



THE MANCHESTER ANGLERS' ASSOCIATION

THE HORTON IN RIBBLESDALE HATCHERIES

1884 – 1946

A HISTORY

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Part 1

The Douk Ghyll (Horton Beck) Hatchery 1884 ~ 1908



The Douk Ghyll Hatchery

In early April 2005 an article in the Manchester Evening News, written by Michelle Dhillon, highlighted the sale of part of the Manchester Anglers Association's library to be held in the near future at Honiton by Bonhams. Among the commentary was an assertion that—"The association also worked with Manchester Corporation to rear trout so they could pursue the art of fly-fishing." It was thought interesting to see what light contemporary documentation threw on this assertion.

The first rule book of the Association states that:-

"The object of the Association is to further such measures as may tend to promote the practice of angling, and the breeding and preservation of fish, and to afford the members opportunities of meeting together in a social manner for the exchange of ideas and experiences"

These aspirations were met in part in the first year when monthly meetings were held, where papers were read and discussed on angling matters. Working parties were sent out to various Rivers to assess the availability and the suitability of fishing that might be rented. It was realised that the wish to breed and preserve trout could not be met until the club had waters of its own. Interest was shown in fishing stretches among some of the rivers in the Dee, the Derbyshire Wye and the Eden. Nothing came to fruition. Soon an interest was shown in the upper reaches of the Ribble round Horton and "A special meeting of the Manchester Angler's Association was called at the Albion Hotel Piccadilly on the evening of November the first at half past seven for the purpose of considering the Ribble Scheme." "In accordance with the powers given by the Rules, and by the special sanction of the Association given by vote, at the meeting held on May 10th 1881 the Council has entered into arrangements with various land owners by which they have obtained the exclusive right to fish in the Ribble from Ribble Head to Elwith Bridge (sic), a distance of some fourteen miles. To insure the excellent fishing the Council have good reason to expect, an efficient watching, and probably some stocking will be required---"

A closer examination of the fishing showed that over the years the Trout stock had been denuded when the railway was being built and natural regeneration was not easy since the Weir(s) at Settle prevented any trout reaching the higher reaches of the Ribble for Spawning. An ex policeman called Walker was employed to look after the angler's interests and the subscription for fishing members went up from one guinea to two guineas per annum. A long article by "Redspinner" in "Sporting and Dramatic News" 3rd June 1882 eloquently describes the "Strictly preserved waters" or the Ribble round Horton and discusses the state of the trout stock and their abundant food sources. The "Craven Herald" reports on 17th February 1883 that an otter was trapped at Studfold, by Walker the keeper, weighing fourteen and a half pounds and it had forty two inches in length.



THE KEEPERS HORTON

The "Manchester Examiner" reports on the annual dinner of the Manchester Anglers' Association held at the "Grand" the night before on December 9th 1884. There were a hundred guests including the Mayor of Manchester and other civic dignitaries including Colonel Shaw, United States Consul. It is reported that "Colonel Shaw submitted the Mayor and Corporation toast. He thought they had reason to be proud of the Mayor and Corporation. The City in its local government presented a pattern to all cities in all countries. The more he studied its system of local government, the more he knew of the care bestowed upon the health and the morals of the people, the more convinced he was that the city was entitled to the first place." "The Mayor replied saying he thought the pursuit of angling could scarcely fail to waken in the breast, generous, healthy and profitable thoughts, and as anglers they were directly interested in the preservation of the purity of streams, which gave them, he supposed, some connection with municipal government. Corporations would only be able to preserve streams, in so far as anglers and other citizens continued to press this object upon their attention. The Manchester Corporation he was sure would strive to preserve the character that Colonel Shaw had done them the honour to give them."

The "Manchester Guardian" reporting next day the same meeting held on December 9th reports the Mayor as saying the following:-

"THE MAYOR of Manchester spoke of the pleasures and advantages to be derived from angling. He pointed out also that anglers were interested very particularly in the preservation of pure streams, and it was only so far as they and all other faithful citizens urged the importance of these things upon the attention of the authorities that the latter were able to carry out those measures which were for the well being of the community."

Mr Abel Heywood junior, at that time was the secretary of the Manchester Angler's and being a publisher himself was in the habit (so he wrote) of giving press hand outs of the club's affairs in a state that they were ready to publish---- this in his mind to avoid distortion of events. Mr Heywood would be no doubt well versed in local politics for not only had his father been in prison twice for political reasons but he (his father) eventually became Mayor of Manchester twice was an Alderman and eventually sat on one committee for fifty years.

In fact a further article appeared else where in the "Manchester Guardian" on the same day. "The large attendance at the annual dinner of the Manchester Anglers' association last evening and the unquestionable enthusiasm of both the members and the guests must have been specially gratifying, not only to the active President, Mr E. G. Simpson, but to the modest and diligent honorary secretary and founder of the Association Mr Abel Heywood jun. Unquestionably the chief point established by the speeches delivered during the evening, and that which is of most interest to the general public, was the connection between the interests of the association and those of the Corporation. In a speech which gave the highest promise for his year in office, the Mayor intimated that he regarded the duties of the Corporation as embracing everything which contributes to the higher life of the city, or which promotes the general well being of its inhabitants; and it was not difficult for him to show that the sanitary arrangements which are consistent with healthy vegetation and pure streams (conditions which are desiderata to anglers) come within the scope of wise municipal government. In a happy phrase he spoke of the members of the Association as "faithful citizens" in as much as they seek to promote the attainment of these ends. The Mayor gave a practical turn to his observations, and, so to speak, clinched his commendation of the Association, by observing that the Corporation could only hope to be successful in its efforts in the direction indicated in the proportion in which it received the support of such Associations of citizens. So far there can be no question as to the wisdom of the Mayors

remarks. The Association has given evidence of its public spirit by erecting a fish breeding establishment in the Ribble Valley; and there can be no doubt that the closer the connection between the Corporation and intellectual and public spirited organisations in the city the better it will be for the Corporation and the public generally. We need not inquire too curiously into Mr Daniel Adamson's intimation that the ship canal scheme will promote the purification of the waters of this neighbourhood. If, as one of the speakers suggested, the necessity of providing salmon ladders to enable the fish to pass the projected locks should present itself, a local Association which has given its attention to the waters between Ingleborough and Pene-ghent (sic) may reasonably be expected not to neglect the Irwell. But as some of the speakers intimated last night, the association, even if it does not meddle with the Irwell, may still assist the Corporation in other waters." This was an illusion to the fact that the Manchester Drinking Reservoirs were infested with toxic water snails.

It seems from this that was only a one way of exchange of information from the anglers to the Corporation and that the latter were always happy to gather any crumbs off the table of the Manchester anglers with regards to water purity and fish culture.

"City News" reported the same dinner of the 9th December on the 23rd. Among other things it reported:-

"The Mayor, in responding, referred in the outset to the intellectual and other pleasures connected with angling. It was, for instance, closely related to the study of Botany, because it was impossible for any angler not to admire the beautiful flowers by which he was often surrounded in his favourite pursuit, and thus his thoughts were naturally directed to Him who made the flowers. (Hear, hear) Again the Anglers' Association was interested in the preservation of pure streams, and in that sense they had a connection with the Municipal authorities. This brought him to his toast on which he would only say that the corporations were only powerful for good so far as they were supported and urged on by the faithful citizens whom they represent. He thought he could safely promise on behalf of his colleagues that the Manchester Corporation would strive more and more to deserve the high character that Colonel Shaw had done them the honour to give them."

The "City News" further reported the reply made to the toast of The Manchester Anglers' by the Rev. C. P. Roberts "Averting to the connection that exists between the association and the Corporation, he said that the latter had recently been troubled with complaints about the impurity of the water supplied by them, and he was proud to say that they were indebted to a distinguished member of the association, Mr Estcourt the city analyst, for the discovery of a means of purifying that water, by the introduction of trout into the reservoirs" (The reservoirs had become infested with toxic snails) These four separate reports makes one wonder whether the reporters were all at the same meeting!

The report of the council for the year 1884 presented at the General Meeting held Jan. 8th 1885 stated:-



"Some important works have been carried out during the year at Horton. In the first place, a boat-house has been built on the margins of Newhouses Tarn, to hold a boat kindly presented by Mr. Cornforth; a number of small trout both this year and last year have been put into the Tarn, and have already grown to 6 or 8 ounce fish; 500 Loch Leven yearlings have also been ordered, and are expected to be put into the Tarn this month (January).

Near the village of Horton, a trout breeding-house has been built and fitted up, and upwards of 10,000 eggs, which it is hoped will be hatched in the spring, have been laid down.

According to the Manchester Guardian 20th May 1885 at a meeting held the previous evening at the Grand Hotel a paper written by Mr Simpson and Mr Burn on "on our experiences in fish breeding," was read by Mr Thwaites. The Manchester Guardian relates:-

"It is well known that the association preserves a portion of the Ribble extending for six miles from its source to Helwith Bridge along the wild valley between Whernside, Ingleborough and Penyghent. It has long been a matter of complaint that the river, though still yielding excellent trout, has never fully recovered from the attacks upon its vitality, by netting and other practices, made during the construction of the Settle and Carlisle Railway. Towards the close of last year, therefore, the Association decided to erect fish-breeding apparatus at Horton, and the paper read last night described the arrangements made and the results so far obtained. The fish house adjoins a small beck flowing into the Ribble from the slopes of Penyghent, and the tanks are supplied with water conveyed from a spring which has not been known to become dry "within the memory of the oldest inhabitant." The water from this spring was duly tested by the Manchester City Analyst (Charles Estcourt a member of the club) and pronounced suitable, and rightly concluding that the Ribble trout could not be improved upon for the purpose, about 11,000 ova were personally collected by Mr Burn and Mr Thwaites at the begging of December last from the tributaries where the fish repair to spawn. The wisdom of the selection, the excellence of the arrangements, and the care of the amateur breeders were proved by the fact that the mortality during hatching was only about 5% and that the fry were exceptionally large and vigorous. The progress of the experiment has permitted some very interesting observations on the habits and life-history of the fish and the enemies against which they have to contend, all of which were detailed last night and elicited accounts of other personal observations of the kind from Dr. Simpson, Rev St. Vincent Beechy and other members.

It was stated also that the Horton fish-house has already become famed through out the West Riding, and that every man, woman and child in the dales around has made a pilgrimage to it. There is good reason to hope, therefore, that it will promote an intelligent interest in fish culture in the district and a disposition to second the praise worthy attempts of the Association. The economic utility of thus preserving the fry during the earliest stages of their existence has been abundantly proved by statistics. The only difficulty with which the Association has been threatened arose from the fact that science cannot escape the Argus eyes of science. The fact that the fry are fed twice a day with, literally, a thimbleful of powdered meat, carried in the waistcoat pocket of the keeper, and just sufficient to remain suspended in the water until swallowed by the fish, resulted in the lodging of a formal complaint of river pollution; and an inspector travelled six miles in order to report upon the case. It is needless to say that the feeding of the fry has not been interfered with; but the Association has surely reason to rejoice at the excellence of the sanitary administration in those regions, which augurs so well for the continued purity of the streams".

The "Weekly Post" 13th June 1885 discusses the pollution complaint with a resume of the later part of the Manchester Guardians article and wonders who the complainant might be. A week later, the same paper, reports that "it knows the name and address, with the family history and "belongings" of the complaining individual; but I cannot publish them without incurring a risk of being run in for libel, and I have no wish to be landed just now, especially with rain threatening" This could have been Pritt at his best!

25th July the "Weekly Post" reports that Walker, the Manchester Angler's keeper got another otter at Studfold. "the brute was not a very big one, being no more than 14 pounds; still he was better out of the way. The Ribble has always had a reputation as a famous otter-hunting ground, though since Mr Lomax's famous pack of hounds was dispersed but little hunting had been done. Perhaps Captain Yates' pack or Mr Clift's will give the water another turn some of these fine days."

7th September 1885 during the last month there has been some good sport on the Ribble at Horton. The young fish hatched in the Association breeding-house have now been turned into the streams.

The "Manchester Guardian" in October 1886 gave an interesting report of a meeting held by the Manchester Anglers', on the 26th of October, entitled "The close of the trout fishing season in Yorkshire" read by Robert Burn the fishing secretary and overseer of the Trout Hatchery. "The Association has undertaken the preservation of the upper waters of the Ribble, and it has, with commendable public spirit, erected a fish breeding house. It is satisfactory to find from statistics presented by Mr Burn that the members appear to be deriving some benefit already from their enterprise, as there has been, at least during the last three years, a steady increase in the take of fish. Thus in 1884 35 members fished on 192 days and only 800 fish were caught; in the following year 38 members fished on 190 days and 1,417 fish were taken; and this year 43 members fished on 212 days and 1,544 fish were taken. It will be observed that a larger number of members fished this year and that the water was visited on a greater number of days than in previous years; but when allowance is made for the very abnormal character of the weather, and particularly for the lateness of the spring—some of the members who went out to fish being compelled to substitute skating for the pleasure of casting a fly, -- the increased take must be deemed encouraging. Of course it must be assumed that the skill of the members is increasing. Prior to 1884 however, the members appear to have made fairly good baskets, as 40 members fishing on 155 days took 1,281 fish in 1883, and 35 members fishing on 171 days took 1,206 fish in 1882. The falling off in 1884 must be regarded as due to one of those unexplained variations in the productiveness of rivers to which Mr Huxley called attention when Inspector of Fisheries. The steady increase since may be attributed mainly to the care taken of the river, the rules of the Association as to the limit of the size of the fish which it is permissible to take being very strict. For this reason the rods have not derived any advantage from the establishment of the fish house, as the trout hatched by the Association can not have attained as yet the required dimensions; the members of the Association and the riverine proprietors have, therefore, an improving prospect before them.

In addition to the river, the Association preserves a tarn near the foot of Penyghent, in which large quantities of yearling trout from Loch Leven were placed last year; these appear to be thriving remarkably well. Mr Burn's paper gave rise to discussion as to the desirableness of modifying the close time in accordance with the character of the season. In his report as Inspector of Fisheries issued in March last, Mr Berrington directs attention to undeniable evidence of a change in the spawning time of salmon in the Usk. The questions to which such evidence gives rise are important. It may, for instance, be asked whether such a late and abnormal spring as this year's may not have had a retarding influence on the development of the fish. In that case not only may a too early close have unnecessarily deprived anglers of a week or two of good fishing, but there may be a risk that the next season may be opened before the fish have fully recovered. This is one of the problems which the Association may well utilise the opportunities afforded by its beautiful water and admirably sited fish house in attempting to solve. All ichthyologists will rejoice at the scientific spirit which the Association has already displayed in instructing its keeper to record such statistics as those reported on Tuesday."

“The Field” of the 9th July 1887 contains a long and wordy Victorian article about a visit to Upper Ribblesdale by “Red Spinner” (William Senior). Due to its length it is, perhaps, not remiss to just take a few salient points from the essay. Red Spinner describes the journey to Horton by rail and then by trap until the Lion is reached where he is shown in the back larder a platter “upon which lie five grand trout of more than twelve pounds total. Hope shines from our eyes as we think of tomorrow. The river was fearfully low and the water bright we knew. Of late years when has it not been bright and low? Yet here were big trout, caught as we were assured, in a legitimate way with fly. I see a smile between two people and suspect a hoax. The joke continues over the meal and it is only in the morning I am told that the fish were from Malham Tarn where the strong breeze had ruffled the surface the day before and had therefore given grand sport to the anglers from their boat.”

“A clerical member tells a dismal story of the river which is so low that stones are covered in slime and of trout too sick and dispirited to rise. I decline to fish and wonder what can become of trout at times like these. After fishing the Tarn, where good sport was had with Loch Leven trout and after extolling the scenery thereabouts, in about three hundred words, he sets off for the fish hatchery.

“This necessitating a walk back to the village (from the Tarn) and a stroll up one of the sweetest little valley in miniature, selected, as you may perceive at a glance, with much judgement for the work of fish culture. The beech grove is lovely, but not exactly a requisite, from this point of view, as is the brook that tumbles down the mossy ravine. The house is at the head of a romantic glen, and is substantially built on a foundation of solid rock. It is sheltered from the harsh winds, and fed by a never failing supply of the purest water. In this the Association has the advantage of the scientific experience of Mr. Charles Estcourt, its president, who is the official analyst of Manchester city. A spring on the side of Penygant (sic) fills a cistern, which in its turn fills the tanks, and the water is filtered through flannel and animal charcoal. It is in short, a compact, well appointed little hatchery. Mr Robert Burn who explains the ins and outs to me, and who is the leading spirit in this branch of the plucky enterprise, evidently expects me to admire it, and I do so with all my heart. Walker, the keeper, has a paternal interest in his fry, and is delighted with the malformed specimens. He was a policeman once and lost some fingers in a brush with some poachers; now he goes with zeal into the wonderful processes of fish culture, and his Manchester masters have given him the first volume of Sir James Maitland’s Illustrated History of Howietoun, which he considers the finest piece of literature in the world, and quite as valuable as the Family Bible. Walker is quite a character, and as anxious over his fry as a hen over her chicks. The little fish are fed with Burgess’s fish food which answers perfectly. Our fish culturists here have not lost one in a hundred since the work was commenced four years ago. This year about 20,000 fry have been successfully hatched, and they are placed in the tanks, or one of the becks, until they become yearlings. A certain number of members became lessees of miles of the Ribble and in this way the fishing is in the hands of the Association. From an eye witness I get an amusing account of the hardships endured by the two members of the association who, in 1884, in mid-winter, netted out spawning fish from a neighbouring brook. The society strictly merits the unbroken success achieved, and I hear that a visit to the Fish House will probably form one of the excursions of the British Association, which meets this year at Manchester, the scientific interest of the locality and the operations of the anglers in fish breeding having been described by Mr Faraday F. L. S. in a paper read before the Manchester Literary and Philosophical Society. Looking at the work from an angler’s point of view, I am convinced that it is of incalculable value to the Ribble. When I last visited the dale the navvies employed on the Carlisle and Settle railway had ruined the fishing.

Three years stocking done by the Manchester Anglers' has made it better than it was before and heavy baskets are made when the water is favourable. It was little favourable last year and has been as bad as it could be this year from the commencement of the season."

The visit from the British Association did, indeed, take place to the hatcheries and a pamphlet published by them recorded the details of the visit. Many years ago this pamphlet was seen in the hands of the then Fishing Secretary Gerry Walker. A small snippet in the Manchester Guardian of September 1887 recording a meeting of the Manchester Anglers on 20th September 1887 " Mr T. Harker gave a short account of the recent visit of the British Association to Horton the fishing head quarters of the association. He said that in accordance with an invitation given a short time ago a party of the British Association during their stay in this city, proceeded to Horton and district. Taking the train from Victoria Station one section of the party visited Whalley and Stoneyhurst, while the other went on to Giggleswick, and after viewing the school and the beautiful scenery there, resumed their journey to Horton, where, after dinner, they were conducted to Dow Ghyll, and afterwards drove to Clapham where they joined the other party, which had been led by Mr. Faraday. At Clapham they visited the famous cave, where much interest was manifested, most of the visitors exploring the inner most parts of the cavern. The programme was a thoroughly enjoyable one, and was much appreciated."

The "City News" of 27th of September 1884 contains an article on Manchester water---a report of the City Analyst namely Charles Estcourt a Manchester Angler. Mr Estcourt, born 1831, had trained under among other chemists Hoffman! Estcourt was renowned for his accurate analyses and for his forward thinking. There had been worries that the water coming from Manchester reservoirs in warmer weather was smelling "fishy". A careful analysis showed that it was due to snails, limnoea, and their gelatinous spawn which did not always stick to the stones, but rose and contaminated the filters. Mr Estcourt suggested stocking the reservoirs with trout, which would feed voraciously on this type of snail and limit their infestation and hence the spawn and the smell. Little more has been read about this matter, which it is concluded finished up satisfactorily, until the City News of 17th of December 1887 reporting on the Manchester Anglers Annual dinner held a few days earlier has the head line "Fish hatching at the Manchester waterworks" The president, Charles Estcourt, said " The objects of this Association as set out in its first circular were to be "The promotion of meetings of anglers and those interested in the preservation, cultivation or natural history of fish." How have the views of the founders been carried out? To take the very important object ---the preservation and culture---what have they done? The Council having wisely waited until both as to numbers and finance its position was a secure one, it began to carry out the important object just named. The result is that we have acquired a very fine length of water and have erected a commodious and useful fish hatching house at Horton. The hatching house for some years back has enabled us to hatch 20,000 to 30,000 ova and place the living results as young fish into our waters. To our fishing secretary, Mr Burn, we are largely indebted for these results. We were not, however, content to confine these advantages to our own immediate circle and hence have been willing, as well as able, to assist other associations as well as private individuals. Taking as an example, it is more than probable that important results may flow from the action of the Manchester Corporation in connection with fish hatching. This work, taken up at the suggestion of a member of our association, in 1884 has had marvellous results. This year, in company of another member of our association, I journeyed with the British Association to the Manchester Waterworks system. We saw their fish hatching house in which 250,000 ova could easily be hatched. Better still, in the small reservoirs adjacent to the house, we saw large numbers of trout leaping out of the water at the natural flies which were over it. No doubt the reservoirs are equally well stocked and if so I can not but feel the result may

be productive of great pleasure to our Manchester rate payers, who have a taste for the gentle art. The Corporation have at Audenshaw near Gorton immense reservoirs varying from 70 to 100 acre each in area, the fishing rights of which belong to them. The fishing rights of Thirlmere also belong to them. That this is no innovation may be judged by the fact that Stalybridge, Ashton-utylne and Oldham have been, for several years, hatching fish and stocking their reservoirs. Bolton, Macclesfield and Rochdale have stocked their reservoirs with trout, and all six towns permit angling in their reservoirs under proper regulations."

A paper read before the Manchester Literary and Philosophical Society, by F. J. Faraday F.L.S., on February 8th 1887 was entitled "Notice of a fish-breeding house erected by the Manchester Anglers' Association at Horton in Ribblesdale." Prof. W.C. Williamson in the chair.

"The fish house, to which I wish to direct the attention of the Society, was erected by the Manchester Anglers' Association, in 1884, in the romantic dale above Settle, through which the upper reaches of the Ribble flow, and along which the Settle and Carlisle extension of the Midland Railway has been carried. The waters of the Ribble, with its tributaries, from its source at Ribbleshead beneath the wild slopes of Cam Fell and Whernside down to Helwith Bridge--- a course of about ten miles, flanked by Ingleborough, Penyghent, Moughton, and Attermire---are preserved by the association. The river is inhabited by a peculiarly robust breed of trout, whose wariness has apparently been developed to a high degree by the almost uniform and crystal clearness of the river, which flows over a rocky and boulder strewn bed, with here and there pools of great depth and stillness. During the construction of the railway, however, when large bodies of men were encamped for years in the dale, the river was almost depopulated by unrestrained netting and fishing; and the comparative solitude of the dale has also made it peculiarly liable to the destructive operations of poachers. The river is now carefully watched by the Association, and it is with a view to replenishing the waters that the fish house has been erected. A considerable natural tarn, or small lake, at New Houses, in a depression on the flanks of Penyghent—which is believed to derive its water supply from springs fed from Ingleborough on the opposite side of the valley, by subterranean channels beneath the bed of the Ribble—is also preserved, and has been stocked with young trout obtained from Loch Leven.

Though it may be frankly confessed that the primary object of the ichthyological operations of the Association is sport, I hope that those operations will not be the less interesting to the members of the Society. The true fly-fisher is always something of a naturalist, and to anglers we owe some of the most charming and instructive books on natural history. The pursuit of angling moreover, has ever been found favourable to the development of the philosophic mind. The quiet contemplativeness, which is its necessary accompaniment; the solitude of romantic scenes, where the stillness is unbroken, save by the cadences of the stream, the cry of the birds, the hum of the insects, the rippling vegetation, or the slowly passing cloud casting its shadow on the solemn hill side or on the sunlit pool, are conditions that not only enable the mind to shake itself free from crystallising tendencies, but provide recreation which is peculiarly effective, according to all experience, in reinvigorating and giving tone to the mental faculties which have been exhausted by severe strain. I need scarcely refer to Sir Humphrey Davy, an angler from his youth, and the author of a classic book on the subject, in illustration; but it is not generally known that a contemporary investigator, who has opened up for us a new world of science—M. Louis Pasteur—was an angler as a student, and still finds rest and refreshment in "the contemplative man's recreation." I desire also to direct attention to the district as eminently suitable for excursions by the British Association during the forthcoming Manchester meeting.

