Helmsdale Fish that had been marked twice previous to its capture, and both the scales and marking records indicated that it was  $8\frac{3}{4}$  years old. It is possible that examples may be found later of even older fish. It is remarkable that the bulk of the exceptionally large fish caught are cock fish, from which it would seem probable that the hen fish either lose the power or desire of propagation earlier than the males, as in the case with most animals. It would also appear that males put on weight more rapidly than females.

### Kelts.

So far we have been dealing with maiden fish, those that are entering the river for the first time, but I would now draw your attention to what I think is the most interesting part of the subject, namely the evidence the scales afford of the occasions when a Salmon has been in fresh water to spawn. You will know the appearance of a bright fresh, spring salmon, with a comparatively small head, deep thick shoulders, back and flank tapering towards its powerful tail; even if you have never caught one or seen one caught, you have seen many one on the fishmonger's slab. Probably not all of you have seen a Kelt, with its lean, fallen in flanks, its depth and girth reduced, and its brilliancy a thing of the past. There is something almost repulsive about its appearance, though that is no reason why it should not be handled kindly, and returned to the water as gently as possible. As Mr Calderwood says:- "The fish has been reproducing his species in the river, and is willing to do so again, if he is only allowed to go to the sea and become once more a silvery clean Salmon."

Just before he is finally returning to the sea, the Kelt often becomes bright and silvery and is then known as a "well-mended" Kelt, but the shapeliness has not yet returned, nor can it do so, until its exhausted frame has been again nourished by the rich feeding of the sea. When one considers that a fish may enter a river in January or February, run up a hundred miles or more, through rapids and falls, part with nearly a third of its weight in the act of spawning in the early winter, and not return to the sea until the following January or later, and when one realises that during the whole of that period it is impossible for it to obtain nourishing food in sufficient quantity, even if it were to assimilate and digest it, it is marvellous that it should ever reach salt water again. Alas, many a Kelt after doing its best to provide us with the material for sport or food in future years perishes exhausted with the effort before it reaches once more the rich feeding grounds of the sea.

### Loss of Weight in River.

I do not wish in this paper to do more than on that very thorny subject—the feeding of Salmon in fresh water. From the evidence that has from time to time been brought to light, I personally, am convinced that after a very short stay in the river, a Salmon loses all desire of assimilating food. In any case, I think the most hardened opponent of this theory will admit that it cannot obtain sufficient food to maintain the glorious proportions it possessed when it first entered fresh water. As a matter of fact, every day's sojourn in a river shows a marked deterioration. First there is a pink discolouration at the bottom of the fins, and this is afterwards followed by a general loss of brilliancy, and red spots soon show themselves on the gill covers. The weight begins to decrease and the discolouration to increase, and when the winter approaches the male salmon especially assumes the spawning livery, and is covered with red blotches, and the whole fish is more or less brick red colour. One also finds that in the late autumn, fish partially or wholly assume the spawning livery in salt or brackish water, and one may catch a red or coloured fish covered with sea lice, indicating that only a day or two has elapsed since it left the sea. In the act of spawning the salmon parts with a still larger proportion of its weight (viz, about 23%), and the spent fish or Kelt, as it is called become the long lean repulsive looking object to which I have referred above.

### *Disintegration of Scales.*

Now the skin of the fish shrinks gradually to accommodate its lessened bulk. The scales, however, do not shrink, and the edges consequently fray away and disintegration of tissue takes place. If one examines the scales of a "stale" fish, that is one that has been in the river a few months, one can easily perceive the commencement of this disintegration. As however the length of the fish diminishes but little, and as the greatest shrinkage is in the girth, one finds that this disintegration is most marked on the sides of the scales, which I have previously explained, are arranged lengthwise along the sides of the fish. After spawning a further shrinkage in bulk takes place only to be followed by a further wasting away of the edges of the scales.

### *"Spawning Mark."*

When the fish reaches salt water again, it commences to feed ravenously, and we consequently find broad bold and well marked rings (denoting rapid growth), surrounding the disintegrated and rough edges of the scales and between the old growth and the new growth we generally find a well marked broken line or scar, denoting what is now technically termed the "Spawning Mark". When such a mark is found on the scale of any fish, it affords unimpeachable evidence that at a certain date the fish entered the river and spawned. This mark will be found more or less clearly defined on each of its scales.

I should point out that whether a fish has spawned or not, one will find a great similarity on markings on all its scales, though on some the rings are more clearly defined than on others. As regards the "Spawning Mark" it may be entirely absent as is the case with maiden fish, or the scales of a fish may show that it has spawned as a Grilse and then remained in the sea for a year or two, or we may find that a fish has spawned one year and missed the next, or that it has spawned two years or more in succession. The astounding fact, however, remains that generally speaking it has been found that a comparatively small proportion of the fish return to spawn each season. Judging from the scales taken from 32 Salmon caught in the Wye in 1908 only 6 or less than 5% show evidence of having previously entered the river to spawn. Of six salmon caught in Norway in the same year, judging from the scales, not one had previously spawned. This points to the obvious moral on which Mr Calderwood so properly insists, that as we have to depend on the spawning fish for our supplies of future years, we should take all the more care of them, and that no netting or trapping should be allowed in fresh water or in the upper parts of long and narrow estuaries. The sea is the one and only place for the operations of the netsman.

I hope I have explained this fascinating subject in such a way that you will appreciate its importance, and that you can fully realise that the life history of every Salmon is written on scales, for those who can read. I won't say that reading is always easy. Sometimes the writing is clear, sometimes for a beginner, like myself, it is almost undecipherable. Mr Johnston, I believe, can often tell you approximately the month when the fish entered the river and sometimes the date when, as a lean and lanky Kelt, it returned to the rich feeding grounds of the sea, and other numerous interesting facts about its life. I can only that with study and experience I may attain something of the proficiency of which he is possessed. What I must emphasise, however, is the fact that the science is only in its infancy, that there is so much yet to discover and to learn, and that there is ample room for further investigation.

In conclusion I can only regret that my want of experience has prevented me giving you a more than a superficial idea of thus fascinating subject, but I hope that some of you may be sufficiently interested to take up the question, and by making careful investigations for yourselves, help on that obscure problem "The Life History of the Salmon."

### *Note on the Recent Improvement On the Salmon Fishing in the River Wye.*

As far as can be judged from the evidence afforded by the scales of the Salmon, the young fish spend two years in the river as Parr, migrate to the sea in the third year, and those of them which return to the sea as Grilse in the following year are about 3½ years old. It would also appear that the majority of the four year old fish weigh from about 9 to 14 pounds, and the five year old fish from 15 pounds to 25 pounds, and occasionally larger.

Up to 1901 the Wye was heavily netted in the Estuary, and also in the fresh water, but in 1902 the estuary nets came under the control of the Wye fishing Association, which was formed over 30 years ago, for the purpose of improving the fisheries in that river. Netting rights were bought up or leased by the Association with a view to preventing the use of nets in fresh water, and this policy was consistently followed for many years as far as the Limited funds of the Association would permit. It is entirely due to the



untiring exertions of Mr Hotchkis, spread over 25 years, that the Salmon Fisheries of the Wye are now approaching a more satisfactory condition.

From 1902 to 1904 all netting in the estuary and tidal waters was entirely suspended by the Association, with the object of increasing the stock of spawning fish. Further in 1902 the use of the "Draft net" was prohibited by the Board of Conservators in all waters above Bigsweir Bridge and since that date with the exception of two Beating Nets and two or three privileged fixed engines (Stopping Boats) all netting has ceased in the Wye above the estuary.

It is therefore evident that 1902 was the first year in which Salmon had a fair chance of reaching the spawning grounds. The ova deposited by the fish at the end of 1902 would not hatch out until early in 1903, and there would be no large migration of Smolts until 1905. one would expect, therefore, a larger number of Grilse returning to river from the sea in 1906, and in 1907 one would look for the four year old fish, to be followed by the five year old fish in 1908, together with the four year old fish hatched in 1904.

It is most interesting to compare the actual results with those which scale examination would lead one to expect. For some reason at present unknown, grilse do not run up the Wye in any quantity and therefore no results could be looked for in 1906, in 1907, however, we find that 1,424 were caught with rod and line as compared with 468 fish killed in 1906. one cannot exaggerate the importance of the importance of these figures. The average weight of the fish killed in 1907 was about 13 pounds, which would indicate that the majority of the fish were four years old and hatched in 1903, and were, therefore, the offspring of the fish which entered the river in 1902 when the nets were first removed.

In 1908 the number of fish killed increased to 1,571, and it was most remarkable that the average weight rose to 17¼ pounds, indicating that the majority of the fish were five year olds.

One is, therefore, irresistibly led to the conclusion that the extraordinary increase in the number of fished killed in the Wye in 1907 and 1908 is solely due to the suspension of netting in 1902. In further confirmation it should be noted that at the end of 1907 more fish were observed on the spawning beds than had ever been seen before, and that in 1908 there was even more noteworthy increase in the number of spawning fish. It is also remarkable that fish were observed higher up the tributaries than in any recent year, and there was an exceptional number of large fish to be seen.

It would seem probable that in consequence of the increased number of spawning fish observed in 1907, there will be a larger increase of four year old fish in 1912 and of five year old fish in 1913, provided always that the conditions in the river and sea are favourable to the growth and return of fish. One would also expect that in the present year, 1909, some exceptionally heavy fish will be killed, namely the six year old fish hatched in 1903, but this largely depends on circumstances in the Sea which one can only guess at.

Since 1903 the estuary and tidal nets have been worked in moderation, and there is practically no netting in fresh water. There is no doubt that a sufficient number of spawning fish are able to reach the upper reaches and tributaries of the Wye. Unfortunately, however, there is a most regrettable amount of poaching and destruction of spawning fish and also of Kelts in the upper waters. If this could be suppressed the Wye would become one of the best Salmon rivers in the United Kingdom, and would afford an appreciable increase to our national food supplies.

## Fishing etc.

Mr H.L. Behrens      October 1909

About two years ago I had the pleasure to read to you a paper on 'Dry Fly Fishing' and when our ever revered secretary wrote and asked me to read another one I hesitated for a long time whether or no I should continue this, to me most, interesting subject. But as I have dealt with the general outlines, I feared I should bore you very quickly were I to go much deeper into the more minute details such as entomology etc. However you will find that fishing with a dry fly will keep cropping up in this paper, as having once 'tasted blood' by telling you about this subject, it is very difficult for me to keep away from it.

Some time ago after a more than usually interesting and instructive paper had been read at one of our evening meetings, one of our most esteemed members, who is not wholly disconnected with the financial part of our great Association, was called upon to rise and offer up his quota of thanks and criticism to the proud if somewhat exhausted lecturer. The few words that he said have impressed themselves very deeply on my memory, for after thanking the speaker for his excellent discourse, he ended by saying that what had pleased and interested him most about it was the fact that it was essentially a 'fishy' paper.

I have thought that I could not have a better guide than this criticism were I ever asked to read another paper before you, hence my very prosaic title of 'Fishing etc.' I suppose that for more years than I care to remember I have done my fair share of fishing of one kind or another and although I do not lay the slightest claim to being more than a very modest exponent, I have naturally gained some experience and have seen and done some wonderful things as behoves all true believers and disciples of our gentle art. In the paper I hope to tell you something about these incidents and I only hope you will pardon the far too frequent occurrence of the first person singular and the very disjointed nature of my recital.

The first adventure I will tell you is one that I fear even you my brother anglers may think rather too fishy for this paper. Sometime ago I was fishing for trout on the Eden, not far below Appleby. I don't remember what sort of sport I had been having, but I had worked down to a large pool where the river Eamont joins the Eden. I was using a very light 9'6" Leonard rod and was fishing with the finest natural gut and a '00' Iron Blue. I must add that I was fishing with it dry and upstream as I invariably do when there is a ghost of a chance of catching anything in this way. I don't think I had more than a few casts on the dead calm pool, when up came a big head and I found myself fighting a salmon. Of course salmon are occasionally caught with a floating fly, but what surprised me was the next proceeding of the fish, for instead of rushing straight away and breaking me, he let me reel him in like a log until within a few feet of the bank. As soon as he saw me however he quietly turned round and sailed majestically and slowly out into the middle of the pool putting off every inch of my line and finally breaking me at the fly with no more jerk or pull than if my line had been made of burnt cotton. I have done a fair amount of salmon fishing and can form a pretty accurate estimate of the weight of a fish when I see it and am certain that this one was not much short of 20 lbs. If I'd had a really clever gillie with me I believed he might have gaffed the fish, but as I and the two other men who were fishing near me, and who saw the whole thing, only had ordinary trout nets; of course we were all absolutely helpless. I am afraid that I can honestly advise anyone who wants to catch a salmon to try and do so with the tackle and in the manner that I have described, yet it just shows that you never can tell what may happen when you are fishing with a dry fly.

