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THE FISHERIES.

THE FISHERIES,
CONSIDERED AS A
NATIONAL RESOURCE,

WITH
Comments upon the Laws relating to them :

BEING A COLLECTION OF ARTICLES

ON THE STATE OF THE IRISH FISHERIES,

PUBLISHED AT DIFFERENT PERIODS.

BY
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With an Appendix.

[REVISED CAREFULLY FROM THE ORIGINAL MANUSCRIPTS.]

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PREFACE.

THE motive for submitting any political or literary undertaking to the public, is frequently asked and frequently given; mine is easily explained, and is a very simple one. Being employed in the preparation of a legislative measure acknowledged to be one of great practical difficulty, and having embodied in it—and in the familiar publications which accompanied it, the experience of the greater part of my life, I am unwilling to allow my contributions to the general stock of knowledge to be altogether estranged from me, or to lie entombed in the periodicals in which they were originally published.

The purpose I proposed to myself at the time these articles first appeared in print, was, to delineate a system for the administration of

the fisheries; and as far as my humble ability permitted—to *demonstrate* it: and as the system I detailed has been since, in some of its most essential features, transferred into the statute law of the land, by means of bye-laws; and as the remaining portion of it, may also, in like manner, be finally absorbed and carried into operation, it is a very natural wish on my part to assert and record the ownership.

Whatever other causes I may have of just dissatisfaction—the circumstances would warrant a much harsher phrase—I am by no means displeased with this manner of appropriating my thoughts and labours; nor is it any source of exultation to me, that some of the most important principles of the system here delineated, to which a persevering and steady resistance had been offered for many years, have been since quietly and unostentatiously adopted.

That the Salmon-fisheries of this kingdom were vitally injured some years back, by projects and theories then for the first time promulgated, is not anywhere denied: the injury

thence occasioned to property, public and private, can in some respects never be either remedied or repaired. The chief influence in the control and management of the fisheries, was, at the period in question, transferred to the promoter of those theories, and the result was not difficult to foresee:—the new speculative system was at once adopted and introduced into practice, and it now is, of little import, that these theories have been since universally condemned, and that the projector and promoter of them has ceased to have further influence or control over the fisheries. The injury was done: an erroneous system was ingrafted upon the permanent legislation of the country; and a retrograde movement now, has become all but impossible. Such have been the results as far as the fisheries are concerned: but the appeal to public opinion which has been lately raised in England with reference to a right administration of the public affairs in practical and scientific departments, renders it very unlikely that the Fish-

eries will ever again be confided altogether to unskilled and incompetent hands.

With regard to the Sea-fisheries, it will always be a source of satisfaction to me, that regardless of the rocks and shoals, or rather the thorns and briers that beset the path, I have placed upon its proper footing before the public, one of the great resources of the country—one which, if duly cultivated, will prove a boundless source of food, wealth, and employment to the people.

These are briefly my reasons for now submitting to the public this collection of my communications upon the subject of the fisheries.

With regard to the form, or style adopted—it is to be observed that these articles appeared originally in magazines and periodicals, and that in those vehicles of information, some latitude is always allowed, to enable the writer to dress up his subject, and enliven the dull details of practical inquiries: this will in some measure account for extraneous matter occasionally introduced—not always though, without a sufficient object arising out of the political occurrences of the

day—at the same time I may observe, that it has been my chief effort throughout, to condense the subjects treated of, and throw as large a mass of practical matter as possible, into the smallest space.

With these few remarks I now consign these pages, in an authentic shape, to the public. Time is the great truth-teller, and I have little doubt, that use and experience will prove, that the system for the management of the fisheries here put forward—and detailed in more technical and systematic form in the Bill printed by order of the House of Commons in June 1851—is the true one.

Island Bridge, Dublin,
March 24th, 1856.

THE FISHERIES.

IN the following pages it is intended to enter into a full inquiry relative to the Irish Fisheries; and, at the same time, some comments will be made upon the Bill lately introduced into Parliament, and now pending, for the amendment of the laws relating to them. Year after year this subject is acquiring a deeper interest; the Sea-fisheries languish in a state of almost total neglect; and the Salmon-fisheries are falling into decay under the operation of laws framed ostensibly for their improvement. The inland, or Salmon-fisheries, will form the first subject of our investigation; but, before we conclude, we shall extend the sphere of our inquiries, and carefully examine and scrutinize the measures necessary for a full development of the Sea and Sea-coast Fisheries—sources of industry and wealth which, although now drooping from neglect and apathy, are yet well worthy of national consideration.

As an article of food, salmon is becoming each year less plentiful in our markets; it can truly be asserted, that, with the exception of about two

months at the end of the season, this fish may be considered as a luxury, only attainable by the rich : during the greater part of the season the liege subjects of our Lady the Queen, are as effectually debarred from partaking of it, as if some sumptuary law were in force prohibiting its production on their tables.

The great increase, too, in the value of salmon, as an article of commerce, notwithstanding facilities of steam conveyance, and the consequent extension of markets, is ascribable also, we would say, to the decreased supply ; for whether we make the inquiry on the banks of the Shannon or the Foyle, or in the rich marts and markets of Liverpool or London, we shall find the price to be but too true an index to the progressive scarcity of the fish. The matter, therefore, demands not only an inquiry into the cause, but the application of the remedy, if the latter shall be found to be within the reach of the Legislature ; unfortunately, Parliament has before its view the experience and the fate of the English Salmon-fisheries ; these have declined away, and are almost extinct : the decline of England is not a mere visionary speculation as regards its salmon, but is really a sober fact ; indeed, she may now be said to depend altogether upon Ireland and Scotland for her supply of this valuable article, while to Ireland the export of it, is of much commercial importance, from the increased facility of transport from all the great fisheries. Our salmon caught in the Shannon, or

in the Bann, or Foyle, or on our extreme western shore, can be now produced in every part of England, or on the most fastidious London tables, in a state of freshness and perfection to satisfy the aspirations, even of the most distinguished artistes.

The circumstances here detailed, it will be seen, operate highly to the advantage of Ireland in a commercial point of view: our facilities of communication with Liverpool give us a complete command of the chief English markets, and, with timely attention, there is reason to hope, that our Salmon-fisheries will long continue to be adequate to the supply not only of our own demands at home, but also to contribute largely to the supply of England with that much-esteemed fish.

But if this timely attention be not afforded, our Salmon-fisheries will decline and dwindle away, as those of England have already disappeared, and a long-cherished and important resource of this country will depart from among us: to avert this national misfortune, for such it may truly be called, a Bill to consolidate and amend the Law relating to the Irish Fisheries has been brought into the House of Commons by the member for Donegal County, (Mr. Conolly,) and we shall now proceed to a general examination of that measure, and the amendments of the law which it proposes, and essay as much as in us lies, to awaken attention to a subject of such general importance.

In the year 1842, a Bill was introduced into Par-

liament by the then Government, and speedily passed into a law, without much notice or consideration, and without that calm and careful examination which so intricate a measure manifestly required. A very different course has been pursued on the present occasion : after much previous discussion of the subject in print and at public meetings, Mr. Conolly produced his Bill in the House of Commons on the 2nd of June last, when it passed the first reading : it has been printed by order of the House, and has been circulated very generally throughout Ireland, with a view to a full consideration of its provisions previous to next Session : this bespeaks a fair and honourable course, and shows withal confidence in a good cause. The country is thus, as it were, invited to examine, and offer objections to a measure, which is believed, by the promoters of it, to be sound in principle, and calculated to restore the Salmon-fisheries to their former prosperous condition.

Had this course been adopted with reference to the Fishery Act of 1842, the country would not have had to deplore the prostration and ruin of those fisheries : the errors contained in that measure were so palpable, that had sufficient time been given, they would have exploded spontaneously. The examination of a few of these errors will be ancillary to our present purpose.

First. It was maintained, (and the enactments quickly followed,) that by extending the means of capturing salmon, an increased aggregate supply would be obtained.

Secondly. It was propounded, that the ancient mode, which had existed for ages, of capturing salmon by fixed engines in rivers, was a monopoly, and was prejudicial to the fisheries at large; and the remedy proposed was, the legalization of a new monopoly by fixtures in the sea and tideway; and thus the last state of monopoly was made worse than the first.

This leads us into a short digression, and a few observations, concerning the history of the ancient charter and patent weirs of this kingdom. No doubt, at a remote period, a necessity arose for a fixed mode of capturing salmon in our rivers, for the supply of markets in chief cities or towns: the imagination must be vivid, which can conjecture a time when the rude angling tackle of our ancestors was alone regarded as a means adequate to the supply of the public wants. We learn from undoubted records, that at a very early period of our history, purprestures, or weirs, were used in this country for the capture of salmon, and were, for many centuries, subjected to legislative control; hence the origin and the title of the Salmon-weirs, or great Salmon-fisheries of this kingdom; they existed certainly when the Danes held sway in Ireland, and were subsequently confirmed, or granted by the Crown, by charter, or patent, to corporations and others, who had acquired territorial rights. In this manner rights of several fishery were founded; a large proportion of those fisheries falling into hands of mo-

nastic institutions—being annexed to abbeys, and other religious houses. The weirs of Lismore, of Gill Abbey, and many others, were amongst the ancient possessions of the Church. The Abbots of Mellifont possessed three weirs upon the Boyne, and upon a writ of *Monstrans de droit*, in the reign of Edward III., their title was held good. St. Mary's Abbey at Dublin, enjoyed a special grant of fishery in the waters of the Avon Liffey; and in the year 1220, the lordly Prior of Kilmainham had to submit to an inquiry, respecting his title to the structure, which forms the present Island-bridge weir. At Limerick, in the recent trials respecting the title to the great lax-weir and Fishery, now the property of the Limerick Corporation, the title was deduced from a charter granted by King John, in the year 1202, to William de Bradosa. These, not to mention numerous other instances, will be quite sufficient to carry back the title of those obnoxious purprestures, at all events, into a pretty remote antiquity.

But it was objected, in 1842, that these charter weirs, and ancient fisheries, being situated in the tideway, were prohibited by Magna Charta, or were illegal at common law. We cannot admit either of these propositions. The Kidel prohibited by Magna Charta is defined by Coke to mean an "open wear," and was evidently an engine of a transitory nature, used as a fixture in the tidal parts of large rivers (as instanced in the Thames and Medway), which

caused a manifest obstruction to navigation; but the patent or charter weirs in Ireland, are solid structures, and are, for the most part, situate at the very top of the tideway. Great jealousy was always entertained with respect to obstructions in the *tidal* parts of rivers, where the sea ebbs and flows, but the position of those ancient weirs was very carefully chosen; since we find, in almost every case, they are constructed in situations, where obstruction to the navigation of the sea or tideway could not by possibility occur; we might instance the Lismore Salmon-weir, now the property of the Duke of Devonshire, which is situated at least two miles above the tideway; or, the great Salmon-fishery at Ballyshannon, which is formed by a ledge of rocks at the upper extremity of the tideway, where nature herself prohibited navigation; and we believe all the Salmon-weirs, extending across rivers, were constructed above, or near the extremity of, the tideway, and were founded on fords, or ledges of rocks, which were themselves barriers to navigation. We have, indeed, casually observed, that so nicely was this question, as regards the tideway adjusted, at the original formation of many of these weirs, that their foundations appear to have been laid exactly at the point to which the spring-tide reaches, and it would appear that this critical selection of the site above the tideway for these permanent and solid obstructions, was adopted, at a remote period, to accommodate the original structure to the requirements of the common

law; be this as it may, there can be no question but that these weirs and Salmon-fisheries, can deduce a title, more ancient in its origin, and unbroken in possession, than, perhaps any other species of property in the kingdom.

A few ancient stake or head-weirs, in localities carefully selected (where no injury or obstruction to navigation could occur), also formed a species of fixed property in fisheries. The origin of these, also, is carried back to a very remote period; it seems, indeed, to have been the original purpose of the Act of 1842, to legislate for these particular stake-weirs and these only. The clause recites that *doubts* existed with regard to the legality of stake-weirs, and then proceeds to legalize them. These old weirs also, were frequently appurtenant to religious houses, and seem to have been used as a substitute for solid weirs, in places where the latter could not have been constructed; and their number being very limited, and their position carefully chosen, they were not regarded as an injury either to navigation or to the public fishery. They were frequently annexed to monasteries and abbeys—that of Dunbrody, for instance—and had acquired, from time immemorial, and length of possession, that sanction, which is the foundation and security of all property.