The operations of the Manchester Anglers' Association are carried on amidst scenes full of scientific interest. It was amidst the beautiful and awe-inspiring dales of this district that the ancestors of our great Faraday, on the male and female side, lived, for at least a century before his birth, and developed those mental and religious qualities which found a culminating expression in him. Though now used as cottages, there still stands the humble Sandemanian chapel in which his father and mother worshipped, and to which may undoubtedly be traced the peculiar beliefs and observances which so largely influenced his own life and work. The dale in which the fish-house stands may be spoken of as a complete library of natural records in several departments of science: its peculiar characteristic is the successive series of volumes—if I may be allowed the term—which are offered to the study of the inquirer. In Horton Church the archaeologist will find a venerable memorial of successive stages in the history of English Ecclesiastical architecture, not less interesting because of the secluded locality in which it stands and the quaint and mellowed beauty of the structure. The student of the earlier and mysterious period which immediately followed the departure of the Romans, and the inquirer into pre-historic and pre-glacial palaeontology will find here the Victoria Cave, besides many other caves doubtless still containing silent memorials awaiting the investigator who will make them speak. Nowhere in England are more remarkable series of problems and illustrations presented to the geologist than are found in these dales ---from the Pleistocene back to the so-called primary formations there are innumerable exposed sections of singular impressiveness. On the one hand we have the boulder clay resting on the upturned edges of Silurian slates, and right opposite these same slates surmounted unconformably by the carboniferous limestone; while a little beyond, the face of the millstone grit is seen; and the diligent explorer will find traces of many other intervening series. All round are evidences of wreck and change; synclinals and anticlinals abound; perched blocks—Silurian and sandstone—are strewn in hundreds, often of enormous size; the lime stones are of the most varied composition and texture; and innumerable waterfalls, chasms, and ravines at once charm the lover of the picturesque, tempt the adventurous, and present examples of the various stages in the formation of valleys. The little islands, carpeted with the painted cups of the grass of Parnassus, the deep fissures shading the green spleenwort, and the abundant pink of the bird's eye primrose will suggest to the botanist the still unspoiled floral richness of the region: and not less suggestive to the ornithologist will be the pensive heron startled by the lone rock girded pool, or pursued by the hawk; the sky blue flash of the kingfisher, and the silvery splash of the "dipper". Amid such scenes the visitor has still a profound sense of the primeval brooding of Nature, majestic and eternal.

The fish-house erected by the Association stands in a little glen formed by Horton beck or brook, a tributary of the Ribble, which, like the Aire at Malham and many other water courses of the district, flows from a cave at the foot of a limestone precipice known as Douk Ghyll Scar. The house is thus in a sheltered situation, protected from the strong and cold winds which blow across the hills, or sweep along the dales. It stands on the edge of the brook, which affords a ready drainage, and is a strong wooden structure on a foundation of solid rock. The water supply is obtained from a spring on the side of Penyghent which feeds a cistern, the overflow from which formerly found its way to the brook and is now carried through the tanks in the fish house. A good and permanent supply of unpolluted water is thus obtained, for the spring has never been known, within the memory of the oldest inhabitant, to run dry. The vast fells and moorlands which stretch around may be compared to stupendous sponges retaining a practically inexhaustible store of moisture which supplies the subterranean reservoirs, whence the springs are fed and what may be spoken of as a full grown and partly subterranean brook proceed. The building of the house was entrusted to the village joiner, and it will, therefore, be unnecessary for me to inform any one who is familiar with the still primitive qualities of the district, that it was done in a thoroughly

substantial manner. Before the house was erected the water supply was duly tested by Mr Charles Estcourt, the Manchester City Analyst and the present President of the Association, and was pronounced eminently suitable for the purpose. It is conveyed through lead pipes a distance of 65 yards from the cistern, before mentioned, to the house, and as there is a descent of from ten to twelve feet, or say one in sixteen, from the cistern to the hatching tanks, a good pressure is secured. The troughs and trays were made at Bowden under the superintendence of the authorities of the Bollin fish house. The annexed plan shows the arrangement. The water first enters a filter box **A** supplied with loose gravel, and then passes into a long trough **B**. This trough is connected with six trays over tanks on the left hand side of the plan, arranged in the form of steps, over which the water successively flows, escaping by the waste pipe **D**. On the right hand side in another series of trays also arranged in three series of steps independently supplied with a constant flow of water from the trough, and with a waste pipe also marked **D**. The trays are supplied with the usual glass-rod grills, the ova being placed on the rods, and each tray is calculated to hold 1500 trout eggs. As the fish are hatched they escape through the grills into the boxes or tanks. The bottom of the tanks is covered with fine gravel in which the young fish take refuge from the light. Small pieces of slate are mingled with the gravel, and under this the fish find what appears to be often a very welcome shelter.

On the right of the door a large zinc tank has been provided, and into this the fish are removed as they increase in strength. Provision is, of course, made for a continual flow of water through it. The water though roughly filtered, still appears to contain a considerable natural supply of food; indeed Dr. Angus Smith has shown, even very pure spring water is abundantly supplied with microbia. It would be interesting to ascertain how far these micro-organisms minister to the life of the young fish. The fish are, however, also fed daily with well boiled liver, finely grated, and on Sundays Mr Walker the Associations keeper treats them to a hard-boiled egg. Close to the breeding house a slate tank 24 feet long by 8 feet broad, and with a depth varying from two feet at one end to four and a half at the other, has been constructed; and in this, 4,000 fish are kept until they are yearlings, when they are placed in the small streams and allowed to work their way down to the Ribble. This tank however, is far from sufficient to accommodate the whole of the fish hatched, and hence a considerable quantity are placed at an earlier age than one year into the brooks, the larger and stronger fry being selected for this experience as being more likely to survive in the struggle for existence. The Association has the satisfaction of knowing, however, that a considerable proportion of young fish are specially protected from their natural enemies until they are yearlings, when they measure from three to five inches. The trout is believed to become reproductive at the age of two years. The total cost of the installation was about £80.

The first experiments in collecting the ova were conducted by two amateur members of the Association in the early part of December, 1884. In a small neighbouring brook, scarcely two yards wide, with a sandy bottom, where the fish had repaired to spawn, about a hundred fish were netted within about fifty yards. The weight of the fish ranged from a quarter of a pound to a pound. The spawn was taken only from the larger ones. On a subsequent day over 170 fish were captured in the same brook. On both occasions there were twenty males to one female. The ripe female fish were first held over a shallow dish containing a little water, and the belly gently stroked. The ova fell singly into the dish, no pain being caused to the fish. The male fish were then treated in the same way and the milt allowed to fall on the ova. A slight swaying of the fish from side to side tends to ensure the impregnation of all the eggs. Contact with the milt causes the colourless virgin eggs to change to a golden pink hue. The proportion of sexes netted varied on different days; thus, on one day, six female fish to one male were taken. It is stated that the milt from one male is sufficient to impregnate the ova from two or three females. An excess of milt was supplied, however, in these experiments. This may have had something to do with the remarkable success of

the hatchings. Possibly it may have assured the effective impregnation of all the ova. The impregnated ova show signs of life after about six weeks after being placed in the trays. I ought to say that the ova and milt were all obtained from the native trout of the dale, it being considered that the vigour and size of the breed could not be improved. The umbilical sac was absorbed within a month or six weeks after the hatching of the living and moving fry.

In 1885 about 12,000 fry were hatched from the spawning of 1884, and in 1886 about 28,000 fry from the spawning of 1885. The loss from the ova to the fry state was only about two per cent. The young fish have proved remarkably vigorous. From the spawning of this winter, almost 26,000 ova have been placed on trays, and the loss has been only about half a percent. As comparatively few of the fish can yet have attained the size at which it is permissible, according to the rules of the Association, to take them from the river, and only the earliest hatchings can yet be approaching the reproductive age, the effect of the artificial hatchings upon the wealth of the river can not yet have been felt. There is, however, already decided evidence of improvement in the yield to the rod, and my own observation of a water which I knew before the railway was constructed has convinced me that the Association will in due time reap a rich harvest from its enterprise. Apart from the credit due to the Manchester Anglers' Association for having thus utilised its opportunities for assisting in the work of replenishing our rivers with a most important food supply, the experiment has considerable biological interest. A careful record of statistical and other facts is being kept by the association, and such data will afford material for solving many interesting ichthyological problems. Thus, the relations between the meteorological characters of the seasons, the time of spawning, and success of hatchings are being observed. In his latest report as Inspector of Fisheries in England and Wales Mr A.D. Berrington comments on evidence of apparent changes in the spawning time of the salmonidae in different rivers which can not be traced to any visible changes in the natural conditions of the rivers in question; and in a previous report Professor Huxley calls attention to remarkable changes in the productiveness of different rivers from year to year, extraordinary fallings off and sudden revivals, which can not be explained by any of the hypotheses advanced, such as pollution, rainfall, and so on, being witnessed. The question of spawning time and the effect of meteorological and other conditions upon it, and also upon the hatchings, have an important bearing upon the close-time regulations, as it is obvious that with fixed dates the rivers may occasionally be closed and opened too early; and it is just possible that it may eventually be found desirable to adapt close-time regulations to the special character of the season and other conditions of fish life and maturity. I have to thank Mr Robert Burn, who has taken an active part in the fish breeding enterprise on behalf of the Association, for much of the information relating to the fish-house in this paper; and I have authority to add that the Association will welcome any member of this Society who may take a scientific interest in the matter to an inspection of the fish house, and will afford facilities for any scientific investigation which he might like to carry on in connection therewith."

At the annual business meeting of 17th January 1888 the paper reported that "about 26,000 ova had been hatched last March some of which had been put in the Tarn, some in the river and some at Entwistle where the fishermen have certain privileges. This winter about the same number of ova were on the trays, and might be expected to be hatched early in the spring. Last year (1887) was a very unfavourable one, both for fishing and for the care of young trout, on account of the drought, but reports spoke very hopefully of the quantity of fish both in the Tarn and the river."

The Yorkshire weekly post 6th October 1888 Reporting the convivial annual meeting of anglers and farmers and others at the Lion at Horton reports that Mr Harker paid a thoroughly

deserved tribute to the merits of the association keeper Robert Walker “ He had devoted himself heart and soul to the interests of the members; he had brought to bear on the fish breeding operations an intelligent supervision and attention that had resulted in no greater loss than two per cent of all the ova laid down, and had gradually perfected a model trout breeding place; in every respect he is a praiseworthy and reliable man. All this I am prepared to confirm; there no fish breeding house in Yorkshire more excellently regulated, so clean, and in such thoroughly good order, while his 12,000 “babies” in the tanks are thriving splendidly, and come up to be fed at sight of the mere shadow of the burly keeper and his long feeding-sieves. He even jocularly declares that they will---on Sundays only---answer to their 12,000 names.”

T. E. Pritt (secretary to the Yorkshire Angler’s Association and correspondent on fishing to various news papers) wroteappertaining to angling were discussed by interested parties from both counties. Among the several matters discussed was the close season for trout; to allow them to spawn and then to recover from the event. At that time the close season for trout was from the second of October to the second of February. After a positive discussion Charles Estcourt proposed that the new close season should be from the second of October to the fifteenth of March, and the resolution was carried unanimously.

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A further meeting was held in Leeds 17th November 1888 under the joint secretary ship of T.E.Pritt and Abel Heywood. Where the new close time for trout was again discussed. Anglers from the Nidd pointed out that their season was late and it would be quite in order to continue fishing until the end of October without disturbing the spawning process. On the other hand they stated fishing on the Nidd did not start until early April. After it had been pointed out that the Board of Conservators had the right to vary close times in specific areas the resolution was carried unanimously, that the close season should become October the second to March the fifteenth.

At the end of November 1888 a request was put out for any Manchester Anglers’ member who would like to assist the Spawning operations at Horton the last week in November or first week in December to help Mr Burn.

An article in the Yorkshire Weekly Post of December the eighth 1888 touches on the close season matter in a practical way.

“Since the foregoing remarks on the importance of weather and temperature, and the necessity of observations there on, I have received the following interesting communication from my friend Mr Robert Burn, of the Manchester Anglers ‘ Association, which will no doubt be acceptable to a large number of breeders of trout in the north of England:---

At the conference in Leeds on the 17th ult. During the discussion on the resolution respecting the extension of the close season, several speakers expressed the opinion that the trout were influenced in spawning by the character of the previous summer and autumn—that a high temperature encouraged early spawning and a low temperature retarded it, or **vice versa**. In my reply I rather doubted this theory, and said that our experience on the Ribble showed that we

got the great bulk of the ova for our breeding house about, or after, December 8th each year. Since then I have been looking over our memoranda for the last three years, and find the facts to be as follows:-

| | | |
|-------|--------------------|------------|
| 1885. | November 27 to 30 | 5,400ova |
| | December 1 to 5 | 7,200ova |
| | December 15 to 18 | 12,000ova |
| | Total | 24,600 ova |
| 1886 | November 20 to 22 | 4,000ova |
| | November 29 and 30 | 5,000ova |
| | December 6 to 9 | 10,000ova |
| | December 18 to 23 | 6,000ova |
| | Total | 25,000 ova |
| 1887 | November 28 | 1,800ova |
| | December 2 | 12,000ova |
| | December 10 | 3,600ova |
| | December 13 | 4,800ova |
| | December 17 | 4,800ova |
| | Total | 27,000 ova |

This year (1888) about 5,000 ova were got on November 19 to 21, and about 1,000 on the 30th. At the present time a great number of fish are up the becks, but the great bulk of them are males, in the proportion of something like 20 males to one female. This is, however, a sign that about the end of this week, there may be a great rush of females, and we may be able to fill our trays in a day or two. We all know how the last four summers and autumns have differed in weather and temperature, yet substantially my statement made in Leeds, that the trout spawn about the same date each year, is correct. Perhaps fish may spawn early or late in the season according to the altitude. At Horton we are at 750 feet sea and in a cold lime stone district. Before referring to any papers I asked Walker when we might expect to find spawning fish, and he at once said "Not until Ingleton fair (November 17th), and the first and second weeks in December are the best".

One of the speakers at the (Leeds) conference made the statement that the ova were hatched in from 36 to 50 days. This seemed to me a very short time. In my own mind I felt sure it was ninety days, but did not like to speak without being perfectly certain. On reference to our own experiences, I find ova from the Ribble take 104 days to hatch, and each season tallied to a day. This may be very slow, but we are perfectly satisfied, for the fry turn out strong and healthy, with a very small percentage of loss.

"This is an age of "Scientific Observation" and it would be interesting and instructive if brother anglers with a taste for fish culture would observe and not the times when fish actually spawned (not merely when they came up the becks) in different parts of the country, and send the results to you. Then taking into account the character of the previous summer and autumn, and the positions and altitudes of the different places, we might arrive at some conclusion.

The statement of the speaker from Keighley who referred to the hatching time of trout was questioned at the conference, but he settled the matter by adducing the fact that he had

himself hatched the ova of trout "in the time named" i.e. from 36 to 50 days. It was after wards suggested at dinner that the speaker must have referred to eyed ova, as there can be no manner of doubt that the period named is out of the question. The ordinarily accepted time being 90 to 100 days."

It is interesting that no mention was made about the influence of water temperature in the time of hatching of ova. At the Horton Hatcheries the cold water from a spring was first stored in a Helwith Bridge slate tank before being passed over the ova. This tank was situated in trees in a small wood called "The Archery" whose name may have come from the fact that there was a gap between the trees along its length, which was suitable for a toxophilite.

At the Annual Dinner 18th December 1888 Councillor Mark (according to the Manchester Courier 19th December) said " He was an angler, and in full sympathy with the pursuit. As a member of the Water Works committee he referred to the question of fish cultivation in reservoirs of the Corporation. Some time ago there were strong complaints, he said, about the smell arising from fish in the water of one of the reservoirs, and an appeal was made to a member (Charles Estcourt) of that association, who, after a careful examination found that this smell was due to the presence of the spawn scales, which developed themselves very much on the slopes of our reservoirs. To remedy this he suggested the introduction of trout, which had proved successful.

The Yorkshire Post in early 1889 reported on the committee appointed for the purpose of giving effect to the resolutions passed by the recent Conference of Northern Anglers at Leeds. The meeting was held at the George Hotel in Huddersfield. Mr Robert Burn was appointed Chairman, also present were Mr G.F. Booth, Rochdale; Mr George Sykes, Huddersfield; Mr Joseph Webb, Leeds; Mr John Gerrard, Wakefield; Mr Charles Estcourt, Manchester; and Mr T.E. Pritt, Leeds. The committee sat two and a half hours, and having thoroughly considered all interests involved, resolved to proceed immediately with the view of introducing a short Bill in the next session of Parliament under the title of " A bill for the better protection of Trout and Grayling" The members afterwards dined together off that vulgar, but comfortable dish, beefsteak, perhaps in this case it would be better to say beefsteaks and onions. It is therefore to be feared that a large majority of these self sacrificing committeemen would meet with but an indifferent reception when they got home. The report goes further on to advise " Mr R. Ramsbottom of Market Street Manchester has forwarded his annual report on the gut crop of 1888-9. From this it appears there is a considerable increase in the stock available for the coming year as compared with the crop for 1887-8. This is accounted for, says the report, by the greatly increased breeding of Silk Worms, but as food was scarce the worms have been undersized, and the stock of the stoutest salmon gut will therefore be limited. This will apply equally to the very finest qualities of trout gut, the production of this kind being barely an average crop. Mr Ramsbottom's finest picked trout gut is quoted at 12s 6d. per hundred of 22 inches in length, though I am open to argue with any man against the advantage of very long strands of gut.

City News 19th January 1889 reporting on the Manchester Angler's Annual General Meeting wrote "Mr Heywood in responding said that the Association had always taken an active part in any movements for the good of anglers and fishing generally; and this action had reached a higher point than ever during the past year when the important Conference was held at Leeds, promoted by the Manchester Anglers in conjunction with the Yorkshire Angling Association. The ex President Rev Mr Roberts spoke of his work during his year in office. They would all, no doubt,

be interested to hear that in Whittaker's Almanac for 1889 the Leeds conference appeared as the most important event in the angling world. Manchester men had the reputation of leading in all important matters, whether in ship canals, corn laws or free trade, and the Manchester Anglers showed the same spirit in taking a lead in the "protection" of fishing interests. Mr Burn said that the last season had shown a marked improvement, and the recent spawning operations had been most successful, there now being 30,000 ova on the trays and 3,000 yearlings in the store tank at Horton.

The Manchester City News 13 April 1889 published along article entitled "Fish Breeding in Ribblesdale" The History, location and set up of the River Ribble and its Hatchery in Douk Ghyll appears to be very similar to earlier copy. New copy (from perhaps Robert Burn) was written as follows:-- "Trout spawn late in November or early in December. They run up the small brooks or becks, surmounting difficulties that seem incredible. Here, they are easily taken in small nets, or by hand. Before the close time regulation, trout were taken, when spawning, by thousands, but now any one taking or having trout in possession, except for purposes of cultivation, is liable to prosecution, and even fish breeders must have permission. When sufficient trout have been netted, the method of spawning is as follows:- " In a broad shallow dish is placed a little water; then the female fish is held in the left hand, and the belly gently stroked with the right hand downwards to the vent. If the fish is ripe, the ova at once begins to fly out, singly, into the dish. A male fish is then taken, held, and stroked in the same way, and the milt allowed to fall upon the ova in the dish, which is then canted from side to side, so that all the eggs may become impregnated. The change is something wonderful. The eggs at first are colourless, but on absorbing the milt, change to a golden pink hue. The ova are easily carried for hours in a little water, in a quart tin can with a swinging handle, until it is convenient to place them on the hatching trays. As many as 3,000 to 4,000 may be so conveyed, without injury.

The time required before the young fish bursts its shell is two to four months, varying according to the temperature of the water and the air. For the years 1885 to 1888 inclusive, the time of incubation was uniformly 104 days, but this year owing to the milder weather, the first fry were hatched in seventy six days. A spell of severe weather then came on, and the hatching stopped at once, and was not resumed for a fortnight. In about six weeks from placing the eggs on the trays they begin to show signs of life. Taking one up in a glass tube and holding it to the light, the eyes first show as black specks, then the complete form of the young fish can be seen coiled round inside the shell, and with a magnifying glass it is possible to see the blood vessels. When the little trout bursts its shell and comes to life, it has a big yellow bag attached to the underside of the throat, within which is a glutinous substance, by the absorption of which the alevin, as it is then called, subsists for a month or six weeks. At first this bag seems to over power the fish, and the only idea seems to be get into some dark corner out of sight, but in a few days it gathers strength and moves about more freely. Day by day this appendage gets smaller, and in the time named the little one acquires its own natural graceful form, with dark back and silver belly, and actively darts about in search of food. The alevins are very sensitive to light, and it is necessary to place pieces of slate or stone in the troughs under which they can shelter. Many curiosities are hatched, fish with two heads, or two tails, or even two distinct bodies joined together like the Siamese twins, but they never grow to any size generally dying in a few weeks.

As the fry get larger they require more water and moor room, and some of them are removed into a larger trough, with a steady supply of water falling in at one end, and overflowing at the other, so as to cause a continual current. There is considerable natural food in the water, but in addition the fish are fed daily with well boiled beef or liver, finely pounded in a mortar and

passed through a fine sieve, or with a specially prepared fish food which is very nourishing. Outside the breeding house is a stone cistern holding about 3,000 gallons, with a regular flow of water through it of twenty gallons a minute. In this some three or four thousand fry are kept until they are a year old, and then are placed in the small streams, so that they may gradually work their way down to the river. At the age of one year the trout measures from three to five inches. As there is not sufficient pond room in which to keep the whole of the fry until they are yearlings, a considerable number of the largest and strongest are placed in sundry small becks, where there is an ample supply of food and shelter. For the last five years an average of 25,000 fry have been hatched and turned into the stream, and this must tell largely on the increased stock of trout in the Ribble. Coming as the spawning season does in the winter, the work is at times anything but pleasant, some days a keen frost, with snow thick on the ground, and the nets frozen stiff when out of the running water; on others a cold biting rain makes netting the fish and then handling them to get the spawn a difficult and unpleasant business. Dry clothes, a comfortable dinner in a warm room, and an "Anglers' Evening" to follow, soon puts all right again, and the Manchester Anglers look back with pleasure to many enjoyable days and evenings at Horton spent on their useful work."

Astute readers of the "Anglers' Evenings" Third Series published in March 1894 will notice that an article on page 159 and following pages entitled "Trout Breeding in Ribblesdale" is very similar to the above article published about five years before. Perhaps Mr Burn read a paper in early 1889 and he used the copy for Anglers Evenings having already given the notes to his talk to the local press.

In December 1888 about 28,000 ova were placed on the grilles in the fish hatching house at Horton; about 20,000 having been taken from trout from the Ribble, and 8,000 procured from Malham Tarn. The hatching took place in March, and was fortunately attended with a very small percentage loss. A considerable quantity of the fry was placed in becks during the summer, and there were still about 4,000 in the stone cistern adjoining the fish house, which are now ten months old, and are the largest and strongest so far reared. The total number of trout taken from the Ribble at Horton during the fishing season, by members and friends, as shown by Walker's Diary, was 1,238, and 47 trout were caught in the Tarn.