Another curious incident happened a short time ago, though unfortunately I personally had nothing to do with it, nor was I present at the time. However it also deals with a 'dry fly' and the chief actor was our esteemed member, who up to quite recently was one of the most prominent figureheads in the financial circles in this city and I think may be of interest.

This gentleman and another of our association were fishing for salmon on the Herefordshire Wye where there was a rather high and sloping bank behind. Suddenly our great financier gave a

yell and when his friend turned round, he was flabbergasted to see our stately member madly careering up the bank and along the top of it. At first he could see no reason for this somewhat eccentric behaviour, but when he had reeled up his line and had gone to find out what was the matter, he discovered that our money-dealing member had hooked a large sheep, which had been gently grazing on the bank behind him. I believe the two anglers chased that sheep for about half a mile, when at last the gut broke and left the fly in the sheep. I shall be very interested to hear what the farmer says when he next shears the sheep and comes across that fly. As I said before you never can tell what may be done with a dry fly. Have we not all caught a swift, a swallow or a sand martin with one at some period in our piscatorial career, not to mention fair damsels, dogs, cows and other things that may have strayed too near our fatal lure.

Although not actually a dry fly incident, a curious thing happened to me a few weeks ago when I was fishing for salmon in a pool where I was wading up to my middle. There was a strong downstream wind blowing and I had to cast just as far as I knew how. I was using a heavy tapered line when suddenly it came across the back of a swallow that was busily engaged in getting his midday meal. The poor little thing dropped like a stone and was carried out of sight by the strong current, fluttering helplessly on the water before I could get near enough to rescue it. Personally I have never heard of anyone killing a bird with his line, though as I have said before, it is by no means uncommon for one to be caught owing to it mistaking for a natural fly the one which is attached to a piece of gut and which is fluttering in the breeze, when the rod has been slack in the ground or leant against a hedge. It always seems to me that the unforeseen is one of the greatest charms in fishing, whether it is what you see or what you catch.

Probably most of you will have seen in Hardy's shop window the magnificent salmon of 44 lbs, which was caught in the Herefordshire Wye by our World famous member Mr Arthur Hutton. I am not going to give you an account of how Mr Hutton caught that fish as I hope we will all have the pleasure of hearing about this from his own lips. How he hooked it, of the great battle he then had and how finally it was pulled out by an absolute novice who had never used a gaff before and who was very nearly pulled into the river in consequence. The most interesting fact about it as far as I am concerned is that he caught it on a trace belonging to me, and thereby hangs a tale. Mr Hutton caught the fish on the Sabbath (another proof of the saying 'the better the day, the better the deed') and during the previous week I was fishing another pool and got so badly 'hung up' on county Hereford that I had to break my line. I was especially annoyed as I was using one of the new Talarano 'no knot' traces, which had been sent to me to try. Some days later Mr Hutton was fishing the same pool, when he also got badly hung up but after playing about for a long time something gave and he pulled in my minnow, trace and some yards of line. Of course as Mr Hutton is an honourable man, he gave me back my minnow but he said he would like to stick to the trace as he wanted to try it. The very next day he used it, it hooked and killed his 44 pounder with it, and I am still somewhat doubtful whether that fish ought to belong to me! N.B. this must not be taken as a 'puff' for the talarano gut, as personally I do not care for it, though it is certainly very cheap.

Perhaps some of you have hooked a dead sheep or dog, but I hope none have had the ghastly experience of a man I met in the rain the other day who told me that he had hooked and brought to the bank the dead body of a woman when he was grayling fishing near Cromford on the Derbyshire Wye.

One of the most exciting fights I have ever had with a 'fish' was on the Herefordshire Wye in the same pool in which Mr Hutton got his big fish and in which the incident with the sheep occurred. This pool is quite 600 yards long and one day I was fishing with a minnow in a very big water. About my second cast at the very top of the pool I had a big pull and then the fish began making down stream very steadily 'jigging' hard and rapidly which so often means 'lightly hooked'. I pulled, he pulled and gradually he took me down the whole of the pool to where a large tree overhangs the water. It was then a case of 'pull devil, pull baker, may the best man win'. I therefore put every ounce of pressure onto my rod and at last he began to come in. I thought I had got a 60 pounder at least when what was my disgust to see come up to the top of the water nothing but an old iron stable bucket with half the bottom out, which I had hooked by the handle. Naturally

as I pulled the bucket against the stream, the water passing through the bottom, would make it move about and 'jig' just like a fish. I only hope none of you will ever have such a disappointing experience.

You will all remember Mr Hutton's excellent paper on 'Salmon Scales' and the following may bring home to you some of the many uses to which his interesting study may be applied. I was fishing a pool down with a fly when a good salmon rose, though I am not sure that he came at me. I tried him with several other flies but he would not even look at them, so I then put on a Light Devon. At the first cast I had a good pull but nothing more and when I reeled in my minnow I found three scales hooked onto one of the triangles showing that I had nearly 'foul hooked' him. As a matter of course I took the scales home as I thought it would be very interesting to learn the life of a fish that had never been caught. When however Mr Hutton and I examined the scale under the microscope, we found that they did not belong to a salmon at all and must be those of a pike. This had evidently been lying close to the same place as the salmon as I am quite certain that the fish I first rose was a salmon.

On another occasion I was fishing in the same pool when one of the most uncanny things that I have ever experienced happened to me. At the tail of the pool is a large 'back water' through which it is necessary to wade in order to fish properly down the run outside of it. It was a bright hot day and the river was dead low, I had got to the middle of the 'back water' when suddenly I felt something strike quite hard against my legs. I was naturally very startled as I could not think what it could be and when I looked down into the water I was surprised to find that I had been deliberately charged by one of three great big perch that were still swimming quite close to my legs. As quickly as possible I pulled my gaff and made a grab for the largest fish but though I distinctly felt that I touched him the point failed to go home. The perch didn't seem to mind me at all and when I left my gaff in the water, one of them made a charge for it but again I could not manage to hook him. I shall be much interested to hear whether any of you have ever had a similar experience.

Ten days ago I was fishing on the Wye and was lucky enough to get in one day with a fly, four nice fish averaging 14 odd pounds, but I only mention the fact to hang my sermon on it. One of these fish I hooked right below me in the slack water under some big trees, when I was wading very deep and was standing on the edge of a 20 foot hole. Of course I had to step back at once, and make the best way I could to the bank, while the fish was tearing down stream below me. As soon as I reached 'terra firma' I checked the fish for all I was worth and immediately he stopped running. I began to walk upstream very slowly but without winding in my line with my reel. I simply towed the fish upstream as if he had been a log of wood. He sailed up quite quickly until he was safely away from all the dangers when I quickly got him out in the usual way. Surprising though the fact may be and quite inexplicably to me, it is a well known fact that you can very often move a fish up or down stream by simply walking up or down the bank, towing it after you. This is far and away the best thing to do when playing a fish, which sulks in the bottom and won't budge to any strain you may put on the rod or reel. I should very much like to know why the strain brought to bear when simply towing, should differ in effect so materially from the ordinary strain of the rod.

I have never tried this dodge with trout, chiefly because the tackle of even proportionate strength to salmon tackle is never used when fishing for them, but I do not doubt that it would work if one only had the courage to try it. Probably however you have all at some time or another got trout out of some wretched dump of weed by simply taking hold of the line with the hand and gently pulling it as this is one of the rudimentary rules when playing a weeded fish. After all this is practically the same as the 'towing' to which I have just referred, but why it should be so I cannot even offer an explanation.

No doubt some of you have tried the wonderful effect caused by pulling off with your hand several yards from the reel when the fish is madly careering down stream towards some inaccessible place. As you know, the usual result of giving him a 'slack line' is that the fish immediately drops and generally begins to work upstream. I have found this to happen so frequently that I have arrived at the following explanation for this seemingly strange behaviour, though I make no claim to its originality or correctness. I have heard the reason put down to the fact that the fish

will immediately begin to make upstream again when the strain is removed, as this is their natural inclination. I however hardly think that this can be the only reason when there is a great weight of water forcing them 'downhill' and they are probably fairly exhausted. My theory is that when the line is pulled off the reel, the slack will be 'bellied' down by the force of water and so have the effect of causing a downstream pull on the fish. We all know that fish have the contrariness of the proverbial pig and so when he feels that he is being pulled down he immediately does his best to make upstream again and thereby very frequently causes his own ultimate destruction and the angler's rejoicing. I have only once tried this dodge with trout, but regret to say that the effect was not as it should have been as the fish must have been too exhausted to fight against the strong current and was accordingly carried down over the fall above which I was playing him. I need hardly add that that fish did not go to increase the weight of my creel.

I feel that this paper is already too long but if you would care to hear it I should like to tell you of a rather curious experience I had this summer when I was sea trout fishing in the wilds of Connemara. I fear that it was nothing to do with actual fishing but I hope that our financial critic will pardon my digression seeing that it deals with a matter that is even dear to the heart of a true follower of our great common father Isaac. I was walking up to the house with the gillies after a fair day feeling very cold and wet from the nasty mist that had been falling all the time. One of the men casually asked me if I would like to go and see the 'potteen' made as his father-in-law and family were making it that evening 'away on the bog'. Naturally I jumped at the suggestion as I had always wanted to see an 'illicit still' at work having heard so much about it in the wilds of Ireland. Accordingly after leaving our fishing things in the house we started off. We walked for about two miles over a most beastly wet bog when Pat says "sure and we should be pretty adjacent". I could see nothing but rolling bog half hidden in the wretched mist that had become much thicker since we left the house. Pat made me stand still while he went ranging over the bog like a pointer, at last I saw him wave his hand and when I got up to him he pointed to a thin trail of smoke which he had literally 'scented down'.

After walking a few more hundred yards we came upon the weirdest scene that it has ever been my good fortune to see. Right in the middle of the bog under the lee of a small pool was a tiny pool and round this was collected the mottliest throng imaginable of half wild Irish men and women. There was a bright turf fire burning on top of which was placed a large tin carboy, for all the world like a glorified milk can. Out of the top of this was a spout which went into a large tub of water, from the bottom of which projected a short pipe. From this pipe was trickling out what looked like beautiful clear water, which was collected in a tin bucket, over the top of which was a dirty bit of sacking to act as a strainer. As soon as we appeared on the scene a sudden hush fell on the crowd and each pair of eyes was turned instantly in our direction while threatening looks were upon every face. However as soon as they recognised Pat their enmity seemed set at rest and they began their wild jabbering again though in a much more subdued manner than when we had first heard them.

The head of the throng was evidently a tall gaunt old man who came towards us and after a few words with Pat in Irish started violently shaking me by the hand. He then went to the bucket, which I mentioned and removed the piece of sacking from the top, showed that it was nearly full of liquor, clear as crystal. Into this he dipped a small glass tumbler about the size of a sherry glass and handed it to me to drink. I wished all assembled and the old man in particular, good health, and drank it off. I was agreeably surprised at the taste and did not think it was at all objectionable. Pat told me that I must perform the same ceremony so I filled the glass from the bucket and again drank to the prosperity of all those present.

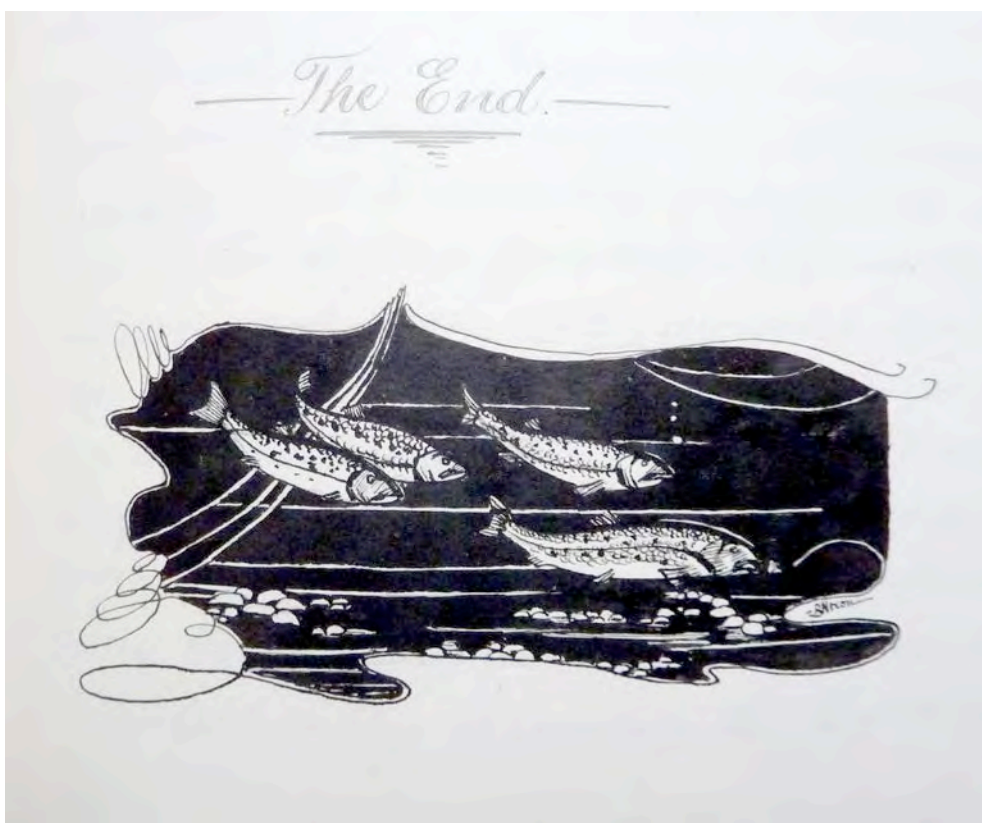
After this introduction I felt I could safely begin to ask questions about this very unorthodox distillery. Unfortunately the old gentleman had a very indifferent acquaintance with our mother tongue and could only speak it very brokenly and indistinctly. I however managed to understand that in the large carboy had been put what he called 'beer', which was really water in which a large quantity of dried wheat had been steeped for a long time. As the 'beer' was boiled the fumes passed out through the funnel at the top then round and through a copper worm, which was placed in the

large wooden barrel filled with cold water. As the fumes condensed they formed into liquor, which came out from the pipe at the bottom and dripped into the bucket. Although I couldn't quite understand what it was he told me, I believe that some of the liquor is then put back into the carboy into which 'mere beer' has been added. The brew is then started once more and this operation is repeated over and over again until no more spirit is given off, which can only be ascertained by continual tasting by an expert. The value of the spirit depends upon the 'brew' to which it belongs and naturally the first 'brew' is the best and strongest and so naturally the most expensive. I was given a glass of this first brew and certainly thought it tasted much stronger than the later 'brew', which was what the bucket contained when I drank from it.

