



***THOMAS
GARNETT***

***ESSAYS
IN NATURAL
HISTORY AND
AGRICULTURE***

Thomas Garnett

Essays in Natural History and Agriculture

EAN 8596547359715

DigiCat, 2022

Contact: DigiCat@okpublishing.info



Table of Contents

[Cover](#)

[Titlepage](#)

[Text](#)

FACTS AND OBSERVATIONS ON THE SALMON.

* * * * *

FACTS AND OBSERVATIONS ON THE SALMON.

In the following observations I intend to offer some remarks on the various migratory fish of the *genus Salmo*; and then some facts and opinions which tend to show the importance of some change in the laws which are now in force regarding them.

We have first the Salmon; which, in the Ribble, varies in weight from five to thirty pounds. We never see the fish here before May, and then very rarely; a few come in June, July, and August if there are high floods in the river, and about the latter end of September they become tolerably abundant; as the fisheries near the mouth of the river have then ceased for the season, and the Salmon run very freely up the river from that time to the middle or end of December. They begin to spawn at the latter end of October, but the greater part of those that spawn here do so in December. I believe nearer the source of the river they are earlier, but many fish are seen on the spawning beds in January; and I have even seen a pair so late as March; but this last is of very rare occurrence.

Some of the male Kipper (Kelts) come down in December and January, but the greater part of the females remain in the river until April, and they are occasionally seen herding with shoals of Smolts in May. In this state they will take a worm very readily, and are, many of them, caught with the fly in the deeps; but they are unfit to eat, the flesh being white, loose, and insipid; although they have lost the red dingy appearance which they had when about to spawn,

and are almost as bright as the fresh fish, their large heads and lank bodies render it sufficiently easy to distinguish them from fish which are only ascending the river, even if the latter were plentiful at this season; but this is unfortunately not the case.

Secondly, we have the Mort. I am not sure whether this fish is what is called the Grilse in Scotland, or whether it is the Sea Trout of that country; it is a handsome fish, weighing from one and a half to three pounds. We first see Morts in June; from that time to the end of September they are plentiful in favourable seasons in the Hodder, a tributary stream of the Ribble, although they are never very numerous in the Ribble above the mouth of that stream. It is the opinion of the fishermen here that this is a distinct species; my own opinion is, that it is a young Salmon, and yet, if I were called upon to give reasons for thinking so, I could not offer any very conclusive ones: the best I have is, that there is no perceptible difference in the fry when going down to sea. It may be said, How do you know that one of the three or four varieties of Smolts which you describe further on, is not the fry of the Mort? To this objection, if made, I say that these varieties exist in the Wharfe, where, owing either to natural or artificial causes, there is never either a Mort or a Sprod (Whitling?) seen.

Thirdly, we have the Sprod, which is, I believe, synonymous with the Whitling, Whiting, or Birling of Scotland. It is a beautiful fish of six or eight ounces in weight, and has more the appearance of the Salmon than the Mort; it seldom ascends the river before July, and, like the Mort, is far more abundant in the Hodder than in the Ribble; this fish sometimes rises pretty freely at the fly, and when it does so, makes a very handsome addition to the angler's basket, but at other times it is difficult to hook, because of its shyness. It disappears in a great measure about September.

Fourthly, we have the Pink, or Par, which is found of two or three sizes in the Ribble; the largest are all males, and in October the milt in them is large; they are small fishes, ranging in weight from about one to three ounces each, and it is well remarked by the author of that delightful book "Wild Sports of the West," they have very much the appearance of Hybrids between the Salmon and the Trout; they rise very freely at the fly and maggot, from July to October, and afford good sport to the angler who is satisfied with catching small fish. I trust I shall be able in the following pages to give some information respecting this fish which will assist in dispelling the mystery in which its natural history has been enveloped.

I will now mention a few of the opinions respecting the various species of the Salmon, and also my own, when they are at variance with the generally received ones, and give the facts and reasonings which have induced me to form those opinions, and I shall be very glad, if I am in error on any of these points, if some one of my readers, better acquainted with the subject than I am, will take the trouble to set me right. It seems to be the opinion of many, indeed of most persons, that the Salmon spawns from November to February, that the young fry, or Smolts, go down to the sea in the April or May following; my own opinion is that they stay in the river much longer. The Grilse is by many believed to be a distinct species, whilst others stoutly maintain that it is a young Salmon.