The Yorkshire Post 4th October 1890 describing the Annual Supper to Occupiers and others held at the Golden Lion Horton on 27th September printed a picture from a wood engraving of the hatchery fish house in Douk Ghyll writing:- "The accompanying illustration may serve to give my readers and others an idea of the picturesque surroundings of the now famous trout hatchery, with the produce of which the Manchester Anglers' have succeeded in making a large stretch of one of the fairest Yorkshire rivers into some of the best trout angling waters in the country. Well situated, well arranged, and excellently managed, it has been visited in recent years by a great many Yorkshire gentlemen who are interested in the art of pisciculture, and on its model many other hatcheries now in working order have been largely constructed. Of course the illustration barely gives an idea of the situation, and does nothing like justice to it, for the dell down which a tumbling chattering beck pours its oft-times impetuous flood, leaping from the solid scar a short distance above, is romantic and picturesque, and with the reddening tints of ripe autumn on it, would charm the soul of painter or poet"

December 1890 saw the laying down of a further 28,000 ova on the trays. It had been feared that the intense frost at the end of December might have interfered with the work; but the

water still flowed freely into the large tank and into the hatching room. In the autumn of 1891 the trout spawned a fortnight earlier than any previous year.

In 1891 the number of fish taken, from the river, was 1,739 and in 1892 it was 1,844 the size limit was eight inches. The hatching of the ova in March 1892 was satisfactory as usual, but owing to the extreme heat in the first week in June, a great number of fry in the stone tank died, showing that the space is much too for a large number with such an unusual temperature. The bulk of survivors were immediately put into small becks, and only some 2,000 (10 months old) were left in the cistern. It was noted that the fish had not grown to such a large size as in previous years, though they had been fed the same class of food. In November 1892 the trays were once again filled with ova. 8,000 came from Malham Tarn, 8,000 from the Wharfe at Bolton Abbey and the remaining 14,000 from the Ribble trout.

A bazaar was held at Horton in August 1892 when with the help of the anglers £148 was raised. The Manchester Anglers were greatly involved and one of the highlights was the fish house. The young son of the fishing secretary was roped in to help Walker show off the "side show" The trays were filled peas (it being August and there were no eggs available) and the visitors to the house were charged a penny or two to see the hatching house in "full" working order. Walker had charge of the fish tanks for he was much afraid of the visitors feeding his family with forbidden delicacies. The young son of Robert Burn, then aged eleven, was in charge of the trays and their contents and discoursed upon the hatchery with the confidence of superior knowledge, and countenance made cheerful by a desire to please. It is possible that these innocent visitors may have heard things about fish culture with which the Fishing Secretary did not agree. If the wondering multitude mistook the peas for ova on a blazing day in August it was their ignorance that prevailed. After all what could they expect for tuppence? The exhibitor thought that the viewers got an excellent return from their investment!

Due to the drought the angling season of 1893 was remembered as one of the worst on record; "only" 1,006 trout were taken from the river the bulk of the catch coming in August and September. The work at the fish house was as "successful as usual. The ova hatched in March; but the hot dry weather in May and June interfered with the water supply, and some young fish were lost. "Since the autumn they have thriven well, and there never was a finer lot of yearlings" The spawning season was a fortnight later than usual, the first ova were taken on 27th November against 14th November in 1892. The trays were filled again from Malham, Bolton Abbey and the Ribble. Once again after hatching the fry were brought to an untimely end because in June the water supply in the stone cistern was fouled and any survivors were cleared out into the becks as soon as possible. The trays were filled again in December with 15,000 ova from the Ribble, 5,000 from Loch Leven trout at Bolton Abbey and 5,000 from Malham Tarn.

Concern was shown in 1895 about the stocking of the Tarn which had received a large number of yearling trout over the previous ten years. Notwithstanding several hundred fish being put in each year the take in 1895 was only 55 as against 82 the year previous and 142 in 1891. The question arose as to the suitability of stocking with yearlings into a water already well filled with mature fish. The question was asked whether the fish had a chance of growing or did they provide a substantial meal for their elders. As a result 70 trout of about 12 ounces in weight were placed in the Tarn in the autumn. Once again the hatchery was reported to be on song. In 1896 it was reported that the Tarn had fished disappointingly; nevertheless it was stocked after the end of the season with 200 large trout of which 100 were fully one pound. To test the theory of cannibalism of trout and that there may be a certain stock that never took a fly the fishing on the Tarn was

opened up to all legitimate forms of fishing until the end of May. No exceptionally large trout were reported as having been caught. In fact at the end of May two members fishing minnow had four fish weighing five pounds in total. Although Walker was failing in health and his assistant Hunt had been seriously ill and left the valley for the Midlands (Temporarily as it turned out) the hatcheries were reported to be successful as usual.

A meeting was held at the Grand Hotel in Manchester 21st September 1897 where on the agenda was "the most practicable way of improving the fishing in the river at Horton. Mr Burn read a communication from Mr Booth, suggesting the necessity of forming ponds at Horton, in which to keep young trout until one or two years old, and offering a donation of £20 towards carrying out his suggestion. Mr Burn observed that only four years of the lease at Horton remained; that the cost of construction of the ponds would be considerable, though not too large if the renewal of the lease was contemplated. He believed that the cost would probably be about £80 and he had no doubt that the lease could be renewed if desired. He thought that if the ponds were to be made, the best place would be behind Tom Iron's cottage, on land belonging to Mr W. Foster; there was a good supply of water, and in so public a position, the ponds would be less likely to be robbed than if in an out of the way place. The chairman asked the opinion of the gentlemen present on the following points:--

- (a) Is it possible, with the river in its present condition, by any means we can take, to hold a stock of larger fish than we have at present?
- (b) Will larger fish not make their way down stream?
- (c) If we can not improve the fishing, ought we go to the expense of ponds?
- (d) Would it not be better to purchase a stock of two year olds, and see if, at the end of two years, any improvement has taken place?

Mr Burn thought that putting in two year olds would not improve the fishing. He believed there was plenty of fish in the river now.

Dr. Wraith thought the river was rather over than under stocked.

Other members expressed similar opinions.

Mr Woolley moved, and it was carried: "that the discussion of the subject be adjourned to the next meeting, the present meeting being too small to decide so important matter."

The next meeting on 19th of October was poorly attended and the question of fresh ponds was put aside and it was decided to continue the arrangements as they were.

Once again the 1897 season at Horton, along with many other rivers, was assessed as the poorest for many years. The spring months being dry again. Despite all the extra stocking the take from the Tarn was the lowest for many years. A present of 5,000 Rainbow Trout Ova was kindly made to the Association by Herr Jaffe of Osnaburg, Germany and were successfully hatched. Though from want of tank room some had to be distributed at an early age, a considerable number were conserved until they became yearlings, so that they could be put in the Tarn. These fish grew rapidly and as yearlings were much larger than the ordinary trout. They rise freely and it was expected that the sport in the Tarn in a season or two would be first class. For all the efforts only 19 trout were taken out of the Tarn in 1898. The yearling Rainbow trout, some 2,000 were turned into the Tarn in April 1898 at a length of six to six and a half inches. (Perhaps so few brown trout were taken because nearly every cast got a rise from a Rainbow, or perhaps the Brown Trout were decimated due to lack of food!) In August many were hooked and landed at eight to eight and half inches, but were returned. On September 11th two were taken measuring eleven inches and weighing over seven ounces (???) It was said that the water and food evidently suited them,

and the next season should show some capital sport. Members were reminded however that Rainbows spawn in April and May and that none should be taken before the first of July.

The fishing on the Ribble in 1899 was specially noted for one fact viz. : that for the first time in eighteen years, the number of Trout taken in the club's experience was greater in the earlier part of the season than in the later part. This was due to the dry season, and low state of the river, which continued until the end of September. Only 58 fish were taken from the Tarn of which 33 were Rainbows. During April and May many Rainbows were hooked and landed and found to be full of spawn or milt. They were put back. It was noticed how unpleasant they were in appearance, being a sickly purple in colour, more especially the males. Though out of condition they rose freely as usual, and fought with some vigour. In June they recovered rapidly, and for the rest of the season gave much sport. It was found that the growth of these Rainbows was most interesting. The ova was hatched in Horton on 25th April 1897. The yearlings when put in Newhouses Tarn in April 1898, measured six to six and a half inches long, and some were taken in August following, ten inches long, and weighing eight to eight and a half ounces. In June 1899, one was taken 13 inches long and weighing one and a quarter pounds, and several pounders were reported. This was thought to be most satisfactory and that it showed how suitable Rainbow Trout were for Tarns and Lakes. Sadly, Robert Walker the Associations stalwart keeper for nearly 20 years died aged 75 and lies buried in Horton churchyard.

The work at the fish hatchery was satisfactory as usual. At the latter end of the year, 70 fine fish weighing a half to one pound were put in the Tarn, and coupled with the stock already there good sport was expected for 1900. Members were often being broken by big fish in the Tarn, and in order to prevent the ravages committed by monsters among their younger brethren, it was decided to net the water to remove them. On Easter Monday, an attempt was made, but was not successful, as the net was too shallow. Early in May, another attempt was made with a deeper net, and more determined members. The water was steadily and systematically dragged, but only about a dozen fish were taken ---the largest (a Brown Trout) being one and three quarters pounds in weight. Several Rainbows were enclosed, but all except two were out of condition. Excitement was caused two or three times that monsters of four and five pounds were in the net, but unfortunately they were never brought to land. The bottom of the Tarn is very uneven, with deep holes, and the fish escaped there when the net passed over.

In 1900 only 38 fish were taken from the Tarn and this included catches of eight including five Rainbows and another catch of three Rainbows. The Rainbows spawned in April and were not in condition until the end of May. The heaviest taken was two pounds and several reached a pound and three quarters. The work of the fish house continued to be satisfactory. About 20,000 ova were put on trays. An experiment was tried of exchanging eyed ova from Ribble Trout with eyed ova from Wharfedale Trout, by courtesy of the Committee of the Burnsall Angling Club.

1901 showed the worst river fishing since 1887 with 881 trout taken. The cause was well documented, it being the result of a long drought in the summer, when the river was lower than ever before and not a line was thrown for weeks together. The fishing in the Tarn was also bad. No doubt the want of rain and the low level of the water had an effect on the trout for they rose badly. The boat was taken out 19 times, but only 14 fish were caught. The best fish was a Rainbow Trout of two pounds taken on the 31st of July. These Rainbows were four years old, and as noted in other waters did not rise so freely as in their earlier days. During May and June each year they were found full of milt and spawn, and in order to see the condition they were in during the winter, and also to see if they would take minnow or fly, permission was obtained from the Ribble

Board of Conservators to fish for them during the close season. At the end of the about a hundred and twenty fine trout three quarters to a pound in weight were placed in the Tarn.

The 21st October 1902 saw a meeting at the Grand in Manchester where the Council sought guidance on stocking. Firstly--- The Tarn, which is not satisfactory from a fisherman's point of view as a reserve when members find the river low and unfishable.

"The Council is considering the question of—

- (a) Procuring from some hatchery, this winter, several hundred nine inch fish, in order to increase the head of fish in the Tarn and
- (b) The desirability, and possibility of raising the level of the Tarn by some two or three feet.

Secondly—Tanks or ponds for keeping the fish hatched at Douk Ghyll until they are two years old, and a fit size to replenish both Tarn and River. Some five years ago, in 1897, this question was thoroughly discussed, and it was decided to defer any action until the expiry of the old and completion of the new lease. The time has now come and the Council requires the views of members on these matters" At the meeting all three proposals were passed unanimously subject only to a question of expense and the financial position of the club. The following resolution was adopted at the meeting:-

" That the Council endeavour to raise the sum of £100 by subscriptions, which shall be devoted entirely to the re-stocking of the Tarn, and the formation of Fish ponds in which to keep fish until two years old—the yearlings now hatched and bred by the Association being transferred thereto."

The council bought 300 two year old (9 to 10 inch) Loch Levens, which were to be put in the Tarn December 1902 or January 1903.

With regard to the stocking ponds the Council decided to wait upon the result of the appeal for subscriptions. Their desire was to provide sufficient storage to enable the River and Tarn to be restocked with about 3,000 healthy trout yearly. By the year end £75 had been subscribed and the go ahead was given for the holding ponds to be made.

The 1902 season as far as the river was concerned was the best for nearly ten years when 1338 fish were taken. The Tarn was a different matter and only nine fish were removed in the whole season. The Fishing Secretary (Mr Robert Burn) offered the following thoughts:-

"It may be that the sport in the Tarn has been disappointing for the last two years. About 2,000 Yearling Rainbow Trout were turned out in 1898, and since then the fishing has been worse. In 1899 and 1900 many were hooked under size and had to be returned, and a few Brown Trout were brought to land. Last season, and again this season, only a small number of good fish were taken, and no small ones had to be returned. The rising fish were few and far between, and it seemed that the occupants of the Tarn had much diminished in numbers. In order to test the matter the place was thoroughly and carefully netted on the last two days of September, but only 34 Trout, one and three quarters to two +pounds were taken. The mesh of the net was large, and the smaller fish would slip through, and again, the bottom of the Tarn is uneven and the net might pass over many fish. The result was very disappointing as it showed we had not the number in the Tarn we expected. Only one Rainbow Trout was captured, and weighed about one and three quarter pounds. The majority of the Brown Trout had heads like Pike, with capacious jaws, and evidently lived entirely on their smaller brethren. The Council has come to the conclusion that it is a mistake to put in Yearling Trout, and in order to provide sport as quickly as possible, 300 Loch Leven Trout, two years old, have been ordered and will be turned in shortly. It is intended to net

vigorously at the end of each season, and take out the big Trout to give the smaller ones a chance of growing.

Rainbow Trout may do in a pond or lake where there is no other kind, but our experience shows that it is a mistake to have different breeds in the same water. Rainbow Trout spawn in May and are quite out of condition until the end of June, and no doubt easily fall victims to the native fish, which are then in the best possible condition. The general opinion is that Rainbow Trout do not rise or show themselves after three or four years, and our experience is just the same. It must be that very few are left to rise. The decision of the Council to make ponds in which to keep young fish until two or three years old should have a great effect both in the Tarn and the River, and may be looked upon as a good investment."

The report of the Council 1903 congratulates the members on their labours in connection with the creation of rearing ponds for two year old trout. After consideration as long before as 1897 it was decided to await the settlement of the new leases in 1902. That done an appeal for the sum of £100 was quickly subscribed.

"The main consideration in providing ponds of this nature is a bountiful supply of pure water, and in December 1902, a survey was made of the available sources, and an excellent site was found alongside Bransgill Beck, on Mr Hammond's land. The Beck issues from a cave in the mountain side, the water is exceedingly pure, and has never been known to fail. The water is led through a pipe from a distance of 140 yards up the beck to a piece of ground below, alongside it, and the water after passing through the ponds finds its way again into the beck. Early in 1903 contracts for the construction of the feeding pipes and ponds were entered into with a local contractor, and in September, last, three ponds were finished, and 1,700 of the last hatch of ova were introduced, apparently with excellent results, the fish growing fast. Some difficulty was met with in the sub soil of the ponds, and the cost was thereby increased.

The cost of the ponds, and their covering and railing in, has been £124, which, with the sum of £18 expended in restocking the Tarn last year with two year old Trout, and £6 for providing fishing stages in the Tarn, makes the total expenditure of the Special Fund £149. A further amount of £30 has been subscribed by members and the sum of £25 is required to clear off the entire expenditure and provide a small sum for purchasing a few more two year old fish for the Tarn next season while our own fish get up to size. The site occupied by the ponds is ample for providing two or three more, should it be thought desirable later on to increase the stock of two year olds. This can be done at comparatively small expense, the water supply being sufficient for double the present quantity of fish. That this expenditure will improve the fishing there can be no doubt, particularly in the Tarn, which requires to be regularly stocked with fish in considerable numbers, and should provide good sport for a larger number of members."

The 1903 season itself showed a record take from the river of 2,185 trout and the Tarn yielded 134 fish well up on the last six years whose take altogether was 161 fish (including Rainbows). In the spring of 1903, 300 two year old Loch Leven Trout were put in the Tarn and they grew in a remarkable manner, as shown by the number taken, although the size of a takable fish was ten inches. Several old Brown Trout of one and a half to two pounds were taken; but there was no record of any Rainbows, placed in the Tarn in 1898, being taken. What became of them remains a mystery. The breeding house continued to do well and 5,000 eyed ova were exchanged again with the Burnsall Angling Club it being considered beneficial to introduce a fresh strain of Brown Trout.

The 1904 season showed a catch on the river of 1,077 fish the severe drop from the year before being put down to the exceptionally dry weather in the last four months of the season, when the river was low and out of condition, and weeks passed and not a rod on the water. Only 91 trout were taken from the Tarn; the bulk were Loch Levens, though some fine Brown Trout were amongst them. No Rainbows were seen. On 24th September the Tarn was vigorously netted in order to get rid of some of the larger fish, "which prey on the smaller ones" but only seven were secured. It was thought that if the netting was done in the spring, when the weeds had not grown, the result might be greater. The fish breeding house as usual did well. With the dry summer and autumn the water supply dwindled away, and the fry in the tank had to be removed to the rearing ponds on Bransgill. As in former years about 5,000 eyed ova were exchanged with Burnsall from Wharfe trout. The difference between trout from the two rivers was found to be most marked. Those from the Wharfe were much blacker on the back and had more pointed noses and also were longer in proportion for their weight. The new ponds, at Bransgill, were in active work all the year, and a fine stock of two year old fish was ready to be released in April. At that time there were about 900 two year olds and about 8,000 yearlings in the ponds. Owing to the dry weather and the low water, the spawning season was about two weeks later than usual. Then a welcome flood came, with genial weather, and a fine rush of good fish took place up the small becks. In two days the whole of the trays were filled, an occurrence that had never happened before.

The 1905 season saw 1,733 taken from the river but only 38 trout were taken from the Tarn despite all the stocking of many hundreds of fish. As ever officials mused over these poor results from the Tarn. "Whether not many members fished there, or whether the fish rose badly, it will be interesting to know. Perhaps the bright, silvery new boat may have had an effect in keeping them down. Before next season the outside of the boat will be painted lead colour." "It was said in the last report that we had about 900 two year old trout in the breeding ponds, but when they were emptied in February last, we only found 311. Evidently many had been eaten by their larger brethren, and no wonder, when they varied from nine inches long down to three and a half inches---more than half of them being six and a half inches in length. They were all put in the Tarn, and we feel assured that the Tarn is now well stocked. This year we have three ponds well filled, and with the experience gained, a much better result is expected." The hatchery, as ever, was reported to be in full working order.

The 1906 season was classed as satisfactory. Owing to the dry weather in June, July and September, there were many days when the water was low and angling appeared to be out of the question. In May and August record baskets were taken to give a total for the season of 1,664 fish. Despite the stocking of 300 Loch Leven two year olds in 1903, and a further addition of 1,000 yearlings in 1904, followed by the 311 two year olds in 1905 and the topping off in March 1906 of a further 538 two year olds only 19 (nineteen) fish were recorded as having been taken from the Tarn in 1906. The Council was still appealing for help in explaining these exceptionally poor results. Contemporary writings mention that on passing the Tarn on some summer evenings the whole surface was boiling with the rings of rising fish. In addition to the two year olds sent to the Tarn, some 2,000 yearlings were put in the becks and river in both 1905 and 1906. The work of the rearing ponds was proclaimed to be "most successful" A new and much larger pond No.4 was added at the small cost of £13 6s. 10d. There were about 800 fish that would be two years old in the following March and about 8,000 yearlings. At least that was the quantity of fry put in in the previous May the year before, but how many would be taken out remained to be seen. In February 1906 Mr Colin Mather kindly presented 3,000 eyed ova from the celebrated Blagdon Lake trout. They were successfully hatched, and looked very promising when put into the slate

tank at the fish house. It was intended to keep them separate from the other fry, but unfortunately at the end of June the weather got very hot, and the water supply failed entirely. The mortality was great, but the remainder were hurriedly moved to No. 1 pond. "It is now difficult to keep them under special observation, but it will be possible to identify them when the pond is emptied, as in both the ova and the fry state they were much larger than either Ribble or Wharfe ova or fry. The question of erecting a new fish breeding house adjoining the rearing ponds on Bransgill must soon be considered. The present building is almost worn out. The sides and the floors, as well as the breeding boxes, are rotten, and want continual patching. The water supply is also failing. It would much reduce Hunt's work if both ponds and breeding house were together, and he could give more time to the river. On the 15th January 1907, at the annual general meeting "That the Council be and is hereby authorised to proceed with the building of a new fish house at Bransgill, and that the members present agree to subscribe one guinea each towards the "Special Fund", and that the Hon. Secretary be requested to send out a circular to all fishing members, giving a list of members who pass this resolution, and requesting them to fall in with the proposal and contribute one guinea."

September the 9th 1907 saw an announcement that the new Fish Breeding House at Horton, adjoining the ponds on Bransgill Beck were completed and ready for work. It was proposed to have a formal opening on 28th September when the water would be turned on. On the next day, Sunday, there was to be a ramble on the hills. "The old fish house, in which many hundreds of thousands of ova have been successfully hatched out for the benefit of the fishing, after 23 years' service, has had to be abandoned on account of old age and the failure of the water supply. In September last the new hatchery was opened with much *éclat*. It has been fitted up with the latest improvements, and it says much for the careful work done so long ago by the Fishing Committee that the old house has so well fulfilled its object for so many years. No doubt many will regret the abandonment of the picturesque glen where the old house stood, so well shown by some enlargements of photographs recently issued, but picturesqueness must give way to utility. In addition to the new fish house several large and small rearing ponds have been made, so that the installation may be considered complete". The whole cost was £245.

The fishing season of 1907 showed a catch of 1,764 fish on the river and a paltry 54 On the Tarn. On the river June was the best month when there were only four fine days causing several floods with resulting good fly waters. The total catch for the last three months of the season on the Tarn was eleven. It was reported that "the new fish house has been well and substantially built at the small cost of £70. Great credit is due to Hunt for the careful manner in which he superintended the work and the many ingenious methods he suggested, which have proved valuable. The hatchery is now in full work. All the trays in the long trough are filled with about 24,000 ova taken from Ribble trout. Space is being reserved for 2,000 Loch Leven trout ova, for the Tarn, which have been ordered from the Solway Fishery, and also ova from the River Wharfe. Owing to the more exposed position on Bransgill fears were expressed that damage might be done by frost. Happily that has not been the case, for even during the severe weather of the beginning of the present month (January) no harm has been sustained. On one day, 5th January, the temperature inside the house was 21 degrees (11 degrees of frost) but the water, with a temperature of 39 degrees, ran on merrily as usual. There is not likely to be a more severe test than this. 830 two year old trout were turned into the Tarn on February the 9th 1907, and about 2,000 yearling trout into the river.

The President, Mr J R Stott, kindly presented to the association 200 Loch Leven yearling trout in March 1907. These are still in one of the ponds, and will be transferred to the Tarn

February 1st next. They then be two years old, and being strong and lively fish may be expected to grow rapidly to a takable size. On the same day about 500 two year old Ribble trout will also be taken to the Tarn. There are also in the ponds about 3,000 Malham Tarn yearlings, 3,000 Wharfe trout yearlings, and 3,000 Ribble trout yearlings. Part will be put in the river shortly and the remainder kept in ponds until they are two years old. As showing the feeding habits of different trout, it was noted that the Loch Levens take food directly it touches the water, dashing at it boldly, while Ribble and Wharfe allow the food to sink six or eight inches before taking it, and then more quietly.

The old fish hatchery and slate cistern at Douk Ghyll have been removed, another tank has been sold for £5, and the ground restored to its original condition. The place where so much good work was done and so many pleasant hours spent is now only a memory.