I watched the performance for nearly an hour then the liquid which was coming out from the pipe was proclaimed by the older man to be of no further use and I was told that the performance was at an end. Immediately a sudden transformation took place for the carboy was pulled over on its side, the funnel and worm pulled out of the barrel and in literally nothing was visible but the disjointed parts which looked quite harmless and useless as they lay smoking on the bog. When the different parts had cooled they were each shouldered by the women who were there and we all set off home across the bog. I may mention that the men never thought of even offering to carry anything although each part must have been very heavy and though I naturally offered to take something, my proposal was indignantly ridiculed. I am sure I shall never forget that walk to my dying day partly because of the awful travelling in the dark misty night surrounded by a very drunken crowd and partly because my own head was anything but clear as the effects of my three glasses was rapidly mounting into it!

I have a somewhat dim recollection of feeling myself well up to my middle in a particularly bad place and being hauled out amid yells of laughter from my numerous attendants. However at last we got back to the road again only a short distance from the house. I was very thankful to get into a hot bath and afterwards to rejoin my anxious party who thought that I was either lost on the bog or had been caught in a raid by the police and taken to jail in Galway.

I am afraid that I have made my paper far exceed its legal limits and in case any of you might feel dry from listening to my long rigmarole, I hope you will taste some of the potteen which I somehow managed to carry home with me and that you will allow me to atone in some measure for my lengthy treatise on "Fishing etc".



## Up and Down Stream Fishing

S. Kneale and J.H. Lea, November 16<sup>th</sup> 1909

### Mr S. Kneale

Our hony. Secretary being without an angling paper to entertain you this evening. I ventured to suggest that it might be of mutual interest to us to exchange out views on the very controversial subject of the respective merits of up and down stream fishing. We all have I suppose, our own theories and practical experiences. Happy is the man who can adapt himself to all styles of angling, up or down, wet or dry according to the character and condition of the water he is fishing. There is much to be said and much has been said in favour of upstream fishing. Where the river is suitable and not too rapid, the dry fly man or up stream fisher can float his fly over the rise of a rising fish with a most deadly result, but the most suitable places on most of our rivers are very restricted and he has to pass by many rapid runs and broken streams containing feeding trout that cannot be successfully fished up stream. Personally I am quite sure a number of anglers persist in trying to fish unsuitable water upstream, just because they consider it the correct thing to do, are generally supported by the angling authors. They come home with a very much lighter creel than their fellow anglers who have been fishing across stream and gently swirling their flies down and across current and eddy, working their droppers to perfection and in a manner quite impossible for the upstream fisherman. When using the term 'downstream', one does not of course mean actually throwing the flies directly down the stream. Bringing them up against the current as thus, your flies would pass in a procession over the fish much as the direct upstream man would do; showing your line, cast and flies all in a straight line thereby scaring the wary and suspicious trout and would also have the effect on striking, of snatching the fly out of the fishes mouth as he heads towards you. I should rather favour the cast direct across the stream. It has so many advantages, namely your flies are covering so much more water as they swirl in a quarter circle from the bank to centre stream, your line being taut you can at once feel the pluck of a fish and in striking your fish you are almost at right angles to the way he is feeding and therefore more likely to hook him as the pull is rather across the fish's mouth.

Of course, too much of this and your dry fly fisher will scoff and wonder how anyone can waste their lives in such a method of fishing when he might be presenting one fly, and that dry, to the epicure trout. He, the dry fly man takes rather after the wine connoisseur who likes most of his beverages very dry; but there is also your other angler who perhaps likes his beverages full and luscious, his downstream fishing with its heavier creel, I think it is pretty generally acknowledged that by far the greatest proportion of anglers in the British Isles are wet and downstream fishermen and skilled sportsmen. I rather sympathise with the downstream fishermen; but like the Vicar of Bray, I favour to all stiles as the conditions may suit.

We all know those cold windy days in the early spring; hardly a fly on the water and if there are no fish rising to them, your dry fly man is absolutely at sea, he may as well reel up his line and go home. But your old and experienced trout fisher, from his knowledge and keen observation of trout and their habits knows where to find then feeding and what fly under the conditions will tempt their fancy. This knowledge cannot be acquired, as the dry fly man's skill can by casting upon a bit of ornamental water in your garden; no it only comes from long years of experience and keen study of the sport of angling we all love so well.

I do not propose to bore you any longer with my views and hope you will forgive me for reading (in lieu of the missing paper) a short article which appeared in C.B.Fry's Magazine entitled "The Down Stream Fisherman" by W. Carter Platts which expresses so much better than I could hope to do, the case of the poor down-trodden, down stream fisherman.

## Mr J.H. Lea

In fly fishing for trout, the question whether it is better to fish up or down stream must be considered in connection with the surrounding circumstances. To apply a general absolute rule to fish and rivers and flies in all their combinations and permutations I venture to think that no widely experienced fisherman would now be prepared. For years a controversy has been waged from time to time on this particular point.

One of our best authorities, Stewart, insists that fishing up is the only proper way to fish and another authority, Captain St John Dick says that he has all his life been enthusiastically attached to the sport of fly fishing and that circumstances have permitted him to indulge that passion to a much greater extent and over a wider field than either time or opportunity would probably have allowed to most fishermen.

He says emphatically that there cannot be two good fishermen holding different opinions on this subject and that the one who is wrong can know very little either of the art of fly fishing or the habits of the fish. He says he is trying to give the results of a very long and very large experience in fly fishing and that he always fishes downstream. He goes on to say that what is called dry fly fishing is all utter nonsense. His book called "Flies and Fly Fishing" is dated 1873 and it may be fair to assume that fish have learned something since that time in well-fished rivers and possibly anglers with more or less success have been trying to learn more about trout.

It would be interesting if such an authority as Stewart and such an experienced angler as St John Dick could be taken to the Wye or the Isaac Walton reach of the Dove in these modern times, to test the merits of their methods. Stewart I feel sure would not get so many pounds of fish each day as he speaks of getting from almost any trout stream in Scotland and St John Dick would I am afraid return with an empty basket if he tries to tempt the Dove trout with a dragging fly.

Any keen observer who is also a fly fisher will have noticed in rivers abroad, some of which are very clear and also in some of the rivers in this country, that the heads of the fish are pointed sometimes up stream and sometimes in any and every direction of the points of the compass and also at every height in the water from resting on the bottom and allowing the back fin and even tail to appear out of water. They will also have seen fish feeding in almost every position. Where the water is clear and the fish is to be seen, the angler will sometimes come to the conclusion that a certain particular fish is not on the feed and that to present a fly to him in any position is simply a waste of time.

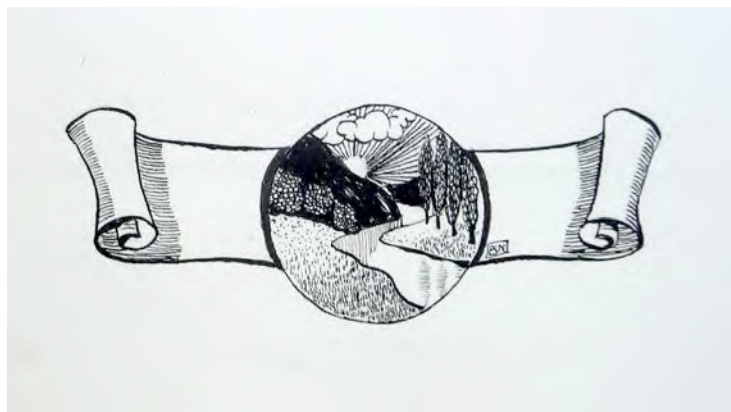
If the fish is feeding or inclined for food he will be on the look out for it and his movements will soon show his inclinations. Assuming that the fish is looking out for flies floating down the stream, that he is occasionally rising to flies floating over him, the point to consider is how to get a similar fly over him in a similar way without him seeing you or the shadow or wave of your rod or any of your line and without your line dragging your fly before it comes over him.

Before casting at all the pace and direction of the wind and the character of the water must be carefully considered and it seems impossible without noticing all these points to say whether you will cast up or down stream to have a fair chance of catching him.

It seems to have been demonstrated conclusively that more water can be covered by down stream fishing but a very great matter is to fish where the trout are likely to be and a still greater matter is to keep clear of the fishes key area and the man who covers the most water does not always catch the most fish.

In broken mountain streams the down stream method is sometimes very effective but even in such streams there are many fish which cannot be reached with any reasonable chance of capture excepting by throwing across or up stream. In slow clear rivers the hope of catching the monarch of the pool by dragging three flies across it is of short duration yet this fish may be under the bank just above a torrent of broken water and then drifting the fly over him down stream is probably the only way of getting him.

There appears therefore to be no hard and fast rule for every instance and the angler who is wise, if such a thing be admitted to be possible, should make himself well acquainted with both methods of fishing and choose for himself which he likes best.





## Views of the River at Horton





## Pot Holes and Underground Streams around Horton

Mr Percy Glass

February 1910

In the year 1900 a Committee was formed entitled "A Committee for the Investigation of the Underground Waters of Northwest Yorkshire" and was composed of representatives of the British Association and the Yorkshire Geological and Polytechnic Association. Professor H.W. Halls of the British Association being Chairman and Rev. W.L. Carter as Hon. Sec.

The first meeting of the Committee was held at Clapham on April 22<sup>nd</sup> 1900, the second at Clapham on June 8<sup>th</sup> 1900 and the third at Horton on August 29<sup>th</sup> 1902. The fourth meeting of the full Committee was held at Horton on April 24<sup>th</sup> 1903, the fifth at Leeds on 1<sup>st</sup> December 1904.

At the fifth and last meeting a draft report was read by Mr Dwerryhouse and it was decided to raise a special fund to pay the cost (£38) of the illustrations needed for the Ingleborough Report. This Report forms Volume 15 Part 2 of the proceedings of the Yorkshire Geological and Polytechnic Society 1904 and from which most of the information and illustrations, which follow have been taken.

"Ingleborough forms a bold hill 2373 feet in height and is an outlying spur of the Pennine Range. It is separated from its neighbours on the east by the valley of the Ribble, from those in the south by that of the Wenning and from Whernside on the west by Chapel-le-dale (the Valley of the Greta). It forms therefore a roughly triangular patch of high ground separated from surrounding hills by deep valleys and on this account a suitable area for the investigation of the movements of underground waters, inasmuch as these movements were unlikely to be complicated by any flow of water from neighbourhood heights. Every stream which courses down the upper slopes of Ingleboro' sooner or later sinks into the limestone which forms the base of the hill, to emerge in one of the surrounding valleys.

The summit of the hill consists of Millstone Grit, resting upon a series of shales with thin limestones and grits (Yoredale Rocks), which in turn lie upon the great mass of the mountain (Carboniferous) Limestone which is here 600 or 700 feet in thickness. At the base of this formation is a great unconformity, highly folded and inclined rocks of Ordovician and Silurian. (page 254). This junction may be seen on the face of the scar at Foredale Quarry.