The testimony of the witnesses from the Severn, the Wye, the Lee, near Cork, and the Ness (see the evidence given before the Select Committees of the House of Commons in 1824 and 1825), would lead one to suppose that the fish were in best season from November to March, whilst the evidence of the witnesses from other parts of the kingdom

goes to prove that this is the very worst period for catching them.

One maintains that each river has its own variety of fish, which can be distinguished from the fish of any other river; another contends that there is no such difference; a third states that stake nets are exceedingly injurious to the breed of the fish; and a fourth attests that stake nets only catch the fish when they are in the best season, that neither Kelt nor fry are taken in them, and that if they were prohibited it would only be preserving the fish for the grampuses and seals;—in short, the evidence regarding both their habits, and the best mode of catching them, having in view the preservation and increase of the breed, is so completely contradictory as to leave a doubt in the mind of every one who reads it, and has no other means of forming an opinion. I will endeavour to show in some instances which of the testimonies is correct, and it will be for my readers to judge how far I succeed, and I hope they will be so obliging as to correct any error into which I may fall.

First.—It is my opinion that the fry of Salmon are much older when they leave the river than seems to be generally supposed, and that the growth of this fish is by no means so rapid as it is considered to be by those who have written upon the subject. For several years previous to 1816 the Salmon were unable to ascend into the upper parts of the river Wharfe, being prevented either by the high weirs in the lower parts, or by some other cause, and of course there were no Smolts or Par; but in that year either the incessant rains of that summer or rumours of the formation of an association for the protection of fish, or some other unknown cause, enabled some Salmon to ascend the river, thirty or forty miles, and to spawn there. In the next spring, 1817, there were no Smolts, but about September they began to rise at the very small flies which the anglers use in

that river—they were then a little larger than Minnows. In the spring of 1818 there were blue Smolts, or what are generally known as Salmon fry, which went down to the sea in the May of that year; but these were only part of the brood, the females only, the males remaining all that summer, being at the period when the females went down very much smaller than they, and what was called at the Wharfe Grey Smolt and Pinks, or Par elsewhere.

I have shown that there were two migrations from the spawn of 1816; but this was not all—there still remained a few Smolts through the summer of 1819, which by that time were from four to six ounces in weight, and which are known by the anglers there as Brambling Smolts. The blue marks on their sides are very distinct, and the fish is a perfect Smolt, except that it is considerably larger. It is quite different from the Whitling, or Sprod, which is not known in the Wharfe, at least not in the upper parts of that river, whilst the Brambling is never seen in the Ribble. [1]

The Brambling is a beautiful fish, and it rises very freely both at the May fly and the artificial fly through the summer; it is occasionally caught by anglers with the worm on the Salmon spawning beds in the autumn, with the milt perfectly developed, and in a fluid state. Although this fish is not found in the Ribble, so far as my observations and inquiries have gone, I believe that it is found in the Tweed, and perhaps also in other rivers running into the German Ocean; for a letter addressed to Mr. Kennedy, who was chairman of the select committee appointed to investigate this subject, by a Mr. George Houy, states that the Smolts are sometimes found there ten inches long, which he attributes to their not being able to get down at the proper period for want of a flood in the river. But I know that in the Ribble Smolts will go down to the sea without there being a flood at all, if that does not come within ten days or a

fortnight of the time at which they usually descend to the sea. I also know that Brambling are found in the Wharfe, in years where there has been no deficiency in that respect; yet why they should be common in that river, when they are never met with in the Ribble, which has ten times as many Salmon and Smolts in it, I am unable to comprehend.

It is my opinion that the ova of the Salmon are not hatched before March or April. Two anglers, who were in April wading in the river Wharfe, came upon a spawning bed, which they had the curiosity to examine; they found a number of ova, in which they could see the young fry already alive, and one of them took these eggs home with him. By regularly and frequently supplying them with fresh water, he succeeded in hatching them, and kept some of the young fishes alive for some time; but they died in consequence of neglect, and were even then very diminutive. The opinion generally received in Scotland seems to be, if I may judge from the evidence given before the House of Commons, that the Smolts go down to the sea in the spring after they are spawned, and that they return in the summer and autumn of the same year as Grilse. When they return, and what size they are on their first visit, I have hitherto been unable to ascertain; but I think I have succeeded in proving that they do not go to the sea so soon as is generally believed, nor do any of the witnesses give their reasons for thinking that they do. I should very much like to learn what evidence they have to offer in behalf of this opinion.