Less than 35 years later the writer used to play in the Beck. Neither he or his “mindere” were aware of the activities not that long ago in the Archery by the Beck. Visits were made to the hatchery by Bransgill Beck (1941 and later) to see the fish being fed and a big slate tank could be seen on the left as the hatchery was entered through the gate from Tommy Pasture. Beside the tank was the green hut which by then was only used for storing food for the fish; the hatching of ova having, some time before, ceased in favour of buying in fry. In 1952 the writer took up part time residence in a cottage in Douk Ghyll. It was not until some years later that a hint from a forgotten source suggested that the Manchester Anglers had had a hatchery in the valley of Douk Ghyll. By then the farm and the land on which the hatchery was presumed to have been sited was owned by Robert Jackson. He, quite coincidentally, was the grandson of Walker the first river keeper, who every day had traipsed past the farm to go and tend to his fish. When I mentioned the subject to Mr Jackson he had the vaguest of recollections that there may have been some truth in what I had heard about a hatchery near to his then present house. The baffling thing was that there did not seem to be any source of water. There was no sign of any leetes or water channels from the Beck itself. The Ordnance Survey map revised in 1893 shows a footbridge across the Beck half way down the Archery (the plantation adjacent to the farm where the building was sited) and also a Spring near Phillips Wood which is just across the road from the far corner of the Archery. More excitingly on a later undated map given to the writer by Harry Kershaw a Tank is shown to be sited on this same corner of the Archery. An examination of the ground showed a firm rock base where the tank could have been sited; as for the spring, that was still flowing but only intermittently and it made one wonder how it ever provided enough water to keep a hatchery going. The true answer is that it didn't. Much later in the 1980s news paper articles were found that gave confirmation of the previous presence of a hatchery and that the hatchery hut was sited some way down stream from the tank. A survey of the overgrown site produced no evidence of the foundations of a bridge and where the hut must have been on the only flat place in a rocky area a few stunted Blackcurrant and Gooseberry bushes were still growing.

The Tarn Enigma

It is interesting to see that the problems of stocking and fish caught was not unique to times in memory. The reports shown above demonstrate that just putting more fish into the Tarn does not solve the problem of available fish to be caught at the right size and it was only ten inches in those days. The members of the Manchester Anglers at the turn of the last century but one (1900) were well educated men, with scientists among them. The only facts they had before

them was that however many fish they put in they never seemed to come out on the end of a line. It appears their first thought was cannibalism; hence the efforts at netting to try and find larger fish that would never rise to the fly. As they hinted this could never work due to the irregular terrain at the bottom of the Tarn. They tried "all legal means of fishing" this included Worm and Minnow, again no conclusive result was obtained. Even in the 1940s forward the same question was being asked "where have all the fish gone? Is it cannibals?" The writer has been present many times when the same procedure has taken place on the Tarn in the hope of proving that these cannibal trout exist; but never saw any ill grown large trout similar to those that could be caught on the river especially around Selside. In the 1950s a (a few actually) discrete experiment was carried out which involved stocking the Tarn, along with the normal eight to nine inch trout, with a few yearling trout of about four or five inches in length which in the main were used for stocking the river at Stainforth as a form of rent to Foster Knowles and later to Admiral Imthurn. Stocking always took place just after the end of the season and in the next spring there would be considerable excitement when several five or six inch trout would be reported as having been turned back into the water, having taken a fly. Not a word was said about the introduction of these small fish and the excitement continued as it was concluded that the trout must have hatched in the Tarn after spawning; there was a sort of gravel bottom near the Duck Wall. It can be seen that there never has been much evidence for cannibalism in the Tarn. The same is true, to some extent, on the theory that the fish became egg bound at spawning time and died; but over the years 1940—1967 very few dead were ever found even though the Tarn was regularly surveyed during the off season.

The last day of the season often showed a good head of fish in the Tarn all in good condition; but in the following March and April although the recently introduced trout were in good condition (and still not being of the takable size of twelve inches or subsequently eleven) the older fish were few and far between and in some seasons when one was captured it was often in poor condition and tipped back into the water. The question of food availability arose as an explanation for this phenomena and once or twice stocking was delayed until the spring so that the older fish did not have any competition for the available food; but the findings were at best inconclusive since there still seemed to be a lack of fit larger fish and on the debit side the anglers spent most of the season catching rather tame undersized fish.

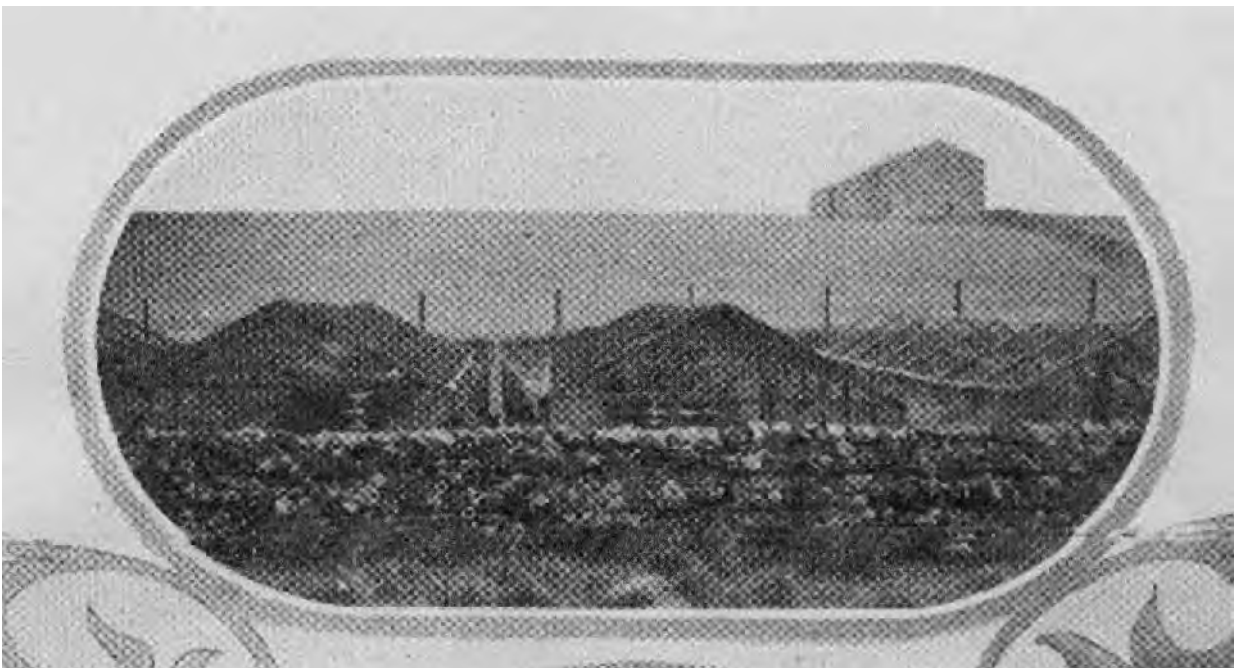
It is strange that the anglers around 1900 never published any thoughts about the food available for the fish they stocked. Running a hatchery they should have been aware of the food needs of trout. A letter of advice to hatchery keepers from the Howietoun Hatchery suggested that you should keep on feeding fish until "they no longer show any interest" There was always a fear at hatcheries that any uneaten food would drop to the bottom and sour the water. Perhaps they were not quite as savvy on this matter as some have thought. At least they were putting so many fish in the Tarn that it can only be wondered at where the little blighters found sustenance. They knew that weed provided food and kept the water sweet and in the era after the second World War care was taken that there was always plenty of weed growing in the Tarn much to the annoyance of many anglers. At least the water stayed sweet and clear and the idea of algae had not yet entered into anyone's thoughts. Even though at that time Farmer Davidson's geese were often seen floating majestically on the Tarn and leaving their droppings along the shores.

The one outstanding fact is that larger trout, and especially Rainbows, do not over winter well in the Tarn. In the 1940s forward if the anchor of the boat was pulled up from the deeper parts of the Tarn it was usually coated with black smelly mud. From these areas at certain times of the year methane bubbles could be seen rising; both symptoms were a sign of a deoxygenated

floor to the Tarn and perhaps in winter when the water got down to 4 degrees Centigrade the fish at the bottom died through lack of oxygen buried in the mud their bodies never rising to the surface to be found. The questions in the main still remain unanswered.

Part 2

The Bransgyll Hatchery 1908 – 1946



Hatcheries 1908 plus

Mr. John Baddeley J. P. at Horton in Ribblesdale opened the new hatcheries,
September 28th 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 honor (sic) 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 Salmonidae 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 huiusmodi 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."



Opening of the new hatchery

"Notwithstanding" (or rather because of) this speech, perhaps, the launch of the hatcheries was rather like the launch of a ship where the bottle does not break!

On September 8th 1908 a circular went out to members, which included the following request:- "On

Saturday. September 26th, the two year old trout in the breeding ponds will be assorted into separate ponds in their respective sizes. The Fishing Committee will be glad to have the presence and assistance of as many members as possible in this interesting work"

The next month on October 13th a further request for assistance was made:- "On Saturday, October 24th, some members of the Fishing Committee will go to Horton for the day, for the purpose of sorting the Loch Leven fry into various sizes in different ponds. They will be glad to have the assistance of as many members as possible. Train leaves Victoria at 9-32, returning from Horton at 5 o'clock, taking Angler's tickets for the day."

The November 10th 1908 monthly circular again asks for help:- "Trout will be spawning the end of November and beginning of December. Some of the members of the Fishing Committee are going to Horton by the 4-40 p.m. train on Friday, December 4th, to stay until Monday, and will be glad to have the assistance of members."

The annual report for the year 1908 reported that 1561 fish had been taken from the river and 81 from the Tarn. The report goes on to say:-

"The fishing in the Tarn shows an improvement, but, considering the number of two year old trout put in during the last few years, it should be very much better. Members fishing in the Autumn were satisfied, from the fish rising, that there were plenty of trout, for the surface at times was literally boiling all over --- but the right fly could not be found to bring them to land."

"The first years work on the fish house is most encouraging. The advantage of having the house and the ponds together is great, and considerably decreases Hunt's work, enabling him to devote more time to watching the river. There is now no fear of the water supply failing, and, as it contains so much natural food, the young fish benefit."

The report continues:-

"In 1907 Mr. J. R. Stott kindly presented 200 Loch Leven yearlings to the Association, and out of these 140 up to seven and a half inches long were sent to the Tarn on February 1st 1908. At the same time 330 Ribble two year olds up to six and a half inches were also sent, thus increasing the stock. The 2,000 Loch Leven ova hatched in March, 1908, were sorted out on December the sixth,

being then eight months old, as it was thought that they had diminished in numbers since turned into a pond. Only 396 were found, but when one was found six and a half inches long and a few more about five inches, the cause of the decrease is easily understood. Such an increase in eight months is wonderful, and shows they must have had a good feeding ground. The size of the bulk was only about three and half inches long.

"It is nice to believe in miracles, unfortunately the abundance of food may have been smaller fry as a few older fish got into the ponds accidentally, Ed.

Three final notices were made in the 1908 report:-

"The spawning season was rather later than usual. The centre box is well filled with ova from Ribble trout, and space is reserved for 5,000 Loch Leven eyed ova ordered from the Solway Fishery."

"As usual, 5,000 eyed ova are being exchanged with the Burnsall Club for eyed ova from the Wharfe."

A new foot bridge has been put across the Ribble, about half a mile above Cam Beck and near to the village of Selside, and will no doubt be of use to anglers.

A special meeting was called for 16th February 1909 "On the presentation to the Council of his report for the year 1908, the Hon. Treasurer. Mr Stanley Kneale, pointed out that the present income, owing to the increased expenses at Horton, is barely sufficient to meet current expenditure, and consequently insufficient to effect any reduction of the debit balance of the Special Fund.

It was resolved to suggest the alteration of the Rule No. 20 by increasing the subscription for new members to three guineas.

At the General Meeting held subsequently it was resolved that the Secretary to the fishing Committee should be *ex officio* a member of the Council."

On April 16th 1909 it was announced that the long term Fishing Secretary and one of the initial instigators of a Hatchery at Horton, had died the previous morning. The Crematorium was about one mile from Chorlton-cum-Hardy railway station. His remains were interred in the family grave, St. John's Church, Lindow, Wilmslow.

On July 14th 1909 an interesting article appeared in the "Evening Standard and St. James Gazette" on "Fresh water fish for food" --- The Cultivation of the Waters" by Arthur M. Young. :-

"The first objection which sceptics will make when the question of fresh water fish cultivation is mooted --- that even if we succeed in popularising it, the supply would not be equal to the demand --- may be refuted once and for all. Putting aside the obvious retort that until we do some thing to create demand, it is some what futile to bewail the assumed failure of supply, the fact remains that, so far from there being any reason to anticipate a scarcity, under proper conditions and reasonable care river fish would enormously increase in quantity, and the waters of England might be made to yield such an abundant and continuous harvest as to supply every household in the United Kingdom.

As to the difficulty of breeding fish this under certain conditions is practically non-existent. Any of the great lakes – say Windermere, for instance, with the Rothay and the Brathay, its principal feeders (the former with its bed of sand, the latter with its rocky bottom), together with the surrounding streams and effluents (sic) – could be made into a first class reservoir, with hatcheries from which, comparatively speaking, nearly all our streams could be supplied with new blood.

That fish are among the most prolific creatures of the universe is well known. The conger eel, for example, holds over 15,000,000 eggs, the turbot coming a good second with 14,000,000. A good sized cod with a roe of seven and the quarters pounds will contain 6,867,840 eggs according to Buckland, while a little herring of half a pound will produce from 20,000 to 50,000 eggs. Although river fish are not quite so fertile as this (they have no need to be, as their environment is not so dangerous.) A carp of fourteen pounds will have 600,000 eggs; a full grown pike something from 20,000 to 50,000. The perch lays about 50,000 eggs for each pound of his weight; and from twenty eight pounds of roach 480,480 eggs have been obtained; and this it must be remembered, without any systematic stocking, breeding or development. Other edible river fish are as prolific, and could undoubtedly be made more so by scientific assistance, while if sufficient attention were paid to the selection, crossing, and breeding the flesh forming qualities of river fish would be vastly improved, and the fish themselves speedily acquire a firm, clean, and ample covering of richly edible meat, which, besides being delicious in flavour, should be nourishing food for our teeming millions.

What may be regarded as something of a new departure in this direction --- in as much as it constitutes a new movement in the culture of coarse fish from a food bearing point of view – has been made by Mr Joseph Fels at the Home Farm ponds of the flourishing agricultural village of Mayland, near Althorne, in Essex. A suitable stream of water has been made and stocked with fish, and from this it is anticipated that, in time, the colony will be supplied with well grow fresh water fish – a pleasing and dainty addition to the rural fare. And there is, in England at least, no reason why every acre of water should not bear its piscatorial burden. Every river, stream, canal, broad, lake, pond, and dyke could be made of value to the community. Many ditches even could be made nurseries for the young fry, and where (as in Essex) there was a scarcity of water, artificial reservoirs could be made. This would be besides providing irrigation in districts where it is sorely needed, afford the farmer an increased measure of profit, for one or two ample fish ponds on the estate would greatly increase the value of his farm. Nor would the land so employed be lost to agriculture, for the proper cultivation of a fish pond entails it being planted periodically with grain. The old monks knew more about fish than we do today; they knew its value as a source of both food and profit, and every monastery had its fishponds, which they used to drain from time to time so as to alternate a crop of fish with a crop of vegetables. To enable this to be done on a proper basis three ponds are necessary. One is drawn and the fish netted and turned into the next one. Then the dry pond is planted with oats, barley, wheat, or any kind of grain or grass, or indeed cabbages, for the rich mud at the bottom should make an excellent compost for any vegetables grown on the modern plan.

When the harvest is reaped the pond can be refilled. Then number two can be drawn and planted for the following year, the larger and marketable fish sold, and the smaller ones put into the third pond, which now would come into use. Thus with three ponds worked upon this system one would always have crops growing in Pond 1, young fish growing in Pond 2, and fish fattening for market in Pond 3.

In this way many and many an acre of water may be made productive and profitable which today is a mere waste of stagnant and offensive ooze, Marsh lands, which at present are only fit for the breeding grounds of a flock of wild duck or the pasturage of a few hardy goats could be made valuable. Were these unproductive areas utilised for the alternate propagation of food, fishes, and produce (as grown in the drained beds) an entirely new field for both capital and labour would be opened out.

One of the greatest objections to fish farming—the expense of removing the mud and the difficulty of cleansing the waters – would thus be removed, for if the ponds were ploughed and sowed the mud would be purged of its foulness and the feed in the ponds when refilled would be richer than ever. Nor would the stocking of such waters prove expensive. Fish Farms can be run on cheaper lines than any other class of industry in the world.

Of course, it is not only for individual or municipal effort to step in here, but the State. It is necessary that special provision should be made for the control, regulation, and stocking the waterways if the fresh water fish are to become a permanent article of diet.”

An interesting point arises from this article, namely, that monks grew vegetables on their drained fish ponds. They found this beneficial because they could use the “rich mud” as a growing medium. This same rich mud at the bottom of hatchery ponds or the tarn can be the very medium that could be causing mortality in trout. Another article on fish farming relates that fish farmers, in mid Europe, as a matter of routine “fallow” fish ponds, draining them and leaving them open to the air for some months; even growing crops on them. The article states that these fish farmers believed that this fallowing improved the production of fish when the pond was put into use again. It then went on to discuss whether this was to do with more oxygen getting to the deoxygenated mud at the bottom of the pond. Another article suggests that the nasty smell of deoxygenated mud was due to poisonous sulphides being formed.

The report of the Fishing Committee for the season 1909 states:-

“Trout fishing has been as flat as business, but that in the opinion of the Committee the partial failure of sport at Horton ought not be attributed to His Majesty’s Government, as it would appear that absence of rain and consequent low water in the river had something to do with the unsatisfactory result of the season. The one satisfactory feature at Horton during the past season has been the marked improvement in the sport at Newhouses Tarn. Your Committee is fully satisfied that this result is owing mainly to the persistent annual stocking with two year old Loch Levens, though the repairs to the outlet by the Duckwall have doubtless done something by preventing the escape of fish over the land during the high water in winter. The new stone fishing stage on the east side of the tarn seems to have been appreciated by members who have fished there.” 1319 fish were taken out of the river and 162 were taken from the tarn.

The 1909 report continues:-

“In September 1908, 51 Loch Leven hatched in February of that year, and measuring from six to eight inches long” (*Were these the escaped cannibals that had caused so much devastation in the hatchery?*) “were transferred to the tarn, as it was felt that it would not be safe to leave such precocious juveniles with their brethren. The remainder of the hatch, 606 in number, were transferred to the tarn as two year olds in April 1909. The weather was bright and sunny, with a water temperature of 45 degrees, but only two of the smaller fish succumbed during transit. There

is a good supply of ova on the trays. Space is reserved for 3,000 Loch Leven ova from Solway Fishery, and 5,000 ova will be exchanged for 5,000 Wharf ova from Burnsall as in former years."

Reporting for the 1910 season the Committee stated that due to low water the fish take had been low again only 866 from the river and 134 from the tarn. "The Committee has on several occasions during low water walked considerable stretches of the river and was pleased to notice the very large head of good fish in the river." "On 26th February in a storm of snow and hail, with air temperature of 32° and water 38°, the Committee transferred 313 two year old trout from the ponds to the tarn. In December a very good supply of ova was obtained and is now on the trays."

The Fishing Committees report for 1911 starts:-

"River Fishing during the past season, except to experts in the art of "upstream worming", has been both difficult and disappointing. The droughty character of the prevailing weather may be judged by the fact that during the twelve weeks out of the twenty nine comprising the season, not a single trout was taken from the river at Horton and the total number of fish caught only amounts to 732, a lower figure than any obtaining during the last fifteen years. It is, however, satisfactory to note that the head of fish in the river is greater today than at any previous time during recent years, and should the balance of the last three droughty years be, to a reasonable extent, redressed in the coming season there is every likelihood of good sport in store. New Houses Tarn has provided a valuable stand-by to the members during the season and the recent record figure of 162 fish taken in 1909 has been easily broken, the number for the year being 194. The policy of stocking the tarn with two year old Loch Levens is proving successful and will be continued."

The year's work at the hatchery has been very successful. In March last, over two hundred good sized two year olds were transferred to the tarn and upwards of 1,800 yearlings put into the river and becks at various points. There is an exceptionally large head of fish in excellent condition now in the ponds, upwards of 700 of them being nearly two year olds and about 2,500 yearlings. The supply of ova for the year is quite up to average, and when the Loch Leven ova arrives, which has been purchased this year from The Wyresdale Fishery, there will be quite 20,000 on the trays. Much of the success of the year's work at the hatchery is undoubtedly due to Hunt's keen interest and skilful attention."

The report for the 1912 told of much better weather conditions, for fishing, with frequent rain; as a consequence 1942 fish were taken from the river. "On occasion the stretch from Ribbleshead to Selside is by no means to be despised. A basket of twenty eight good fish to say nothing of a further twelve lesser ones, returned to the river, is not a bad appetiser for the angler's midday lunch." The number of fish taken from the tarn was 195. "It is interesting to note that one of the fish taken on the opening day was put back being full of ova and quite ripe."

"The members are doubtless aware that a careful record is kept daily of weather conditions, wind, temperature of air and water, flies, hatching, etc., and such information is at the disposal of any member desiring to consult the same. The following table may be of interest:-

| | Air | | | Water | | |
|-------|--------|---------|---------|--------|---------|---------|
| | Lowest | Highest | Average | Lowest | Highest | Average |
| March | 38° | 42° | 40° | 42° | 42° | 42° |
| April | 42° | 64° | 56° | 42° | 46° | 42° |
| May | 50° | 64° | 60° | 46° | 50° | 47 |

| | | | | | | | | |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|
| June | 52° | 66° | 60° | | 48° | | 48° | 48° |
| July | 56° | 94° | 71° | 48° | | 56° | | 51° |
| August | 46° | 60° | 50° | | 42° | | 48° | 44° |
| Sept. | 40° | 60° | 49° | 42° | | 46° | | 43° |

"The work in the Hatchery continues to be very successful. In January last, 758 two year olds in first class condition, and averaging from five to seven inches, with a few reaching twelve inches were put into the tarn, and close upon a thousand yearlings into the river and becks at various points. About 900 yearlings were reserved for this year's two year olds, The ova collected in December last is quite up to the usual standard, only seven out of about 18,000 having to be removed after the first washing on January 18th. When the Loch Leven ova arrive the trays will contain rather more than 20,000 ova."

The Fishing Report for the 1913 season starts off:-

"The proverbial uncertainties of cricket are as naught as compared with those that attend the angler and his sport, in proof of which the vagaries of the season 1913 may be cited. March the 15th opened at Horton with good water, but with heavy snow showers, nevertheless sport was exceptionally good and continued far above the average to the end of April, more fish being taken during the one and a half months named than the rest of the season. The weather for the greater part of the time was by no means conducive to angling, strong winds, mostly East, blew day after day, the water fell to low and still strange to say sport remained good. The fine warm days of early May yielded their full quota of fish and the season that had opened so successfully seemed destined to prove one of the best of recent years. Unfortunately the unexpected happened, and with the exception of a few days in June and other odd days at rare intervals, sport practically ceased about the 13th of May. The river was in good ply from the 9th to the 15th of June, when a fair number of fish were taken, but the rest of the month was blank. July provided a unique record, one it is safe to say will never be beaten and which your Committee sincerely hope will seldom be equalled. Not a single fish, so far as is known, was taken from the river during that month. August provided but three days of good water. The last six days of September also found the river in good ply, but the fish failed to rise to the occasion, and the season closed as badly as it had opened well. 1168 were taken out during the season the last three months yielding only 100 fish."

"The head of fish in the river has considerably increased of late years, and it is gratifying to be able to report that in the opinion of several members visiting Horton regularly, the weight of the average fish creel is increasing. These two facts, taken in conjunction, tend to justify an opinion long held by your Committee that for an upland stream our water is exceptionally well provided with natural food.

"The tarn has not fished well except during May and a portion of July. It is, of course, unfavourably affected by periods of drought and by abnormally high temperatures, but such variations are less rapid than in the case of the river, with the result that sport often remains good on the tarn after it has become negligible on the river. On the 27th of July in bright hot weather with the temperature of the water 60°F., four fish were taken in rapid succession weighing 1½lbs., 1¼lbs., ¾lb., and ¾lb., respectively. There would appear to be that Loch Leven trout are the most suitable for the purpose of stocking the tarn and the take over the last few years supports this contention."