The Millstone Grit is a porous sandstone; rain falling upon its surface is readily absorbed and percolates through its mass until the underlying shales are reached. Here its downward course is arrested and it breaks out as a series of springs, the waters of which course down the steep slopes of the Yoredale Rocks until they reach the Great plateau of the Mountain Limestone. The Limestone is hard, crystalline and quite impervious to water in the ordinary sense, but owing to the fact that it is highly jointed all water flowing on its surface is at once absorbed into its cracks and fissures. (page 256).

Most of you are familiar with the surface of Moughton Fell, I need not describe to you how these joints and fissures are enlarged by the solvent action of rainwater. The Ordovician and Silurian Rocks consist for the most part of hard grits and slates, which are practically impervious, consequently the water that flows onto the Mountain Limestone on its upper surface issues as springs either upon or immediately above the line of junction between the limestone and the underlying impervious rocks. It must be noticed in passing that the fact that the surface of the older rocks upon which the limestone rests being no means horizontal, forming a series of ridges and valleys, has an important effect on the direction of the flow of the subterranean streams (page 256).

In some instances the subterranean as well as the surface streams have come under the influence of the great glaciers which flowed around Ingleboro' from the high ground north of Ribbleshead. Some of the existing Pot Holes and Caves are of pre-glacial existence and it is probable that others now deserted by their streams were produced during the glacial period, by streams diverted from their original (and subsequent) course by the edge of the Glacier or by streams flowing off the ice itself. It is difficult to draw lines upon the map to represent the watersheds of the district, as in more than one instance, the water underground travels parallel or even counter to the slope of the surface, or passing beneath a ridge emerges in a neighbouring valley. In this way water which, from its direction of flow and from the slope of the ground would inevitably flow into the River Ribble, sinks into the limestone, passes into a tributary of the Wenning or alternately into the Lune. (page 258)"

In this case however, instanced by Mr Dwerryhouse, the diversion of water from one watershed into another only became possible owing to a glacial block at Helwith Bridge, causing a glacial outlet to be cut at right angles to the Ribble Valley, across Swarth Moor and between Moughton and Feizor. Feizor Nick is

doubtless the beheaded watercourse, which before the block at Helwith Bridge, used to flow parallel with the river.

In referring to glacial and pre-glacial periods in this connexion it may be well to state here that in this district there are clear evidences of two and probably three glacial periods with milder periods intervening, but for the purpose of this paper the general term Glacial Period is sufficient.

The tracing of these subterranean streams at first was accomplished by putting into the sinks chemical substances requiring reagents, but the labour involved in the collection of samples and subsequent examination (1200 tests were made in a single season) led to the use of colouring matter only. It will however be of interest to narrate from the pages of Mr Dwerryhouse's Report and account of the various processes tried.

"The following substances were employed as tests during the investigations.

1. Common Salt
  2. Ammonium Sulphate
  3. Methylene Blue
  4. Fluorescein
1. Common Salt was introduced in quantities of half a ton and the issuing waters were tested quantitatively for chlorine by means of a standard solution of nitrate of silver, the reaction being observed by means of Potassium Chromate. This proved a satisfactory method except in that it involved much labour in collecting and testing samples, as well as in the transport of the salt to the sinks, many of which are situated on the hillsides distant from any road or even track.
  2. Ammonium Sulphate was employed in about 5cwt quantities and tested my means of Hessler's solution. This method possesses all the disadvantages of the foregoing, with the additional one, that the quantity of ammonia in streams flowing through an agricultural (pastoral) district varies with change of weather. There are one or two instances in which every large shower carried the washings of a farmyard into a neighbouring stream raising its ammonia percentage considerably.
  3. Methylene Blue was tried on several occasions but unsuccessfully.
  4. Fluorescein, dissolved in a solution of Potassium Carbonate has been found by far the most useful and trustworthy. Its appearance in a steam is unmistakeable. During the last 4 years it has been the only test employed by the Committee. In a few cases the course of the underground water was actually followed but in most cases this was found to be impossible owing to the narrowness of the fissures."

The work was commenced at Gaping Ghyll, working round by Alum Pot, Ribblehead, and Chapel-le-dale to Ingleton.

The beck is formed by several springs, which issue on the breast of Simon Fell about 2100 feet O.D. and finally flows onto the limestone at 1350 feet. At times of heavy rain it flows over the lip into Gaping Ghyll, but at other times disappears down fissures and finds its way into Gaping Ghyll at a lower level. Most of you have observed the same thing in the case of the beck just above Hunt Pot on the slopes of Pen-y-Ghent.

Gaping Ghyll is 365 feet deep. It was first descended by Mr John Birkbeck of Settle in 1872 but only to the ledge in the main shaft 190 ft down. In 1895 Mous. E.A. Martell of Paris, by means of rope ladders, reached the bottom. It was descended by the Yorkshire Ramblers Club in the same year; from the proceedings of which Club the accompanying illustrations are taken, and in 1903 by the Underground Waters Committee. Gaping Ghyll is just below the 1350 ft contour line.

At the bottom of the shaft is a chamber 479 ft long, 82ft wide and 110 ft high. The water enters partly over the lip, partly by a subterranean waterfall, about 30 ft below the surface. Part of the water finds its way via Clapham Cave but apparently all of its water emerges at Clapham Beck Head. The first trial was made with ammonium and took 5 days to reach Clapham Beck Head (1 mile). The second was made with salt and ½ ton being put down Gaping Ghyll on June 4<sup>th</sup> 1900 and another ½ ton on June 5<sup>th</sup>. The salt appeared at Clapham Beck Head on June 15<sup>th</sup>, 16<sup>th</sup>, 17<sup>th</sup> 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup> and 21<sup>st</sup>, the maximum being on June 18<sup>th</sup>, thus taking 11 days for its first and 14 days for its maximum. By the kindness of Mr Walter Morrison of Malham Tarn, Mr Coulthard has supplied the Register of rainfall in that place for the months April, May and June 1900. This shows the rainfall for April 3.88 inches. While from May 4<sup>th</sup> to June 4<sup>th</sup> 2.09 inches (260/266)."

The next observation is of Long Kin marked P8 on the special Ordnance map.

“It is a long rift in the limestone about 12 feet deep at the bottom of which a stream flows in a series of cascades and passes at its lowest extremity into a cave”

Long Kin is, as the crow flies, about  $\frac{3}{4}$  mile N.E. of Gaping Ghyll, ie nearer to Horton, it is like Gaping Ghyll just below the upper side of the limestone formation and at the same level, about 1350 ft. The streams flowing into these two sinks are both in the catchment basin of Clapham Beck, but the water from Long Kin, marked P8 on the Southern area map, passes under the surface watershed and issues at Austwick Beck Head, in Crummock Dale, about 2 miles N.E. of Clapham Beck Head. A stream, which rises on the Eastern slope of Simon’s Fell, above the shooting Box, sinks at P14a, then turns at right angles to the surface slope and emerges at Austwick Beck Head. The curious fact is related that the fluorescein put into Long Kin in April 1900 took 10 days to reach Austwick Beck Head about 1 mile in a direct line, while in 1904 the fluorescein put into P14 by the Shooting Box and having a slightly longer distance to travel, reached Austwick Beck Head the next morning. In the first case there was low water and in the second heavy rain fell during the night after the colouring matter was put in.”

This ‘P14’ Mr Dwerryhouse points out as a very interesting case. It flows past the Shooting Box in a depression in the side of Ribblesdale and would if continued in its course inevitably flow into the Ribble. However on falling below the surface it turns at right angles to the south, under the Ribble watershed, emerging at Austwick Beck Head and thence by the Wenning and the Lune enters the sea 25 miles north of the Ribble. (P21a).

Moughton and Norber, have denuded limestone surfaces, there are no surface streams, the water immediately disappearing beneath the surface (p 270). The story of this denuded surface is to me of never failing interest, not to say fascination, but its place is not here, although I hope I may some day be able to return to it.

Leaving Gaping Ghyll and Long Ken behind us we now proceed almost due south and still following the upper side of the limestone, for about  $1\frac{1}{2}$  miles in a direct line to the scene of by far the most interesting investigation of the Joint Committee, centred as they are in our own old familiar friend Alum Pot above Selside. How many times have we lunched, rested, renderedvoused (sic), lounged and cracked on the banks of Alum Pot Beck to say nothing of a noonday siesta, with a 12 to 20 ft snowdrift on the opposite side of the beck.

It might perhaps be heading on dangerous ground to refer to traffic with juvenile natives, ie. Plovers eggs, so we will omit all reference to such questionable transactions, but the same reticence need not be observed in referring to one memorable occasion when a party of us, several of whom alas will never accompany us on our jaunts again, made the discovery at Long Churn that the fluorescein put down shortly before by members of the Yorkshire Geological Society was not properly underway. It was a sight for “Ye Gods” on that Sunday afternoon, to see men with the weight of mature years upon their shoulders, fathers of families and grown up at that and married some of them, to see the grave Justice of the Peace, the man of business, the medicine man, to say nothing of the colonel commanding all on hands and knees and slashing the water about like so many kids--- you wouldn’t believe it so I won’t tell it.

Most of you have walked up from Selside to Alum Pot, following what is in fact the (almost) dry bed of Selside Beck up to the stone quarry, relic of the days of the building of the Settle and Carlisle Railway and where on one never-to-be-forgotten Sunday afternoon, certain frivolous members of the Association (I intentionally refrain from mentioning names) with the parts of a new rifle cunningly concealed in trouser legs and coat sleeves, visited this said quarry and fired bullets at an improvised target, the bullseye men being later in the day regaled at the Golden Lion on boiled Plover’s eggs, but enough of the reminiscences and to return to our text, as the Preacher puts it.

You will have noticed small runs of water appearing and disappearing in the most unaccountable manner and you may have supposed, or might naturally have supposed that there were small tributaries of Alum Pot drainage area which like many a trout in the river below had ‘dodged the plot’ and by another route found their natural home in Selside Beck. It is quite true that Alum Pot watershed is the natural watershed of Selside Beck and equally true that Selside Beck has been robbed of its natural supply by Alum Pot; but these little springs, runs and minature ‘pots’ which you pass on your left as you go up are diverted upper waters from the next neighbouring watersheds to the south, in other words Selside Beck retaliates on Alum Pot by annexing the headwaters of Gill Garth Beck.

We just now noticed the case of a stream being turned at right angles to its natural course and flowing South, in this case the upper waters of Gill Garth Beck are turned at right angles and North, and the

upper waters of Selside Beck are swallowed by Alum Pot, carried beneath two surface watersheds and emerges finally upon the opposite side of the Ribble.

It will be of interest therefore before dealing with Alum Pot itself to trace on the plan these waters flowing into Selside Beck and which are set off against those of which it has been robbed by Alum Pot. We will follow Mr Dwerryhouse in his felicitous description,

“Fell Close Side issues on the steep sides of Simon Fell and flows E.S.E till it sinks at P18, reappearing and again sinking at P19, this time into the mountain limestone. It again appears at S51 where it is joined by several other springs. From S51 the water flows through a shallow open channel in the limestone, sinks at P43, again emerges partly from a small cave S40, almost immediately sinks again and comes to the surface at two adjoining springs S42, then over a pasture, through a wall, crosses the corner of a second pasture, under another wall and into a third field. After passing through the second wall the stream is partly absorbed into the limestone at P37a (in dry weather it is entirely absorbed) and finally disappears at P37 close to an old limekiln. In very wet weather it flows over the surface to Gill Garth Beck. From P37 the stream underground turns at right angles to the surface slope and finally emerges at S46 where it flows over the surface forming Selside Beck.”

We now come to streams, which issuing in the angle between Simon Fell and Pack Fell unite to form Alum Pot Beck. Mr Dwerryhouse points out that on the 6 inch Ordnance this beck is shown as flowing over the lip of Alum Pot, which however rarely occurs, a small independent stream providing the water which usually flows over the lip of Alum Pot. Alum Pot Beck is joined by the water from Long Churn Spring and they disappear down Long Churn, P31. Again to quote the Report....

“On entering P31 the cave is sufficiently high for a man to stand upright; a few yards from the entrance it divides into two, the one to the left being the one followed by the water, that to the right being an ‘oxbow’ deserted by the stream except when in flood. About 50 ft below the point of reunion the stream plunges down a waterfall some 15 ft in height and into a chamber about 50 by 20 ft. The greater part of the floor of this chamber is occupied by a pool from which the water flows E. At first the passage is low and one must walk in a stooping posture, further it becomes more lofty as the roof, which is formed by a massive bed of limestone, remains horizontal, the floor gradually falling away. For the next 600 ft there is little variety, a few pools 1 to 3 ft in depth and a number of deserted oxbows, some at a height of 5 to 6 ft above the bed of the stream. At the end of the 600 ft reach a small passage branches off to the right about 4 ft above water level and rejoins the main passage further down; it is too low to explore. The water now flows another 100 ft, the passage again bifurcates. In this case the water takes the right hand, the left coming to daylight as P30, where also there enters a stream flowing from Whit-a-Green Spring which issues on the higher slopes of Park Fell at a height of 1600 ft sinking on reaching the limestone at 1250 ft, (P29) before entering Long Churn at P30. It is joined underground by a small spring (S53) being the drainage of a peat bog which owes its existence to a patch of glacial drift resting on the limestone (P275).”