I remember seeing an article in the "Scotsman," perhaps about twelve months ago, in which it was stated that Dr. Knox had made some important discoveries in the natural history of the Salmon and Herring, both in their food and propagation, and, if I recollect aright, it stated that he had ascertained that the eggs remained several months in the gravel, and that then, in a few days or weeks after, they

(*i.e.* the fish hatched from them) were so much grown as to go down to the sea; but none of the data which enabled him to arrive at this conclusion were given, and since then I have heard nothing about the matter. As it is so long since I read this article, I may have quoted it incorrectly, but I believe its substance was what I have stated.

The only conclusive evidence I can find about the hatching of Salmon fry is that of Mr. George Hogarth (second Parl. Report, p. 92), and his account agrees with my own: he states that he took Salmon spawn from the spawning beds, and by keeping it freely supplied with fresh water, he succeeded in hatching some of the eggs; he gives drawings of the appearance of the fry in three or four different stages, from the egg to the age of eight days (see Appendix to second Parl. Report), that the young fry, by keeping them well supplied with fresh water, were very lively and vigorous for three weeks, but that they after this time appeared to grow languid and uneasy, and as they would eat nothing they died when one inch long. Unfortunately he does not state at what time of the year they were hatched, but if this were in March or April, which I see no reason to doubt, it is sufficient to prove that they would not reach the size that Smolts are when they leave the river for the sea; for supposing them to be hatched the last week in March, and that they lived a month, this would bring us to the time when they are about to migrate, at which time they average more than six inches long; many of them are eight inches, and at this period they are fond of feeding upon worms, flies, maggots, and caddis worms, as is known to every schoolboy living on the banks of a river frequented by Salmon. It is also my opinion that neither Salmon nor Trout spawn every year, [2] for Salmon ascend the river as early as January, in the highest condition, with roe in them no bigger than mustard seed: these could not have spawned that season, as the Kelts, particularly the females, do not

return to the sea until March or April, [3] and at that time they are in very bad condition, and do not appear to have a particle of spawn in them; and in the evidence of Mr. Mackenzie (see Parl. Rep., p. 21), we have an account of a Grilse Kelt which was caught and marked in March, 1823, and was again caught as a Salmon on its return to the river in March, 1824. In this case the fish had evidently required a residence of twelve months in the sea before it was in a condition to visit the river a second time, and in the Wharfe it is the constant practice of the angler to catch Trout through the winter with very minute roe in them, and in high condition with the worm and Salmon roe, and also with night lines. In fact, one of the fishermen has frequently remarked to me that he occasionally caught dishes of Trout with the fly in January, and in finer condition, than he has found them in April, which he accounted for by saying that the spawned fish (Kelts) of that season had not begun to rise freely at the fly at the former period, but they had at the latter, so that his pannier contained as many Kelts as fresh fish. Another reason has just occurred to me: it is, that in January the spawned fish will still be in the small brooks in which they are so fond of breeding, and of course the bulk of the fish remaining in the river at that time would be fish in good season.

As it is some years since I acquired this information, or at least a part of it, I felt afraid of giving it incorrectly; and I therefore addressed a letter to a friend living on the banks of the Wharfe, requesting him to send me all the information in his possession on this subject, that derived from his own observations, as well as that collected from others. He has since the above was written sent me the following reply:—"I have seen Robinson (one of the best anglers and fly makers between Cornwall and Caithness), and have had some conversation with him on the subject of Salmon, &c. He is of opinion that the spawn of the Salmon remains five months

in the gravel before hatching; he examined the spawn in April, and found the young fry alive in the eggs, and Ingham, another angler, took some home and kept one of the Smolts two or three months. I have subsequently seen Ingham, and he has given me the same account. All the fishermen here are of opinion that the female Smolts remain one year, and the males two years, before they go down to the sea. The Bramblings are supposed to be Smolts which remain a year longer than the usual time; they are few in number, and are generally taken with the May fly. I have no doubt that the above opinions are correct, for we have now three distinct sizes of Smolts in the river exclusive of Bramblings, the largest of which are nearly four ounces in weight, and are all males, as they contain milt in October and November. The next are the females of the present year: I have had one since the receipt of your letter, which weighed half an ounce and measured five inches in length; this was a real blue Smolt; the third are the males of the same age, and are much smaller; these are occasionally taken with the worm, and will rise at the fly all the next summer."