"During the season thanks to the generosity of two of our members a five inch Bradford rain gauge was installed at the hatchery. A daily record of rainfall is now kept, which is available for the use of members, and the station is officially recognised by the British Rainfall Association, to whom the results are duly forwarded."

"The work of the hatchery has been very satisfactory. The trays in December 1912 contained 5,000 Loch Leven ova and 19,000 Ribble ova. The usual exchange of 5,000 ova was made with Burnsall, and in February last about 10,000 Ribble and Wharfe fry were turned into the tributaries and 883 yearlings were turned into the river. 700 Loch Leven two year olds from five to nine inches long were put into the tarn. At September sorting the ponds contained:--

258 Loch Leven two year olds up to ten inches long.

470 Loch Leven two year olds up to six inches long.

1048 yearlings.

700 Ribble yearlings.

The collection of ova in December last was quite up to the average in quantity and quality, one particularly fine tray of ova being obtained from a single fish. The ova from this fish, about 1,000, were uniformly above the average in size and were of a full rich orange colour."

The fishing report for 1914 starts off by mentioning that seven of its members were "at present serving with the colours." All were officers and three were colonels.

The river fished as well as it ever had in March--- surprisingly so since the weather was cold and rough and snow lay on the hills. For the rest of the season dry periods were interspersed with rain and good fly waters that enabled 1577 fish to be taken for the season.

227 fish were taken from the tarn. The Fishing Committee's report goes on to say "The result obtained on the tarn, which also constitutes a record, is very gratifying to your Committee. It is of opinion that the head of fish now existing is sufficient to enable it for the coming season experimentally to remove the ten inch restriction and to place the tarn on the same footing as the river. At the hatchery very satisfactory results have been obtained. The usual quantity of ova was gathered from the becks in December 1913, to which was added 5,000 Loch Leven ova. At the sorting on the 21st February, ponds No. one and two yielded over 700 two year olds ranging from six to ten inches long. The bulk of these fish were conveyed to the tarn. An average number of Ribble and Wharfe yearlings and fry were turned into the river and its tributaries."

"Anglers do not possess a monopoly of interest in the hatchery as is evidenced by a recent photograph, taken by the keeper, of a heron which seemed inclined to establish its head quarters a few yards from one of the ponds. The head quarters in question are at present untenanted. Another intruder is the large and voracious "Dytiscus Marginalis Beetle". This beetle's partiality for Ribble Fry makes him a most unwelcome visitor to the ponds and very careful search is made for him on each occasion when the ponds are emptied. The consistently good results obtained at the hatchery reflects great credit upon Hunt. It is only by careful observation and methodical work that such results can be obtained."

"A curious side light upon the war has occurred in connection with the hatchery. The Fishing Committee has been asked to provide a number of sets of specimens illustrative of the life history of trout from ova to the yearling. These sets are required in America for Educational purposes and in normal times are obtained from Germany."

In 1915, the first full year of the war, only twenty seven members visited Horton during the season, nevertheless 1160 fish were taken from the river and 183 from the tarn. No fish were taken at all in June with May not much better, on the other hand 559 trout were taken from the river in July. The Fishing Committee's report goes on to state:—"The tarn again has yielded good results. The record for the last two years shows that in any month of the fishing season it is well worth a visit. A new fishing pier has been constructed at the wall end near the boat house, which it is hoped it will add to the convenience of members, The experimental removal of the ten inch limit will remain in force during the present season."

"The work at the hatchery has proceeded on normal lines. The usual quantity of ova was collected in December 1914, and was supplemented by 5,000 Loch Leven ova. An exchange of 4,000 ova was made with the Burnsall Club. At the sorting on the 30th January, 140 selected two year olds, ranging from six to ten inches, were put in the tarn, ice two inches thick having to be broken for the purpose, About 300 two year olds were put in the river in addition to surplus yearlings and fry. The stock of yearlings, on that date, was 1,758.

"The arrangements for the transfer of 200 yearlings to the Lune were duly carried out. Lord Henry Bentinck's agent (Mr. Punchard) kindly motored over to Horton and conveyed the fish to Howgill where they were put into the Chapel Beck by your Secretary"—(Thos Farron.)

Hunt had the misfortune during the season to be laid up for several weeks with a bad foot. He was able, however, to make suitable arrangements so that the work at the hatchery did not suffer. Accurate records continue to be kept of weather, wind, rainfall and temperature. The following comparisons of rainfall and river conditions may be of interest.

| | | | River in good ply | |
|--|-----------|-----------|-------------------|---------|
| | 1915 | 1914 | 1915 | 1914 |
| March 15 th to 31 st | 0.95 ins | 3.36 ins | 0 days | 17 days |
| April | 3.25 ins | 1.50 ins | 16 days | 17 days |
| May | 1.42 ins | 3.21 ins | 0 days | 11 days |
| June | 0.81 ins | 2.06 ins | 0 days | 3 days |
| July | 4.47 ins | 4.82 ins | 17 days | 7 days |
| August | 2.36 ins | 3.57 ins | 17 days | 8 days |
| September | 1.87 ins | 3.52 ins | 2 days | 3 days |
| Total | 15.13 ins | 22.04 ins | 52days | 66 days |

The ponds this year have been freer from the Dyticus Marginalis Beetle but the pest has not been entirely eliminated. The larvae of one of them was caught *in flagrante delecto* and promptly transferred to the spirit bottle.

The report for the Council for 1916 starts off:-

"The tragedies of the great war have had their effect upon angling as upon all other fresh air pursuits. Attendances have been rather better than in 1915, and the number of occasions when the Ribble or Lune could be visited is naturally affected. But the welcome relaxation, which angling and the discussion of angling topics provide, is surely no great deviation, from the path of determination, which distinguishes the efforts of all in other directions. Each one of our national past times has provided its heroes and, when regarded from our particular point of view, it is

essential for many reasons that a society of the character of the Manchester Anglers' Association, with its history of traditions, should carry on. Those who are unable, for obvious reasons, to take an active part in the great struggle can yet see that the minor details of home affairs are maintained and really valuable forms of relaxation kept in existence."

The 1916 season on the river found the rainfall fairly well distributed over the fishing months. Snowy and then stormy at the start of the season,. May was fine and warm and the next three months with the "normal weather" of frequent freshes provided good sport. September returned to persistent North winds. The Fishing Committee continued "The creeper was successfully fished during the latter part of May, and indeed as early as the first and second of May it was found useful. Many fine fish were taken with upstream worm during June and July, when the conditions were suitable." Thirty six members visited Horton during the season and their aggregate bag was 1,333 trout. "The figures for the tarn (176) are very gratifying. It would appear that the policy of stocking with Loch Leven fish is a correct one and ought to be continued subject to the capacity of the water. In July and August the temperature of the water in the tarn steadily rose, reaching 72° on the 4th August with the natural result that sport during this period steadily diminished. The question of still further thinning the weeds of the tarn has engaged the attention of the Committee. The difficulty in the matter lies in the fact that the weeds are a desirable shelter for the fish from the sun and provide considerable insect food."

"The usual routine at the hatchery has been carried out during the year, except that no exchange of ova with the Burnsall Club has been made. In addition to the ova collected from the local becks in December, 1915, 5,000 Loch Leven ova were purchased. At the sorting on the 22nd January last about 150 selected two year olds, ranging from six to ten inches long, were transferred to the tarn, and a few weeks later about 400 were put in the river at Bransghyll foot and Newhouses. The keeper had trouble during last winter with rats, which particularly attacked number one pond, in which are kept the older fish. It is certain that some of the fish fell victims to these pests before the trouble was removed. 800 yearlings and between 8,000 and 9,000 fry were put into the becks and river. The daily records of weather, wind, rainfall and temperature continue to be kept."

"For the third year in succession 200 yearlings were taken over to the Lune. Your President Mr. Alfred Smith was good enough to undertake the transfer and motored over to Horton for the purpose, afterwards conveying the fish to Lowgill where they were put into the river close to Crook o' Lune Bridge."

It was also notified that the usually convenient train services had been disrupted and where as the Anglers had become accustomed to getting to their fishing from Manchester in about two and a half hours the 8-37 arrived at 12-04 and the 12-30 train arrived at Horton at 17-43. The much used five o'clock train (or sometimes five past five) to return home was cancelled leaving only two departing trains from Horton the 13-02 arriving Victoria at 15-35 or the 18-41 arriving in Manchester at 21-47.

Report of the Fishing Committee for Season 1917:-

"The Fishing Season 1917 opened at Horton under exceptionally Arctic conditions. Frost and snow had continued unbroken from the 8th January and some idea may be obtained of the severity of the weather from the fact that some sheep, which were overblown, were not recovered for nearly eight weeks. It is extraordinary to relate that they were dug out alive. Heavy falls of snow continued at intervals until the middle of April and May was well in sight before any mild or Spring

like days made their appearance. Sport was negligible during March, although there was a consistently good water from the fifteenth onward. Since the water must necessarily have consisted almost entirely of "snow broth" good sport was hardly to be expected. With April sport improved, but May, the fly fisher's ideal month, proved disappointing doubtless due to the fact that the river remained persistently low through out the entire month with the exception of a little thunder rain on the twentieth. The fish rose freely during June but as the water was in good ply on six days only the number of fish taken was not great. July was almost as blank from a fishing point of view until the 28th when the river rose to the height of a worm water. August proved to be by far the best fishing month of the season, more than half the season's total of fish being taken during the month. There were successive floods on 7th, 9th, and 24th one of these being to an exceptional height. Sport remained good during most of the month of September, two floods occurring on the 13th and 22nd thus providing good water for many days." In all 1,427 fish were taken from the river and 138 from the tarn.

"There would appear to be a growing tendency for members to foregather at Horton during the Easter and Whit week holidays. Such gatherings in past years were counted amongst the chief pleasures of our membership and embodied one of the main objects of the Association. In this connection it may be desirable to remind the members that their presence at the annual spawning and sorting operations at Horton during the winter months would be welcomed by the Fishing Committee and might not be without interest to such members."

"The figures of the tarn are below average of recent years, but in the opinion of the Committee that is more the fault of the members than the fish, since the water has not been fished to any thing like the same extent during the season as in previous years."

"The work of the hatchery has proceeded as usual except that the food shortage has so far affected the fish that it was found necessary to turn out the two year olds to earn their own living some months earlier than is usual in normal times. The supply of fish cake ceased and your Committee felt that the use of liver should be reduced as much as possible under present conditions. The sorting operations in March produced 280 selected two year olds, 160 Of which were put into the tarn and 120 into the river. The ova gathered in December 1916, together with the 5,000 Loch Leven Ova purchased, produced over 23,000 alevins. The two year olds were in very good condition, averaging between seven and ten inches, and one was over half a pound in weight. For the present, at any rate, it is intended to continue the work of the hatchery on such modified lines as may be considered proper and expedient. As stated above, a second sorting took place in November, when about 300 two year olds of average size were transferred to the tarn. During the Spring of the year the usual quantity of yearling and fry were put into the beck and river."

"The food shortage has naturally attracted attention to the supply of fresh water and sea fish from our rivers, lakes and ponds. Your Committee have during the year answered numerous questions put to it by the Special Committee appointed by the Government to deal with the matter."

"In the opinion of your Committee the supply of fresh water fish obtainable from these sources would be negligible for national purposes, and the cost of procurement and distribution out of all proportion to the result to be obtained. The two considerations which appear to your Committee to be fatal to the success of any such scheme are (1) That once thoroughly netted the

river, lake or pond is exhausted for the period of the war. (2) Many years would have to elapse before the damage could be repaired."

"With regard to sea fish which are Salmon and Sea Trout, it might be possible to extend netting operations, but in comparison with the results obtainable from the increased sea fishing operations, where the supply is practically boundless, it would be unprofitable."

"In conclusion your Committee again venture to express the hope that we are surely nearing the turn of the long lane which has been our weary road for over three years, and that we may soon be able to enjoy our favourite recreation with a thankful and tranquil mind."

The report for the Council 1918 offers the thought that "the activities of the Association have been as well maintained as could be expected under the war conditions, which have lasted so long. It is to be hoped that normal conditions will soon be established." The fishing Committee said that he start of the season had seen fair water but that in May and June and the first half of July there was little water and anglers had "to put fortune to the test on the tarn." The rest of the season provided mainly good waters and for the whole season 1.789 fish were taken from the river. The tarn provided 140 fish for the creel. "The weather at the Easter holidays, contrary to the usual custom, proved favourable. There was a good gathering of members who enjoyed excellent sport. Whit week was not all that could be desired from a fishing point of view. There was a great deal of thunder about but little rain. Fair baskets were however obtained."

"The usual stock of ova was obtained from the becks early in December, 1917, and with the addition of 5,000 Loch Leven ova made up a total of 23,000. In due course 12,000 fry were put into the becks, and later on 300 two year olds in good condition and fully up to the average size were put in the tarn. Although it was not deemed necessary to issue ration books for the fish the daily feeding has been a difficult matter during the last two years. Extra care and attention has been required, and Hunt is to be commended on the success which has attended his efforts. Your Committee anticipates a return to more normal conditions, and it will be possible to retain the fish in the ponds for a longer period. This will enable the youngsters the better to fight their own way in the world."

"The storm of heavy wet snow which broke over the Horton District on the 20th December last caused considerable to the coverings of the ponds. In several of them the whole frame work was smashed and submerged."

"To many members during the awful period now happily closing Horton and Lowgill have meant a much needed and most valuable respite from the daily worries, anxieties and sorrows, inseparable from the war. Your Committee earnestly hope that in the season that is close upon us we shall again be enabled to enjoy our favourite recreation with lighter hearts and fewer cares."

The report of the fishing committee for season 1919 starts:-"The fishing season 1919 at Horton, like the Curate's egg, was good in parts. Although the total catch for the year approximated to the average catch in recent years yet there were many days when, despite good water, favourable wind and a cloudy sky, there was literally "nothing doing." "The best day's catch was made on September 2nd by a visitor who obtained twenty one fish between Ribblehead and Horton. It is interesting to note that the catch of the season in 1918 was also made on the same stretch. It is a question of whether the upper reaches of the Association's water receives adequate attention from members. The number of days on which the water is suitable is of course

fewer than in the case of the water down stream from New Inn Bridge. Fishing above also involves more walking. On the other hand the fact that it is less fished than the lower stretch is a solid advantage and there would seem to be no question that the head of fish is quite adequate to provide excellent sport under favourable conditions." This bit of Wisdom does not point out that the best time for fishing on the upper reaches is the last two months of the season, when many fish have moved upstream prior to spawning. As an up stream fisher it was the custom of the writer when transport was difficult and he did not have a car to start fishing above Horton and arrive at Ribbleshead in time to catch the five o'clock train back to Horton. Many were the glances of passengers on the train as an apparition dressed in thigh length waders and an oil skin jacket and carrying a landing net and rod, climbed onto the train often smelling of the fish that weighed him down.

In 1919 1,248 fish were taken from the river and 115 trout were removed from the tarn. The report continues:- "With regard to the tarn the outstanding feature of the season was the number of good fish which were taken weighing from 1½lbs. To over 1¾lbs. The best sport was obtained in August and the psychological moments seemed to be about the edge of dusk, which under Summer time was necessarily late in the evening." The writer can concur with this idea. For after many a frustrating evening on the tarn with the pond boiling with rises and never an offer to his own fly, as the light fell, some handsome fish could be picked up in the shallows along the edge. The presence of the fish being noticed by bow waves rather than by rings.

The report next states:-

"The suggestion has been made that during the Easter and Whit week holidays the use of waders should be prohibited (on the river.) The matter, however, was felt to be one better left to the discretion of the members. It is of course obvious that, during these holidays when the number of members fishing is greater than usual, the less wading there is the better will be the chances of sport for everyone. This is especially the case when the river is on the low side."

"The work at the hatchery was to some extent interfered with by the damage to the coverings of the ponds caused by the storm of 20th December 1918. It was not found practicable to renew the coverings during last year but your Committee hope to be able to deal with the matter at an early date. The average number of ova was placed on the trays in December 1918, to which in due course were added 5,000 Loch Leven ova. At the sorting in April it was found that the stock of the two year olds had been materially depleted, presumably by otters, in spite of the precautions that had been taken. About 120 selected fish were dealt with and the remainder, along with the usual number of yearlings and fry, were put into the river and the becks."

"It has been the custom for many years to fix the first Saturday in December for spawning operations. For three years in succession your Secretary and Fishing Secretary have dutifully attended at Horton on the appointed day ready to assist in the ceremony only to find that the fish had not arrived at the spawning beds in the becks. There has not appeared to be any particular reason for the late spawning and it may prove to be a mere passing phase due to some obscure climatic or other conditions."

"The new season is rapidly approaching. Already the annual overhauling of rods, flies and tackle is doubtless taking place. At such a time the Angler, like Mr. Pip, has great expectations. Your Committee venture to express the hope that whether such expectations are entirely realised or not the members will have ample opportunities to enjoy "the most honest, ingenious, quiet and harmless Art of Angling.""

The Fishing Committee's report for 1920 starts:-

"The rain it raineth every day" and despite that the fish did not seem to be co-operating even when the water fell to a decent fly water or lower. The report went on to say:- "For some obscure reasons, possibly unusual barometric variations or excess of food by floods trout were uncommonly shy under the most favourable conditions of wind water and sky. These conditions were not confined to the Ribble. The fishing reports from other rivers also disclosed disappointing results: dark murmurings arose as to whether there were "really any fish in the river". One curious effect of the persistent rain was that even on the rare occasions when the river was low, the water at Horton still remained dark coloured. Undoubtedly the fly fisher was the chief sufferer since the total catch during the season was quite up to the usual average."

"There was a goodly gathering of members at Easter. The river was in good condition with a Southerly wind but sport was only moderate. At Whit week sport was very poor. Although wind and water were favourable the air was oppressive and filled with thunder every day. The week finished with a heavy thunder storm on the Saturday which effectually put an end to the anglers hopes for that day." The river had 1,326 fish taken from it during the season, but the tarn had only 77 trout removed from it. "Possibly, owing to the river being so often in good ply, it has not received as much member's attention as usual. The after dinner walk to the tarn for an hours fishing on the edge of dusk loses much of its attraction when, as was so often the case, the evening promised to be cold and wet. On occasions, however, it fished well and repaid the angler for his trouble and enterprise." The writer over the years noticed that in these sorts of conditions with the tarn full to overflowing it was the most difficult time to fill his creel.

"At the hatchery a beginning has been made towards repairing the damage caused by the storm in December 1918. The covering over the largest pond which is used for rearing the two year old fish has been replaced at a cost of about £20. The other ponds have also been protected to some extent temporarily and further work will doubtless be done during the current year. The usual quantity of ova was collected December 1919, and an average number of fry and yearlings were transferred to the tributaries and to the river in February. The Committee were unable to obtain any Loch Leven ova. About 300 two year olds in good condition were added to the stock in the tarn."

"The experiences of 1920 must have brought home to many fishers the fact that angling may be the subject of endless observations, statistical compilations, refinements of lure and method, yet success remains unknowable and capricious as the weather--- a notoriously unsafe matter about which to prophesy--- wherein probably lies much of the charm and attraction of angling." Years ago, in the 1940s, the writer was sitting on the bank of the tarn with Harry Kershaw an older member. As he hand rolled his next cigarette and we mused over the lack of co-operation of the fish that day even though they were rising, Harry turned to me as he philosophised and said "You know David one of my definitions of Hell is, that it is a place where you catch a fish at every cast."

The Fishing Committees report for 1921 starts:-

"The Angling Season 1921 will long be remembered as one of the worst on record." Indeed it was for only 630 fish were taken from the river with a further 70 from the tarn. Various theories were put forward to explain the lack of fish. The main one offered was seeming absence of flies hatching, but it was phlegmatically suggested that "there were many adverse factors in conjunction, although it is noted that the wind for the season was mainly from the North. The

records show N. NE. and N. W. winds on 114 days as against S. S. E. and S. W. winds on 61 days." The report goes on to say:- "It may, however, be of some comfort to the members to know that phases of this kind are by no means unprecedented on the Ribble at Horton or any other river. The opening sentence of this report was lifted bodily from the report of 1893" The Lune report also stated for 1921 "Brown Trout did not rise to the fly at all well during the season and in this respect behaved much as their brother "Fario" at Horton and elsewhere."

"The number of fish taken from the tarn was much below the average. On the other hand most of the fish taken were heavy ones which must have been some consolation to the angler."

"Fishing was most unpleasantly interrupted in the tarn on the 15th of September by the accidental drowning of Mr. Percy K. Winter, a visitor staying at Horton, whilst bathing. The accident was seen by one of our members but it was impossible to render assistance. The tarn was dragged daily by the police who were unable to recover the body until it rose twelve days later." The writer was told this story when quite young by some one who claimed to have been present at the tragedy. He related that the unfortunate person had stood at the end of a stillage and despite warnings had dived in head first. There was thick weed at the time. Whether this story was embellished for my benefit, so that I did not take too many chances with the water in the tarn, will, now, never be known.

The 1921 report continues:-

"There is nothing of special interest to note with regard to the work at the hatchery. The usual quantity of ova, say about 22,000, were obtained and placed on the trays in December 1920, and the sorting of the fish and transference of two year olds of selected size to the tarn was duly carried out in March last. Some trouble has arisen in No. one pond from rats by which a number of fish were undoubtedly lost. The overhead covering of the ponds is now considered adequate but later on, when labour and materials are more reasonable, further work may be done.

The report of the Fishing Committee for 1922 was slightly happier than the one for the year before . They reported the take from the river as 1,057 fish and that from the tarn 82 fish, they went on to say:-

"It would appear from the records of temperature of air and water, direction of wind, rainfall, barometer and state of sport, that the factors most conducive to good sport are rising temperature, rising barometer, moderate rainfall and Southerly or Westerly winds moderate. When all are in favourable conjunction the creel should be a heavy one. (*The writer could not have put it better himself*) Such days, unfortunately, are rare, but happily for the Angler glorious exceptions to all statistics and rules are constantly occurring and spice is added to his pleasure when in spite of unfavourable omens success awaits him."

"The trays at the hatchery were filled with about 23,000 ova during December 1921, and Mr. W. Haslam Cross and your Secretary attended in April and sorted the two year old fish, placing 111 specimens in the tarn. The yearlings were selected from the two year old ponds and 200 retained for transference to the Lune. The remainder, together with excess fry, were put into the river and becks. 5,000 Loch Leven eyed ova were purchased and hatched out."

"The report for the 1923 season starts:-

"The fishing season at Horton must be regarded on the whole as a disappointing one. Not only was the total catch of the fish in the river (807) much below the normal figure but the cold and the bad weather particularly in May and June, the month when the fly fisherman is supposed to come

into his own, must have affected adversely the most optimistic of the Brotherhood. From observations made by various members and by your Fishing Secretary during the season there seems to be little doubt that there is a good head of fish in the river. That being so, the rest lies in the lap of the Gods."

"The tarn fishing has shewn a marked improvement. The number of fish taken was 112 many of which were well over a pound. Ten fish were taken close on two pounds each and one over two pounds."

"The usual quantity of ova, 23,000, was collected in December 1922, to which was added 5,000 Loch Leven eyed ova, and the whole were successfully hatched out. Mr. R. B. Martin attended at the hatchery on 17th March when the two year olds were sorted, 224 of a good size and quality were put in the tarn and 40 smaller ones put in the river. Selected yearlings were put into No. 1 pond, 200 were sent Mr Foster Knowles and 200 retained for transference to the Lune."

"With the season 1923 Nathaniel Hunt, our keeper, completed 30 years' service with the Association. The members generally, the great majority of whom have, as freshmen, at Horton relied upon Hunt's knowledge and assistance, will hope that he has many years before him of active and useful service to the Association."

"The report of the Fishing Committee for 1924 states:-

"The fishing season at Horton was, on the whole, a satisfactory one. The total of fish taken from the river was 1.332 fish and from the tarn 132. With the exception of April, each month provided its quota of sport, the best being May. Easter and Whit week were both disappointing. There was a fair gathering of members at Whit week, but sport was negligible until late in the week. On Whit Monday nine rods were out and only one fish was taken. The upper reaches of the river have again yielded good results. The best basket of the season (Mr. Wilfred Barnes) was 24 on August 20th all being obtained above New Inn Bridge. Major Gillies the following day took 22 fish about Selside."