In passing let me observe that this apparently trivial reference to the peat bog forms one of several very valuable sidelights thrown upon the history of the Upper Ribble as a result of the accurate and painstaking observations made by the “Pot Hunters”.

So much then for the streams flowing into Alum Pot. Alum Pot itself is a huge rift in the limestone which descends vertically to a depth of about 200 ft and is then continued by a series of sloping passages and chambers too a depth of 290 ft at which level the water stands up to the roof, barring further passage.

Although most of you are familiar with the top or surface of Alum Pot you will not be so familiar with it below, so we will on the screen look at Alum Pot from several new points of view. Some of these views are reproduced in the joint Committee Report, by permission from the Yorkshire Ramblers Club Journal. It was across the mouth of this shaft that there was placed a baulk of timber at the time that the railway below was being constructed in 1876, with a windlass for the purpose of descending it. When the contractors left so did the windlass but the timber remained and on one occasion one of our members (Dr Hodgekinson) walked across this chasm on this baulk of timber. This timber disappeared some years ago and I have been told that one of the underground exploring parties discovered it wedged firmly in the roof of one of the chambers, having probably been lifted there during some heavy flood.

As showing some of the difficulties, which the men who made these underground investigations had to face, some of you will be interested by the following. You will of course understand that these underground explorations can only be undertaken during a dry time with the water dead low. On one occasion when I was at Horton a party of these explorers descended Long Churn and while they were below ground a heavy thunderstorm came on. The watercourses were soon in full flood and it was impossible for them to return to the surface, there they had to remain for 12 hours till the water subsided sufficiently to allow of the return journey to be made.

I need not in any great detail recapitulate the experiments made by the Committee which showed that the water from Alum Pot passed under the River Ribble, emerging at Turn Dub on the left bank as our late friend Mr Robert Burn, with the members of the Association demonstrated this same interesting phenomenon years ago, they using sawdust for the purpose. The Committee made the experiment in Sept 1901 with Fluorescein put into Long Churn and some of you on that particular Sunday afternoon assisted in completing its dispatch on the journey to Turn Dub. It took 12 days to accomplish the journey of 1½ miles, the water in Footnaws Hole was coloured the day previous.

The Committee spared neither time nor expense in the endeavour to solve the problem, why and how did this water flow under the bed of the Ribble to come up to the surface on the opposite side? The top of Alum Pot is 1125 ft above the sea; the lowest point is 290 ft below the surface or 835 ft above sea level. The top of Footnaws Hole is just below the 825 ft contour and the water in it is usually 25 ft lower, in other words stands at a level of 800 ft.

Turn Dub is just below the 800 ft contour so the fall is very slight. Footnaws Hole evidently forms a storm relief outlet for Alum Pot. Turn Dub, many of you will be glad to know, is not bottomless, it is 18 ft deep. As a result of careful boring (fig 6 page 280) it has been demonstrated that in preglacial times Alum Pot waters flowed into the river on the right bank, that when the mild conditions then prevailing gave place once again to arctic conditions and when in turn the glaciers made their retreat north they filled up the bed of the river with boulder clay dropped by the retreating edge of the ice sheet, then once more a milder climate ensuing the water once again flowing from Alum Pot into the old bed of the river, this however was choked with glacial debris, the new river was running on the top of this debris and had shrunk in dimensions to a mere trickle by comparison and an old outlet on the right bank became now an outlet on the left bank of the river. In only one place out of 7 bores did the Committee reach rock, viz on the right bank 20 ft from the river and at a depth of 8 ft. At another spot the bore was blocked by a boulder at 14 ft.

As Mr Dwerryhouse remarks.....

“The Ribble can be seen to be flowing over drift, no solid rock being exposed for nearly 2 miles above or 300 yards below Turn Dub. This series of observations tends to prove that Alum Pot and possibly Long Churn were of preglacial origin.”

But as a matter of fact this wonderful series of ascertained data throws light on not merely a preglacial period but of more than one, possibly and probably several preglacial periods. It is not improbable that Alum Pot was in the first case a hole excavated by water and debris falling off the outer edge of, or a cravasse in a glacier, the glacier, which carved out the Ribble valley down to the 1200 ft line. When this glacier retreated in a more temperate climate, streams began to flow over the land surface, this hole would naturally swallow the water coming down from the slopes above and it would be cut and extended by floods.

Then when once more the valley was filled with a glacier, which carved out the valley from the old 1200 ft level down to the level revealed by the boring, viz. something below 800 ft and in turn retreated before milder climatic conditions. Alum Pot would be flowing again into the river till a third glacial period filled this 800 ft bed with glacial debris which the present River Ribble, greatly reduced in volume, is busily engaged in transporting to the sea.

In addition to the water which flows into and through Footnaws Hole from Alum Pot, it has a small independent supply of its own which is shown on the plan of the Committee, Washford Spring, rising just above the 1700 ft contour on Park Fell, disappearing at P52 on the 1200 ft contour, also a smaller spring rising at the 1300 ft contour a short distance above and to the south of P52, disappears at P34, P35 and finally at P41 from whence it flows underground to Footnaws Hole.

Hull Pot on Pen-y-Ghent Moor is almost opposite Alum Pot, a line would intersect the Tarn and Newhouses. It is really about ½ mile lower down the valley and about 100 ft above Alum Pot, viz about the same altitude as Gaping Ghyll.

Hunt Pot is ½ mile distant.



- Hunt Pot -



*Salmon Scales*  
*From*  
*A Practical Point of View*

By *J. A. Hutton*

*March 20<sup>th</sup> 1910*

*Introduction*

A little more than a year has elapsed since I endeavoured to give you some idea of the information we may obtain of the history of the Salmon from the study of the periodic growth of its scales. My main object in again addressing you on the subject is to draw your attention to the practical results, which one can hope to obtain by a more thorough and more systematic investigation of the scales of the noblest of our fresh water fish. Probably the Salmo would be better designated as a salt-water fish, for it is in the sea that the greater part of growth takes place. Although its birth occurs in fresh water and its early years are spent in the river, during the latter and longer portion of its life its visits to fresh water are solely for the function of reproducing its species.

It will be generally admitted that the quantity of fish available for the sportsman, and in a ten fold degree the harvest for the netsman, depend entirely on one factor, namely, the number of fish which are annually allowed to reach the best spawning beds of every river, and there to deposit unmolested the ova on which the future of the whole industry depends. As a Norwegian farmer quaintly remarked "if you kill your kids you can't get goats" and still more so, if you kill your goats you can't expect to get either kids or goats. The law recognises the first fact by forbidding the capture of parr or smolts, but unfortunately it does not recognise the second fact, for in the majority of British rivers, under existing conditions there is not the least chance of mature fish reaching the spawning bed in sufficient numbers to restock the waters. One cannot have a better example of this than the manner in which drift nets are permitted to work both by legal and illegal methods along the coasts of Ireland, subject to little, if any control by the authorities.

There is no doubt that the existing neglect and miss management of British Salmon Fisheries is largely due to ignorance of the life history of the fish, and also to a failure to realise that the interests of the netsman and sportsman are, in the long run, identical. If more fish were allowed to reach the upper waters the sportsman would undoubtedly benefit, but the proportion of fish caught by rod and line would be infinitesimal in comparison with the numbers which would remain to spawn, for unfortunately, from an anglers point of view, which perhaps fortunately for the whole industry, salmon are not obliged to feed in fresh water. If we only allow a fair proportion of every run of fish to get past the nets, we should soon have an ample stock of spawning fish in every river, to be followed in a few years by a vastly increased number of mature fish returning to fresh water to spawn. The netsman would then reap his reward, for it is not too much to say that where the angler catches one fish the netsman catches twenty. Nor should it be forgotten that such little preservation as does take place under present conditions, is due almost entirely to the exertions and self denial of the sportsman, and owes almost nothing to the nets man, whose sole desire seems to be to kill every salmon he can, with an utter disregard to the future.

Perhaps it is hardly fair to expect the average fisherman who gets his living by netting, to take a broad and farsighted view of matters, and to be always thinking of the future. The powers that be, however, cannot be excused in this manner for we must all admit that good and wise Government means the exercising of due forethought for the future, and we should hardly term him a statesman whose action is solely guided by the expediency of the moment, with utter disregard for the days to come. I think it is generally admitted that our Salmon Fisheries do not produce the amount of valuable food they should do, and this is owing mainly to the neglect, or apathy on the part of authorities. I am not referring here to the Board of Conservators who generally speaking do what they can with limited means and limited authority. I am afraid, however, that the only excuse we can offer for the higher authorities is either that they are more or less ignorant of the life history of the fish, and the great possibilities of increasing the present stock, or that they really have not the adequate funds or time to devote to the subject.

One must therefore welcome anything and everything which will aid us in solving the many and difficult problems connected with the history of the salmon, and for this reason alone, apart from all other arguments which could be brought forward, investigation of scales should receive more encouragement from the authorities than it has done up to now. It is a remarkable fact that neither the English or Irish Board of

Fisheries have published a single report dealing with the question, although the Scottish Board have published three of Mr Johnston's valuable papers. What work has been carried on in England has been done by private individuals. In Norway, a country with a small population and a very small revenue, most valuable investigations are being carried out in connection with Salmon and Trout. The American work is the admiration of the world. German Scientists, are, as usual, carrying on useful and thorough investigations. Good work is also being done in Holland in connection with Rhine Salmon. The one country, which is remarkable for its utter neglect of its fresh water fisheries, is England, and this neglect is more conspicuous in comparison with the first class work carried on in Scotland. If anyone doubts this statement I can only ask him to read the annual reports published in both countries during the last few years. If you want information read the Scottish Blue Books, which will repay the closest study; on the other hand you may read through half a dozen of the English Blue Books without obtaining any information of the least interest either from a utilitarian or scientific point of view. As a further example I may mention the fact that the English report for the year ending December 31<sup>st</sup> 1908 was only published in March 1910.

The very greatest credit is therefore due to Mr Johnston for his original investigations in connection with all the periodic growth of Salmon scales and for the valuable deductions he has obtained. Our thanks are also due to the Scottish Fishery Board for publishing the results of these investigations, and still more to Mr Calderwood for bringing the whole question before the public in his book "The Life of the Salmon." One is glad to see, too, that the well-known angler Mr P. D. Malloch has also fallen a victim to the fascination of scales and has recently published a book "The Life History of Salmon, Sea Trout and other Fish," which everyone ought to read. Mr Hubert Turnbull contributed three interesting articles to "Field" and it would almost seem as if the study of the Life History of the Salmon were the prerogative of Scotsmen. Herr Knut Dahl is carrying on some most interesting investigations in Norway the results of which will shortly be publicised and I am glad to say that a few private individuals in England are also investigating the subject on their own account. May we hope that the infection may be shortly spread with useful effect, towards the regions of Whitehall.

### *What has been proved*

It has now been proved that as British Rivers are concerned generally speaking, the parr or immature salmon remain two years in fresh water before migrating to the Sea. It has further been proved by scale investigation that out of every shoal of smolts which enter the sea in a given year, not one will return to the river in the same year and that every single fish will remain at least one winter in the sea before returning to fresh water to spawn. It has been further proved that out of the shoal only a certain proportion will return as Grilse during the following year and that a certain proportion in some rivers the largest proportion will remain two or three winters in the sea and will return to the river as four year old fish, running say from 10 to 15 pounds and more, or as five year old fish averaging from 15 to 35 pounds in weight. A smaller proportion will remain even a fourth winter in the sea, and will enter the river as maiden unspawned fish, six years old, and weighing from 30 to 50 pounds. It is possible that a few fish may even delay their return for another year. In this connection I should like to draw to your attention to a prophecy in a pamphlet, I published last year, and which I ventured to make in connection with the River Wye.

On page 27 you will find the following:-

"One would also expect that in the present year, 1909, some exceptionally heavy fish will be killed, namely, the six year old fish hatched in 1903, but this largely depends on circumstances in the sea which can only be guessed at."

These remarks were based on investigations carried out in 1908 with the scales of Wye Salmon, and I am glad to be able to tell you that to my knowledge alone no less than six salmon of 40 pounds, and upwards were killed on the Wye last year. I have acquired the scales of three of these fish, which weighed 40, 42 and 44 pounds respectfully and the scales show them to be six years old maiden fish hatched in 1903, and therefore the offspring of the fish that entered the river and spawned in 1902. It should be remembered that 1902 was the first year for many years in which Salmon had a reasonable chance of reaching the upper waters of the Wye. It now remains to be seen whether during the present year we shall see any seven-year maiden fish, which would probably weigh about 50 pounds. Naturally the numbers of such fish would be limited and the might escape capture.