There is not, perhaps, any branch of our law more intricate than that which relates to Salmon-fisheries; and the intermixture of public with private rights, raises some of the nicest questions known to

our jurisprudence. Many of the difficulties which surrounded the subject were adequately met by the old Irish Fishery Acts, repealed in 1842, but nothing has resulted from the change but a legal chaos. Abstract legal questions, such as, the point at which fresh-water rivers or streams should be deemed navigable, or were public highways (*haut streams le Roy*)—seemed but ill suited to a country, one of whose chief resources at the present day is its water-power. The old Irish Fishery Acts legislated for and recognized, the title to weirs, held by patent or charter, or to which an uninterrupted possession of thirty-one years could be shown; and the limits and bounds of Salmon-fisheries were likewise regulated by the same period of prescription or enjoyment; but those Acts being repealed, the titles are now all at sea, and every fishing-weir and mill-weir in the kingdom might be now objected to, as an obstruction to navigation. It might, by the way, be computed that the proportion of solid fishing-weirs to mill-weirs in Ireland is about as one to fifty; or, in other words, that for one fishing-weir, we have, in many rivers, fifty or perhaps a hundred mill-weirs. Those who sought to unsettle the one, forgot that they should prostrate the other also. It would answer indeed little purpose, or rather no purpose whatsoever, to upset the title to an ancient fishing-weir, without also prostrating and removing every mill-weir in the same river.

Now it is with reference to property in fisheries,

circumstanced as we have above described, and in antagonism to its acknowledged rights and admitted stability, that the legislation of 1842 was directed. Those ancient weirs and fisheries, founded with care by our ancestors, handed down to us through corporations or monastic institutions; venerated and respected amidst every political change,—it was, we say, with reference to this species of property that the discovery was made in the year 1842 that these weirs and fisheries were monopolies; that such obstructions were illegal; that they interfered with the rights of the subject; and—not that they had increased, were increasing, and ought to be diminished, but simply—that they were nuisances of some 300, or 500, years' duration, and ought to be abolished.

But how was this to be done? Time had sanctioned them; Acts of Parliament had recognized them; the experience of ages had stamped them with utility;—the innovators saw that it would be useless to take the bull by the horns, and so they adopted an ignoble means of undermining and destroying him.

We would by no means aver, that if these ancient weirs injuriously, or improperly affected public rights, they were not properly amenable to legislative control: on the contrary, we admit the proposition to its full extent. The Irish Parliament always exercised control over them, and we venture to say that in Mr. Conolly's Bill, a more effectual control, and

more stringent regulations are proposed respecting them, than can be found in the legislation of 1842 or of any previous period.

But to proceed. In the year 1842, the notable theory was propounded, that sufficient modes of capture were not in use (whereas the direct contrary was the fact), and that, by increasing the means of capturing salmon in the sea and tideway, the gross quantity taken, and available to the public, would be thereby increased. Shall we proceed to demolish this absurd theory?—shall we even condescend to give it an answer? The answer is to be found in the prostration, and ruin of our Salmon-fisheries.

Again : said these projectors ; those ancient weirs, which have existed so long, are monopolies, and are exhausting the fisheries. And what, gentle reader ! do you suppose was the remedy proposed ? Why, to legalize and establish a monopoly in the sea, and at the mouths of rivers, far more devouring. The argument was this—and here is a correct recapitulation of it ; Firstly, the more engines of capture you establish, and the more salmon you catch, the better for the public. Secondly ; as one fixed engine is too destructive, establish six !

These theories, gentle reader, have left you from January to June almost without a salmon for your table. It is an incontrovertible fact, that for the first four months of the fishing season, a good salmon is of greater money value than a sheep.

But let us proceed to Mr. Conolly's Bill ; and let

us discuss its provisions with candour and impartiality.

The removal of fixed nets, to defined limits, outside the mouths of rivers and harbours, is a primary and essential feature in this measure; we must, therefore, discuss this head carefully and at some length, as a very general impression prevails, both here and in Scotland, that the decline of the salmon fisheries is mainly attributable to the extended use of these engines. The Bill proposes to prohibit the use of fixed engines within the mouth, or within two miles of the mouth, of any river or harbour, in all cases in which a prescriptive title to use such engines cannot be shown; and the length of possession which should constitute a prescriptive right, is proposed in this (and in all other cases relating to fisheries) to be a period of forty years. For this proposed period of limitation, there is a precedent in the English Act, 2 & 3 Wil. IV. c. 71, which shortens the period of prescription in certain commonable cases, and enacts that it shall not be necessary, in proving a prescription, or that a right has been exercised from "time immemorial," to include the whole period of time from the commencement of the reign of Richard I. The Act we refer to, substitutes shorter and more reasonable periods for proof. It cannot be argued that those engines which have sprung up, mushroom-like, since 1842, are recognized by the law, or were lawfully erected, according to a sound construction of the provisions, even of the statute which introduced them. The 21st section of the Act of 1842, prohibits

their erection, in any manner, so as to be *injurious to navigation*; and we have abundant evidence before us, that those recent fixtures in the tide-way have interfered with navigation,* and that more explicit legislation respecting them is demanded. Again; to interfere injuriously with the *public fishery*, is contrary to the common law; and, that these novel engines of destruction do so interfere, requires little argument or elucidation: they have had a most pernicious effect upon the fisheries at large; they have reduced the gross produce to an alarming extent; and being placed near, or inside, the mouths of rivers, they take precedence of all ancient modes of capture, and deprive not only the charter weir of its existing rights, but swallow up those public rights of fishery in the estuary, which belonged to the cotman, and which are derived to him by a prescription, more ancient than the parchment which secures the landed proprietor, on the shore, in his possessions. In point of fact, there was a clear transfer here to the landed proprietor, of that public right of piscary which is and ought to be inalienable. Here, then, is an instance of the danger of innovation, and of the mischief which results from experimental legislation. The Legislature is now called upon to review its own purposes, and explicitly declare the law, and place it upon its ancient and equitable basis. It was disturbed, undoubtedly, but not displaced, by the

* See Captain Frazer's Report to the Admiralty, Jan. 1851.

enactments of 1842. The present Bill proposes, as has been already said, to remove and prohibit all new fixtures within the mouth, or within two miles of the mouth. This is merely a recurrence to the provisions of *Magna Charta*,* and the requirements of the common law.

Perhaps it would be well to give here a cursory description of those engines, or rather of the bag-net. This machine—invented by some cannie Highlandman—was first introduced into Ireland about fifteen or eighteen years back. It is a most ingenious contrivance; but fated, we fear, unless timely restrictions be interposed, to annihilate the *genus salmo*. It is a trap made of netting, extended upon poles in such a manner, that when immersed in the sea, it sinks to its upper surface, and then floats, so as to form beneath the water, a cage, or compartment like a chamber, some ten or twelve feet square: this chamber is entered by a narrow door, which is so adapted to the instincts of the salmon, that though he enters freely, there is a slight labyrinth which bewilders him, and prevents his egress. A “leader,” or curtain of net-work, one or two hundred yards in length, extends from the shore to this chamber, and as the salmon is known to keep close to the shore, and, in proceeding towards his native river, to traverse the indentations of the coast, and the inner-

* “*Omnes Kidelli deponantur de cætero penitus per Thamesiam et Medewium et per totam Angliam, nisi per costeram maris.*”—*Magna Charta*.

most recesses of bays, it follows that in his progress along the coast, he strikes against the leader of the fixed net, and being thus turned off into deep water, he goes along the leader in the same way that he was before traversing the shore, and in this way enters the chamber, where he remains until captured. This engine is so certain and destructive in its operations, that the capture of 50, or 100 salmon, was by no means an unusual performance for a bag-net during a single tide: but salmon lately have become more scarce. The number of these engines now in use, and their efficiency, will give some idea of the drain thus put upon the fisheries: a drain so effectual, that it has almost overthrown all property in Salmon-fisheries; and the engine now becomes almost suicidal, and threatens its own existence—at least, many of them have ceased operations, merely from the dearth and paucity of salmon which they have themselves occasioned.

It will be necessary now to direct attention, practically, to some specific injuries, peculiar to itself, which this engine inflicts upon the Salmon-fisheries. We have already cursorily viewed the subject in relation to the overcapture of the fixed net, and its general illegality, whether considered with reference to the ancient or the existing laws; we shall now endeavour to draw attention to the enormous waste occasioned by the depredations of seals, and other natural enemies of the salmon, in the vicinity of this engine, and by its instrumentality. We take upon

us to say, that there is scarcely a beg-net around the coast, or a stake-net in an exposed situation in an estuary, which has not its attendant pair of seals, or more, which frequent the net for their ordinary supply of food. We have known the seal, denominated the large sea seal, to have been taken in the chamber of a bag-net, into which he forced himself by extending the door of the net, which is an aperture of only seven inches in width, but of considerable height. The animal here alluded to was as large as a polar bear, and was purchased at the time by the Royal College of Surgeons, in Dublin, for the purposes of comparative anatomy. Upon being captured and removed from the net, this unwelcome visiter, of course, received some rough usage, which caused its death a few days afterwards; but, on being brought to shore, it disgorged from its stomach a portion of its prey, and five or six salmon heads formed part of the contents. We mention this fact with particularity, because some marine animals which frequent the fixed net do not devour the whole of their prey—in this respect resembling the otter: numbers of heads, and other fragments of salmon, are found about the rocks in the neighbourhood of the bag-net; and it is conjectured that these are probably the traces of the smaller seal (*Phoca vitulina*) which can readily obtain ingress and egress through the narrow door of the bag-net; and this smaller animal, which probably is the chief depredator, will doubtless resort there for food, and carry

off to the adjacent rocks the salmon which are conveniently assembled for his purpose in the net. The acuteness of the seal tribe, and their eager pursuit of salmon, render it very unlikely that they would overlook so inviting a receptacle as a bag-net, where, without trying the velocity of their pace against the salmon (in which they are invariably foiled), they here find them, close to their haunts, or abode in the rocks, most invitingly enclosed in a machine absolutely adapted to supply their wants, without any necessity on their part to watch for and surprise their prey. It would be trifling with zoology, and with the known habits of these animals of prey, to doubt that the seal has had a great boon conferred upon him by the Act of 1842. Every fixed-net fisher is aware that these animals frequent his net; he sees them in the day-time—shy though they be; nay, they will sometimes so much forget themselves as to go quietly over the corks of the ordinary draught-net, or seine, while the men are in the act of hauling it to shore, and carry off a salmon in the presence of perhaps fifty spectators. But in the fixed-net it is quite another matter; there it floats in a remote spot extended from the rocks, with the salmon enclosed in it, like a decoy, swimming about in the most tempting way in its capacious chamber. Once or twice, perhaps, during the day, the owner approaches with his boat, and “fishes” the net, as it is technically called; that is, removes from it the salmon which had entered during the previous tide, which

operation only occupies a few minutes : the seal has, therefore, throughout the day, ample opportunity for his operations ; he lurks and ranges about the net, and the rifle-ball is very frequently employed to drive him from its neighbourhood : but during the night-tide he has it all his own way, lurking unseen and undisturbed in its immediate vicinity. Those nets are seldom fished, or examined at all during the night ; and it is a well-known, and common observation, that the night-tide is always less productive to the bag-net fisher, than the day-tide : it is said, salmon in the sea are not much inclined to travel by night ; this we cannot aver, but will take upon us to say, that the capture from the night-tide is seldom one-fourth the amount of the capture of the tide which commences to flow after daylight. We shall not go further into these somewhat abstruse fishing speculations, and will conclude this unwarrantable interference on our part, with the vested rights of the seal, by assuring our readers, that the fact of his extensive depredations at the bag-net, is perfectly well known to every one, who either owns or tends such engines.

We must now introduce our readers to the porpoise. He also has vested rights in the fixed-net. With less instinct, but more speed than the seal, he relies upon the chase : shoals of porpoises may be seen in pursuit of salmon up large tideways, such as those of the Shannon and the Tay : the pace is tremendous, and the issue doubtful : the porpoises hunt

in packs; and as they roll over the surface, their operations can be seen; neither is there the least doubt as to their depredations, or that salmon is their prey. Whenever porpoises are seen, fishermen know that salmon are not far off; and often, when taken and opened, they are found surfeited with this dainty food; the universal law amongst fishes is, to eat, and be eaten; but we should not facilitate the destruction of the useful sorts: let us see however what has the Act of 1842, done for the porpoise: we much suspect he would be very averse to its repeal; if he could be heard by counsel against the Bill, his case would be this—he keeps out in the deep, and never ventures into shallow water; the salmon, on the contrary, invariably hugs the shore, and avoids the deep. In his course along the shore, the salmon will traverse the innermost recesses of a bay (though there be no river flowing into it), and will prolong his journey twenty miles round the bay, rather than cross the mouth of it between headlands: this is the salmon's security; he keeps close to the shore; but stay, in his course he stumbles against the leader of a bag-net, extended across his path: turned off by the leader into deep water, the porpoise comes at him, and the chase begins, and thus this process is kept up, all along the shore, or up the estuary, wherever these fixed engines are extended. The most casual inspection of these occurrences, or the slightest knowledge of the habits of the porpoise, will be sufficient to show the advantage he derives from the aid of the

fixed net. We cannot, therefore, regard the matter otherwise than, and we charge the fact to be, that these predatory animals have had great privileges conferred upon them by the Act of 1842 ; and that their combined depredations, form one large item amongst the causes, which have produced the falling off of our salmon fisheries.