"We were for several years, but I do not know the dates, entirely without Salmon, and of course without Smolts; and we invariably found that the Smolts made their appearance the year after the Salmon, but were very small till the second year, when we had what we call blue Smolts, which disappeared in May or June; and what you called Pinks, which remained till the following year; and Brambling Smolts, which remained another year. The fishermen here are also of opinion that neither Salmon nor Trout spawn every year. Robinson says that one day lately (the letter is dated December 13th) he caught seven Trouts, six of which were in good season; and he brought me two the other day, one of which contained roe, and the other was in excellent condition." My friend states, in a subsequent

communication, that one of the fishermen had told him that he had caught the male Smolt (Par) more abundantly on the Salmon spawning beds than elsewhere, and my friend adds that the opinion there is, that if a female Salmon gets up to the spawning beds, and if no male accompanies her, yet her eggs are fecundated by the male Smolts; and they allege, in support of this opinion, that a female got up one season and spawned, and though no male was seen near her her eggs were prolific. I mention this, although I apprehend it is evidence which the unbeliever will consider inadmissible, for though no male was seen, still there may have been one, or admitting that one did spawn, without being accompanied by a male, yet another, which contrived to bring her mate along with her, may have spawned in the same place the same season; yet, notwithstanding its liability to these objections, I have no doubt myself that if a female were to come alone her eggs would be impregnated by the Par. It is an excellent maxim, that Nature makes no useless provisions; yet, if we admit that Par are young Salmon, for what purpose is the milt if not to impregnate Salmon roe? and if we deny this to be the fact, we must endeavour to show that there are female Par, but in all my examinations, I have never been able to meet with one that contained roe. That the Grilse are Salmon is proved I think sufficiently by the evidence given before the House of Commons. Mr. Wm. Stephens states (see Rep., p. 52) that he has known Grilse kept in a salt-water pond until they became Salmon, and that fry that had been marked came back that year as Grilse, and the year after as Salmon; and Mr. George Hogarth states that he has often seen a Salmon and a Grilse working together on the spawning beds, as two Salmon, or two Grilse; and Mr. Mackenzie states (page 21) that he, in March, 1823, marked a Grilse Kelt with brass wire, and caught it again in March, 1824, a Salmon of seven pounds weight. The testimony of the witnesses from the Ness, the Severn, the Lee, and some other rivers, is too positive and

too well supported to admit of any doubt as to the excellent condition of many of the fish ascending those rivers in November, December, and January—a period when they are out of season, and full of spawn generally, and even when many fish are caught in those rivers in the same unseasonable condition. The fact that there are many fish in fine season in those months may be, I think, accounted for, if we admit that Salmon spawn every other year, which I have I think shown to be very probable; but what it is that induces those fish to ascend rivers so many months before the spawning season, I cannot explain. Probably there may be some quality in the waters of these rivers, all the year, which is congenial to the habits of the fish, while the same quality may only be found during part of the year in others; it is certain that the quality of the waters in rivers generally varies very much with the season: thus the water of the Ribble, after a flood in summer, is always of a dark brown colour, being so coloured by the peat moss over which it passes, while in winter no such tinge can be observed; and there may be other differences with which we are unacquainted; however, whether this is the true reason or not, it certainly cannot be that the fish which spawn in October are impelled by their desire to propagate their species to ascend the river the January before; and if this long residence in fresh water were necessary for the proper development of the ova in one river, we might suppose it would be necessary in all; yet this is not the case, as the red fish which ascend the river in November and December have at that time the spawn in them nearly ready for exclusion.

On one point, about which there is great difference of opinion, viz. whether the fish which are bred in the river generally resort to it again, and whether each river has its own variety of fish, I am not a competent judge, as I am acquainted with too few rivers to pretend to decide. I may,

however, just remark that the Hodder, though it is a much smaller river than the Ribble, is always much better stocked with Salmon, Morts, Sprods, Smolts, and Par than is the latter river, which I attribute to the fact that more fish spawn in the river Hodder, which runs for many miles through the Forest of Bowland (the property of the Duke of Buccleuch) and other large estates, and the fish are much better protected there than in the Ribble, where, with one or two exceptions, the properties are very much divided, and few people think it worth their while to trouble themselves on the subject. Dr. Fleming, in his letter to Mr. Kennedy (Appendix to the first Rep., 1825), seems to doubt that Salmon enter rivers for any other purpose than of propagation, but lest I should misrepresent his opinions, I will quote what he has said on the subject:—"In the evidence taken before the Select Committee during the last season of Parliament, and appearing in the report, there are several statements of a somewhat imposing kind, which, as they appear to me to be erroneous and apt to mislead, I shall here take the liberty of opposing." He then enumerates several opinions expressed before the Select Committee, one of which is, that Salmon enter and leave rivers for other purposes than those connected with spawning (see the evidence of Messrs. Little, Halliday, and Johnstone).