### Tay smolt marking experiment.

I know it is difficult to upset old ideas and prejudices, but anyone who seriously investigates the subject is forced to the conclusion that, at any rate, in large rivers like the Tay or the Wye, the greater majority of the fish even those of 30 or 40 pounds are maiden fish re-entering the river to spawn for the first time. If anyone is sceptical about the theory of scale markings I can only refer him to the results of the valuable experiments carried out on the Tay under Mr Malloch's supervision. Of the 6,500 smolts which were marked with the fine silver wire during migration in 1905, not one was recaptured that year, but in succeeding years we get the following remarkable results: -

- 1906 40 grilse were caught with wire mark varying from 15 ounces to 10 ½ pounds in weight.
- 1907 57 fish were caught with the marks, varying in weight from 7 to 27 pounds.
- 1908 4 fish were caught with the marks, varying in weight from 13 to 35 pounds.

Scales have been taken from these fish, and the estimated age of the fish as shown by the rings on the scales, according to Mr Johnson's theory, is in absolute agreement with the actual age of the fish as shown by the wire marks. We have here a clear case of theory being confirmed by practice, and I think that even the most hardened sceptic must admit that Mr Johnston's Scale theory has been proved up to the hilt, at any rate as far as maiden fish are concerned.

### The Scale Theory

For the benefit of those who were not present on the last occasion when I endeavoured to give you some idea of Mr Johnston's Scale theory, I will reiterate as shortly as possible the main points.

A Salmon acquires most of its scales shortly after birth, and generally speaking obtains no new ones in the latter period of its life, except perhaps to replace lost scales. The scales increase in size as the fish grows, by the addition of rings or ridges around the circumference of each scale, in the same manner as the growth of a tree. There is however this difference, that a considerable number of rings are added in each year. In the winter when there is a scarcity of food, the small parr cease to feed, and there is a cessation in growth. We consequently find on each scale around the centre of growth, a number of concentric rings comparatively wide apart, representing the feeding during the first summer of its life, and surrounding these a few lines closer together which indicate the slackened growth as winter approaches. Around this inner core is a further series of summer lines, surrounded by a second winter band. In the third year of the fish's life we generally find in addition, two or three, or it may be more, rings representing the early feeding in the river or in water just above the tide reach, before its departure to the richer feeding of the sea as a Smolt a few inches long. Although in British rivers it would appear that the majority of the Parr migrate when a little over two years in age, some may delay their departure until three years old, and possibly longer, and a certain may migrate when only a year old. Immature Sea Trout may hang about the estuaries for a long time, but it would appear that Salmon Smolts when once they enter brackish water, make prompt passage through the estuarial waters into the sea.

When the Smolt enters the rich feeding ground of the Sea, rapid growth commences, and is shown by the addition of lines or ridges of an altogether different character, far apart, and strongly marked. In the sea, however, during the winter there is also a diminution in rate of growth if not an absolute cessation of feeding. This may be due to lessened food supplies, or some form of hibernation, or possibly to satiation and the consequent necessity of resting from feeding. It may be due to the spawning instinct developing itself, for I am inclined to think that when the mature fish once approaches a river with the intention of spawning it ceases to feed. In this connection I should draw attention to a rather remarkable note in Mr Willis Bund's interesting book "Salmon Problems" on page 208,

"The Usk Salmon in the Brighton Aquarium died in the summer of 1878. It was placed there as a Smolt in April 5<sup>th</sup> 1873 and in the following month was transferred to salt water, in which it remained for upwards of five years, feeding freely on shrimp etc. during a portion of the year, but abstaining from food between August and February"

This question is one that requires further investigation, and is one of the problems which scale investigation may help us to solve.

### Winter Band of Grilse

The cessation or diminution of feeding in the sea is generally marked by a winter band or series of closer lines or ridges, and in the case of Grilse scales, surrounding these we find a further series of wide rings denoting the portion of the second summer spent in the sea. I cannot emphasise so strongly that the scales of all Grilse show more or less clearly defined, this dark band representing one winter spent in the sea, proving that no Grilse return to the river in the same year in which it migrates. The truth of this theory was more than confirmed by the results of the Tay marking experiments, to which I have already alluded. Here does not seem to be any possible room for doubt that this winter band is formed in the sea and it is evident that if Smolts did return to the fresh water during the first autumn or winter, they would not weigh more than one or two pounds at the outside and further, if they did return some of them would be caught.

The first of the marked Smolts in the Tay experiment were recaptured on June 1<sup>st</sup> in the following year and weighed only two pounds and fifteen ounces. Mr Calderwood also mentions the case of a Grilse caught March 6<sup>th</sup> 1906 weighing only 2 ½ pounds. One cannot, I think, therefore dispute the deduction that no Smolts return to fresh water in the year they migrate, and that the winter band which is generally more or less well marked on the scales of all Grilse is formed in the sea, and not in fresh water.

### Winter Band on larger fish.

If therefore we find on larger fish not only one winter band but two or three, and occasionally four, such bands, each surrounding a full series of summer rings, I think it is a logical conclusion that all such winter bands are formed in the sea, and not in the river, and therefore Mr Johnston's theory is correct and that a large number of fish running up to 40 lbs, and more in weight are maiden fish entering the river for the first time. This is more evident when we compare the spawning mark with the winter band or check.

### Disintegration of Scales.

A Salmon may enter a river in January or even earlier, but will not spawn until the following October, November or December, nor return to the Sea until some months later. In other words it may spend twelve months or more in fresh water and practically fasting the whole of that time. The fish diminishes in bulk every day after entering the river, and there is a further loss in weight and bulk in the operation of spawning. The skin has to accommodate itself to the lessened bulk of the fish, but the scales cannot shrink, and they become disintegrated and frayed and worn away, especially at the sides. Consequently when the fish re-enters the sea as a Kelt, the scales are altogether different in shape from those of fresh fish, and are irregular in outline with rough and ragged edges.

### Spawning Mark.

On returning to the sea the fish begins to feed ravenously, and therefore in the case of a fish returning to the river for the second time to spawn, we find broad well marked ridges denoting rapid feeding surrounding the old kelt scales and between there is a scar of "Spawning Mark" affording evidence that the fish in question has previously entered the river and spawned, that is the theory, but again we have confirmation in practice, for scales have been taken from marked kelts, and some of these have been subsequently recaptured as clean fish, and their scales show an undoubted "spawning mark". One only has to compare side by side scales from maiden fish and those from fish which have previously spawned, to see that in the majority of cases, it is impossible to confuse the "spawning mark" which is formed in fresh water, with the winter check which is formed in the sea. In this connection I should point out that in those rivers which are purely Autumn rivers, and in which the Salmon do not remain any length of time, it is probable that the spawning mark would not be so well defined as in rivers like the Tay and the Wye, whose upper waters are principally dependent on Spring and early summer fish, and where the best and least polluted spawning beds are situated 50 to 100 miles and more from the sea, and are seldom if ever reached by late running fish.

### Proportion of Spawned Fish.

On examination of the scales of a large number of fish from rivers like the Tay and Wye, we discover the astonishing fact that a very small proportion of the fish have spawned before, and that the majority are maiden fish, entering the river for the first time. Mr Malloch states about 20 percent only have spawned before. I have examined the scales of 108 fish caught in the Wye in 1908 and 1909, and find that only ten or less than ten percent show undoubted signs of having previously spawned. Only one of these latter scales show two spawning marks, and it is probable, at any rate, in big rivers that comparatively few salmon spawn more than once, very few twice, and hardly any three times. This is not so remarkable when

we consider that each time a fish enters a river, it has to pass the nets. We should also the great exertions a fish has to undergo to reach the spawning grounds, the further exhaustion in the act of spawning, and the long period, which elapses before it again reaches the sea, during the whole of which time it is practically fasting. The male fish seem to suffer the most, as one notices from the number of dead male kelts one picks up on the riverside. This is further confirmed by the fact that of the fish whose scales show the "Spawning Mark" the majority are females.

#### *Pacific Salmon.*

In this connection it should not be forgotten that the Pacific Salmon, which have 400 miles or more to run up the rivers in order to reach the spawning grounds, are all said to die after spawning. Notwithstanding this these Salmon enter in all sizes from a few pounds to 80 pounds and more. All these fish must be maiden fish thus adding confirmation, if it were needed, to Mr Johnston's theory. It is possible that if the rivers of North America were shorter some of these fish would also regain the sea as Kelts, and would again return to spawn.

#### *Divided Return.*

It has therefore been proved that of every migration of smolts, all will remain one winter in the sea. A certain proportion will return the following year as Grilse, when about 3 ½ years old. A larger proportion will remain two winters in the sea, and return as small spring fish or as summer or autumn fish running from seven pounds to perhaps thirty pounds. A still larger proportion will remain a third year in the sea and only return as five year old fish, running from 13 to 35 pounds, and in this connection I may point out that the spring fishing, and indeed the greater part of the rod fishing on the Wye mainly depends on this run of fish, which average in weight about 20 pounds. A few of these five-year-old fish on the Wye may delay their return for a few months and enter the river as summer and autumn fish. There is yet a further proportion, though not many, which will remain four winters in the sea, and return as six-year-old maiden fish, averaging 40 pounds in weight. As I have already pointed out, it remains to be seen, at any rate as far as the Wye is concerned whether any fish will remain even a fifth year in the sea and only enter the river for the first time when seven years old.

#### *Further Problems.*

So far I have been dealing with what has already been proved by Mr Johnston and others, but as I pointed out on a previous occasion, there are many problems connected with the life history of the Salmon, which remain to be solved. I am firmly convinced that with thorough investigation of the scales on scientific lines, fresh light can be thrown on the whole subject, and information obtained which will enable us to come to sound conclusions as to the best methods for managing our Salmon Fisheries. The whole subject of Scale investigation is still in its infancy and the further I go in the matter the more convinced I am that investigations require to be carried out by men trained in the best methods of scientific observation. At the same time very valuable assistance can be rendered by Sportsmen and others like myself, whose time may be largely taken up by business or other occupations.

#### *The Growth of Scales.*

The first point on which further information is required is as to the composition of, and mode of growth of the scales, and as to whether they are built up merely by additional growth around the circumference of the scale or whether the whole of the scale increases in thickness as well as in area. They are embedded in pockets in the skin and the scale apparently grows from the centre outwards by the addition of rings or ridges around the circumference. Then again, further investigation is required as to the number of rings added each year, and as to whether the number is fairly constant or not, both in the early past life in the river, and subsequently in the sea. It may be that the number of rings will vary according to the food supply, being more numerous when food is plentiful and vice versa. Mr Malloch is of opinion that the rings are added in each year of the fish's life, prior to spawning. This theory does seem to coincide with the investigations carried out by Mr Johnston and other scientific investigators, according to whom 15 to 30 lines are acquired during the two years river life and from 20 to 30 additional lines during each subsequent year spent in the sea. There seems to be need for fuller enquiry into this point. The anterior or front portion of the scale is embedded in the above mentioned pockets; the hinder or posterior portion of the scale is more or less free, and overlaps the adjacent scales nearer to the tail in the same manner as the tiles of a roof. This free portion is all that we see until we remove the scale, and owing to exposure on this portion the rings are not clearly indicated. It is on the anterior portion of the scale that we find the rings, which help us to arrive at the history of the fish. These rings or ridges project on the upper and outer side of the scale, and can easily be felt with a needle, the under portion of the scale next to the skin being quite smooth.

### *Abnormal Scales.*

Dr Turnbull drew attention to certain abnormal or "atypical" scales to be found on many fish. Sometimes the rings representing the first year or two of the parr life are missing and we find instead a blurred centre. I am informed by Dr. Masterman of the Board of Agriculture and Fisheries that the Salmon, when hatched, are not covered with scales, and that some of these may only be acquired during subsequent months or even later. This would seem to explain why so many scales do not show in the inner core, which represents the first two years parr life, any rings which would correspond with the first year's growth, and sometimes one may find scales with blurred centres occupying a space representing three or even more years of life, and as pointed out by Dr. Turnbull it is probable that in such cases the blurred centre represents rapid growth to replace lost scales, for surrounding this centre we invariably find a number of rings corresponding with the outer rings on typical or perfect scales taken from the same fish.

### *The Lateral Line.*

You will probably all have noticed that on salmon, and I believe on most fish, there is a lateral line extending from the back of the head and the gill covers to the tail. This line is formed by a series of scales perforated by longitudinal holes, but I have never seen any satisfactory explanation of the purpose of these holes. It may be for breathing or sensory purposes, or possibly for exuding some mucus, which keeps the skin and scales in health.