But amongst the theories propounded, when that disastrous measure legalizing fixed-nets, was introduced, it was gravely maintained that one advantage to be expected from their use, was, that they rescued salmon for the purposes of man, from the jaws of porpoises and seals ; that salmon were inclined to delay and hanker in the sea, on their way to, and previous to entering, the river ; and that, during all this time, they were preyed upon by seals and other natural enemies. We shall not detain the reader with any further refutation of this theory, as we think it has been sufficiently shown, that salmon in the sea know how to take care of themselves ; their habit being to keep out of range of their marine enemies. That they do, in point of fact, so avoid their sea enemies, we could give numberless entertaining instances ; but it is unnecessary to do so, as this instinct, we conceive, will not be questioned. It may, however, be mentioned as a very remarkable circumstance, that the bag-net captures a great proportion of very large fish. Salmon 20 lbs. and 30 lbs. weight, and upwards, are quite familiar to the bag-net fisher, but were at all times scarce during the

open season in the river, or at the charter-weir. The specious reason assigned for this peculiar capture by the advocates of this destructive engine, is, that these large fish are a species of sea-salmon, which do not usually visit the river, but remain conveniently in the ocean, to feed porpoises and seals. This is a theory too absurd to require any confutation; a better and more practical solution of the matter is, that these very large salmon of 20 lbs., 30 lbs., or 40 lbs. weight understood the flow of water in their native streams, long before the era of fixed nets, and instinctively remained in the sea in comparative security until the autumn and winter floods commenced. Then the obnoxious charter-weir had ceased its operations; then the river-nets were hung up; and then these leviathans rushed up stream, to deposit their matured ova in the fords and spawning-places of their native rivers. Poachers who destroy, and water-bailiffs who guard the helpless salmon on these fords, in the winter time, were once familiar with these monster salmon, fit to populate whole rivers. Now, alas! they are seldom seen alive, except inside the door of a bag-net; and this peculiarity in its capture, though instanced as one of the benefits conferred by that engine, we regard, and have always regarded, as one of the most fatal evidences of its destructive and pernicious effects.

Another supposed advantage set forward by the advocates of the new mode of capture, and to which

much more importance was attached than it merits, may be here referred to. We mean, the allegation that these engines capture salmon in the best condition; and the inference thence deduced, that they have an advantage in that respect over the ancient mode of capture. We admit that they take salmon in the highest condition; but we cannot perceive that they have any peculiar privilege in this respect. A single tide will not elapse, in ordinary tideways, in the passage of the salmon from the sea to the charter-weir. This fact is known in many ways; but we may instance the animalcule or parasite, which adheres to the scales of the fish, and which can live only a few hours after its arrival in fresh water. These associates of the salmon are found alive upon them, at all the old Salmon-weirs. Many of these weirs being only a short distance from the sea, an hour sometimes will not elapse, in the transit (which is always rapid) from the sea to the weir. Upon this head, it may be stated that there is no perceptible difference between a salmon caught in the sea, and one caught at one of the old weirs. Those who sought to make this distinction must have made diligent search for a supposed advantage. It assumes, too, that the lordly abbots of the olden time, or their successors, of the corporations, did not know the flavour of a salmon in its prime, and mistook the proper locality for capturing him: a salmon caught by an angler far up a river, which has been, perhaps, a month in fresh water, is

not the better for it; but as already observed, the distance from the salt-water to the weir, is at all times run up rapidly.

A practical observation or two, may here be made respecting some peculiar localities on the sea-coast, in which those fixed engines are sometimes erected, and in which the use of them has a most prejudicial effect upon the fisheries, and for which a remedy is provided in the Bill. The enabling words of the Statute are, that such engines may be erected "*attached to the shore*" adjoining the land, in right of which the engine is erected; but under this power fixed-nets have been erected from the ends of piers, and artificial breakwaters, projecting perhaps a mile or more, into the sea. A provision is made in the present Bill, to prevent this practice, which is an abuse of the enabling power; and we proceed to show why this may be considered to be a judicious and proper restriction. When a fixed-net is erected from the extremity of a pier, the pier acts as leader to the net, and it is to all intents and purposes the same with respect to it, as if the curtain, or leader of the net itself, was of similar length with the pier, which may, perhaps, be a mile or more. This gives the fixed-net so circumstanced an overwhelming advantage; its capture is most destructive, and it engrosses, and monopolizes, or, so to speak, takes the wind out of the sails, of all fixed-nets in the same locality, properly and legally erected. We omit to take any notice of the injury to navigation, which

may be feared, from encouraging the erection of fixtures in the sea, in the immediate vicinity of piers and artificial harbours ; the present observations are confined merely to the monopolizing effect of such an engine, as a fishing engine ; and to the equity and policy of not extending the enabling power beyond its strict letter, by providing, that the net shall be “attached to the shore” adjoining the land, in right of which the party uses it, and not otherwise. This provision will supply an evident omission, and prevent a destructive monopoly, and will secure equal rights to all entitled to use those engines on the shore.

The next amendment of importance proposed by the Bill before us relates to the close season ; amongst the many enactments a Fishery Bill must unavoidably contain, we select, as we proceed, only the most prominent. The close season is the period appointed by law for the cessation of salmon fishing. If we fish too late, and thereby destroy almost all our brood fish, we cannot reasonably complain of the decline of our fisheries. This question of close season, however, involves many intricate and technical details, but the gist of it, is this, that if we fish too late, we kill the hen that lays the golden egg. This subject of the close season was very fully discussed in some papers published in 1844, which are printed in the Fourth Annual Report of the Commissioners of Irish Fisheries to Parliament, and we

do not think we can add anything to the arguments there adduced. Indeed it would appear to be a self-evident proposition, that if it be necessary to maintain an adequate stock of breeders in a river, we should diminish the period, as we increase the means, and improve the mode, of capture. New and improved engines of capture were legalized in 1842, and then first put into operation, but the period of capture was at the same time *prolonged*. It is obvious that the converse would have been the more judicious course. All the arguments applicable to the subject were set out at the time in the articles we have just referred to, but were not heeded; on the contrary, a subsequent Act was obtained in 1846 (9 & 10 Vic., cap. 114), *extending* the period of capture to the 1st of September. The consequences might have been easily foreseen; but we forbear to pursue the subject further, as a complete reaction of opinion has recently taken place, and nobody now doubts that the arguments put forward by a competent practical party in 1844, for further restriction, in the publication referred to, should not have been disregarded. Last Session the Duke of Argyll brought in a Bill in the House of Lords, to curtail the fishing-season in the Scotch Salmon-fisheries; and Mr. Conolly's Bill, in the House of Commons, proposes that the close time for the Irish Salmon-fisheries shall commence on the 1st day of August in every year. We are aware of the controversy likely to arise upon this subject; many

practical persons taking a partial view, where their own present or supposed interests are concerned ; and in piscatorial matters the present is often preferred to the future, and for various reasons. But so long as Nature directs that the great migration of the spawners up rivers shall take place about the period when the autumn or Lammas floods commence, we shall continue to think that the time is fixed by immutable laws when the fish itself is becoming unfit for food, and the capture of it should cease. The Bill introduced by Mr. Conolly fixes, as we have already said, the 1st of August as the period for the commencement of the close season ; and we can only add, that the most salutary and beneficial results may be calculated upon should this important provision receive the sanction of the Legislature.

There is another matter of great importance in Salmon-fishing, to describe which we must take leave to coin a word for this purpose, and call it the “ escapement,” by which we mean certain facilities which enable salmon, during the open, or fishing season, to baffle the arts of man. At the great fall of Ballyshannon (which forms the Salmon-fishery of that name) there is an escapement of this kind. At high water of the tide the fall is not more than five feet ; the salmon leaps this with ease, and escapes upwards in defiance of proprietor or lessee. In this manner great numbers avoid the traps and pass up the river, where, if they escape the angler and other dangers,

they go for stock, and thus breed and uphold the fishery. Take again the charter-weir, in any other river; that old monopoly which has existed so long with advantage to the public; there, too, in high floods, throughout the fishing season, there is an escapement for salmon in defiance of the charter, and all the vested rights of proprietor or patentee. When the river is in flood, and a flow of twelve inches or more is passing over the weir, salmon, in numbers may be seen, at various suitable places, running up the weir, and thus escaping, in spite of every art we can employ; and it is only as the flood is subsiding, that the boxes and other devices come into play; in the meantime, great numbers have escaped, and have scampered off, and thus go to stock the river: these are the natural escapements which have preserved the Salmon-fisheries for ages against the rapacity of man: there is another escapement, too, at the solid weir, provided by law during the open season, which we shall presently describe.—But let us now take a look at the bag-net: behold it! there it is, extended treacherously in the sea, in the very track and pathway of the salmon, fishing incessantly night and day. Over its door might be placed that dreary inscription—“*Lasciate ogni speranza, voi ch' entrate!*” For ingress, the door is for ever open to the salmon; but once in, it is all up with him—there is no escapement there:—he will never again revisit his native river—dash up the tide-way—dart through the cruive—or bound over the weir. From the full grown salmon of 20 lbs. or 30

lbs. weight, down to the salmon peal, of 2 lbs. or 3 lbs., all that enter the bag-net are captured. It is proposed, therefore, in the present Bill, that fixed-nets shall use a certain sized mesh (five and half inch mesh) which will permit an escapement in some degree analogous to the escapement provided for by law in fixed river engines. We hold it as an axiom in Salmon-fishing, that no fixed engine should be allowed to take a 5 lbs. salmon. By the enactments now in force provision is made for the escape of fish through boxes or cruives in solid weirs, by providing that the bars or rails shall have intervals of two inches. This provision, if it were properly made, so as that the bars should stand perpendicularly, and not horizontally, would permit small salmon to escape through the cruive, but no provision whatever is made for an escapement through fixed nets: we maintain there should be adequate escape through both. Whatever, therefore, may be the decision arrived at in this particular, let us at least hope, that it will proceed upon fixed principles and by equitable enactments.

We must, however, devote a little more space to an examination of this subject, as we conceive it to be of the utmost importance to allow an ample escape of the grilse or young salmon. The grilse or salmon-peal returning to the river for the first time since his descent to the sea as a fry, ranges in weight from 3 lbs. to 5 lbs. and upwards. It may be observed that this salmon-peal has escaped all the dangers of the intermediate stages. The fry in their passage down the river are destroyed in myriads by pike and

other natural enemies, aided by every little urchin along the banks, who, on each Sunday, will destroy perhaps his six or eight dozen by fair angling; not to mention the miller's man, who will take a whole basket of them as they are passing down the waste gate. Then again, when they reach the sea, they are swallowed in numbers by sea fish, until at length those that survive reach their sea habitat, where doubtless they remain in comparative security; but the salmon-peal of 3 lbs. or 4 lbs., returning towards his river, has arrived at years of discretion; each one of them may be said to represent 100 salmon-fry, probably much more; and if we spare him for a little, he will in five or six months present himself at the doors of our nets and traps, a full grown salmon of 12 lbs. or 14 lbs. (no outlay in food or any other respect being expended upon him in the interim); it is therefore impolitic to destroy these peal to such an extent as we capture them by fixed engines. Self-denial here will reward the proprietor fourfold. We have never known a salmon season where the proportion of salmon was not in almost the exact ratio to the peal of the preceding year. When these peal are abundant, the ensuing salmon season is likewise abundant; when they are scarce, the ensuing salmon season shows a similar deficiency; it is therefore consistent with every observation we can make, that if we spare these small fish we shall vastly increase the produce of our fisheries. These fish, too, will spawn the very season we spare them; and if they escape other dangers, we invariably get

them on their return to the river, in the ensuing spring, averaging 12 lbs. and 14 lbs. weight.

We have, therefore, thought it desirable to make a few experiments with the utmost accuracy, with the view of showing satisfactorily what aperture in the fixed engine will allow a 5lbs. salmon to escape.

In the hecks or rails of cruives in Salmon-weirs, if the bars are two and a quarter inches apart, and placed perpendicularly, a 5 lbs. salmon will escape; in the bag, or stake net, if the meshes of the inner chambers are of five and a half inches mesh, that is, eleven inches all round, the same sized salmon will escape.

To ascertain this by experiment with salmon obtained from the markets and from various rivers, through different sized meshes, or through bars of any aperture, is a matter of no difficulty; but we considered it desirable to see salmon alive in a fish pond pass voluntarily through the required spaces, and then accurately to weigh them, and we made some slight arrangements which enabled us to prosecute this inquiry satisfactorily, which we were not enabled to do sooner than the arrival of the peal in the rivers in June, July, and August of the present year.