First, "That they enter rivers to rid themselves of sea lice (*Monoculus piscinus*);" secondly, "That they forsake rivers to save themselves from being exhausted by residence in fresh water, and from having their gills devoured by a maggot (*Lernaea salmonea*)."
The whole history of the Salmon contradicts this hypothesis. Another of these errors is, that it is asserted (Rep., 1824, p. 145), "That Salmon always return to the same river;" this is not probable, when we consider the circumstances in which they are placed during their residence in the sea. On the first of these opinions, I am not a competent judge; but I think that the fact that Salmon

enter rivers nine or ten months before they are ready to spawn, is of itself sufficient to show that there are other reasons for their entering rivers than those connected with propagation. With respect to the second, I believe that after Salmon have once entered rivers, at least when they have ascended into the upper parts of them, they never offer to descend again until they have spawned. On the third opinion I would remark, that although I do not think that Salmon always come to the same river in which they were bred, yet I think they will do so if they can; and I think that the fact which I have mentioned of the Hodder, a smaller and a tributary stream to the Ribble, containing many more Salmon, as well as more Morts and Sprods, countenances this supposition, for why should the larger number of fish ascend the smaller river except for such a reason?

I am of opinion that Salmon do not grow so fast in the sea as is generally supposed. It is here generally believed that the Smolts, which go down in the spring, come up again in the August or September following, five or six pounds in weight; and George Little, Esq., in his evidence states that as his opinion, but he does not give any other reason for it than this: "That the Grilse that ascend the river in June weigh one and a half or two pounds, and that those which come in September weigh five or six pounds,"—but opposed to this supposition is the evidence of Mr. Mackenzie, before referred to (second Parl. Report, p. 21), who states that he caught in March a Grilse Kelt which weighed three and a half pounds, that he marked it with a brass wire, and let it go, and that in the March following he caught it again a Salmon of seven pounds weight. Now a fish which weighed three and a half pounds as a Kelt, would weigh five pounds or six pounds when in high condition the summer before, and if this were so, which I believe all persons who are acquainted with Salmon will admit, the fish would have gained only one pound or two pounds in fifteen or eighteen months. Besides,

if Salmon grew as fast as is stated and believed by many persons, the breeds of different years would vary very much in weight, whereas it is known to everybody that we have them of all sizes, from five pounds to forty pounds; and it is contrary to analogy to suppose that a fish which is two or three years in arriving at the weight of as many ounces, should in two or three months acquire as many pounds. There are, however, two or three things about which all persons agree in opinion—one of these is: that the breed of Salmon is decreasing every year, and that the great cause of this decrease is the want of protection, and a consequent destruction in the spawning season. The complaint on this head is universal from north to south; from the Shannon to the Tweed, the cry is—"Protect the breeding fish, or we shall very soon have none to protect." And yet, although the destruction of the spawning fish, and the destruction of the fry in the Spring, are the chief reasons for this alarming falling off, no one seems able to devise a remedy; no one seems inclined to make the necessary sacrifices for so desirable an object, and without these sacrifices it would be absurd to expect the fish to become plentiful; and instead of furnishing an abundant supply of cheap and wholesome food to all classes, which they certainly would do if the fisheries were properly regulated, they will either become wholly extinct, or so rare as to be found only at the tables of the wealthy. James Gillies, in his evidence, states that his brother had in one night killed in the Tweed four hundred Salmon at one landing-place in close time; and all the reports are full of statements showing how unceasing and universal is the persecution the Salmon undergo, not only when in season, but at all times, and most of all when every one should do his utmost to preserve them—I mean when they are spawning. In this neighbourhood the properties generally are so much divided, and so few good fish are allowed to ascend the river, that no one has any interest in protecting them in close time, and the consequence is, as