### *The Colouring of Fish.*

Investigation is also required as to the numerous changes in colouring of the Salmon and whether the colour is due to pigmentary cells or is optical or both. I do not pretend to any knowledge of that abstruse subject, optics, but I understand that the silvery or iridescent colours such as one finds on a smolt or fresh fish or on a well mended kelt are due to the reflection of light from extremely thin transparent plates or films. As far as I can judge these thin plates are contained in the mucus or thin skin with which each scale is covered, for on removing this skin we are left with a transparent scale without any iridescent effect, and this latter effect can often be seen on the skin of the scale after removal.

### *The Colouring of the Parr and Smolt.*

Salmon, Sea Trout and fresh water Trout are closely allied and the immature fish are very similar in appearance, probably due to a protective colouring to suit their surroundings. The Parr is of much the same colouring as the young trout with red spots and with eight to twelve finger marks along the sides of a slaty blue colour. When it appears for migration, and reaches the smolt stage the scales become bright and silvery and the spots and the finger marks disappear. It would be interesting to know the cause of this change, which, I believe, is due to some alteration in the skin covering the scale, which causes an iridescent effect. In Mr Malloch's book illustrations are shown of Smolts with the scales removed from half the fish and whereas one half remain bright and silvery, on the other half, where the scales have been removed the red spots and finger marks are visible still, which would point to the early colouring being due to pigmentary cells on the surface of the body below the scales, and further that the scales during parr life are transparent and allow this pigmentary colouring of the body to be transmitted.

### *The Colouring of Mature Fish.*

The mature fish when it first enters the river, at any rate in the early part of the year, is bright and silvery along the sides, with darker colouring along the back. It gradually becomes dull and more reddish in colour, and when the spawning season approaches, you find male fish absolutely brick red in colour with orange and red and discoloured blotches and spots all over the head and body. After spawning and before returning to the sea, the Kelts will often become as bright and as silvery as a fresh spring fish. I have never seen a satisfactory explanation of this change in any publication, but I have been informed by a friend that it largely if not entirely due to a change in the thin skin which covers the scales. As pointed out by Dr Noel Paton as soon as the salmon enters fresh water, there is a gradual transference of the fats from all parts of the body to the genital organs, which are in this way built up, with the consequence that the coating of the scales as it were, dries up, and the thin plates coalesce and lose their iridescent power or brightness. In the latter part of the year, as the spawning season approaches, the change also takes place in the sea, and consequently in the late autumn one may catch a fresh run fish covered in sea lice, but in fully developed spawning livery, in other words red.

After spawning a great restoration takes place in the digestive organs, the scales and other parts of the body. The coating of the scales recovers its iridescent power, and consequently the kelt again becomes bright and silvery. I do not pretend to any scientific knowledge of the question and only put forward the above suggested explanations of the changes in the colour of the scales of the Salmon and Kelts in the hope that it may lead others better equipped than I am, to fully investigate the subject.

### Well Mended Kelts.

It has been practically established that Salmon do not feed in fresh water or at any rate if they take any food they cannot assimilate it, but the controversy continues as to whether Kelts can do so while in the rivers. There is no doubt that many of them become bright and silvery although they may remain as thin as the proverbial lath. As I have mentioned, this may be due merely to a change in the coating of the scales. Some kelts do apparently regain in bulk, but it has been pointed out by Dr Noel Paton (Report of investigations of the Life History of the Salmon cd. 8787) that "the apparent increased size of the so called "well mended" kelt is in part at least, due to the increase of the water, and not to the solids of the muscle." This would seem to explain why some little time after death, when the water evaporates, the sides of any Kelt collapse or fall in. I have not seen the scales of many kelts, but the few I have examined no rings which would denote feeding or growth in fresh water. It is, perhaps, hardly necessary to point out that the scientific investigations alluded to above were published by the Fishery Board of Scotland.

### Parr Life.

Apparently on the Tay it has been proved that the Parr generally speaking remain two years in the fresh water before migrating to the sea as smolts; some few may migrate when a year old, and also a few may remain in the river even a third year. Herr Knut Dahl is, I believe, of opinion that in some Norwegian rivers they remain as long as five years before migrating. There is no doubt that further investigations are required on this point and it seems impossible that in those rivers in which the feeding is poor, the parr grow more slowly and might not migrate until three or four years old, whereas in rivers in which the feeding is richer migration may take at an earlier age. Investigations, should, therefore, be made on several rivers in order to definitely establish whether this is the case or not, nor is it necessary to catch smolts in order to prove this for the inner core or centre of the scales of fish of any size will generally show how many years have been spent in fresh water.

### Period of Migration.

Some doubt also exists as to the time of the year when smolts migrate. Most of the authorities seem to agree that the bulk of the fish migrate in April and May and it is positively stated by Mr Malloch that on the Tay there is no Autumn migration. Mr Willis Bund, however, suggests that on the severn (sic) the smolts continue to migrate in the summer and autumn. Mr Holt also states that in some rivers in Ireland there is a distinct autumn migration.

Some of the scale I have examined of Wye fish would point to the fact that some of the fish migrate in the summer or even later, or that the commencement of rapid growth in Salt Water is considerably delayed. It would be interesting to ascertain when the feeding in the sea begins and whether there is much variation in different rivers. One should also be able to prove as to whether the age of the smolt (whether 1, 2, 3 or more years old) or the period of migration has any effect on the subsequent growth of fish. One may find Spring Salmon returning after three winters spent in the sea and all from the same migration of smolts, varying in weight from 13 pounds up to nearly 40 pounds. If we could ascertain the cause of this variation we might be able to increase the average size of the fish in many rivers. Some interesting experiments are now being carried on in the Conway by introducing new stock from which possibly some useful information may be obtained.

### Early growth in the Sea.

Dr Turnbull has drawn attention to a slight break in the growth during the first summer spent in the Sea, and Mr Johnston mentions a similar check during the second year. Some scales show this break most clearly, on others it is hardly noticeable. It would be interesting to ascertain whether this is generally the case in all rivers, and also the cause of the same. Apparently the greatest growth takes place in the summer and not in the spring and there seems to be a gradual diminution of feeding as the winter approaches. One notices a considerable difference among different fish and in different years. I believe in some years the majority of the fish are all poorly fed, and if any year could be definitely ascertained in which the food supply was

deficient, it might be possible to trace its effect in subsequent years, for example, if the feeding was bad this year, the grilse caught this autumn would show poor growth in second summers feeding and those caught in 1911 would show poor growth in the first summers feeding in salt water. One might also be able to trace the effect of the same seasons poor feeding in four, five and six year old spring fish caught in 1911 and subsequent years. It is possible we might trace a connection in any year of badly fed salmon with a deficiency in the supply of herrings, which I understand form their chief food.

### *The Winter Band or Check.*

The winter band is not always clearly marked. There seems to be always a certain diminution of feeding and growth denoted by narrower lines, as opposed to the broad lines or ridges, which indicate the rapid growth of summer. In some cases there seems to be an absolute cessation of feeding for a considerable period, so much so, that it would appear that the fish has actually deteriorated in weight, and that the longitudinal edges of the scales have slightly frayed away. The winter check is undoubtedly much more clearly marked on some fish than on others.

### *Cessation of Feeding before Spawning.*

This also raises the question as to when the spring fish, which is going to spawn during the following winter, ceases to feed. I believe the fish approach the rivers much earlier than generally thought. There is no doubt that in some rivers the spring run may commence even as early as October, though the bulk of the fish will not enter the rivers until the following March or April. Mr Malloch states that in the Tay, spring fish begin to run in early October. Professor Metzger of Munden, in his statistics of the river Weser in Germany, reports that the run commences in October and that none of these fish will spawn until the following Autumn.

I have examined the scales of a considerable number of Wye Salmon, and as far as I can ascertain, even in the case of fish caught in the nets so late as May and June, there does not seem to be any sign of a commencement of summer feeding, though fish caught later in the year generally show some lines of summer feeding surrounding the last winter check. This would seem to point to the fact that when Spring fish make up their minds to enter a river to spawn, no further feeding takes place. Considerable further investigation is needed on this point before one could express any decided opinion about the matter, and it would be interesting to know if any food has ever been found in the stomach of Spring fish.

### *Divided Return.*

I am afraid Scale examination will hardly help us to ascertain the cause of the divided return of any particular lot of smolts, why should some return as Grilse and others delay their return for one, two or even three years more. It is possible that it is a provision of nature to provide against the absolute failure of spawning in any particular year.

According to Dr. Hock, a good grilse year, or St. Jakob's salmon as they are called on the Rhine is followed by a good year of the four year old or summer salmon. Dr Metzger also confirms this as far as the Weser is concerned, and as is pointed out by Mr Malloch, this is only natural, as they all come from the same migration of smolts. A good Smolt year would mean a good Grilse year in the following year, and an exceptionally large number of small fish in the year after, with a corresponding increase in the number of large spring fish in the following season, and vice versa, a bad smolt year would show its effects during the three following years.

One would like to know why there is a further subdivision of the return of the fish and why some return as spring fish and others as summer or autumn fish. The difference between the spring and the summer run is, I believe pretty well marked on most rivers where there is a divided run. I believe it will be found that the summer or autumn run will all show signs of having fed in the sea during that summer, whereas the spring fish show no such signs. The above remarks apply of course only to rivers where there is a spring run of fish.

### *Spring and Autumn Rivers.*

Generally speaking I believe all large rivers are naturally spring rivers, and as Mr Calderwood points out, if any large river adapted for an early run of fish does not afford spring fishing it is due to mismanagement; in other words to over netting. I should imagine that careful investigation on the Tweed would prove that this glorious river is badly managed. One can hardly look for salmon again on the Thames, but on the Severn some explanation seems necessary as to how it is the rods only catch one hundred fish in



the year and the nets 15,000 to 25,000. It is possible that some of the latter are Wye and Usk bred fish drifting up and down the Severn Estuary with the tide, while they are waiting for favourable running conditions in their own rivers.

Some rivers would never have a spring run, and it would be of no use attempting to establish one, but I am convinced that on those rivers, which spring fish would frequent every effort should be made to protect the spring run. I believe spring fish produce spring fish, though I do not see how it is to be proved, but it would certainly seem that the fish are entering the Wye very much earlier than they used to do now that the spring fish have a fair chance of getting past the nets. There is doubt that on long rivers like the Wye or the Severn, unless the running conditions are most favourable the summer and autumn fish never reach the upper waters and have to spawn in the main river. I hardly think that many of the fry produced in the lower waters would have much chance of reaching maturity, for these regions of the river swarm with chub, pike and other coarse fish. What applies to the Wye applies equally to other large and log rivers and would seem to point to the necessity of a longer weekly close time for the nets, or some greater form of protection in the early months so as to a fair proportion of the spring fish a reasonable chance of reaching the best spawning beds. I am informed that the ova of the large hen fish which run up in the spring produce the best and strongest parr, and I should think it probable that these parr will make the best smolts and probably the heaviest Salmon. It has, I believe, been suggested that these parr which return as grilse, the least remunerative class of fish to the netsman, are the offspring of the summer fish, and it is the spring fish, which produce spring fish, which not only add enormously to the sporting value of a river but are a gold mine to the netsman. Everything would point to the necessity of greater protection of all spring fish.

#### *Proportion of Sexes.*

It is most important that we should know what is the proportion of male and female fish in each run. There is no doubt as pointed out by Dr. Metzger you cannot formulate sound conclusions unless you have definite statistics to go upon. Every individual who catches a salmon whether with a rod or with a net ought to be compelled by law to fill up a return giving the date of capture, the weight and sex. In this way, only, can we obtain reliable statistics. In this connection I should like to draw attention to the admirable statistics recently published by the Wye fisheries Association, giving full particulars of the netting returns from 1905 to 1910 and showing the number of fish caught in each year of different weights. I am informed that the best results in spawning derived from artificial hatching are obtained by fertilizing the ova of large hen fish with the milt from small male fish. If this is correct every endeavour should be made to ensure a sufficient proportion of each sex being able to reach the best spawning beds.

From what little investigation I have been able to make on the Wye, the bulk of the spring fish of five years old are hen fish, although all the exceptionally large fish seem to be cock fish. It is rather remarkable that in the autumn the stale or red cock fish seem to have lost much more in girth and weight than the hen fish, so much so, that a glance of the scales of any autumn Salmon would show whether the fish was male or female. The scales of stale or red fish are always more difficult to remove than those of fresh fish. Possibly as the skin shrinks the scales become more tightly embedded in their pockets, or it may be that the thin membrane, or skin, with which each scale is covered adheres more closely to the true skin of the fish. This membrane is more difficult to remove from the scales of stale fish.

#### *Large Rivers large fish, small rivers small fish.*

I have often been puzzled why in some rivers the general run of fish are smaller or larger than in others, though I believe it is generally thought that large rivers produce large fish and small rivers small fish. Why for instance in the Helmsdale should the fish run small, whereas they are large in the Tay. They are both early rivers and presumably the fish from both rivers feed in the same grounds in the North Sea.