During those months live salmon, at the Island-bridge Salmon-fishery, were thrown into the fish ponds, across which divisions were made of a five and a half inch mesh, and bars of two inches, and two and a quarter inches aperture, and then at all leisure times we observed their movements, which

were at any time easily excited by partially raising the waste-gate of the pond, when, of course, as they missed the water, the fish moved upwards to the head of the pond, and in doing so voluntarily passed through (or were unable to pass if too large) the required spaces. We went to a good deal of trouble to make these arrangements, which were amusing, perhaps, to those who witnessed them, but were, after all, of not much consequence, since we found, as may be readily conjectured, that the salmon which thus passed through voluntarily, or could not pass, corresponded precisely in size and weight with others which had been recently killed, and tried elsewhere at similar apertures.

Under the existing Acts, and under the Bill now before us, the Commissioners of Fisheries have a power to alter the size of these apertures, and they will, no doubt, satisfy themselves previous to doing so on any occasion. We merely now give the details, as a matter of useful investigation, pledging ourselves, however, to their strict accuracy.

MESH.				BARS.	
1851.		5 Inch Mesh	5½ Inch Mesh	2 Inch Aperture.	2½ Inch Aperture.
June 19,	Peal 2½ lbs.	Will pass.	..	Will pass.	.. ..
July 3,	Peal 3½ lbs.	Will pass.	..	Will pass.	.. ..
Aug. 16,	Peal 4 lbs	{ Will not } pass. }	Will pass.	{ Will not } pass. }	Will pass.
Aug. 16,	Peal 4½ lbs.	.. ..	Will pass.	.. ..	Will pass.
Aug. 14,	Peal 5 lbs.	.. ..	Will pass.	.. ..	Will pass.
July 4,	Peal 5½ lbs.	.. ..	Will pass.	.. ..	{ Will bare- ly pass.
July 30,	Peal 6 lbs.	.. ..	{ Will not } pass at all }	.. ..	{ Will not pass at all }

The foregoing Table exhibits the size or weight of salmon peal, or young salmon, which will pass through the proposed spaces, viz., five and a half inch mesh in fixed nets, and two and a quarter inch aperture in perpendicular bars, at the head of boxes or cruives in Salmon-weirs.

The escapement here appears slightly favourable to cruives in weirs, as contrasted with the mesh in fixed nets, but this advantage is rather apparent than real. In the box or cruive the fish is as it were coerced to move upwards by the stream running through the box, and, if the apertures be sufficient, he will not remain in it a moment, but pass through. But in the flexible chamber of the fixed net, where no stream is running, there is not the same impulse upon the fish to pass through. We shall not here enter into any hair-breadth argument on a matter, respecting which each member of the community, if he pleases, may satisfy himself, but will merely state that we have arrived at a satisfactory conclusion in our own mind, that if it be considered desirable to prevent the capture, by fixed engines, of Salmon-peal of 5 lbs. weight, (which we assuredly do,) two and a quarter inch bars, and five and a half inch mesh in fixed engines, will be the proper provision to effect that object.

Neither do we think that any sound objection can be made on behalf of tenants, or lessees, paying rent, to the adoption of such apertures or means of escape. Small salmon do not make their appear-

ance until about the commencement of June, when the season is drawing to a close; previously to that period the salmon *are all large*, and cannot pass these apertures. If, therefore, by adopting this regulation, great numbers of salmon-peal should be allowed to escape during the months of June and July, our argument is, that this forbearance and present loss will repay the proprietor fourfold.

We now proceed to consider a very important branch of our subject, namely, the means for protection, and the clauses applicable to that purpose in the Bill. The term protection is here used as applying to the care and preservation of the salmon while spawning, and the defence of the brood on their passage to the sea. Some insuperable difficulties will here present themselves; commerce, manufactures, population, drainage, in short, all the improvements of civilized life, are but so many drawbacks upon the fruitfulness of our rivers. If protection could be fully carried out, that is, if all the salmon which go up to spawn, spawned, and all their young arrived safely at the sea, our rivers might again attain their aboriginal, or an extreme measure of productiveness; but this state of things is now impossible; a regiment of infantry would not suffice to protect fully, fifty miles of a salmon river and its mountain tributaries. A main object here, therefore, will be to *concentrate* the exertions of the water keepers, both as regards time and place; the fords are usually well known to the water keepers, and

the time at which redoubled watchfulness should be exercised will be only of short continuance. If frosts set in about November, almost the whole of the spawning will be completed before Christmas. Very stringent and summary provisions, to prevent night-poaching on spawning-beds, are introduced into the Bill, and we think them salutary and necessary: we confess, indeed, we have no maudlin sensibility for the rights of the subject, as represented in the person of a poacher, with torch, spear, or net in hands upon the banks of a spawning river. We approve, then, of the very summary powers and strong measures of protection contained in the Bill, and if we adopt them we may then take into account the aid which nature and adventitious circumstances will supply. The number of salmon that will pass up under the improved state of the law—the number that will escape—the severities and difficulties of the winter season—the protecting influence of floods, and of discoloured water in the spawning time—the short time required for the actual deposition of the spawn; all these circumstances will aid us if we only aid ourselves; and our Salmon-fisheries may long continue fruitful. The Bill before us unavoidably contains voluminous and intricate provisions, which are necessary to regulate the complicated rights of parties, or restrain the unlawful acts of poachers; but as regards the main question itself (the improvement and restoration of the Salmon-fisheries), the whole case lies in a nutshell. Passing over all sub-

sidiary details, and taking a broad view of the whole subject, we say, confidently :—Give facility of passage over weirs, and moderate protection to the spawners ; stop Salmon-fishing on the first of August ; allow ample escape of Salmon-peal ; and your fisheries will improve, and salmon will increase and multiply in spite of all that crib or weir can do, or poacher poach.

The next topic requiring particular notice is that of migratory passes, or salmon ladders, as they are sometimes called ; these are contrivances or devices intended to enable salmon to get over mill-weirs or other obstructions. Ample provisions, with a view to this important purpose, are contained in the Bill, but we shall here endeavour to discuss the subject in ordinary phrase, omitting legal phraseology. We have seen some models or plans of salmon-passes, imported, we believe, from Scotland, which are quite unsuited to our weirs, and we very much doubt their efficiency at any weir. Let us, then, examine this matter critically : we take up a case purely conjectural, as we shall permit no personal allusion to have a place in these pages. A mill-owner, we shall suppose, has heightened his weir, which is an acknowledged encroachment ; an objection is made, and thereupon he proposes to provide, at his own expense, a passage for fish over this obstruction ; accordingly, a pass is constructed—of cut stone, perhaps, and at a handsome outlay—a mere cipher, though, in comparison to the value of the additional

water-power obtained ; a salmon is seen going over, perhaps two, and the whole neighbourhood resounds with the praises of the salmon-pass ; these praises pass current, the engineer approves, and the device is accepted ; the official *imprimatur* is put upon it, and finally (which is our main objection) it is adopted as a model, and is applied with slight variations to every or any weir. This is not the way to meet this difficulty ; we would not slur over this important provision, and respecting, as we do to the uttermost, the mill-owner's rights, we would yet sustain and uphold those public rights in the stream, which it is our theme and our most anxious purpose to preserve.

Let us discuss the matter frankly with the mill-owner himself. We acknowledge and feel perfect amity with him, and join him sincerely in deploring the present silence of the mill. We profess some acquaintance, too, with the subject, and are no novice in the subtleties of water-power : it forms one of the great resources of the country : we could wish that no stream descended to the sea until it had performed its work of industry ; and that every hill and valley in the land resounded with the clank of the water-wheel. Let the mill-owner, with our hearty welcome, continue to engulf the waters of the river, and throw their concentrated force upon the machinery of his mill, but let him not deny to us those shreds and clippings of the stream which can be turned advantageously to our uses, and can be

made to subserve the Salmon-fishery without injuring the mill.

We shall endeavour to treat this delicate matter impartially, as with cordiality and confidence the important provisions we are now referring to, can be carried out satisfactorily, and both parties, at the same time, amply satisfy their wants from the stream. A mill-owner, we shall suppose, has a weir which blocks up the river, by which means he applies the whole of the waters thereof to his own use. This is a great privilege which the owner of a mill-weir enjoys, and although we by no means will admit that these useful structures are illegal, or indictable at common law (as has been contended), yet we maintain they are justly amenable to every reasonable restraint. We believe the right so to divert the stream is good in most cases, sanctioned as it is by admitted utility and length of possession. But we stop here; and would say to the mill-owner—Do not push matters to extremities; above all, do not knock your head against the salmon. Depend upon it, he has a better case against you than you might suppose; the public rights in the stream which he represents go more to put a flaw in your title than any other supposable objection. We would suggest a compromise. Suppose a salmon could hold parley with a mill-owner, he would argue his case somewhat after this fashion:—You block up my native river; stop my way when I am dashing up stream, and, if the truth must be told, you sometimes filch me at

your mill-wheels, entrap me by cunning devices in the tail-race, or destroy me in my infant and tiny state with baskets at your waste-gates—this, Mr. Mill-owner, is not fair. I know you sometimes allege all this is done by your workmen without your knowledge or *participation*, or by poachers who prowl about your works; but let us remedy all this. I propose that you shall apply as heretofore the whole river to your uses, but do you (without raising any captious objections) give your hearty concurrence in making me a passage over your weir: it shall be a very simple contrivance, which will strengthen your weir, banish prowling poachers from your mill and its appurtenances, and be in every respect sufficient for my purposes without diverting one drop of water from your mill.

To resume. In some late proceedings, emanating from a public meeting, an inquiry as to the best means of constructing these passages, so important to the full developement of the Salmon fisheries, was made through the medium of printed queries addressed to Boards of Conservators and others throughout Ireland. We have had an opportunity of examining the replies, and fear that but little useful information has been acquired by this means: several Boards of Conservators declare their inability to offer any suggestion whatever, and only three Boards have proposed any plan. The short reply from the Westport Board we conceive to be in the right direction, but no details of any kind are given.

The Board of the Drogheda District suggests an opening of three inches upon a surface of two feet six inches on the crest of the weir, to be closed when necessary ; but we are of opinion that three inches of water upon this extent of surface, no matter how adapted or applied, would not form a sufficient "lead," and would be, therefore, useless ; it would swamp in flood-time, and in low water would not act at all. We conceive that the minimum will be a volume of three inches upon a surface of sixteen or eighteen feet, collected in the centre of an inclined plane by its concave surface, in the way we shall presently describe. The Ballina Board propose, that below the mill-weir, two other weirs should be constructed in a descending scale, with openings in the centre of each weir. This would, undoubtedly, form a perfect salmon-pass, but the great expense it would occasion puts it entirely *hors de combat*. Other devices have been suggested by individuals, equally efficacious but equally impracticable, either by reason of the expense, or of interference with the water-power of the mill, which latter is a fatal objection to any plan, whenever it arises.

We shall, therefore, proceed to give our own notions upon this knotty point, and suggest how those devices may be best constructed. The problem to be solved is somewhat difficult of explanation, but we must discuss it, since many, and well-founded are the complaints that nothing has yet been done in this department.

If, when the mill is at work, waste-water is escaping in quantity over the weir, in the usual flow of the river, the construction of a "salmon-pass" will be in such case comparatively easy. Nothing more will be required than to build against the weir, on the down-stream side, an inclined plane at a proper angle of inclination—say, with a gradient of about one in twenty, commencing below the apron of the weir at bottom, and finishing at "nothing" at the crest; if this superadded structure be sixteen or eighteen feet in width, built of hammered stone, slightly concave on the surface, without stops to collect the water (which only impede the fish) and so placed, in the river, as to face the channel of a current on the down-stream side, it will afford an easy and suitable passage for salmon: the fish will speedily become acquainted with it: with about three inches of water going over the weir they will ascend it readily, but in flood time, and in little freshes after rain, they will dash over it with as little concern as if no weir at all existed at the place.

There is another class of weir, which we may call the V weir, being in the shape of that letter inverted, the angle pointing up-stream; here, under the same conditions, that is, waste-water passing over the weir when the mill is at full work, a pass can with much facility be constructed, by forming the inclined plane, with concave surface, before referred to, at the same angle of inclination, commencing with its centre at the apex of the V, and terminating at the outer edge

of the apron of the weir; in this angular description of weir, a pass so constructed will be highly efficient; the water doubling itself at the apex, which is the most difficult part, will give additional facility of passage, and the concave surface collecting it below will form a sufficient "lead." The salmon will seek it and pass over without difficulty—in time of fresh, or flood, or in the weekly close-time when the mill stops work, this weir, with the above alteration, will present little or no obstruction.