might be expected, that all sorts of contrivances for taking them are resorted to: they are speared and netted in the streams by day and night; they are caught with the fly, they are taken with switch hooks (large hooks fixed to the ends of staves), or with a triple hook fixed to the end of a running line and a salmon rod; if the river becomes low, parties of idle fellows go up each side of it in search of them, and by stoning the deeps, or dragging a horse's skull, or large bone of any kind through them, they compel the fish to *side*, and there they fall an easy prey, in most cases where the pool is of small extent. In a river so small as the Ribble, it will be readily believed that not many fish can deposit their spawn in safety, when practices of this kind are followed almost openly, and when no one feels a sufficient interest in the matter to put a stop to them. A single party of poachers killed four hundred Salmon in one spawning season near the source of the river; the roe of which, when potted, they sold for £20. Need we be surprised, then, if the breed decreases? The only wonder is that they have not been exterminated long ago.

I may perhaps be allowed to say what, in my opinion, would remedy this alarming destruction, particularly as no one hitherto seems to have devised an efficient preventive. I believe that in 1826 there was an Act of Parliament passed which either repealed or modified some of the old laws on the subject, and I have also understood that the good effects of this new law are already perceptible in Scotland, to which it is exclusively applied. There was a bill introduced into Parliament in 1825 which was intended to apply to the whole kingdom; but some of the clauses were so very objectionable, that if they had been carried they could not possibly have been enforced without stopping and ruining the manufactories which were carried on by water-power, and the bill was consequently abandoned. The first thing to be done is to give the proprietors on the upper part of the

river such an interest in the fisheries as will make them anxious about the preservation of the fish in the spawning season; and to accomplish so desirable an object no one ought to fish or keep a net stretched across a river for more than twelve hours each day, or from sunrise to sunset; and every mill-owner ought to be compelled to facilitate the passage of the fish over his weir by every means consistent with the proper supply of water to his wheels. At present the fisheries at the mouths and lower parts of rivers so completely prevent the access of the fish to the upper parts, that unless there happen to be high floods, which prevent the fishermen below from keeping their nets in, the upper proprietors comparatively seldom see any until the season is at an end. The evidence before the House of Commons on this point is exceedingly amusing. One person thinks the upper proprietors have no right to expect any fish, as they have never paid any consideration for them when they bought their estates; another states that he pays £7,000 a year to the Duke of Gordon, and that if he is compelled to observe a weekly (not a daily) close time, he will lose that proportion of his rent; another observes the weekly close time, and opens a passage for the fish, but places a crocodile, painted in very glaring colours, in the gap to frighten them back again; another says he observes the weekly close time in his cruive fishing, but no one is allowed to inspect the cruives; another sends men to break down the stake nets in the estuary, which reach from high to low water-mark, and at the same time stretches a net completely across the river from March to August, so that a fish cannot pass without his permission. No wonder that fish are scarce in the upper parts of the river, when such samples of *disinterestedness* are manifested by the proprietors of the fisheries below. No wonder that the upper proprietors should be careless about the protection of fish from which they are not allowed to derive any benefit. No wonder that they should connive at, and even encourage,

the shameful destruction of fish in close time, since that is the only time they are allowed to have any. Let the fishermen below make it worth the while of the upper proprietors to protect the fish, and they will receive that protection; but it is too much to expect from human nature that these proprietors will take all the odium and trouble of preserving them when others reap all the benefit. There ought to be conservators employed, to see that the fisheries are properly regulated, and these should be paid by an assessment on all the proprietors in proportion to the value of their fisheries.

I should also recommend an extension and uniformity of close time in all the rivers in the kingdom, for although it is an undoubted fact that some clean fish are caught in the river early in the season, yet they are comparatively few in number, and their capture involves that of a far greater number of spawning and Kelt fish, which are not only of no value for the table, but the destruction of which is in effect the destruction of millions of fish which would proceed from them. In the first Parl. Rep., p. 11, Mr. Walter Jamieson says, that in the river Tweed, from January 10th to February 1st, he caught one hundred and twenty-one fish, only one of which had spawned; from February 1st to March 1st he took forty-four fish, twenty-five of which had not spawned—fifteen were Kelts and four were clean fish; from March 1st to March 10th he took seventeen fish, seven of which had not spawned (four of them on the 10th)—six were Kelts and one clean fish. Now the close time varies in almost every river, and some have no close time at all; thus in the Ribble the close time begins on September 15th and ends on December 31st, and in the Hodder there is no legal close time; but there is no practical difference between them in this respect, every one thinking himself entitled to kill all the fish he can, at all times of the year, in both of them. The observance of the weekly close time, that is, opening a