Is it possible that when the fish grow to a certain size they desert the smaller rivers. If that were the case one would expect to hear of a certain number of Helmsdale fish being caught in the other rivers, as a considerable number are marked every year after spawning. Or is it because fish from smaller rivers grow more slowly? I have examined the scales of a few Helmsdale fish and I am inclined to think the latter is the true explanation though I should hardly like to jump to any conclusion based on the examination of scales from half a dozen fish. I understand, however, that the markings and recapture of Helmsdale fish show very slow increase in weight. I believe it is the case that in most Icelandic Rivers the fish run small and a 20 pounder is not often caught. There is no doubt that systematic investigation on a considerable scale is required on each river before we can arrive at any conclusions as to the best methods in dealing with any particular river in order to obtain the most satisfactory results. Each river, or class of river, would apparently require special treatment.

### *Do small Smolt produce small fish.*

Even if the above conclusion is correct, it does not explain why Salmon should run smaller in the Helmsdale than in the Tay, for they all feed and grow in the same place, namely the sea, though the sea has many different feeding grounds. This would point to the fact that the difference in growth may be due to some difference in the Parr and Smolts and it seems possible in small rivers there is presumably less food, and consequently the Parr are not so strong and when they enter the sea do not grow as rapidly as those from larger rivers. A systematic and thorough examination of the scales ought to provide the solution of this problem, and also whether it would be possible to improve the quality of the fish by introducing fry from other rivers.

### *Kelt Scales.*

The investigation of Kelt scales seems to point to the fact that no feeding or growth take place in fresh water. One ought to be able to ascertain from an examination of the scales of fish, which have spawned before, at what period of the year the kelts return to the sea and recommence feeding. As far as I can judge on the Wye, the larger kelts are the first to return to the sea, but this what one would expect, for they are the kelts of the large spring fish which enter the rivers first and spawn the earliest. The summer kelts from the summer fish do not seem to descend the rivers until April and May. There is plenty of room for investigation on this point. I understand that the male kelts leave the river earlier than the females.

### *The "Spawning Mark".*

Judging from the few scales I have obtained, it would seem that as far as the Wye fish are concerned, the spawning mark is always well defined, probably owing to the fish having to run so great a distance to the spawning grounds, with a consequent loss in weight. Probably in small autumn rivers where the fish remain in water for a comparatively short time, the spawning mark might not be so noticeable. Most of the fish we have caught on the Wye in the autumn show great deterioration in the scales, particularly so with the male fish. As already pointed out in the majority of cases it is quite easy to distinguish the scales of male fish from those of females. I have never seen any satisfactory explanation of this greater deterioration in the cock fish. In the same way the greater number of the male kelts seem to die after spawning, which would explain why we find that the majority of fish whose scales show that they have spawned before are hen fish. I believe at any rate in larger rivers, the majority of fish are maiden fish and are entering the river for the first time. Of the spring run of large fish on the Wye, I believe 90% including Salmon of 30 and 40 pounds are maiden fish and have never spawned before and are re-entering the fresh water for the first time. Of the summer run of small fish I believe all are ascending the river for the first time, but investigations are needed on a much larger scale than I have had time for, in order to provide sufficient data to justify one in coming to definite conclusions on the matter.

I have only found one fish on the Wye the scales of which showed two spawning marks, and which was ascending the river for the third time. The only other scales I have seen with two spawning marks were taken from a Norwegian fish. It would seem that very few fish, at any rate in large rivers, spawn a third time.

Mr Calderwood was the first to point out that the so called Tay Bull Trout. Fish of 30 to 40 pounds weight were really salmon which had spawned before. These fish are much more spotted on the gill covers than maiden fish, and have a number of small dark spots behind the head, both above and below the lateral line. The gills are also partially eaten away by fresh water maggots. Only the other day out of a dozen spring fish caught on the Wye we picked out a fish, which showed such characteristics. On examination under a magnifying glass the scales showed an undoubted "spawning mark."

### *Long and Short periods of migration.*

Some fish returning to the sea as Kelts in the early spring may only remain a few months in salt water and return as clean fish in the autumn of the same year. Others, and I believe as far as the Wye is concerned the majority do not return until the following spring or even later, having spent the best part of a year in the sea. It is possible that in smaller rivers, and especially in rivers where there is only an autumn run, that the majority of the fish may spawn annually. Scale investigation carried out thoroughly would provide the means of deciding this point, and as to whether or not on most rivers the majority of the fish spawn annually or only every other year, in other words, adopt the long or short period of migration.

### Conclusion

I hope I have made it clear to you what an immense field there is for systematic investigation on a large scale, and on scientific lines. The further I pursue the matter the more I am convinced how little I know and how much there is to be learnt. I wish, however, to make it perfectly clear that I do not lay any claim to originality on this important question for I have not had the necessary scientific training nor the experience, which would justify me in coming to any definite conclusions. I have attempted rather to lay before you a few suggestions and ideas in the hope that they may open the way for further investigation.

In conclusion may I say that the main object, which has induced me to bring this fascinating subject before you for a second time, is to try and obtain the co-operation of others who have more time and who are better equipped than I am to fully investigate the subject.

Thanks to the Scottish Fishery Board and particularly to the investigations of Mr Calderwood and Mr Johnston, we now know much more than we did of the life history of the fish, but there is still much to be learnt. To sum up the problem in a few words, what we want to know is how to manage our fisheries in such a manner that each river will annually produce the largest possible number of strong healthy smolts, to return in later years as mature fish and so provide sport for the angler, increased income for the owners of the fisheries, and other property along the river banks, better employment for keepers, gillies, and netsmen, and last but not least add enormously to the food supplies of the country.

## Speech by Mr. John Baddeley J. P.

Horton in Ribblesdale,  
September 28<sup>th</sup> 1907

“Mr President and Gentlemen,

A few weeks ago I heard from Mr. Burn and Mr. Glass, with much interest and pleasure, that your new works here were approaching completion, and at the same time I also heard, with some little trepidation, that it had been decided that the honour of making a ceremonial opening of these works should be conferred upon myself, and this upon the ground, which I take as an additional complement, that I either was or at least by some of my friends was considered to be, a sportsman and a naturalist combined.

I must first, Gentlemen, assure you that I greatly appreciate this two fold honour, though I fear it is hardly merited either by my knowledge as a naturalist or by my skill as a sportsman, but be that as it may, whatever may be my present knowledge or skill in these matters it is true that during the whole of my reasonably long life time, I have at all times taken a keen interest in all that relates to field sports or to Natural History.

More over, Gentlemen, in addressing you I know that I am speaking to men who are both naturalists and sportsmen for I believe it is impossible to be one without becoming the other, it is impossible that men like our selves, should pass hours and days of our lives, among the moors and mountains, fields or woods, by the side of the sea, or the lakes or the rivers or brooks, and to see there the trees and the plants, and to watch the birds and the animals and the fishes and even the insects, without a strong desire to attain to a wider and at the same time more accurate and definite knowledge than heretofore of their wonderful lives and their wonderful ways, in other words without a desire to become in a greater or less degree, what is known as a naturalist.

Being therefore, Gentlemen, both sportsmen and naturalists I feel sure that you will be as pleased to hear as I am to express the some what optimistic opinion, in these days notwithstanding the growth of our vast material civilisation, notwithstanding all we see of great tracts of land formerly fields and woodlands now covered with works and houses and mines and cinders and smoke; notwithstanding all we see of rivers and brooks formerly as clear as the Ribble today, now hopelessly polluted, that notwithstanding all this there were never so many living animals in the country of interest to sportsmen and naturalists, so many creatures on the land and so many sportsmen to pursue them, or so many fishes in the water and so many anglers to catch them, as there are today.

With regard to the study of natural history, notwithstanding the strenuous commercial and political lives which we are expected to lead in these days, or rather compelled to lead, notwithstanding the attractions of the new recreations, cycling, motoring, golfing and the like, notwithstanding the counter claims of the great physical sciences, with their X rays, radium, wireless, electricity, electrons and new theories of matter, are becoming more intensely interesting day by day, I believe that notwithstanding all this there never was a time when knowledge of and interest in the old forms of natural history were so widely attended among the people of this country as it is the case today. This is shown by the number of field clubs, field naturalist societies and other similar Associations formed in every town and the movement has the strong of the daily and weekly press and is further assisted notwithstanding the aggregation of the people in the towns, by the facilities now enjoyed for making by rail and cycle or by both combined very cheap and very long excursions into the country.

Moreover there never was a time when so many efforts were made by the people, or the legislature, or by both combined for the preservation and if I may use the expression for the production of living wild animals. Apart from the old game laws, we have now the acts for the protection of birds, we hear of large tracts of country in Central Africa set aside as reserves for wild animals, we hear of the same in America, and in our own country we have the sanctuaries for the complete protection of birds, such as the one in the Wirral district of Cheshire and others. Then we have the artificial rearing of certain game birds and wild fowl, which has enormously increased their numbers and last but not least, and which brings us to the subject on account of which we are assembled here today, we have the artificial culture of fish, which is one of the most useful and in my own opinion one of the most curious and interesting effort of human ingenuity which has ever been made. Of the principles and practice of this combined art and science it is not for me to speak to you, who probably understand them better than myself; to do so with advantage one should be not only a sportsman and a naturalist but a physiologist in addition, and it has always appeared to me that such knowledge was rather too high for me and that I should never attain unto it. I might indeed discourse learnedly, or rather with an appearance of learning about our British Salmondiaie migratory or otherwise,

about our good old friends, Fario, Ferox and Salar about our new friends Tridoeus and Foutunalis, but it would be out of place to this, as there are men present who are better qualified to speak to you of the Salmonidae of the whole world, than I am to speak of those of Great Britain. Historically, I have been informed that the rearing of fish was practised first by certain monks of the fifteenth century, and then again by a landowner named Jacobi, in Westphalia in the beginning of the eighteenth century, but undoubtedly the art was brought into perfection during the last century by the experiments of the French Government, which is perhaps the reason why we still use the French name for one of the stages of growth, and in this country by the energy and enthusiasm of Mr. Frank Buckland, whose book on the subject probably many of you have read.

I conclude, there is a well known saying which, though by repetition it has become a mere huius and commonplace, is never the less of value, and tells us that he is a great benefactor to the human race who makes two blades of grass grow where only one grew before. Now the fish culturist makes not two fish but shoals of fish swim where one or even no fish at all swam before. He therefore like the progressive agriculturist of the saying, increases the food of the people, but he does something more which is of interest to us. He furnishes us with that combined necessity and delight of living existence, the instructive desire for which shows itself alike in the least animal, in the youngest child and in the man of mature years, and which we variously name play, games, recreation or sport. He supplies us indeed with the best form of sport which is field sport, and with the best form of field sport which is angling.

Now, men who are occupying a position somewhat analogous to my own generally conclude by assuring their hearers that a certain stone before them is "well and truly laid," it will presently be my duty to assure you that the water so necessary for these complicated operations is "well and truly" laid on. Before doing so, I will first express the hope that all the ova placed in the water will safely develop into alevins, that all the alevins will grow into shoals of fry, that all the fry will safely become yearling trout, that all the yearlings will grow into strong and heavy two year olds, and that all the two year olds will remain in the river and in this part of the river until they are one and all "well and truly caught" by the members and friends of the Manchester Anglers Association.

Gentlemen I have said what I had to say and the water is now laid on."



Chew! Fugaces.... Tabunker Annie

The wind may howl adown the street  
 The driving rain or frozen sleet  
 May chilly 'gainst my lattice beat,  
 I care not, I but lounge the while  
 In cushioned chair and heedless pile  
 The every-ready leg and smile  
 On thee, Old Pipe.

Tried friend and hue! in every clime,  
 Morning or noon or evening time,  
 In Winter's depth or Summer's prime  
 To me the same. There's nought can smooth  
 The wrinkled brow, nor sweetly soothe  
 The soul devoured by care's fell tooth  
 Like thee, Old Pipe!

And as I watch thy cloud upwind,  
 With wreath, or wreath, in many a curl,  
 I scorn not, clown, nor envy earl,  
 Nor sigh for wealth; for I can hail  
 In fancy thro' thy fragrant veil  
 Old friends, whose loss I did bewail  
 Full sore, Old Pipe!

And memories come hooping back  
 Of olden times that were - good lack!  
 'Ere I was grey, 'ere thou wast black,  
 My hussy friend; of happy days  
 By babbling burn and bracken braes,  
 'Mid rugged rocks and mountain ways  
 With thee, Old Pipe!

How happy we, when, rod in hand,  
By Tweed or Tummel's pebbly strand,  
We fished with gentle art to land  
The speckly trout, Ah me! I sigh  
To think those days are all gone by  
Those far off days that seem so nigh  
Thro' thee, Old Pipe!

Yes! those old times are past and gone  
Of those old friends there is not one  
Remaining now — all, all are flown  
For aye — and age creeps on; I doubt  
If ever I'll land another trout,  
My few fast falls, is going out  
Like thine, Old Pipe!

Black Gnat, in "The Angler's Note Book"