"The work at the hatchery has followed the normal course. About 23,000 ova were collected in December of 1923 and hatched out successfully. The President and the Hon. Fishing Secretary attended on the 17th January and sorted the two year olds. 116 well grown fish were put in the tarn and 178 of medium size were put into the river. Members will be glad to hear that Hunt has made a good recovery after the operation he underwent at Leeds in September, in consequence of an accident which happened to him in the course of his work at the hatchery. The Committee are grateful to Mrs. Hunt and Miss Hunt for their services at the hatchery and general assistance during Hunt's indisposition."

The Fishing Committee's report for the 1925 season started:-

"1.238 were taken from the river at Horton in the 1925 season. Having regard to the fact that the river was practically unfishable for the greater part of June and the whole of July it is evident that the remaining months of the season yielded reasonably good sport. Pleasant weather prevailed during the Easter holiday, but sport was on the small side. At Whit week there was a good gathering of members and sport was very good especially in the early part of the week before the water became low.

"The total catch for the tarn was 177, which is well above the average. The usefulness of the tarn as a stand by when river conditions are unfavourable was well demonstrated during June

and July. In the latter month 38 fish were taken from the tarn as against 8 from the river. The attention of members is drawn to the ten inch limit for tarn fish.

“The old boat house which had stood up against about forty winters was found to be in so unsatisfactory a condition that it was decided not to attempt further repairs but to erect a new one. The wood was purchased locally and the entire work was carried out by Hunt with one assistant. The new boat house, which is a little larger and more convenient than the old one, has been erected at a cost of under fifty pounds. A thoroughly good job has been made of it and one that reflects great credit upon Hunt’s work and craftsmanship.”

“During the back end of the year several of the fishing stages were rendered unsafe by the bad weather and it has been decided to renew some of them and to possibly erect one or two additional stages. Old age also appears to have affected the boat, and the Committee is of the opinion that a new one will have to be obtained. It is hoped that the stages and the new boat will be available for members early in the coming season.”

“The question of weeds in the tarn is occupying the attention of the Committee and an endeavour will be made to minimise the inconvenience they cause to Anglers. It has, however, to be recognised that weeds are not only feeding grounds but are a valuable cover for fish in hot weather.”

“There is nothing of special interest to report with regard to the hatchery. The usual number of ova, about 23,000, were collected in December 1924 and in due course successfully hatched. The fish were sorted on the 21st March By your Hon. Secretary and Hon. Treasurer. 270 selected two year olds of good size and in good condition were taken to the tarn and 184 reserved for the river in addition to the usual fry which every year are put in the becks as a feeder to the main river. Two more ponds have been re-covered and the hatchery and ponds generally are now in good and efficient condition.”

The report for 1926 commences:-

“The season 1926 at Horton yielded a fair amount of sport during each of the fishing months with the exception of March when the conditions were more than usually unfavourable. The total number of fish taken was 1,250. The river fell low during late June and remained so until the 21st July, when heavy and continuous rain caused the river to be in flood over a period of four days. Very heavy toll was taken by the use of the worm during these four days and it is a question for consideration whether a limit should not be placed on the number of fish allowed to be taken on the worm in any one day.”

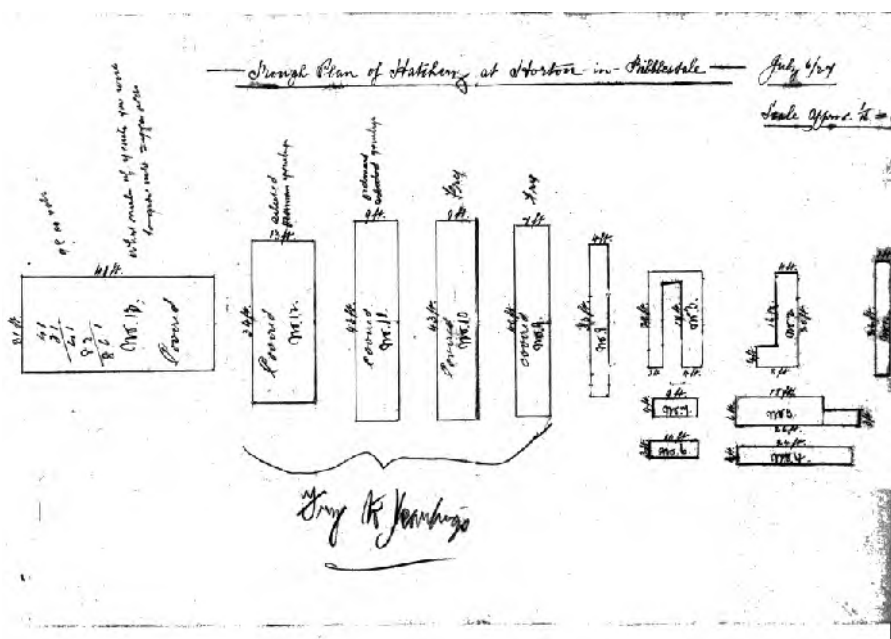
“The tarn fished fairly well with the total taken being 204, being well above the general average. There are now seven fishing stages in good order surrounding the tarn. Two new stages have been added during the year. The new boat appears to have satisfied the requirements of the Anglers and with ordinary care should have a long life. Weed cutting was carried out on three occasions, once each in May, July and September.” In fact this new boat survived in good order until the late 1940s when it was found, in the boathouse, full of water with a large hole below the water line where apparently a rock (in the boat house bay?) had pierced through the several clinker boards. Attempts were made to patch the hole using copper nails and waterproof leather but these repairs were never very satisfactory and soon a fresh boat was acquired despite the prevailing austerity.

The 1926 report goes on to say:-

"The hatchery work has proceeded on normal lines. The usual quantity of ova was collected and in due time hatched out. The sorting of the two year olds was carried out in the presence of your Hon. Treasurer, Mr. Martin, on the 26th March, 260 good sized fish being taken to the tarn. The re-covering of the ponds is proceeding and will probably be completed this season. From time to time there is a marked loss of fish between the yearling and two year old period due to the rat and other vermin, and although every care is taken it has not been found possible so far to eliminate this source of loss."

At the end of the 1926 fishing season the then Fishing Secretary, Thomas Farron, found that he had too many commitments and relinquished his surveillance of the Ribble whilst retaining that on the Lune. His replacement was Wilfred Barnes a cotton mill owner from Oldham. The 1926 report states:-

"Mr. Barnes is keenly interested in all matters connected with the Horton fishery and has the great advantage of possessing considerable local knowledge of the whole district in which the water is situated. The Committee feel sure that the interests of the members will under the new regime receive the same care and attention as in the past." Wilfred with his practical knowledge of running factories soon realised that all was not well in the Hatcheries. He would look at the bald statistics and note that every year rather over 20,000 ova were put down to hatching. The wastage of these on hatching was claimed to negligible as the fry were put in the ponds; but when it came to the first and second sorting only a few hundred fish of above three inches were mentioned and of these just the odd hundred or two were deemed large enough to put in the tarn (There was always the fear that the smaller fish were being gobbled up by the larger ones in the tarn). The total number of fish reared was always dissimulated. The let out clause being "the excess fish were placed in the becks and river" a count was never given. Wilfred no doubt noticed in reality that, of the ova laid down, only one percent were of real use in stocking the tarn and behind the scenes he was enquiring whether it would not be more cost effective to buy in two or even three year old fish. In 1927 he was still struggling against the Victorian ideals of the Club one of which was the rearing of trout.



renowned Howietoun and Northern Fisheries of Stirling to spend a day inspecting the hatcheries at Horton in July 1927. Mr. Shorthouse rendered his report at the end of that month with a covering letter:-

29th July 1927

Dear Mr Barnes,

Very many thanks for your two letters dated 19th and 25th curts. I have now had my report put into shape and send it to you herewith trusting that it contains all the matter upon which you wish information. If there is anything omitted do not hesitate to let me know its nature and I will at once attend.

I got home quite safely though a bit tired and felt no ill effects.

I take this occasion to thank you and your friends for the many kindnesses received especially your good self.

Assuring you of the firm's best services at all time.

Yours faithfully

The Howietoun Northern Fisheries Coy Ltd.

George W. Shorthouse

Enclosed with the letter was the report.

REPORT by the manager of the Howietoun and Northern Fisheries Company Ltd., as to the improvements he considers necessary to increase the production of trout at the hatchery near Horton-in-Ribblesdale belonging to the Manchester Angling Association.

Hatchery

The water supply to the hatchery and ponds is obtained by tapping the stream which passes the hatchery. The supply is ample and good but attention should be given to the following work:-

- (a) Previous to the ova harvest the cistern outside connected with the water supply to the hatchery must be emptied and thoroughly cleaned and when this work is completed the water should be turned on and covers put and kept thereon so that no deleterious matter may get into the water.
- (b) The filter tank inside should receive a thorough clean and new filters be made ready to put in immediately the first lot of ova reaches the hatchery. These filters must be sufficient in number to allow every alternate one to be taken out and cleaned and put back before the others are disturbed for cleaning. A little silt on the eggs is not harmful as it settles mostly on the top side of the egg but the less the better and unless the grille system was in operation I would have suggested absolute filtration. By the grille system the water passes under as well as over the remaining sides of each egg.

- (c) All run channels from cistern to hatching boxes must also be cleaned and all taps scoured out with caustic soda. The hatching boxes both zinc and wood and grilles, fittings &c, in fact every bit of zinc and wood coming into contact with the water supply should likewise be similarly treated and when absolutely dry, varnished with black bitumistic varnish obtainable from Messers Blundell and Spence, oil merchants, Hull. Before applying the varnish the pot should stand before the fire for an hour, so that the varnish may become thin before applying. The work of cleaning should be seen to now so as to give the fittings ample time to dry and the varnishing completed before the end of September. All surplus materials including bottles containing freak specimen fish &c should be taken out and placed in some other building. Nothing but what is actually need for the incubation of the ova should be left in the hatchery as they only provide ledges for filth to rest on. The hatchery wall shelves &c, should receive a thorough clean before the work enumerated above is tackled.

Collection of ova and deposit in Hatchery

The selection of breeders is no doubt very important but unfortunately the Manchester Anglers' Association have not the ponds and other facilities for keeping a sufficient number of domesticated trout with the result that they are forced to take ova from wild fish when ascending the streams in the autumn to spawn. The great authority the late Sir James Maitland, held that the strain of trout requires to be obtained from selected breeders, selected yearlings, selected two year olds, and again selected three year olds. After this fourth elimination of the less fit, the trout may be allowed to grow for two seasons, after which they are fit for spawning and the ova are of good size but the best and almost the largest ova are yielded in the seventh season. With ova promiscuously obtained, however, breeders such as I have described can not be selected by the operator. By accident he may be lucky to net a few and if he is, the work in the hatchery is made easy, and the best of fry follow. Mr. Hunt fully realises the importance of good eggs and no doubt carries out his work in the autumn in order to get them. He will spot a nice female with a small head, deep rib and perfect gills and from the size of her concludes she can not be less than four years of age and lets pass those exhibiting these weak points and immaturity. Although Sir James was most particular about his Breeders you are not to conclude that the ova from wild fish are worthless. On the contrary, I am sure that if Mr Hunt is given favourable freshets with the mileage of water under his control he will be in a position to ensure really good eggs. If I remember rightly he simply secures the spawners by lifting them out with a net. Perhaps a larger number to select from could be got if he put a trap in the streams. He could make such a trap himself and see that it was secured firmly so that floods would not carry it down stream.

As soon as the ova is ready to be moved it should without delay be laid down on the grilles, care being taken that the water supply is in order and that the taps have all been tested and fixed to pass the necessary supply. It is always well to measure the eggs when laying down. At Howietoun we always count how many there are to the fluid ounce, then multiply that number by twenty and you get the number in a pint, then fill your pint measure and keep a record of the number of pints and half pints you have put into each hatching box. Next morning and every morning there after till they hatch out, all dead eggs should be removed and a record there of kept daily so that you can estimate your total loss in dead eggs for the season. It may be that you will fill fully a few of your hatching boxes and only leave a few empty. If you do please note that you should transfer

half of the eggs before hatching out into the empty boxes as although you can hatch out 10,000 in one box you can only rear half that number into fry. The alevins do not require much attention but if they are unable to keep the bottom of the boxes polished by their bodies you must do the cleaning for them. Fry commence to feed before the yolk sac is totally absorbed. A short handled feeding spoon made with number eight perforated zinc, gauge 14, should be used. We feed on sheep liver pressed through a cooks sieve, the skin of the pluck being first removed. To commence with a desert spoon full of this liver to every 20,000 fry four times a day will be ample, the quantity being increased as the fry take it up. We keep the fry in the hatching boxes for about two months after they commence feeding. It is a great mistake to starve fry. While the fry are being fed the boxes should be cleaned out every second day other wise a scum will form on the bottom and later fungus on the fry will appear and be fatal. As the fry grow stronger the depth of the water in the hatching boxes should be raised.

I may add under this head that the strength of the fry is controlled by the mode of incubation of the ova. The best ova from the best strain of trout may easily be so treated that the resulting fry are puny and ill conditioned neer do weels. There are three secrets of incubation these are :- no strong light; no sudden change in temperature; no stagnant water. Strong light injures the nervous system; sudden change of temperature injures the venous system; stagnant water injures both. The hatching trays must be so arranged that a current of water is constantly impinging on each individual ovum and sweeping off (the pores of the shell) the carbonic acid continually produced during the formation of the embryo, but more particularly in the few weeks preceding hatching.

Turning out the Fry

The little fellows having now reached a stage a stage at which they can rough it a bit, coupled with the necessity for increased space growing them into yearlings, the time has arrived for putting them outside, but before this is done their new home must be put in perfect order. In my opinion it was a pity that the Engineer when laying out the ponds did not allow the water supply from the tank to run in an open channel instead of being enclosed in fire clay pipes, especially as the supply is more than ample. Watercress could have been planted in the channel referred to, and as it grew it would not only have tended to sweeten and purify the water, but would have been the means of creating vast quantities of natural feeding for the fry in the ponds. How ever I would advise you to leave it as it is meantime. The method of regulating the supplies of water to the ponds from the channel is rather primitive and might be improved by the erection of small wooden sluices. If, however, it is decided not to anything in this connection I would only suggest that the Attendant before leaving at night satisfies himself that the supplies to the ponds at that hour are in order. The small irregular ditches (numbers one to eight on the plan) in which I understand fry in the past have been reared should be run dry and then relieved of all old tile, pieces of wood and other rubbish at present lying in them. These accumulations only arrest the passing of filth &c, which in its natural course is well away down the main stream. As the accommodation for fry is more than ample for the stock proposed to be reared, I would not advise stocking these ditches with fry at present, as considerable expense would be necessary to make them fit to rear fry. It may be said that those old drain tiles &c, afford shade, but better shade would be obtained if these ditches had on each side stretches of Water Cress and other Aquatic plants. Before the ditches can be used as nurseries for fry they would require to take a definite shape and then be covered with frames of wire netting to keep out the vermin. The stock at present in numbers nine to thirteen ponds will no doubt be placed in the tarn and river, say in

January or February next year, unless it is decided to retain a few, and grow them into two year olds in pond number thirteen. If this is so, pond thirteen should be cleaned out first and made ready to receive the 1928 stock. Immediately the ponds are empty of trout they should be run dry and all the mud and decayed matter taken out. There after the water should be let on and when about half full the plug drawn and while the pond is emptying a man with a brush should use it freely, so as to let go any other filth that remains and could not be lifted out with a shovel. The ponds must then be examined carefully and any or crevice in which fry could hide must be stopped up. The bottom surface should then receive say, a three inch layer of gravel so as to sweeten up the pond for the new stock. Assuming that the fry in the hatchery will be ready to go out in the middle of March the work at the ponds should be completed and the water turned on a month previous, in order that time may be given for the natural food to collect. The ponds being now ready to receive the fry they should be divided and one lot into number nine pond and the other into number ten; number ten should get rather more than the other pond if that can be arranged. It is impossible to count fry and not harm them but you know the number of eggs in each box and should therefore have little difficulty in arranging the two divisions. I am assuming that you are aiming at a stock of 20,000 ova. They will not feed during the first day after being put out, but on the second every endeavour should be made to get them on the feed, as it is at this time that the great loss occurs. For the first fortnight they should be fed four times a day, quantity same as that recommended in the hatchery, and gradually increased as they take it up. Three times a day after the fortnight will suffice. They will soon become accustomed to the presence of the Attendant and whoever is employed to feed them should remember that at first he must take the food to the fry, later they will crowd around him for supplies. A certain number will become weak and fall back on the outlet screen. See then that the food passes their very nose. About the first of September the springlings as they are then called in number nine should be netted or otherwise taken out and arranged into two classes of big and smaller sizes. The larger lot should be put into number twelve pond and the smaller lot into number eleven pond. Ditto with number ten pond. Both fry and yearlings feed best when the full number is in a pond. When thin, there is always a difficulty in getting the trout to collect to feed, hence the reason for using two ponds only. Now with regard to pond number thirteen it should be noted that after the yearling stage, trout require more range, that is more space to move about in, so that in my opinion it would not be wise to rear yearlings into two year olds there, of a greater number than one thousand, and even then, the Attendant should see that a plentiful supply of water is allowed to pass through the pond. Assuming then that you adopt this system of distribution I would recommend that you turn all the selected yearlings directly into the river, select 500 out of number eleven pond, for pond number thirteen, and keep the smallest or rather, what is left in number eleven pond until say May month, by which time they will be a fair size and better able to look after themselves in the river or tarn.

I find I omitted to state in its appropriate place that in order to enable the Attendant to feed the fry inside, a nine inch plank should be erected on a level with the ground outside up the middle of each covered pond.

River

Owing to a heavy flood in which I saw the river, it was impossible to examine it carefully and note the extent and character of the feeding, but it seemed to me to be very much like other rivers I have inspected in England and Wales.

Rivers in which the interests are vested in many proprietors it is invariably the case that a few of them have the misfortune not to be so well off financially as his neighbour with the result that the maintenance of a stock of trout in the water equal to its feeding properties is not realised generally. Until when a river is taken over and managed by a Corporate body it will continue to deteriorate as a sporting asset to the angling public. No doubt certain stretches of a river have a greater value than others, but surely by the application of skilled advice, agreements could be reached where by the annual value of each stretch could be equitably fixed. If those who favour the art of fishing go on increasing in number as they have done during past years some thing will require to be done, if sport at all is to be available to the public, at least the angling portion there of. What is happening now? Certain Associations and Proprietors are stocking their stretches of the river, others who are willing can not, because they have not the money, so the river is only partly stocked. More over I wonder how many anglers examine the trout they kill in order to determine the sexes. If they do, I am certain that at the end of the season they would find that 75% at least would be males, they are more forward than the sedate female, hence into the creel they go in the excess stated above. What follows? The balance of sexes being thus upset many females go to the spawning redds without a mate and on goes the deterioration in the sport. It is up to the Manchester Anglers' Association to be very careful with the selected yearlings they rear as the bulk of them will be male fish.

Any proprietor who decides to stock artificially his reach of the river, high up, by purchasing a few thousand yearlings from a fish farm is really a "Toff" because he is presenting to his neighbour lower down, trout he can never expect to fish and he knows it. But such kindness is only a partial remedy and as already said, until the management is given to one man, of the whole length of the River Associations, proprietors and anglers will continue to be disappointed.

As explained to the gentlemen who very kindly accompanied me that day I was at Horton in Ribblesdale, every advantage should be taken to introduce shrimps, snails, &c, along their whole stretch of water. The man on the ground every day can do a lot in this connection in the preparation of places for these forms of life to breed and multiply. He can also use the ditches at the hatchery as breeding grounds for shrimps, caddis, snails, etc., and thus be in a position to transfer large quantities of these to the river and tarn.

Management

If the Manchester Anglers' Association wish their fishery to be well managed, I have no hesitation in saying that Mr. Hunt has too much to do, to do it well. No risks should be taken with the work at the hatchery. Certain work on the river could perhaps stand over for a day, but no work at the hatchery should be postponed five minutes. It is obvious therefore that some one should be in constant attendance at the hatchery and this, Mr. Hunt can not be. If then you could arrange to give him the assistance of an intelligent girl I feel that good results will follow

The Howietoun and Northern Fisheries Coy. Ltd

29th July 1927

Geo. W. Shorthouse
Manager

Having digested all this information Wilfred Barns reported to the council Oct. 27/27. :-

"In June I proposed obtaining expert advice on trout rearing, seeing that none of us were in a position to say definitely why we were getting such poor results from the Hatchery.

On July 3rd I arranged with Mr. G. W. Shorthouse manager for the Howietoun and Northern Fisheries Stirling, (which is one of the finest hatcheries we have) to come to Horton and spend a day with us at the hatchery and on the river, to give his advice.

He came down to Hellifield on the Wednesday evening July 6th, and Mr. Owen, Mr. G. Gillies and I met him there on Thursday morning and went along to Horton with him, where he gave the hatchery a thorough inspection, and also our keeper Hunt, whom he criticised keenly.

After a few hours at the hatchery we proceeded to the tarn and then went down to the river, which I might say was a raging torrent, the rain simply coming down in torrents all day. However this did not damp, let alone drown, our courage.

We had set about to find the loose screws, and I think we found them.

The chief cause of our failure to get good results is the feeding of the fish, from the fry stage upwards.

This we are satisfied has not been carried out as it should have been with the result that nine tenths of our fish have simply died of starvation, probably just after the fry were turned out into the outside ponds.

The feeding of the fry etc., appears to have been done in a very half hearted manner and instead of being fed four times a day, have only been fed once or twice and some times left for days without food at all.

Regular feeding is MOST essential as you will see from Mr. Shorthouse's report.

Grading say at least every six months is also essential, as unless this is done, you get a certain amount of large fish in the pond along with their smaller brethren, which they feast upon.

Another point is the cleanliness of the ponds, which at present are anything but clean."

"In August I received Mr. Shorthouse's full report, which is now on the table, and which some of you have already read, and I feel sure that if his advice is acted upon we shall have some better results. I may add here that the total cost for this advice, including his coming down from Stirling to Horton is just over £7, which I think has been money well spent.

Before discussing the report in detail, I would like to give you this season's workings, the results of which I would like you to note.

On February 9th 1927 Mr. Farron and I went to the hatchery to grade and count the two year old trout in pond number 13. Result 209 fish in all. Made up of 104 (four inch and over) 61 (three to four inches) These were put in the tarn. The other 44 (1½ to 2¾ inches) were put in the river.

On June 1st I collected 500 three month old fry from the Whitewell hatchery and put them into one of the small uncovered ponds at our hatchery. These fry were on the whole rather smaller than our own. Mr. Martin and I took the empty can back to Whitewell, and we also took our keeper Hunt along with us, to let him see what a tidy hatchery was, and to get any information he could (but I am afraid he did not get much).

On October 11th 1927 Mr. Owen and I went to the hatchery to grade and count all the six month old Springlings, contained in ALL the ponds. The grading was essential, and we were also anxious to know the number of fish we really had this season.

The number of fish taken out of each pond was as follows:-

| | | | | |
|------------------|------------|-------------|-------------|------------|
| 8. Small ditches | No. 9 pond | No. 10 pond | No. 11 pond | No 12 pond |
| 136 | 58 | 101 | 133 | 542 |

Making a total of 970 fish only, out of the 20,000 ova laid down last autumn, which is just short of 5%.

We graded the above 970 into small and large – 811 small (say one to two inches) being put into number eleven pond and 159 large (say two and a half to three inches) being put into number twelve pond.

The 133 taken out of No. eleven pond were the total result from the 5,000 Howietoun ova we put down—these having been kept by themselves in this pond.

Out of 500 three months old fry taken from Whitewell hatchery to our hatchery we got only 32 six month old fish, which is just over 6% -- these were reared by themselves in one of the small ditches. (this points to the loss taking place after the fry are put out into the ponds.)