The devices above indicated assume that waste-water is escaping over the weir in some quantity, at all seasons when the mill is at full work—but this condition cannot always be fulfilled; in some streams, and at some weirs, the mill takes the whole of the water, and the weir is dry, or nearly so, during the greater part of the summer. It is a mistake to apply any description of pass to every description of weir: give a salmon water enough, and he can do almost anything; but to build a migratory pass, where the chief element is absent, will be only as futile as the plan or specification which proposes it.

We therefore, now assume the worst case: let the problem be to make an efficient migratory pass where no water at all escapes over the weir, in an average state of the river, when the mill is working. This object, we allege, cannot be attained by any of the plans officially propounded, until salmon can be found to advance up an inclined plane in any other element than water—and building the pass will not

remove the difficulty. We proceed to suggest the means by which, as we conceive, the difficulty can be best met, admitting, as we do, that it is not capable of being wholly removed. The only useful pass which can be here constructed is one which will be effective only at the following periods; namely, in flood time; secondly, during the weekly close-time when the mill stops work; and lastly, during the winter-season; and these opportunities, under all the circumstances, may be considered sufficient.

Let a similar incline, concave on the surface, be built against the weir, but finishing about a foot below the crest; here let an opening be made, in due conformity with the provisions of the 5th and 6th Victoria (doing no injury to the water-power of the mill); the opening when completed should be, say, nine inches in depth, and about four feet wide; if an oaken or metal sill be imbedded in the masonry at the top of the inclined plane, grooved so as to take a metal plate or bevelled piece of timber adapted to the groove, in such way as to range with and continue the inclined plane, and of such height (that is to say nine inches) as will range exactly level with the crest of the weir, a pass will be formed, and no injury whatever will be done to the water-power of the mill. This pass will be effective in flood time, and will then act without requiring any attention; during the weekly close-time, when the mill stops, the passage can be opened under the provisions of the Act, and during the general close-time, we ven-

ture to say that if opened at the occurrence of the first flood in October, the mill-owner will not have occasion to close it until March or April following, as the river (except some very petty stream) will hold its winter level during the whole of that period—in other words, the run of water in the river will maintain its level and flow over the top of the weir, although the aperture be open; should the contrary, however, at any time occur, the miller has the remedy in his own hands; he closes the opening as he would close any waste-gate of his mill; but, as demonstrative of the general efficiency of a pass constructed in this manner, we can state that we have seen in many rivers flood-gates discharging, at least, ten times a greater volume of water (seven feet by five) remain open with the miller's assent, and by the miller's own act, for six months together, until the very cogs of the winch became rusty—but, as already stated, the material fact will remain at all times undisplaced; the miller can close the aperture, if he becomes inconvenienced, and the pass will be effective and available under the existing enactments, once in each week throughout the year.

Our next device, we hope, will complete the series, as the subject here discussed, though important, is necessarily tedious. Amongst various plans and specifications which we have seen (many of them quite absurd, inasmuch as they assume that a salmon can ascend a weir without water) it has never been proposed, that we are aware of, to construct a migra-

tory passage for salmon in the sluice itself, or in one of the flood or waste-gates of the weir. Nevertheless, by far the most effectual pass can be so constructed. The best constructed weirs, whether fishing weirs or mill-weirs, are always the most difficult for salmon to ascend; and these have usually supernumerary sluices, or flood-gates in the corpus of the weir itself, some of which are seldom, if ever, opened for any purpose of the mill. We could point to some weirs where some one of several large flood-gates has not been once opened for many years; we know others where mill-owners have closed up with masonry one or two of such waste-gates, as being wholly supernumerary. Take any such cases (and they are numerous) and a pass can be constructed which would pre-eminently accomplish the intended purpose. Let an inclined plane be built in the interior of the sluice itself, or waste-gate selected for the passage, finishing at a level of a foot or eighteen inches below the level of the crest of the weir; the existing sluice-gate will close down upon this. Here, then, is a pass ready made, most effectual for every purpose, and attainable at a small expense. We declare categorically that the salmon will wag their very tails with joy when they perceive a sluice or flood-gate slightly altered in this way, inviting them, as it were, to pass up stream.

We shall now say a word about the expense of these constructions. In all the above plans the expense will be moderate, and the work suggested be-

ing of stone, will be as permanent as the weir itself; any other material would be useless: timber, for instance, has been proposed, and estimates of considerable amount have been put forward for some wooden structures, but we much fear the poachers in the vicinity (when the moon was not at the full) would take an early opportunity of permitting the *disjecta membra* to float quietly down-stream, particularly if the device so constructed should prove very efficient for its purpose.

But the expense of these structures will, after all, be a material consideration. The funds for these purposes at the disposal of Boards of Conservators are very limited; and as mill-weirs in some rivers are numerous, many years might elapse before anything effectual could be done, if estimates should range so high as £50, £100, and even considerably higher. We think economy, therefore, indispensable in the allocation of the funds applicable to this purpose. In any of the plans we have proposed, we should say £40 will be the outside of all expenses, but in the most effectual plan suggested, namely, that in the sluice itself, one-half the above amount will amply suffice; while in numerous old, ill-constructed, and uneven weirs, by slight aids or very simple adaptations, passes effectual for every purpose intended, and permanent as the rough old structure itself, can be completed at an expense not exceeding ten pounds.

We must not, however, prolong this discussion, as

we fear so much technical detail connected with these migratory contrivances may appear tedious; if so, its best excuse will be its utility. The practical difficulty of this particular branch of our subject is admitted on all hands: few, indeed, have examined it all; but great as are the inherent difficulties, the adventitious ones are greater; to pursue, indeed, this branch of inquiry, or meddle in the smallest degree with either the mill or the mill-owner may be regarded as a task beset with difficulties and controversy. The fisheries are especially known to be a *vexata questio*, or sea of troubles, and to ramble into these forbidden paths resembles poaching on some strange manor, or innocently putting one's hand into a hornet's nest; but in this utilitarian age every nook and corner of science must be explored, and even in the humblest departments of the useful arts, the march of improvement must go on: many persons throughout Ireland understand, and can explain, these technical details, and we hope no extraneous considerations will deter any person competent to do so from throwing every possible light upon so useful an inquiry—practical persons in the neighbourhood of mills and weirs should willingly communicate any information upon the subject, which their local knowledge and pursuits may have enabled them to acquire.

The scale of license duties fixed by the Bill will next require some notice. A higher rate is proposed for all engines used in fishing, than that provided by the present scale, and we think this absolutely neces-

sary. It is to be observed, that license-duties upon fishing implements form the only fund for payment of water-keepers, and the protection of the fish during the spawning season; and if this object be properly carried out, the party paying the tax derives direct benefit from the outlay, and therefore should not complain. A question may be made in the department of angling whether, in the case of trout-rods, a very trifling duty might not be sufficient, and produce a larger revenue than a larger duty: but we are decidedly of opinion that every person fishing with flies, for any description of trout, should take out a license for his rod, otherwise the duty may be evaded on all occasions. We confess we are not very favourable to promiscuous angling amongst the industrial classes, nor do we think it desirable. Angling, in excess, is very injurious to a salmon river, and immense quantities of salmon fry are destroyed in this way; but our grand objection to it is, the habit of idleness it engenders amongst a class of persons who must live by their industry: very few indeed pursue angling as a trade, or means of livelihood, and those who do, will derive personal advantage from restriction; but tradesmen and artisans frequently leave their proper work neglected at home, to spend the day upon the banks of the river, and the evening in the shebeen. In this view of the case a license duty of £1 is proposed by the Bill upon a trout-rod; we admit, however, that the question of amount is debateable.

The license-duty upon nets is proposed to be regulated by their efficiency and by their length. The Select Committee of the House of Commons, in 1849, recommended that a power should be given to the Commissioners to regulate the length of draught-nets in rivers, according to the breadth of each river; and we are clearly of opinion that such a regulation is desirable, and has been properly introduced into the Bill. Large draught-nets are frequently used, particularly at the mouths of narrow rivers, in such a manner as to form a most destructive monopoly: we know of nets of this description more than a quarter of a mile in length, which stretch across the whole mouth, and are most destructive and prejudicial to the fishery at large. Parties using those powerful engines profess to fish on the common right amongst poor persons, who are not able to provide such expensive engines. A draught-net of this description is worth £60 or £70; the party using it fishes where the right of fishing is common to all, but engrosses and monopolizes to himself almost the whole fishery of the locality, to the detriment of those really poor persons who have an equal right to fish in the same locality, but whose right is swept away, or swallowed up, by those greedy and devouring engines. We think, at the entrance of narrow rivers, no net should be allowed of greater length than two hundred yards; which regulation would, in a great measure, prevent the injurious practice of stretching draught-nets across the mouth, and would

secure to all exercising the public right an equal chance of capture.

Some provisions are introduced, giving new and important powers to Boards of Conservators of Fisheries, constituted under the Act 11 & 12 Vict., chap. 92, and the elections to those offices will in future be held triennially. To those Boards the regulation of all local matters connected with the fisheries is confided, and it is reasonable to expect that much benefit will result, from the increasing interest now taken with regard to them in almost every locality. It will probably be necessary to give some additional powers of control to the Commissioners of Fisheries with respect to those Boards, as their functions have been much enlarged, and very onerous duties now devolve upon them.

An important matter remains to be noticed, namely, the jurisdiction proposed to be given in fishery cases, to the Assistant-Barrister of the County (with appeal to the Judge of Assize). Numerous cases occur at Petty Sessions, where the jurisdiction of the magistrate is ousted whenever any question of title arises; an expensive suit then becomes necessary, which is often worse to the proprietor of the fishery than the over-capture of the bag-net. Not to mention numerous other cases of interminable litigation in fishery questions, the recent Limerick case of *Gabbet v. Clanchy* will suffice as an instance; in that suit, after an expenditure of many thousand pounds in trials at the Assizes, in the Queen's Bench, and in the Court

of Equity, the lessee at length succeeded in sustaining his verdict. But then the verdict was only against A. B., and immediately another party, C. D., commenced to try his rights; the lessee then applied for an injunction in the Court of Equity against C. D., which was of course refused, until he tried the right at law with him also. And thus every one of her Majesty's liege subjects might, if so inclined, lead our lessee into a like dance: but this is too much, even for the stoutest litigant: through these meshes of the law there is no "escapement," and the poor proprietor finds himself, like a salmon in a bag-net, looking wistfully about to see where he can get out. In many instances, in fishery cases, where the question of title has been raised, the parties preferred abandoning their rights altogether to contesting them at law. But if these questions involving the title, whenever they occurred at Petty Sessions, might be referred for trial to the Assistant-Barrister's Court, they could be decided by a competent tribunal, at a moderate expenditure of time or money. The extension of the jurisdiction of County Courts in England has been found to work well: by a resolution of the Bar, passed at Lancaster, on the Northern Circuit, during the late Assizes, it was decided by a large majority that it was quite in accordance with etiquette, for barristers to attend, and form a Bar, and practise at the County Courts. Such fishery cases, therefore, as occurred at Petty Sessions in Ireland, involving the title, might, with great ad-

vantage to the public, be referred for trial to the able and impartial judges presiding in those courts, and be decided without that interminable litigation which at present renders the law almost a nullity in such cases.

In concluding our remarks upon the subject of the Salmon-fisheries, we shall submit a few observations as to the aggregate deficit of the Irish Salmon-fisheries since 1842, which is the matter the public has to deal with. Upon this point we are really afraid to make an estimate, as any calculation of ours might appear incredible, but the reader may form some estimate himself from the following data:—The average take of salmon annually at the chief Salmon-fisheries, at that period, may be taken at about 200 tons each; the Foyle fishery, in 1842, produced nearly 300 tons, and it is a remarkable fact that in the reign of Charles I., (according to a return made by Lord Strafford), the produce of the Foyle is stated at 240 tons for the year 1638; the Bann, at Coleraine, previously also, had been equally fruitful; and the Shannon superior to all. Shortly anterior to 1842, in one town on the Shannon (the town of Glin), £8,000 worth of salmon was sold in one season. The great fishery of the Moy, at Ballina; the Blackwater, at Lismore; and last, not least, the Erne, at Ballyshannon—produced also their hundreds of tons. Perhaps those now mentioned might be placed in one category, and be styled first-class rivers: in another may be placed the Slaney, Lee,

Suir, Nore, Barrow, and some others, which may be termed second-class rivers; the average here also will range high, though accurate returns cannot be given, as public rights of fishery prevail so largely in those rivers. Then we have in great abundance third-class rivers, such as the Laune, the Maine, the Boyne, the Liffey, and a host of others; in all, we believe, about 120 salmon rivers. Most of the third-class rivers will average from ten to twenty tons each; and even the most inconsiderable mountain streams of Kerry, and other districts, will yield, or rather, we should say, did yield, their five or six tons annually, of salmon and sea trout; and all this exclusive of the capture of salmon in the sea, and at the mouths. Here, then, is a vast aggregate, the annual produce of our Salmon-fisheries down to 1842. But how stands the matter now? Let the proprietors of the large Salmon-fisheries above mentioned state what amount of rent they now receive from fisheries, which previously had paid each an annual rent of one, two, or three thousand pounds. The Irish Society, or London Company, can inform us what rent they got for the Foyle fisheries previous to that year. We believe we are right in saying the rent was £3,200 per annum; but what is the rent now? The Foyle fishery was set up to be let last February, in the Guildhall, London, and no bidder could be found rash enough to take it. In every district of the country ruin has stalked among the fisheries; from the records of the Court of

Chancery, in a case where a receiver was appointed, we could show an instance in which a fishery, in the hands of the receiver, has not produced any profit whatsoever, which down to 1842, produced, beyond wages and expenses, a clear profit of £600 per annum. In the late movement connected with the fisheries, the Committee appointed at a General meeting, sent printed queries to the owners of all Salmon-fisheries in Ireland, both in rivers and upon the sea-coast; and one of the queries was, as to whether there had been an increase or decrease of produce since 1842; the answer from all was "decrease." In some cases, the decrease was stated at one-half, in others, two-thirds, and in some the produce was stated at literally nothing. We have all the documents before us, and with impartiality and accuracy we can declare the result of our examination to be, that the produce from all the Irish Salmon-fisheries has dwindled to one-third, within the last ten years.

These, indeed, are sad statistics and reminiscences into which we have been led, while viewing, in mournful vein, the prostrate condition of our salmon rivers.—It is a dreary spectacle to behold from afar the sterility of the land, and see a whole country laid desolate; when the blighted corn-fields are spread out before us, or black and withering potato; when no joyous laugh is heard about the dwelling, or busy hum of the homestead; sad and dreary is this spectacle; but the sight is not a more mournful one, than

that of a noble river flowing by us, despoiled of its gay and silvery denizens: lethe-like it rolls on, whether foaming in flood, or sparkling and dimpling in eddies; on the surface, indeed, there is no change, but we know there is no life within; the skilful salmon fisher is but too sure, and sees but too well, that all is still and desolate beneath the waters.

THE SEA AND COAST FISHERIES.

This extensive and all-important branch of our subject, will now claim attention. It would appear from some of the clauses in the Fishery Act of 1842, that there was some inchoate intention in the then Government to cultivate those fisheries. Provision is made in the 17th clause of that Act to facilitate the purchase of land upon the sea-shore, for the purpose of erecting curing-houses; and in the 111th clause, power is given to the Commissioners to hold meetings, the object of which would appear to be, to scrutinize and investigate as to the best means to be adopted for the extension and improvement of these fisheries, and to acquire information respecting them. But as yet the word of promise has been broken to our hope, and nothing whatever has been done on this head since 1842.

The sea fisheries may be described as a rich, but uncultivated, waste surrounding our shores: it is obvious that the resources of the sea are vast and inexhaustible as itself, and that the extent to which

those fisheries could be profitably worked would be bounded only by the amount of capital embarked in them. The fisheries of every nation that has cultivated them have prospered. We might instance those of Holland, Norway, Newfoundland, or even the British sea-coast fisheries; but we shall keep near home, and confine our observations here solely to the latter. From the Report laid before Parliament by the Commissioners of British Fisheries, for the year ending January, 1850, we find that the gross catch of herrings for the year 1849 amounted to one million, one hundred and fifty-one thousand, nine hundred and seventy-nine barrels. The usual value of a barrel of herrings is taken at one pound, British; so that the cash proceeds may be stated at about £1,100,000 sterling. The year 1841 was formerly the standard by which the productiveness of those fisheries was measured; the year 1848, however, surpassed it; the produce of 1848 being 999,345 barrels. But the year 1849 has surpassed all previous years, and will now remain as the standard, until some more productive year shall displace it. The Commissioners state in their Report that this extraordinary influx of herrings, so much exceeding anything that could be calculated upon, had almost disarranged the trade; and that but for the exertions and superintendence of the officers of the Board, and the extraordinary efforts made by them, the fish could not have been cured, nor markets found to carry off all this produce. In some districts of the

Highlands, where the preparations made were on a scanty and insufficient scale, much loss resulted. The urgency was so great, that salt, and empty barrels, were hurried forward by steamers at high freights, in hopes they might arrive in time ; and, on the fishing-grounds, fishermen might be seen rowing their boats, over-loaded with fish, and vainly endeavouring to effect sales at the curing-houses. The curers refused to accept the cargoes, not having a sufficient stock of salt or barrels, and quantities of the finest fish were, consequently, thrown out as manure ; and finally, although the fish remained abundant on the coast, the operations were brought to a stand-still from the want of markets for an immediate sale of the fish, or the requisite materials for preserving and barrelling them. The proceeds, however as we have already said, amounted to 1,151,979 barrels.

So confident do the Commissioners of British Fisheries appear to be, that this catch of 1849 forms no exceptional case, but that the produce of those fisheries may be regarded as illimitable and inexhaustible, that they have embodied in their Report to Parliament a very important document—namely, an application made by them to the Board of Trade to procure for them foreign markets to take off all this increasing produce. Previously to the famine, the export of Scotch herrings to Ireland exceeded that to the whole of Europe put together ; but the Irish market having declined, the Board of Trade is solicited by the Commissioners to obtain for them from Continental Governments some reci-

procity, or reciprocal advantages, for those which we have so liberally afforded to them in free-trade. The Commissioners of British Fisheries complain that foreign markets are almost closed against British herrings by the high rates of import duty. They enumerate in this illiberal category Austria, Russia, France, Holland, Belgium, Sweden, Denmark, Portugal, and Spain; and they strongly impress upon the Board of Trade the necessity for its good offices, in procuring new markets, and removing the jealousies and oppressive enactments of foreign governments, in which event, they state, that an unbounded Continental market would be secured. The Commissioners conclude their Report in a truly gratifying manner, by pointing to the prosperity they have originated; the towns and harbours they have created; the population they have sustained; the industry they have excited, and the boundless resources which lie yet undeveloped before them. The most cursory examination of the lucid and comprehensive documents and reports emanating from the Commissioners of British Fisheries will evidence the great pains and anxiety they have devoted to the improvement of the Scottish Fisheries, and the transcendant success which has attended their exertions. In their buoyant and exhilarating Report there is but one lugubrious feature: they complain that the export of their cured fish to Ireland was declining. Alas! the bulk of our unhappy population had ceased to eat herrings, or anything

else, we fear, and the enormous exportations of that article to Ireland had lamentably declined.

Let us now take a view of our Irish sea-coast. Behold the roofless cottage—the boat stranded on the beach—the coast almost depopulated—the poor-house full. How is this? Do the herrings turn tail upon us, or shun our shores? or have the turbot, the sole, and all the finny tribes, forsaken us? No such thing. Is our coast population indolent or cowardly? believe it not: they want instruction and culture; they want encouragement and aid; but they are not deficient either in courage or in energy. Our fishermen will go to sea in “cots,” or face the Atlantic surge in “currags” made of canvass, in which the well-equipped mariner of other countries would not venture to set a foot. Neither have the fish deserted us; they abound upon our shores or visit our bays in never-failing profusion; even while we are penning these lines, a fleet of Cornish fishing boats is leaving our shores, laden with the fit reward of their well-requited toils. Two hundred sail of these vessels dropped anchor in Howth Harbour this season, and fished under the friendly ray of the Poolbeg and Baily lights, almost within sight of our metropolis; and each summer they carry off a golden harvest in the presence of our starving fishermen. Our fishermen attend upon them, land their fish, or carry it to distant markets, and the utmost harmony prevails between them. We have seen and conversed with these intelligent

Cornishmen ; we admire their skill, their energy, their superior equipments, and fishing-gear—but, above all, their mild and orderly demeanour. Their fleet, as we have said, consisted of about two hundred sail, and frequently in some seasons consists of much more : these boats, with their equipments, are worth about £200 each, so that the whole fleet will represent, in round numbers, a capital of about £40,000. They arrived at Howth this season on the 23rd of June, and were all off on the 1st of September. Having fished our Dublin coast, they leave the herrings still abundant behind them, and hurry back to Cornwall to be in time for the great pilchard fishery on that coast, which only lasts a brief period, when they reap another abundant harvest ; and some of them this season again returned to our coast, and again met the herrings. But confining our inquiries solely to their catch of herrings on our own coasts during the months of July and August of the present year, we find from careful inquiries that most of those boats captured and sold about £200 worth each ; thus clearing almost the whole floating capital of their fleet within a period little exceeding two months, and carrying off from our shores, in hard cash, an amount little short of £30,000.

Do we make these observations in an invidious spirit ? By no means ; nor are our native fishermen themselves unfriendly to their visitors, or at all disposed to act the part of the dog in the manger :

quite the reverse : they welcome them, and receive considerable employment from them ; and as they cannot themselves, under present circumstances, take advantage of the rich harvest which is spread out before them, they envy not their neighbours, and contemplate more in sorrow than in anger the splendid results of their industry and energy. But have these hardy inhabitants of Cornwall no advantages over our native fishermen ? Alas ! the ready answer is—all this industry and productive wealth have been called forth, and have had energy and life impressed upon them by English capital. Those boats do not belong to the trusty fishermen who navigate them ; they belong in shares to rich shopkeepers and merchants in Cornwall, who fit them out, and the proceeds are divided in certain equitable proportions between the owners and the fishermen, by which arrangement all are equitably recompensed ; those who supply the capital, divide, clear of all contingencies, fifteen or twenty per cent. ; and the industrious fishermen themselves lay up in money, as the reward of their toils, an ample provision for winter.

Can we not imitate this curriculum of industry ? —We proceed to make a few suggestions on this head, as an effort is being made in the present Bill to call forth our dormant industry, and latent wealth in this land of paralyzed resources.

In the first place, without proper means for development, nothing can be even reasonably proposed.

We have seen how British industry prospers ; but there is a substantial grant for the control and management of the British Fisheries, whilst almost nothing is conceded for the culture of our own. The Select Committee of the House of Commons (1849), upon the state of the Irish Fisheries, have reported to the House—" That the want of proper funds and effective machinery has constituted an impediment, sufficient of itself to defeat the intentions of the Legislature, by disabling the Executive from giving them their due and practical effect." As a commentary upon this passage, and with reference to the unexampled success which has attended the administration of the British Fisheries, we would say:—give to Ireland the same advantages, and soon a similar scene of prosperity and industry will develop itself—encouragement, and due and full development of our fisheries, is the just claim which we prefer.

If some Seer or Sybil could be consulted in some Celtic Delos!—at Tara's Hill, or in the shadowy Glendalough, and if the question were demanded, What remedy was there for our unhappy and forlorn state? we doubt not the mystic response would be, "*employ and educate*;" in these—employment and education—will be found the true means for our moral regeneration, and the balm for those social evils which are agitating the land and dispersing our race. In the fisheries there is an unbounded field for industry and employment. Let us avail ourselves of it; nor longer incur the responsibility of

wilfully neglecting those created things that are so lavishly spread out around us. Let us not cease to hope that this great industrial resource will be now impartially developed, and that England will at length perceive the folly and injustice of allowing to lie waste the fisheries of our Irish sea-board; thus neglecting a vast source of prosperity to us, and of strength and naval advantage to herself.

We now proceed to consider the measures necessary to call into active existence the fisheries of Ireland.

A grant in aid of a loan-fund to encourage and assist the native fisherman will be our first requirement: here we are met on the very threshold by the Chancellor of the Exchequer, who, buttoning up the pocket of the United Kingdom, declares positively, "No money:" we answer:—then the fisheries must slumber for another century. Sir William Temple, in 1673, proclaimed that the fisheries of Ireland were a hidden mine under water; we insist upon the same thing now, but still the mine has never yet been worked on any suitable or national scale. We have just exhibited to view, in one locality, a fishing fleet of two hundred sail successfully and profitably engaged on our shores, and to procure for our suffering population some share in these their own native fruits, is surely a matter devoutly to be wished for; we shall endeavour, therefore, to suggest something feasible, if possible, something which may be thought practicable—in fact, to do

business ; for while we are debating the matter, our people are quitting our shores, or crowding towards the poor-house. If any means can be suggested to put our fisheries in motion, we feel convinced they will prosper from the starting-post, and be adequate not only to the due supply of our provincial towns, our poor-houses, and our population, from the coast to the centre ; but to export annually 500,000 barrels of cured fish ; not one barrel less will satisfy us.