This means of our own ova, approx. 15,000, we got 805 six month old fish, which is 5 $\frac{3}{4}$ % A very poor result indeed, which we hope to have very much improved next season.

Now we come to October 21st 1927 when Mr. Owen and I again went to the hatchery, to grade and count the eighteen months old fish in pond thirteen, into which, Hunt gave us to understand when we were up in July, that he had about 600 yearlings coming on, for two year olds in the tarn in Feb next. However we were determined to verify this for our selves, and the result we got was as follows:- The total was 215 fish, which we grade as below. 45 large (say 5 $\frac{1}{2}$ inches to 7 $\frac{1}{2}$ inches) 117 Medium (say 3 inches to 5 inches) and 53 small (say two to three inches). There was one fish nine inches long. The 45 large ones we took up and put into the tarn. The 117 medium we put back into pond number thirteen until February next. The 53 small we put into number twelve pond along with this years largest six months old fish, as they were about the same size.

Now as regards the report – Mr. Owen—Mr. Gillies – and I have tried to boil it down, and have tabulated same in the form of a set of working rules, setting forth the duties of our keeper, and I propose to have these mounted and framed, and to have them hung up in the hatchery, so that our keeper has them always before him, which gives him no excuse for not carrying out his duties in a proper manner.

I for my part will do my best to see that they are carried out.

I would now ask the Council's authority to write Hunt, saying that the Council are very disappointed with the very poor results obtained this year at the hatchery, and that they trust that next year he will show much better results".

"The next matter is:- the time Hunt has for patrolling the river, especially when he has feeding of fish four times per day. Shall we find him any assistance or not?

The following notice was subsequently put up in the hatchery:-

Trout rearing Keepers duties in connection with hatchery

Memo: Hatchery contains eight small-uncovered ponds or ditches for the cultivation of shrimps and snails; and also five large covered ponds for trout. For reference purposes the large covered ponds are numbered 9 to 13, the lowest number being the pond nearest the fish house.

August

Empty and thoroughly cleanse of all mud and decayed matter ponds 11 and 12. Afterwards half fill, then open the plugs, and while the ponds are emptying use brush freely so as to let go any remaining filth not previously removed by shovel. Examine the ponds carefully and make up any hole or crevice in which fry could hide. Furnish the bottom with a three-inch layer of gravel. Fill the ponds ready to receive six month old graded fish in about six weeks time.

September

Empty ponds nine and ten, grading and transferring fish to Ponds eleven and twelve. The cistern outside the Hatchery is to be emptied and thoroughly cleaned out, water is then to be turned on and the covers put back, say, late September or early October. The filter Tank in the Hatchery and new Filters must be ready for when the first lot of ova reach the Hatchery. There should be sufficient filters in number to allow every alternate one to be taken out and cleaned and put back before the others are disturbed for cleaning. The Fish house is to be thoroughly cleaned, all surplus materials, including specimens of freak fish etc. and other articles not essential for hatchery work and on which dust could accumulate, are to be removed to another building. All walls and shelves etc. should be thoroughly cleaned before the following work is commenced:- All run channels from the cistern to the hatching boxes, all taps, hatching boxes and grille fittings etc., in fact, every bit of zinc and wood coming into contact with the water supply, must be cleaned and scoured out with Caustic Soda, and when absolutely dry varnished with BLACK Bitumistic varnish (obtainable from Messers. Blundell and Spence, Oil Merchants Hull). The pot of varnish should stand before the fire for an hour, so as to become thin before applying. Varnishing should be completed before the end of September.

Early in September all the Springlings in Nos. 9 and 10 ponds are to be graded and counted, the smaller ones being then put into no. 11 pond and the larger into //////////no. 12 pond. Also the one and a half year old fish in No. 13 pond must be counted and graded, and all fish over, say, five inches must be transferred to the Tarn, the others being put back into the pond until February next.

December

Stripping fish and laying down the ova. The ova must be counted when laying down. To measure the number of ova, first count how many there are in a fluid ounce, then multiply that number by twenty and you get the number in a pint. Then record how many pints and half pints are put in each hatching box. Every morning afterwards all dead eggs must be removed and a record kept of the daily of the count. There should be 5,000 in each box, as, although this will accommodate more, only this number of fry can be reared.

Conditions in the hatchery: - No strong light. No sudden change in temperature. No stagnant water.

February

Number 13 pond to be run off and two-year olds counted and turned into the Tarn and the River. The results to be expected: 500 to 600 two-year olds from 700 yearlings put in. number 13 pond to be cleaned and prepared as 11 and 12 in August in order to receive the yearlings in March.

March

Number 11 and 12 Ponds to be emptied and the best 700 fish are to be put into Pond 13 and the remainder should be turned out into the river. Results to be expected: 20 to 25 yearlings for every hundred ova originally put down. If there are any under sized and not fit for the river these may be put back into No. 11 pond until they can be put in the river in May.

April

If the fry do not keep the bottom of the boxes polished the cleaning must be done for them. The fry commence to feed before the yolk sac is totally absorbed. A short handled spoon six inches deep and by three inches diameter made of perforated zinc, 14s gauge, No. 8 hole is to be used for feeding in the boxes. The Food is to be Sheep's Liver pressed through a cook's sieve (the skin of the pluck being first removed). Quantity: To commence with a desert spoon full to every 20,000 Fry, four times a day and the quantity to be increased as the fry take it up. Feeding is to take place at 8 a. m. —11 a.m.—2 p.m.—and 5 p.m. Strict punctuality must be observed as this is absolutely essential in order to obtain good results. The fry are to be kept in the hatchery boxes for about two months after they commence feeding. It is a great mistake to starve fry. Boxes should be cleaned out every other day. The water in the boxes is to be raised as the fry grow stronger.

May

All the fry are to put in the first two covered ponds Nos. 9 and 10 rather more into 10 than 9. They will not feed during the first day after being put out, but on the second day every endeavour should be made to get them on the feed as it is at this time that the great loss occurs. For the first fortnight they must be fed four times a day at the times indicated above. Three times a day will suffice after the first fortnight at 8 a.m.—12.30 p.m.- and 5 p.m.. This must be done until they are twelve months old, and after this, one good feed at 12.30 p.m. daily until two years old. See that the food passes their very nose. Both fry and yearlings feed best when a full number is in the pond. A feeding spoon ten inches deep by three inches diameter, made of perforated zinc, No. 8 hole, 14s gauge, is to be used, and as the fry increase in size go on to a spoon with a No. 9 hole.

Keepers other duties besides the hatchery.

1. Maintenance in reasonable repair of the Boathouse, Boat, And Tarn Staging. Also weed cutting in the Tarn.
2. Reasonable daily patrols of, at any rate, a portion of the river.
3. Planting and cultivation of new weed beds in suitable places in the river. This to be done during patrol duty throughout the year.
4. Cultivation of shrimps and snails in eight small hatchery ponds.
5. Furnishing to the Hon. Fishing Secretary of a weekly report as to the trout killed in the river and the Tarn, as also periodical reports of out-put of shrimps and snails from the hatchery.
6. Such other duties as may be reasonably required by the Hon. Fishing Secretary.

The report of the Committee for the season 1927 offers an "APPRECIATION. ----It is desired to place on record that the hearty thanks of our members are due to Mr. Owen and Mr. Barnes for their persistent and energetic efforts towards the improvement of the Hatchery and the re-organisation of its work. It is confidently expected that their efforts will result in a marked increase in future out put."

The Fishing Committee reported a catch of 1.684 fish from the river in 1927 and a total of 200 fish from the tarn; several fish of 1½ and 1¾ pounds being taken. The report goes on to say:- "The work at the hatchery has proceeded on normal lines, the usual quantity of ova being collected and hatched out.

"The results were however very unsatisfactory. With a view to increasing the output of fish from the hatchery, expert professional advice was taken during last summer on this matter, and also as to the possibilities of improving the river's production of food supplies for the trout. Your Committee arranged with the Howietoun and Northern Fisheries of Stirling, to send their Manager, MR. G. W. Shorthouse, to Horton to spend a day with us to inspect the hatchery—the river—and the tarn, and to let have his report on same. This he did in a very capable manner, and in due course he sent in a full report containing much useful advice and working instructions.

"This report your Committee has condensed, and tabulated into a set of Working Rules, which have been framed and hung up in the Fish House for the guidance of our keeper Hunt, to whom we look for substantially better results in the future.

"Several of the hatching boxes and a portion of the bottom part of the Fish House were in a very rotten state, and have had to be replaced with new. The cost of this and the charge for advice on the hatchery, has made our expenditure rather heavy, but we feel sure it will more than repay us in the future.

"The Committee is desirous that our keeper Hunt, shall do more patrolling of the river in the future, and to enable him to do so, we have arranged with him that his daughter shall assist him, by feeding the fish at the hatchery the two mid day meals, so as to liberate him for this duty on the river. This of course will add slightly to our expense. Members are requested not to expect too much service from Hunt in other directions.

"The sorting of the two year olds was carried out on February 9th 1927 and 165 good sized fish were transferred to the tarn."

The Committee then reported finding 970 six month old fish in October 1927 and related the fate of the 215 eighteen year old fish as noted above.

The report of the Fishing Committee for the 1928 season was as follows:- "At the hatchery 20,000 ova were laid down, 5,000 from Howietoun the other 15,000 from the Ribble, and hatched out. The result being a slight improvement upon last year, but not by any means what we want it to be. We hope to have far better results next season. The sorting of the two year old fish was carried out on 24th February 1928, and 137 good sized fish were transferred to the tarn.

"On 3rd October 1928, all of the six months' old fish in the ponds were graded and counted. 2,008 being the total reared out of 20,000 ova. Last year the total was 970. After grading these were put back into the ponds to come on for yearlings in March 1929. On 29th November 1929 the eighteen months' old fish were graded and counted the total being 222. Of these 37, from 5½ inches to 7½ inches were transferred to the river, the other 185 being put back into number thirteen pond to come on for two year olds in February 1929.

"During the season it has been necessary to have a new wood framework covered with wire netting put over number twelve pond. We have also had to concrete the sides of number ten pond, owing to the banks leaking. In the spring three stages at the tarn which had been washed away by the heavy gales, had to be rebuilt, partly with new timber. We have also had to put a new foot bridge across Blind End Beck, the old one having become very rotten and beyond use. These repairs have made our expenditure for the year very heavy.

"The trout fishing for the Season 1928 has been only fair. There was very little rain during the months March, April and May, and consequently very little fishing was done, very few fish being taken. Of the following months June was very good with a catch of 369 fish and August came near its average with a catch of 426 fish; the months of July and September being very poor. The total number of fish taken from the river was 1,144 as against 1,684 for the season 1927 and 1,219 for the season 1926.

"The fishing on the tarn has been up to average, 169 fish having been taken. The best fish recorded was a pound and a half, of which size several were taken.

"Minnow and Bottom fishing in the tarn will again be permitted during season 1929, but Ground baiting is prohibited, and members are requested to creel only fish of good size."

Apparently the Committee was still obsessed with the idea that the tarn was full of cannibals that were eating up all the smaller trout. At least that was the explanation given (to me) in the 1940s when older members were asked about spinning in the tarn.

Wilfred Barnes, the fishing secretary, was still worried about the feeding process for fry and he wrote to Mr. Shorthouse at Howietoun in December 1928 seeking advice. The following reply dated 11th January 1929, in due course, arrived.

Dear Mr. Barnes,

I duly received your letter of the 20th ulto. And as I have been some what busy I took the advantage of your permission not to be in a hurry to write.

It is not necessary to feed the fry for two days after being put out simply because they are so dazed after being transferred from the boxes to the earth pond that they remain motionless during that period. By the expiry of this period feeding must be commenced and carried on regularly for say three months four times a day. The quantity of liver for 10,000 fry at the commencement is so very small that the feeder must judge the quantity to use according to the appetite of the fry. Four Desert spoonfuls each day may be regarded as ample to begin with and this quantity gradually increased as they get older. By the time the 10,000 become six months old the quantity of food stated above should be at least doubled at each meal. There after three meals a day will commence and during the subsequent six months the quantity should again be doubled. During this period bits of raw lean meat passed through a one eighth inch plate of a mincer may with advantage be used and of course the size of the hole in the perforated feeding spoon be wider as food becomes coarser. During the first six months feed the fry near the side so that any particles, which fall to the bottom, may be picked up by the fry. The fry will not take the food off the bottom in the centre of the pond.

When rearing 500 yearlings into two year olds four table spoonfuls once a day will suffice. Feed over the same water so that the trout may know to collect there and scatter it by hand. Let the trout have time to eat up the first spoonful before the next is scattered.

At Howietoun we feed on liver till they are about five months old there after on raw horse flesh but bits of lean meat, rabbit flesh and the liver of ox or horse does equally well. We do not approve of fish meals.

Tell your man not to scrimp the feeding. If he sees the trout feeding ravenously let them have food until they disincline to come to the surface. Trout will not feed during hard frost or exceptionally cold weather.

Many thanks for your good wishes. I trust you will have a prosperous new year and tight lines during the fishing season.

I will not be hard pressed for some time now so please do not hesitate to write about anything upon which you desire information.

Yours faithfully

Geo. W. Shorthouse

Season 1929 the Fishing Committee reported, "At the hatchery 20,000 ova were laid down (15,000 from Howietoun and 5,000 from the Ribble) and hatched out. A good number of fry were lost in the early stages owing to the effect of the new concrete in one of the ponds. The result however, is still slightly better than last year as will be seen from the following figures:-

"On April 19th 1929, all the yearlings in ponds were counted the result being 1,758 against 430 on May 1st 1928. These were dealt with as follows: 1,158 transferred to the river; 600 transferred to number thirteen pond to come on for two year olds in February 1930.

"The number of fish put into the tarn during the year is as follows: March 13th 1929, 185 two year olds from four to eight inches long; November 6th 1929, 301 nineteen months' old, from four to eight inches long.

"On November 12th 1929 all the six month old fish in the ponds were counted and graded 2,175 being the total reared out of 20,000 ova laid down. Last year the total was 2,008,"

The total number of fish taken from the river was 979 the poorest for some years and this was the result of a long drought, which materially reduced the number of days the river was in good ply.

"The fishing on the tarn has also been very poor and far below its usual average only 109 fish being taken. The best fish recorded was one pound ten ounces the others ranging from $\frac{3}{4}$ pound to 1 $\frac{1}{2}$ pounds."

The Accounts for 1930 showed a deficit. This deficit was explained as follows:- "This has been occasioned by the expenditure on certain concreting work at the hatchery, and also by reason of a special grant made to a farmer towards the cost of diverting the drainage of sheep dip chemicals from entering an important spawning beck."

The fishing Committee reported that the catch on the river had been 1,123 fish taken. Fishing on the tarn had improved with a take of 227 fish, a forty year old record. The best fish recorded weighed one pound five ounces.

The report goes on to say:-

"At the hatchery 20,000 ova were laid down (15,000 from Howietoun and the rest from the Ribble) and hatched out. The result obtained from the above was 1,704 yearlings, counted out on March 6th 1930, against 1,758 the preceding year. Of these 997 were transferred to the Ribble, the remaining 707 being transferred to number thirteen pond to come on for two year olds in February 1931."

"The number of two year olds put into the tarn during the year is as follows:- On February 5th 1930, 301, and October 2nd 375, making 676 for the year."

"On October 22nd 1930 all of the six month old fish in the ponds were counted and graded, 3,779 being the total reared out of the 20,000 ova laid down on January 28th 1930. Last year the total was 2,175, the best result for many years.

Congratulations are due to Keeper Hunt for his results, and it is hoped that he will continue in his efforts to obtain still better results.

The hearty thanks of the Council and Members are due to Mr. Sutcliffe who, by his untiring efforts, has constructed several weirs across the river in the length of water a short distance above New Inn Bridge. By so doing he has made what was very poor fishing water into good holding pools for fish. It is intended to build more of these weirs in the future, and Mr. Sutcliffe has very kindly promised to supervise their erection.

There is now a Gauge Board fixed in mid stream immediately below New Inn Bridge, which shows clearly the height of the river."

The Fishing Committee reported for the 1931 season that fishing had been on the whole fairly good; 1,355 fish having been taken. The largest fish caught on the river weighed 1 $\frac{3}{4}$ pounds and was taken on the fly on April 1st below New Inn Bridge. Further exceptional fish recorded

included one at one and half pounds taken on the worm on June 1st at the foot of Bransghyll beck. This place was, over the years, well noted for large fish since it lay just below where the local butcher had his slaughter house and no doubt various tit bits flowed down stream for the waiting fish. This one and a half pound trout was reported to have a five inch young trout in its gullet, half digested, when caught. Further fish were reported weighing one pound four ounces two on the fly and one on the minnow.

The report continued:- "The fishing on the tarn has also been very good---the total number of fish taken being 332 ranging from half a pound to one and a quarter pounds with the exception of one fish about two pounds taken on the worm."

At the hatchery 20,000 ova, all from Howietoun, were laid down in December 1929; and on March 6th 1931, 2,691 yearlings were counted out, compared with the figure of 1,704 for the preceding year. These yearlings were distributed as follows:-- 984 to the Ribble, 1,000 to our water in the Lune, and the remaining 707 replaced in the ponds as stock for two year olds in February, 1932. At the same time, 295 two year olds were transferred from the ponds to the Ribble. On 14th December 1931 233 two year olds were transferred from the ponds to the tarn. Out of the above 103 fish ranging from five to seven inches were marked on the dorsal fin with a silver wire having one circular loop. Any of these marked fish, when caught, should be reported to Hunt or the Fishing Secretary giving particulars as to weight and size. The tedious work of marking the above was carefully carried out by Mr. J. Thwaites and Mr. Percy Kenyon.

On September 18th 1931 all the six month old fish in the ponds were counted and graded, 2,468 being the total reared out of 20,000 ova laid down on 28th January 1931."

April 20th 1932 Wilfred Barnes wrote to Geo. Shorthouse at Howietoun saying "We get a fair amount of Peat water at times down the stream which feeds our hatchery (Bransghyll). Can you say whether in your opinion this is detrimental or not to the rearing of fry and if so to what extent?"

Mr Shorthouse replied on the 21st of April to Mr. Barnes :-
 "I am receipt of you letter of the 20th inst. and in reply beg to say that "a fair amount of Peat" temporarily in the water in which you are rearing the fry will not injure them. Of course water such as we have from springs led to the hatchery in pipes from where it issues from the earth is really what a first class hatchery water supply should be, but very seldom can one get such a supply.

Fry will not grow so quickly in Peat water as in water flowing through a fine fertile valley of sand and gravel formation. The reason is obvious, for in peaty water there is a great scarcity of microscopic life, that is life in the water which can not be seen with the naked eye. That life is found in great quantities in the other supply.

Are you short of fry this season. If you are and will pay the rail carriage I will send you a box of 6,000 free.

Yours faithfully,

Geo W Shortland.

The letter from Wilfred Barnes mirrors the continuing unease about the hatcheries. He knew that in comparison with other hatching enterprises the mortality of young fry was extremely high and yet he could never quite put his finger on the reason. He was putting a lot of time into the hatcheries and he was not getting the results. As a businessman he also knew that the hatcheries, were not cost effective if all the time taken in their supervision was taken into consideration. For many succeeding years he played along with the system until, after the war, he oversaw their closure. The writer knew Wilfred Barnes over several years and a kinder a man you could not meet. I will never forget visits to "Nettlepot", his retreat in the Lune valley where he owned considerable salmon fishing rights. These, I believe, he let to the Manchester Anglers' free of charge. His wife was a lovely soul and knew exactly what a teenager liked to eat before and after fishing and was always welcoming. Wilfred died in 1955.

The fishing Committee reported for the 1932 season that on the whole the season had not been too good. Never the less 1,141 fish were taken from the river, the best being one and a half pounds from East Wind Reach.

"Fishing on the tarn was rather disappointing and the total of fish taken was 174, ranging from half a pound to one and a quarter pounds."

"At the hatchery 20,000 Howietoun ova were laid down in January 1932; and on March 5th 1932 1,929 yearlings were counted out of ponds, as compared with 2,691 the previous year. These were distributed as follows:-
1,229 to the Ribble, and the remaining 700 replaced in the ponds as stock for two year olds in February 1933.

On 20th February 1932, 210 two year olds were transferred to the river, and 211 to the tarn; and on 10th December 1932 491 two year olds were further transferred to the tarn from the ponds.

On 21st September 1932 all the six month old fish in the ponds were counted and graded, 2,977 being the total reared out of the 20,000 ova laid down in January 1932.

Any member having a silver wire loop on the dorsal fin to make a report to the Keeper Hunt or to the fishing secretary giving particulars as to weight and size."

The results of this survey seem to have been lost. Fortunately the analysis of the economics of the fish hatchery 1930 to 1932 have survived.

| <u>Year 1930</u> | | | | |
|------------------------------|------------|----------|-----------------------|----------|
| Fish put into River and Tarn | | | Expenditure | |
| Yearlings | 997 at £18 | 17-19-0 | 20,000 OVA | 18- 0- 0 |
| Two year olds | 676 at £40 | 27- 0 -0 | Fish Food | 8-11-3 |
| | | | Hunts Sundry Expenses | 5- 4 - 5 |
| | | | Other Sundry Expenses | 5- 9- 3 |
| | | | Rent | 5- 0- 0 |
| | | | Miss Hunts Wages | 10-2- 6 |

| | | |
|-------------------|---------|---------|
| | £45-0-0 | £52-7-5 |
| Plus carriage say | £5-0-0 | |

Year 1931

| Fish put into River and Tarn | | | Expenditure | |
|------------------------------|-------------------|-----------|-----------------------|-----------|
| Yearlings | 1984 at £18 | £35-14-0 | 20,000 OVA | 18- 0- 0 |
| Two year olds | 526 at £40 | £23- 2- 0 | Fish Food | 9-14- 0 |
| | | | Hunts Sundry Expenses | 2-17- 3 |
| | | | Other do. do. | 3-19- 3 |
| | | | Rent | 5- 0- 0 |
| | | | Miss Hunts wages | 9-15- 0 |
| | | £58-16-0 | | £49- 5- 6 |
| | Plus carriage say | £5-0-0 | | |

Year 1932

| Fish put into River and Tarn | | | Expenditure | |
|------------------------------|--------------|-----------|-----------------------|----------|
| Yearlings | 1,229 at £18 | £22- 2- 6 | 20,000 OVA | 12-10- 0 |
| Two year olds | 912 at £40 | £36- 9- 7 | Fish Food | 10-14- 6 |
| | | | Hunts Sundry expenses | 3- 5-11 |
| | | | Other do. do. | 2-18-11 |
| | | | Rent | 5- 0- 0 |
| | | | Miss Hunts Wages | 9-16- 0 |
| | | £58-12- 1 | | £44-4-4 |
| Plus carriage say | | £5- 0- 0 | | |

Average for the three years of product from the hatchery £53-5-0 plus carriage £5-0-0.

Average yearly expenditure £48-12-5.

The lowest quotation for fish was for yearlings was £12 pounds per thousand and for two year olds:- £36-1-6 This reduced the average price of buying in fish to £42-1-9 plus £5 carriage.

This meant that there was little difference in cost between buying fish of the correct age and hatching and rearing at Bransghyll and if a part of Hunt's wages were taken into account it must have been cheaper to buy in fish. The original objective of the Manchester Anglers' was to breed and promote the indigenous wild fish; but as the years rolled by they first introduced fish from the Wharfe and then from other sources such as Loch Leven. By the 1930s all the ova came from Howietoun and it can be wondered whether at this stage of the life in the Ribble there remained any blood lines of the original wild stock.

The actual quotations for live trout in 1932 were as follows:-

Howietoun £30 per thousand for yearlings. £42-15-0 per 500 for two year olds.

Ribble Conservancy Board £15 per thousand for yearlings. No price for two year olds.

Welham Park Hatchery £21 per thousand for yearlings £23 per 500 for two year olds.