We shall begin our exposition with Howth, as we are partial to its blue cliffs. We take upon us to say there is not in the British empire, a town to surpass Howth in all the concomitants of a first-class fishing-station. Its harbour cost half a million ; a few miles in the offing a “ball” of herrings, eight or ten miles in length, and one or two miles in thickness, moves annually along in its huge and mysterious migration. The Cornishmen take a handful or two out of them (some £20,000 or £30,000 worth) each season, and then leave them unmolested to wend their way in slow and successive shoals along our coast. A railroad has its terminus close to the harbour ; we have stepped the distance, and it is just forty paces from the turn-table of the terminus, to the gunwale of the fishing-boat. Our Dublin Billingsgate, the wholesale fish-market, is reached in forty-five minutes, and, as a market, is not perhaps equalled in advantages by any in Great Britain ; the fish are sold by auction at an early hour to the trade, and if a glut of herrings, salmon, turbot, or other

fish is poured in, the bulk of it is on board a steamer in three hours afterwards on its way to Liverpool. Not to waste time in details, those fish next day are exposed for sale in Manchester, Birmingham, and other inland towns, "bleeding fresh," to use a market phrase, in which state the commercial value is greatest, and thus the most remunerating price is obtained. Such is Howth, and such are its natural advantages. No town in Great Britain, neither Yarmouth, nor Wick, nor Stornoway, nor Helmsdale, nor any other fishing locality, in situation or natural advantages will be found to surpass Howth in all the requirements of a great fishing-station.

There are about 150 resident fishermen in the town—a hardy and stalworth race of industrious men; they occupy their time in the long line fishery, and when not fishing, prepare their hooks and lines. There is not a net in the town, nor has there been a net made in it these forty years.

We shall now take a view of another of our fishing-stations—we mean Ardglass; but we may here cursorily observe, that our whole coast, at intervals of a few miles, is thickly studded with well-circumstanced fishing-villages, containing each an industrious though distressed population, who are compelled, like Tantalus, to see abundant store spread out beside them, although beyond their reach. Several years ago, before famine or potato-rot, we had an opportunity of witnessing the neglected and dilapidated state of the locality we have just mentioned—

Ardglass. In company with a friend we made an excursion from that locality to witness a take of herrings during a serene night in August. We were hardly on board when the lamentably defective state of the tackle and fishing-gear came under observation, and, on losing sight of the land, were quite dismayed at finding that such a thing as a compass was not amongst our naval stores. The Manx boats, however, were fishing in all directions about us; what their capture may have been we cannot say, but ours was just what might be expected, very deficient; indeed, the nets were totally unfit for any operation on an extensive scale. The value of a proper train of nets is somewhere about £80, an amount which, we need scarcely say, could not well be put together by any boat's crew, from their own unaided resources; and, indeed, our co-voyageurs seemed sunk in abject poverty, brooding upon their misfortunes and the depressing causes which baffled all their efforts at industry. One of them, during our return homewards, "did salutation to the morn," and, in plaintive note, sang for us the "Mountains of Mourne," which were then heaving in sight—a fine, athlete fellow, who, we thought, under proper discipline, might have made a model seaman on board a man-of-war or merchantman: the mournful cadence harmonised but too well with the tattered garb and broken nets, and disappointed hopes of these uncultured fishermen. The observations we then made, and the reflections arising from them, satisfied us that these

men occupy a field for fishing operations which has scarcely an equal, being the same fishing-ground on which the Isle of Man fishing-fleets carry on such large and profitable operations, but that their defective equipments and uncultured state render success hopeless. We may here casually observe, that the sales of fresh fish effected by the Manx men in the Dublin market alone, during a great part of the present summer, averaged £100 daily.

We might, if it were necessary, enumerate a long train of towns, villages, and fishing-stations, with which we are familiar along our eastern shores, all of them in the same depressed and neglected state, or the immense resources of the locality known only through the visits of rival fishing-fleets. We feel coerced to ask, how it is, that we stand with folded arms, and allow our people to seek distant Atlantic shores, or Californian mines, when the more wholesome mines of native industry remain unexplored beside them.

Our Bill proposes that the Lords of the Treasury be empowered to advance money on loans in aid of the coast-fishing population. This is the pivot upon which the whole question in relation to the sea-fisheries hinges. Our fishermen cannot emerge from their present state without aid; but where is the aid to come from? If landed proprietors are willing to encourage the fishing population and establish fishing villages on their estates along the shore, it is proposed, in such case, to enable them to take up money

at a low rate of interest, in the same way as for drainage purposes, and a short amendment of the Land Improvement Act will supply all the necessary machinery for that purpose : but we feel convinced that fishing speculations will never thrive so well as when carried on in person by the fishermen themselves, at their own risk, and for their own profit, and we are satisfied that the struggle for independence which this encouragement, if conceded, will excite, would be attended with the most salutary results, social and political. A grant in aid of the industry of the coast population, will be a humane and long-demanded remedial measure, and a safer investment than advances, for labour-rates or poor-law unions. We would suggest, then, a limited grant, in aid of a loan-fund, in localities selected for the experiment ; the sums advanced to bear a small rate of interest, and to be repayable in four years, by annual instalments of 25 per cent., each instalment to become due on the 1st of September in each year. If it be asked, what security can the impoverished coast fisherman give—we answer, he can give a mortgage upon the ocean, and draw almost at sight upon the treasuries of the deep. A loan-fund office, with savings'-bank annexed, will, therefore, be the only machinery we shall suggest, and a bottomry bond, with sureties, the security. We have little doubt as to the results, or of the validity and efficiency of the security ; nor do we fear that our fishing population, temperate as they now are, and industrious and persevering, will

have any difficulty in meeting these instalments—nay, we are convinced, many of them would anticipate their obligations, and place themselves, in a shorter time than the period we have above mentioned, in the position of independent boat-owners, thus becoming useful and serviceable members of the community, no longer a burden upon the poor-rates, and a reproach to the industry of the country.

The punctuality of the working classes in Ireland, in similar cases, with their gratitude for kindness shown to them is proverbial. In the City of Cork Loan-fund Society, the loss in six years, upon loans to the amount of £38,520, only amounted to £8 17s.

We are satisfied the Government would not lose a shilling by this grant, so prolific and unfailing is the field, so ample are the means for repayment, and so keen would be the self-reliant struggle for independence. With a surplus treasury, an exchequer overflowing, and with large indirect taxation from Ireland swelling the resources of the State, we do not think any Chancellor of the Exchequer can remain imperturbable, or obdurate, in the face of the facts which can be marshalled against him.

Should the plan here proposed be adopted, and prove successful—to enumerate the proper measures for a full development of the fisheries will be a work of few words. Small piers, in localities which at present have no harbours, will be a necessary requirement; and for this purpose there is at present, we believe, in operation an Act of Parliament, toge-

ther with a grant. In many localities a short spur will be sufficient to form a safe low-water harbour for yauls and small craft used in such species of fishing as is suited to the locality. We would suggest that these piers should be constructed wholly by the Government, without any aid or application from local proprietors. This will ensure a proper selection of the site by competent hydrographists. Small harbours appear to have been constructed with much advantage on the east coast of Scotland, under the provisions of the 5th Geo. IV. c. 64; and everything connected with them, or relating to their extent or requirements, is well understood. A capstan, boat-slip, and mooring-gear, and small light, or lantern, will be the necessary appendances to complete the boat-harbour. Curing-houses and salt-stores, in remote localities, will also be required for fishing purposes; and provision is made in one of the clauses of the Bill to encourage their erection by private parties, and we have little doubt that in suitable localities they will form, not merely self-supporting, but highly profitable private speculations.

In the control and management of the fisheries educational purposes must not be overlooked. While the Professor and the schoolmaster diffuse science and the liberal arts in their proper sphere, the practical instructor should keep equal pace amongst the industrial classes. At home we have ample scientific skill in fishing operations, but we must seek curers, and perhaps managers, from the sister isle.

In Scotland, indeed, the system of curing and preparing fish for export has been reduced almost to a science ; and the success of the sea fisheries will, to a considerable extent, be dependent upon a competent knowledge of this art. Experienced Scotch curers will form admirable partners in the profitable speculations of the curing-house ; indeed, practical information will be desirable in everything relating to the fisheries, nor can they be developed without the same skill and business-knowledge which brought the British Sea-fisheries to so high a state of productiveness. The Committee of the House of Commons pointedly direct attention to this fact, and the Inspecting Commissioners of Fisheries in Ireland have reported to Government the necessity for such aids ; practical information is undoubtedly to be wished for, and should finally supervene to that spirit of theory which has ridden roughshod over the fisheries. When the ship can be conducted through the seas without the aid of the mariner, or when the manufacturer or the artisan can pursue his calling without any knowledge of it ; then may the fisheries be developed, and their wants and requirements be understood and met, without the experience and knowledge necessary to the due understanding of the mysteries and intricacies of the art.

To control and preserve order in the Scotch Sea-fisheries, the services of an armed cutter are found requisite. The “ Princess Royal ” sails under the orders of the Fishery Board at Edinburgh, and pre-

serves order and regularity on the crowded fishing grounds. We think some similar provision will be necessary in our fisheries. We should like to see the "Self-Reliance" or the "Industry" cutter, cruising around our fishing stations; our fishermen will see even in the cannon on her deck, a solicitude for their welfare, and a watchfulness of their interests.

Extensive at first view though these requirements may seem, they involve no very serious expenditure, comparatively with the magnitude of the moral and national advantages that may be expected to result from them. The present public expenditure upon the British Fisheries cannot be otherwise regarded than as a due application of the finances of the State, when we see in one item alone, a million sterling reproduced annually in national wealth; and towns, and harbours, and thriving communities springing up under its fostering influence. The Parliamentary grant of £14,000 per annum, for the control and management of the Scotch Fisheries, sinks almost into insignificance when contrasted with such results. Neither are *our* fisheries intended by nature, nor should they be allowed by governments or human laws, to stagnate in neglect. We may witness in almost every provincial town in Ireland, imported cured fish retailed at high prices; but if we make only a short excursion from our shores, we shall see the very waters instinct, and moving with life, or perceive the ocean for miles indicating by well-known appearances the masses which are moving below, or bristling in myriads at the surface!

We have now detailed the requirements for calling into active existence the vast resources of our fisheries. We have stated them, we hope, impartially—at all events, independently. We cannot acquiesce in the justice or propriety of the “non-interference” system, which has been so long and so studiously recommended, but which has so signally failed; nor do we concur with those who promulgate the cold and iron dogmas of political economy: to preach self-reliance to the spell-bound and starving Celt, is but to tell him to despair. Those dogmas may be palatable or may be applicable to happier climes, but they toll with fatal knell upon the desolate condition, and exhausted resources of our fishermen. Our coast population possess ample energy and self-reliance, if only properly set in motion and directed; and if these iron rules were relaxed, habits of industry and enterprise would be engendered in this country, not displeasing (we should hope) even to that school of political philosophy, which now uplifts itself so predominantly amidst the classic porticoes, and academic groves of Manchester!

A feeling prevails, well or ill-founded, that commercial jealousies retard the development of our fisheries; we cannot take upon us to offer any opinion upon this head. We have, however, the fact before us, that there is a full development of the British Fisheries, whilst our fisheries are almost hermetically sealed up. Perhaps some apologist

may say, that the continued agitations which distract the country prevent alike the introduction of capital, or the due care and culture of our resources by the Government; but let us hope that a new era is now at length opening upon us, and that the Celt has learned, in famine and misfortune, an enduring lesson—"Sweet are the uses of adversity"—assuredly in that school an improving lesson has been taught him, and an opportunity for social ameliorations now presents itself in this country, such as was never before presented at any period of our unhappy history. Famine and pestilence have swept over the land; the affrighted inhabitants are abandoning their homes, seeking distant shores; a new industrial class, and a new proprietary, are springing up around us; fresh scions have been implanted, and new vigour infused; and an amalgamation of interests and of races will be the inevitable result: railroads expand, ready to receive and distribute all the products of the land, or treasures of the deep: space is almost annihilated, and engineering science almost joins together the two islands; the legal incumbrances on the soil are removed; capital but seeks to divert itself into some peaceful and profitable channel, and even labour is redundant, if the Poorhouses but ope their ponderous jaws. Surely, this is England's opportunity, and here are the elements of a time-enduring and invigorating union.

In urging our cause, and stating the case of the fisheries, we shall make this concluding observation

—that to attract population to the coasts should be a leading policy with every maritime nation. The time may arise (though distant be the day) when a brave and weather-beaten race of coast population along our sea-board, will be a better display before the neighbouring nations than a bare and deserted coast; the thews and sinews of the land should be sustained; and though we compete betimes with other nations in clipper yachts, or in mercantile marine, let our future navies not be deemed unworthy of a thought: reinforced from our shores with a sturdy and well-cultured class of fishermen, we trust the navies of England will long maintain their proud pre-eminence—and in this western isle, the Queen of the waves possesses a jewel, in the gratitude and loyalty of our sea-coast population, brighter than Orient pearl, or costly Koh-i-noor.