From all this data Wilfred Barnes proposed that the hatchery should cease the production of fry from ova and instead buy in six month old troutlets. His costing chart was as follows:--

Proposed

| <u>Results we should get</u> | | | <u>Expenditure</u> | |
|------------------------------|--------------|----------|--------------------------------|----------|
| Yearlings | 4,000 at £18 | £72-0-0 | 6,000 Six month olds | 24- 0- 0 |
| Two year olds | 750 at £40 | £30-0-0 | Fish food for six months (say) | 9- 0- 0 |
| | | | Hunts Sundry Expenses (say) | 3-10- 0 |
| | | | Other do. do. | 4- 0- 0 |
| | | | Rent | 5- 0- 0 |
| | | £102-0-0 | | £45-10-0 |
| Plus Carriage say | | £5-0-0 | | |

With the lowest quotations for fish at £12 per thousand for yearlings and £23 per 500 for two year olds the output results would drop to £75-1-10, still a much more economic figure than hatching fish from ova.

The Councils Report for 1933 gave no hint of these thoughts and calculations. It did, however, set out a part the Club's policy as follows:- "Mr. Wilfred Barnes continues to represent this Association on the Ribble Board; and a strong opposition he has raised against the proposal to erect Salmon Passes at the Langcliffe Weirs has the full approval of your Council."

The report for the Fishing Committee for the season 1933 records that there were very few fishing days on the Ribble for with the exception of about three floods the River was low for practically the whole season, The total number of fish taken from the river was only 612 and was the lowest ever recorded. It appears it was not for want of trying, since 582 days were recorded as having been fished by members.

The Report goes on to say:-

"The fishing on the tarn has had a good run this season owing to the river being so low; consequently more members than usual have fished it. Although the conditions have not been ideal (the water being very low and clear) the total number of fish taken of 202 is up to average. Most of the fish taken were from half a pound to one and a quarter pounds all in good condition. The best fish was two pounds and two ounces."

"At the hatchery 20,000 Howietoun ova were laid down in January 1933; and on March 25th 1933 2,802 yearlings were counted out of the ponds as compared with 1,929 the previous year. These were distributed as follows:-1,352 to the Ribble, 759 to the Lune, and the remaining 700 replaced in the ponds as stock for two year olds in February 1934."

"On March 11th 1933 124 two year olds were transferred to the tarn and on November 4th 1933 270 two year olds were also transferred to the tarn from the ponds."

"On November 11th 1933 all the six month old fish in the ponds were counted and graded, 6,863 being the total reared out of the 20,000 ova laid down in January 1933 against 2,977 the previous year." This was a record number reared, more than double anything achieved before and

in truth it put a cart and horse through all the calculations made during the year. It is interesting to note that this fine out turn from the hatchery was not commented on in the report.

The Report 1933 continues:-“In the river, above New Bridge Inn, several more weirs have been completed by the kind generosity of our President Mr. J. W. Sutcliffe who has very kindly defrayed the cost of constructing them.”

The report of the Fishing Committee for the 1934 Season after summarising mixed weather conditions from several low waters to floods continues:-- “Although the river has fished better than last season, the conditions have been far from ideal; the total number of fish taken was 1,170 with two fish of one and a quarter pounds being reported”

“The fishing on the tarn has again been very good, and many happy evenings have been spent by our members thereon. No fish over a pound and a quarter in weight were reported, but the total number of fish, 452, is an easy record for the tarn.”

“No ova were put down at the hatchery this year, but instead the ponds were stocked on September 25th 1934 with 6,000 six months old trout, which will remain in the ponds until September 1935 when they will be eighteen months old. These then will be turned into the river with the exception say of 700/1,000 to be kept in the pond for another six months as two year olds for stocking the tarn.”

“On February 25th 1934, 422 two year olds were put into the tarn and on March 2nd 1934, 55 large yearlings, four to six inches long, were also put in the tarn, On August 27th 1934, 1,648 seventeen months old trout were counted out of the ponds at the hatchery and distributed as follows:-- 1,048 to the Ribble, 100 to the tarn and 500 to the Lune.”

Not surprisingly the extra stocking of the tarn in the previous two years showed a benefit in the number of fish taken, but it seems to have affected the number of larger fish brought to the net. Wilfred Barnes obviously got his way about what he thought to be the most economical method of raising trout, for the actual hatching of ova was discontinued. Instead well grown fry were brought in. This change of policy, on paper at least, was introduced on a low key.

The report of the Fishing Committee for the 1935 Season as usual gave an account of mixed water levels on the river during the fishing season and 1,040 fish were reported as being taken. The largest weighing twenty eight ounces and several others of one and a quarter pounds were reported.

The report continues:-

“The tarn has again fished very well and although the number caught is slightly down, viz., 417, we are very well satisfied. No fish over a pound and a quarter has been reported as taken. Taken on the whole, both the river and the tarn have fished very well and with our present stocking we can confidently look forward to better results in the future.”

At the hatchery the ponds were again stocked on October 16th 1935 with 6,000 six months old trout, to be kept there until September 1936 when they will be eighteen months old and ready for distribution to the river and tarn.”

"Extensive improvements have been carried out at the hatchery with a view to obtaining better results. Up to the present the undertaking has proved successful, and we have every confidence that we shall get much better results than have ever been obtained before. Our keeper has worked hard to carry out the scheme and he is highly pleased with its workings so far."

What these "improvements" were is unclear but the Accounts for 1935 say "heavy expenditure on structural improvements to the hatchery have resulted in a bank overdraft. As this capital expenditure is likely to greatly increase output and to improve the fishing, the following members have very generously given or promised donations towards the hatchery fund." A list follows of members who had donated £33-7-6. By the end of 1936 the total donations to the hatchery fund had become £41-7-6. It was stated that the total cost for the structural improvements was £71-7-6 a very considerable sum in those days. How the money was spent can only be left to the imagination. Quite soon after further monies were required to concrete the sides and bottoms of three of the main ponds.

The 1935 report goes on to say:-

"On January 12th 1935, 640 twenty one months old fish were put in the tarn and on June 13th 1935, 955 fifteen months old fish were also put in the tarn, making 1,595 in all. (!!!!!) On April 13th 1935 446 yearlings, and July 29th 1935, 500 yearlings were put in the Ribble, making 946 in all. On July 29th 1935, 500 yearlings were put in the Lune. From these statistics it looks as if about 3,500 to 4,000 trout were raised to maturity from the 6,000 six month old fish bought in. This is rather lower than the projections made in 1933 but it still provided far more fish in 1935 than the Committee really knew what to do with.

The Fishing Committee's report for 1936 said that the river had been low in the early part of the season and that sport had improved during the summer months and the total number of fish taken was 1,049. The largest fish weighed 23 ounces taken on a fly in March.

The report went on to say:-

"The tarn has again kept up its reputation with 449 fish being taken."

"At the hatchery the ponds were stocked on November 18th 1936 with 6,000 six month old trout, to be kept there until March and September, 1937 ready for distribution to the river and tarn. The improvements at the hatchery have proved very satisfactory, and we have every confidence that the results there from will continue.

"On April 11th 1936, 1,182 yearlings, and on May 31st 1936, 500 yearlings were put in the Ribble. On October 2nd 1936, 382 eighteen month old trout were also put into the Ribble making a total of 2,064 in all."

"On October 2nd 1,009 eighteen year old trout were put in the tarn. The Lune was restocked with 614 yearlings on April 11th 1936. This is the best restocking we have ever had and it should help materially to improve our fishing."

In 1937, 938 fish were taken from the river and in a reverse of the conditions the year before most fish were caught in the spring months with July, August and September yielding few fish.

Despite the "excess" stocking of the tarn a reduced number of fish were taken namely 358.

The hatcheries were stocked with 6,000 six month old trout in September 1937. The fish from the last years purchase of 6,000 six month olds in November 1936 were sorted and graded and counted and found to number over four thousand. The river and tarn were replenished with fish from these and from the two year olds retained from the year before.

The Council in its report for 1938 under the heading of Keepers stated:-- "It is with very great regret that the death of Keeper Hunt is recorded. Hunt had been with the Association for over 45 years and the Council wish to place on record their appreciation of his many years of service and to extend to his widow and family their sincere sympathy in their bereavement. The Council have appointed Mr. W. Pollard of Billy Garth, Horton in Ribblesdale, as his successor."

The Fishing Committee's report for the fishing season 1938 saw the weather conditions variable with neither too many floods nor droughts. The total number of fish taken was 1,010 with the largest weighing in at one and a quarter pounds. The committee continued:-- "The tarn again yielded good sport, 361 fish being taken, the largest fish reported was one and a quarter pounds."

"At the hatchery the ponds were stocked on November 23rd with 6,000 eight month old trout which will be kept there until August 1939, and August 1940, when they will be 17 months old and 29 months old respectively and be ready for distribution to the river and the tarn. The ponds at the hatchery are working very satisfactorily and the stock of fish there is in good condition."

"On April 16th 1938, all the yearlings were counted and graded, resulting in a total of 3,950 out of 6,000 six-months old fish put down in September 1937. This was not quite so good as last year. The sides of three ponds consist only of earth and it is thought that there may be leakage due to holes in them. The council have therefore decided to concrete the sides of these ponds, and propose to deal with one pond as soon as possible."

"On October 15th 1938, the Ribble was re-stocked with 1647 eighteen month old trout and the tarn with 481 two and a half year old trout."

The Report of the Fishing Committee for season 1939 again showed variable weather during the season with April, July and August yielding the most fish. "The declaration of war during the first week of September practically put an end to angling and the total catch for the month was only twelve fish. The total taken for the season was 737 and the heaviest fish taken weighed one pound seven ounces; there were also several other fish taken at a pound and many at three quarters of a pound were also creeled."

The report for 1939 continues:--"The fishing on the tarn has been but moderate, 287 fish being taken. The largest fish reported was seventeen ounces---a number of this size being taken."

"At the hatchery the work of concreting the sides and ends of the three ponds was commenced in May and completed by the end of October, consequently the sides and ends of all our ponds are now concrete. They are all working very satisfactorily and should do us good service in the future. On November 9th the ponds were stocked with 6,000 six month old trout, from Dunsop (Bridge) trout farm, Whitewell, which will be kept there until they are eighteen months, and two and a half years old respectively and ready for distribution to the river and the tarn."

"The Ribble was restocked on April 16th 1939 with 1,350 large yearlings (put in at Selside) and on May 6th 1939, with 925 ditto (put in at New Inn Bridge) a total of 2,275. The tarn was restocked on May 6th with 290 two year olds.

"The Committee hope that in spite of the war, members will be able to visit Horton occasionally and enjoy a day's fishing, and do their utmost to see our Association through these troublesome times. May the sun soon shine again for all of us."

The Council in its report for 1940 said:-- "There are vacancies on both Ribble and Lune fisheries and the Council request the efforts in all members to introduce friends to swell our ranks. We wish to emerge from the present chaotic state strong and ready to go forward to even better times, leaving behind these some what darker days, that, to say the least of it, hamper our activities."

The report of the Ribble Fishery Committee for 1940 reported that there was good water in March and April, but May and June were very dry with no fish taken at all in June. For the rest of the season several good fishing waters were in evidence. The season's take was 418 with several fish at a pound in weight. The tarn again fished fairly well with 239 fish taken with several fish around one and a quarter pounds in weight being taken.

The season 1940 report goes on to say:-

"The war and the long spells of very dry weather no doubt accounts for the small number of fish taken from the River and Tarn. Quite a number of our members have joined the Forces and consequently have not been able to visit Horton, whilst others who have been able to fish have had to curtail their visits owing to lack of petrol and leisure."

"On October 24th 1940, the ponds at the hatchery were stocked with 2,000 six month old trout from Dunsop Trout Farm, which will be kept there until they are eighteen months old, and two and a half years old respectively and ready for distribution to River and Tarn. The Ribble was restocked in September and October with 1,102 eighteen month old trout and the tarn with 326 two and a half year old trout."

"The Committee hope that in spite of the war, members will be able to visit Horton occasionally and enjoy a day's sport and do their utmost to see our Association through these troubled times."

The Fishing Committee's report for the 1941 season relates that there had been mixed levels of water during the season and that 505 fish had been taken from the river. The tarn did not yield as many fish as usual but the size of fish was larger. Of the 130 fish taken quite number weighed between one pound and one and three quarters pounds and the heaviest weighed in at two pounds.

The report goes on to say:-

"Owing to the continuation of the war, fewer members than ever have visited Horton, and this, coupled with a very dry season, is no doubt responsible for the number of fish taken being so low."

“On November 5th 1941, the ponds at the hatchery were stocked with 2,000 nine month old trout, from Howietoun Fisheries, which will be kept there until twenty one and thirty three months old respectively. The Ribble was restocked on October 22nd 1941 with 300 yearlings. There were no fish put in the tarn during the year.”

The Fishing Committee reported for the 1942 season that 723 fish had been taken out of the river the best being one of twenty ounces and the next best weighed eighteen ounces. As ever fishing conditions were mixed.

The 1942 report goes on to say:-

“The number of fish taken from the tarn this season was negligible, due no doubt to the inability of members to go there by car. Only 14 fish were taken during the season, but the size of the fish has increased very much. The best fish were two at 1½lbs, one 2¼lbs, one 2½lbs, one 2¾lbs, and one at 3lbs. Taken as a whole (in spite of the war) the season has been a fairly good one and quite a few members have been able to spend a few quiet and happy days at Horton.”

“The Ribble was restocked in October, 1942, with 750 twenty one month old fish and the tarn was also restocked with 450 fish of the same age but of a larger size.”

This meant that there were only a few hundred fish left in the hatchery. The report of the 1943 season said that no stocking took place at all during the year it also stated that it was intended to put 200 three year old fish in the river at the beginning of the following season 1944. The report for 1944 does not mention this, saying “No stocking has been carried out on the river in 1944 but 279 two year olds were put in the tarn on September 11th 1944” Perhaps these were the last fish to be reared at the Horton Hatcheries.

It was also announced that from the start of the 1943 season the fishing on New Houses Tarn would become fly only.

The report from the Council for 1943 season (made end of March 1944) includes this statement:-

“Whilst the financial affairs of the Association are in a very good position, members are reminded that in post war days much work will be necessary in the nature of repairs and renewals. It has been considered inadvisable, if not impossible, to execute much of this during the last few seasons, because of the shortage of labour and the divergence (sic) of materials to more important uses.”

The Fishing Committee reported that for the 1943 season 796 fish were taken from the river with the water in good ply most of the time. The number of fish taken from the tarn was only 43, due no doubt to so few members fishing there. Quite a number of good fish, however, were taken out of the tarn. One at 2¾ lbs, five of 2¼lbs, three of 2lbs, and one of 1½lbs.

The report goes on to say:-- “No restocking has been carried out either at the tarn or the river, but we have about 200 three year old fish at the hatchery which will be transferred into the river early in 1944.”

The report of the Fishing Committee for 1944 season related that 571 fish were taken from the river during the season. The best fish was one pound and seven ounces; another weighed one and a quarter pounds. The number of fish taken from the tarn was again very low viz :- 22/ The

best fish recorded were four pounds two ounces, Three pounds twelve ounces, three pounds nine ounces, three pounds eight ounces, three pounds four ounces, three pounds one ounce, two pounds six ounces (these were all taken the first week in July) as well as several from a pound to a pound and three quarters.

The 1944 (made in early 1945) report also says "No restocking has been carried out on the river, but 279 two year olds were put in the tarn on September 11th 1944, and a good consignment of yearlings has been ordered for 1945 delivery."

This consignment turned out to be 1,200 five to six inch trout which were delivered 4th June 1945 a thousand were put in the river and the remaining 200 into the tarn.

Over a year later, on October 1st 1946, 100 7/8 inch fish and 400 5/6 inch fish were put in the tarn. No fish were put in the river that year. The decision had been made to abandon the hatchery.

A document still exists entitled "Post war financial estimates" The annual expenditure was expected to be, without stocking, £526 and with the annual fees at five guineas for the Ribble and eight guineas for the Lune the total income of £412 was just not enough. It was suggested that the fees had to go up and for the 1947 season the respective fees for Ribble and Lune were increased to seven and eleven guineas per member. This brought in £615 (assuming full membership), which left a kitty of nearly £90 for restocking. There was a further complication in that the club was in the midst of buying up fishing rights rather than paying rent on the upper Ribble. It was thus necessary to make some sort of profit each season to cover the costs of purchase. The actual purchases were done via a holding company with shares. Members bought and held these shares and it was this money that bought the fishing rights for the Holding Company. It was the intention of the club to buy in these shares as they became available and as and when they had the money.

These "Financial Estimates" show various estimates for Stocking:-

(the least we should do- Using Hatchery)

| | | |
|-------------------------|------------------------------|--------------------|
| 300 three to four inch | For Mr. Knowles (Stainforth) | 6- 8- 6 |
| 1,000 four to five inch | Put in ponds for 11 months | 45-15-0 |
| 300 five to six inch | Put direct in Lune | 12-12-0 |
| Carriage | | 6- 0-0 |
| | | Total £70 15s. 6d. |

(What we ought to do—Using Hatchery)

| | | |
|-------------------------|----------------------------|--------------------|
| 300 three to four inch | For Mr. Knowles | 6- 8-6 |
| 1,800 four to five inch | Put in ponds for 11 months | 54-18-0 |
| 400 five to six inch | Put direct in Lune | 16- 7-6 |
| Carriage | | 6- 0-0 |
| | | Total £83 14s. 0d. |

(What we could do **Not** using Hatchery)

| | | |
|------------------------|-------------|--------|
| 300 three to four inch | Mr. Knowles | 6- 8-6 |
|------------------------|-------------|--------|

| | |
|---|---------------------|
| 1,200 five to six inch Put direct in Ribble | 48- 0-0 |
| 400 five to six inch Put directly in Lune | 16- 7-6 |
| 300 eight to nine inch Put directly in tarn (two year olds) | 31-16-0 |
| Carriage | 6- 0-0 |
| | Total £108 12s. 0d. |

(what we could do **Not** using hatchery)

| | |
|---|--------------------|
| 300 three to four inch For Mr. Knowles | 6- 8-6 |
| 1,000 five to six inch Put direct in Ribble | 48- 0-0 |
| 300 five to six inch Put direct in Lune | 16- 7-6 |
| 250 eight to nine inch Put direct in Tarn | 31-16-0 |
| Carriage | 6- 0-0 |
| | Total £85 10s. 6d. |

The last fish put in the hatchery were in 1941 and the last few were taken to the tarn in 1944. When the decision whether the hatchery was to be opened again after the war money was in short supply to the club. By 1946 the hatcheries, once again, needed considerable repairs the covers over the ponds having, again, become dilapidated and a lot of money was going to have to be spent in getting the enterprise back into tip top condition. It was well known that there was a further cost to the hatchery that did not occur in any accounts. That was the amount of effort and labour put in to feed the fish every day and top of this was the sorting and grading. Further more the out put from the hatchery was erratic and unreliable. Some years there were so many fish that it was not known where to put them (such as 1936 when 1009 fish were put in the tarn) and other years it was famine with not enough fish of the right sort to go round. The figures from the "Financial Estimates" showed that for very little difference in money the club could buy the size of fish they wanted at very little cost difference and it also gave the option of reducing costs in financially lean years by reducing purchases. The decision was taken to close the hatchery for the foreseeable future and buy in fish to stock directly.

In a way the decision had been taken already for in 1945 the Club had bought 1,200 trout for direct stocking and some further fish (500) had been bought for the tarn in 1946. This was followed by another 950 fish bought for 1947 season and in 1948 no stocking was done at all. This made the cost of buying fish much less than had been budgeted for in the financial estimates and this lack of spending no doubt helped the Clubs finances at a tricky time after the war.

Not that buying fish in for direct stocking was all plain sailing. There were two main scenarios. The first one was that the hatchery could be approached to find out what fish they had for sale. Using this information the season's stocking plans could be formulated. It was no use asking for two year old fish for the tarn if the hatchery had only yearlings or three year olds. That perhaps explains the stocking of 1945. The second plan was to set up a relationship with the hatchery and tell them, say, that next year a certain number of two year olds were required and could they be reserved for the Club. This did not always work because, as at the hatchery at Horton, there may have been some inexplicable extra mortality and a reduced number was all the hatchery could provide. It has to be remembered that this was just after the war and most things were very "tight". I remember my "Uncle Cliff", J. Clifford Sutcliffe Hon. Secretary to the Manchester Anglers, inveigling my father to take him, by car, to Mercaston Near Derby (Uncle Cliff did not have a car at that time, neither could he drive), there they would be taking "gifts" to persuade Mr. Leeny the proprietor of the Hatchery to part with a few fish. Even later when the

affiliations of the Manchester Anglers, moved to Dunsop Bridge Hatchery it was never sure, quite what fish were going to be delivered even though they had been ordered a year before.

The Bransghyll hatchery had been run for the first twenty years as a "Victorian ideal". No real interest was taken in the out turn once the ova were hatched and the cost did not come into the equation. It was only during the depression of the late 1920s and the 1930s that Wilfred Barnes a hard and successful businessman started to ask questions. The answers he got he did not like. Even though the hatching of the ova was near a hundred percent, the surviving fry after six months were only five percent of their starting total. He changed things so that the production was at least doubled but he knew that the Horton Hatchery out put was woefully below that of more professional set ups. He always worried about the quality the water coming out of Bransghyll, especially at flood times and was fairly sure that either the acidity or small suspended particles were affecting the growth of the fry. No doubt he was relieved, when the decision was made after the war to close a very inefficient enterprise.

The hatchery became overgrown and the fencing dilapidated. From time to time a lamb would get trapped in a pond having clambered over the fence from the adjacent Tommy Meadow. The farmer Frank Campbell always claimed it was his best tup lamb that had met its death in the empty pond and as these lambs were his prize winning Dales Bred, that were winning all the open classes at the Yorkshire Show etc., his claims for compensation were always high. The then Fishing Secretary was a friend of Frank, but that did not seem to ease the negotiations. In the end the Manchester Angler's Council sold back this small parcel of land to Frank Campbell. It had originally been bought from the Misses Hammond of Arncliffe,

Post script by Ian Fleming, MAA Keeper (February 2006)

In the summer of 2005 the local Environment Agency Fisheries Technical Officer, Neil Handy of Stainforth, approached the Association's keeper, Ian Fleming, with a proposal to explore the possibility of refurbishing and reopening the hatchery ponds to serve as a habitat for native white clawed crayfish and other riverine invertebrates.

These native crayfish had been absent from the river for some years having succumbed to crayfish plague.

This approach coincided with a shift in the way in which the Association proposed to manage its waters. For some 60 years farmed brown trout had been put into the river annually in varying numbers and sizes and the Association now wished to move to a more sustainable approach by concentrating on the conservation and development of habitat along the river to increase its potential to hold native brown trout.

As a consequence it was decided to look at the option of experimenting with the breeding of native Ribble trout and use at least one of the hatchery ponds as a refuge for maturing fish.

Agreement was reached with the owner of Jackie meadow, Chris Sutcliffe of Holm Farm, Horton, to use the hatchery site and carry out such works as would be necessary to bring the ponds back into use.

Work was scheduled to commence in spring 2006 so, after 60 derelict years, the once renowned Horton Hatchery may once again be producing native Ribble trout.





Further post script by Ian Fleming MAA Keeper (July 2012)

The refurbishment work was duly completed in 2006/7 thanks to the generosity of Chris and Steven Sutcliffe who made the land available and the hard graft of Phil Sutcliffe who carried out the work. The hatchery was returned to water and allowed to naturalise. The aim was to encourage spawning trout to find the off-line spawning channel shown above and use it to breed. It was hoped that the resulting fry would drop down into the larger of the two ponds where they could grow on naturally before making their way out of the outflow into Bransghyll beck. Some evidence suggested that this aim had been partly met as fish had been seen in both the large and small ponds, but it was also evident that the site had potential far beyond the use to which it was being put.

The smaller pond was used very successfully by PBA Applied Ecology as a native crayfish refuge and held creatures from rescue projects as far afield as Sheffield and Cheshire.

In July 2012 a meeting between MAA and Settle Anglers was held at the Tarn lodge to discuss further investment in the site to increase fish breeding potential.