Having concluded our comments upon the Irish fisheries, we indulge the hope that something will be done to upraise them, during the approaching session. The Government, perhaps, is not partial to a Fishery Bill, surrounded as it is, with difficulties, and divided and conflicting interests; but when the voice of the country has been unequivocally, we might almost say indignantly declared, it is not too much to hope that Government will support a remedial measure so urgently required. The Irish fisheries form a component part of the resources of the empire, and are entitled to equal encouragement and equal support. Speculative advantages are not here sought; we only

demand that culture and care of a great national property, which a landed proprietor would bestow upon his private estate. The clauses in the Bill, which relate to the coast fisheries, have especially our warmest sympathy, as without government aid those fisheries must continue to be a sealed book: Lord Clarendon's attention has been frequently called to this important subject, by memorials and deputations from public meetings, but he has not as yet indicated his intentions: still the prestige is favourable, and every anticipation of his approval and support may reasonably be formed: history will survey the events of his time, and may acknowledge prouder services of his, but none more useful than his unceasing efforts to improve our social position.—The sacred duty has ever been present to his mind and councils, to develop our internal resources, instruct our industry, and foster and encourage every effort or enterprise calculated to advance our national prosperity: we are therefore sanguine in our hope for the fisheries: the ensuing session, however, will decide: if the Government will not support the Bill, the clauses having reference to the coast fisheries must be expunged; if so, those fisheries will again languish and collapse, and a long and dreary inanition will ensue.

With respect to the general merits of the Bill which we have here (too tediously, we fear) discussed, we shall not offer any opinion, nor is it our province to do so—it is before the public; great care has evidently been bestowed upon it, and the consoli-

dations appear to be worked out with strict impartiality ; it may doubtless require technical or verbal amendments, which is generally the case with complicated measures ; and perhaps there is not an Act on the statute-book, which is conversant with a greater variety of intricate details ; but there is ample time, before the commencement of next session, for the most minute consideration of its provisions by all those interested in its success, and we trust the result will be, a measure useful to the country. Early in the session it will be proceeded with ; indeed, those competent to form an opinion on this subject, consider that not a day should be lost in stopping the exhaustion of the Salmon-fisheries, and calling into activity the sea-coast fisheries. Mr. Conolly, as we have said, has charge of the Bill, and it is likely the task will prove an arduous one ; but he has devoted much study and attention to the subject, and possesses ample ability and energy for the task : he is owner of the Fishery of the Erne, at Ballyshannon—a noble Salmon-fishery—which, we believe, paid him a rent of a couple of thousand pounds per annum, until the fisheries, somewhere about the year 1842, fell upon disastrous days, and evil times ; but though owner of so valuable a fishery, sure are we, with his large possessions, that no personal motive influences him to undertake this arduous measure ; he is rather, we should say, influenced by a desire to promote the prosperity of the country, by obtaining due encouragement for her fisheries ; and by judi-

cious and equitable enactments to allay those heart-burnings and contentions, which arose in mischievous abundance, from the mistaken legislation of 1842. We wish him “golden opinions,” and every success, in his arduous undertaking.

DUBLIN, OCTOBER, 1851.

THE ARTIFICIAL PROPAGATION OF FISH:

TO WHICH IS ANNEXED, A SHORT SURVEY OF THE RESOURCES, AND
POLITICAL PROSPECTS OF IRELAND.

IN the preceding article, the subject of the Fisheries was examined into at large, in connexion with the measure then submitted to the Legislature, for the amendment of the fishery laws. In the present article, the intention is, merely to investigate a collateral branch of the subject; we mean that relating to the artificial propagation of fish,—a subject which now occupies a good deal of the public attention, and appears to be well deserving of a careful consideration. The French Government has recently issued a commission to examine and report upon this matter, preparatory to a more ample development, by artificial means, of the fisheries on the French coast. It is proposed, therefore, in the present article, to make a few observations upon this novel, and somewhat interesting process.

It would be premature and unfair to assert, and

we are very far from doing so, that this proceeding with reference to the artificial propagation of fish, is not, on the part of our continental neighbours, a step in the right direction. Let us examine into it more particularly. Two French fishermen, named Gehin and Remy, set themselves to work, some years back, to replenish by artificial means, the stock of trout in the streams of their native district (the department of the Vosges); and very successful results having attended their efforts, the French Government has at length engaged their services, with the view of carrying out these processes on a more extensive scale. The methods here adverted to, of producing fish by artificial means, are not now heard of, for the first time in our own islands: on the contrary, many years ago, in Scotland, Mr. John Shaw, a gentleman connected with the Scottish fisheries, carried on these processes in a very systematic form, adjacent to the river Nith; from the year 1833, when his experiments first commenced, until their publication in 1836. It is but just, however, to state, that Jacobi, a German naturalist, was the first discoverer of this method of artificial production, although Count Golstein, another German, communicated it to the public. Mr. Shaw, however, in the experiments we are about to refer to, was the first to direct this discovery to practical purposes, and he succeeded perfectly, not only in producing salmon-fry by the methods referred to, but also in retaining them in his enclosures, and fish-ponds, near the river, during the several stages of

their growth, as far as that stage, when they acquire the peculiar characteristics, and migratory instincts, of the salmon-fry. There, however, his care and tutelage ceased, as at that stage the impulse to quit the river takes place, and the fry must then be allowed to seek the sea, otherwise they die : but from the artificial exclusion—by pressure—of the ova and milt, either from living salmon, or from salmon recently killed—which ova, fecundated with the milt, he buried, or covered with gravel in his ponds in imitation of the mode adopted by the salmon themselves, in their natural spawning places in the river—to the appearance of the embryo-fish, emerging from the gravel—and then through the several stages of their growth during a period of two years, until they manifested themselves healthy and vigorous salmon-fry—through all these processes, Mr. Shaw succeeded perfectly, in breeding and rearing salmon-fry, and dismissing them from his fish-ponds to the sea. It may be added, that in the course of his experiments he fully established the fact of the identity of the salmon-fry with the small fish called the graveling—a discovery which, strange to say, had escaped the acuteness and research of all naturalists, and the merit of which is due to Mr. Shaw alone. The experiments here alluded to, were carried on under the surveillance of distinguished naturalists, and other scientific and literary persons in Scotland ; and the detail of all the processes may be seen in Vol. XIV. of the “ *Transactions of the Royal Society of Edinburgh.*” Still these experiments

have not as yet had any useful practical results—at least on any large scale—such as have attended the efforts of the French fishermen, with river fish. Undoubtedly the migratory instinct of the salmon species interposes a difficulty. If that difficulty did not exist, the whole process of propagating salmon by artificial means might be considered as settled and ascertained, since no doubt whatever now exists, that we have it in our power, to breed, by artificial means, salmon-fry to an unlimited extent, either in enclosed streams, or in the actual spawning places in the river.

We have read and carefully considered all that has been published on this interesting subject for some time back, but will candidly admit, we have not yet formed a decided, or final opinion, nor intend to come to any hasty conclusion, on the whole of this subject: the scientific public must suspend its judgment, pending the inquiries and operations of the French Commissioners; and if (which is by no means to be despaired of) useful results should develop themselves, we shall have no hesitation in taking a lesson from the book, now opened for the first time by our ingenious continental neighbours.

In Ireland a difficulty presents itself at the outset, in the way of such investigations. Here, public rights of fishery exist in almost all the rivers, and private rights also are much subdivided: he, therefore, who would take upon him the office of incubator-general in any river, would only realise the complaint made by Sir Walter Scott in "*Redgauntlet*," and would

become merely a sort of clocking-hen, to hatch fish, for other folk below him to catch and eat ; in Scotland, where many of the rivers, from their sources to the sea, are held as fiefs, or in France, where the subject is now taken up by the Government, such researches, possibly, may be best prosecuted.

Nevertheless, we shall not hesitate to offer our opinions and suggestions, as to the direction in which success may be hoped for ; in an inquiring age like the present, and in the face of some very successful experiments, the public is not likely to rest satisfied with the gradual decline of the Salmon-fisheries, concurrently with the knowledge of the fact, that from a single pair of salmon, some thousands of their young can be produced in a single season, either by artificial means in rills, or enclosed streams ; or by the natural process in the river, in the spawning-beds selected by the salmon themselves.

With respect to indigenous river fish, and particularly river trout, there is no obstacle whatever to a similar success in our rivers, with that which has attended the French methods, in breeding them to an almost unlimited extent : with lobsters and other crustaceæ, which inhabit the sea, the project is also perfectly feasible ; as regards oysters, we know that we can multiply them in artificial beds almost to any extent, and under the existing Fishery Acts a large extension of the oyster fisheries has already actually taken place, and there is ample field, by proper means, for a still further extension of them.

But the Salmon!—there's the rub: he is a fish of roving habits, and once fully formed as a minute creature, in the river, he takes his leave of us for a while, and puts to sea, where all we know of him is, that his growth is remarkably rapid, and that he will, if not intercepted, infallibly return in two or three months, to the river and place in which he was bred.

Admitting then, that salmon-fry, can be produced in rivers to any conceivable amount, either by the natural process, or by artificial means; and that they do produce their young, in vast abundance by the natural process cannot be questioned; it may be asked what purpose is attained by adopting the artificial method?—the object attained is, that we by such means acquire a more complete command of the spawning beds, and a greater control over the parent fish, and over the brood, and can exercise that control for the purpose of protecting them from various casualties to which they are exposed in the main course and channel of the river. Thus, by hatching the spawn in boxes, or in artificial streams, it can be protected while buried in the gravel from the injurious effects of floods, or from dangers arising from an opposite condition of the river—we mean, drought—when the spawning-bed is often left high and dry, to the complete destruction of the whole brood so circumstanced: both these destructive agencies are under control, if we carry on, or compel the process to be carried on, in secure and sheltered places. This protection can be also continued to the brood when it emerges from the gravel, and for the long

period (two years*) during which the fry remain in the river, previous to their first descent to the sea; this further tutelage protects the fry from the various dangers which surround them in the river at large—namely, those from the angler, the poacher, the pike, the waterfowl, and other natural enemies, not forgetting the miller's man.

Now, these destructive agencies are all avoided by propagating them ourselves in secure places—that is, excluding the spawn by pressure, and placing it in gravel, in imitation of the method adopted by the salmon themselves; or coercing the fish, by confining them in their range, to breed in small streams, which latter we conceive to be the best mode, restricting them to a moderate portion of the river or stream, or confining them altogether in a lateral cut, or canal, connected with the main stream, and by proper adaptations, providing against the injurious effects of floods, or the opposite casualty—the sudden falling off of the water.

So far, the investigations and experiments hitherto made in Scotland have been completely successful, and they do not, in fact, much vary from the ordinary process of committing to parent earth the ve-

* We do not think it desirable to embarrass our subject with the controversy as to whether the salmon-fry are of the age of one or two years, when they first go off to the sea. We think Mr. Shaw has proved his case, and that the fry have completed the second, and are entering on their third year, when they first quit the river.

getable seeds. You take the eggs of the salmon (the roe fecundated with the milt), and merely provide for their security, pending their natural vivication in the gravel by the ordinary effect of the seasons, and temperature of the atmosphere and water. Without further disquisition on this head, we may advance our position some steps, and come at once to the conclusion that the ingenuity of man has already settled the question that *salmon-fry* can be bred, by artificial means, in rivers or streams, in any conceivable profusion. But then comes a second problem.—We have dismissed our progeny of salmon-fry in countless myriads into the sea—there we lose sight of them; we have protected them in their infancy in the river—How are we to protect them in their adolescent state in the sea?

We confess, to our belief, that unless this second problem can be successfully mastered, no very extraordinary or important practical results will follow from the successful mastery of the first.

To explain our views on this subject as concisely as possible.—We do not think, as already said, that any extremely important practical results will follow from breeding salmon-fry artificially in rivers, unless we can go a step further, and protect them, at least for some period, in the sea; and the following are our reasons:—In spite of all opposing circumstances, the number of salmon-fry annually produced by the salmon themselves, by the natural process in the river, is at all times so prodigious, and

the fry, which actually descend to the sea from every river, and in every season, are so numerous, that we cannot escape from the conclusion, that some enormous waste, goes on in the sea, from natural causes ; and that, until this waste can be controlled, it will answer no paramount practical purpose, to multiply further the abundant production, which the salmon (if allowed to go up to spawn in sufficient numbers) can, without any adventitious aid, effect for themselves. The leaves on the trees are not more abundant than the prodigious swarms of salmon-fry which we have seen in some seasons descending rivers ; and yet, in ensuing seasons, no observable increase, either of grilse or matured salmon, has taken place.

We have often, also—indeed, continuously, for a period of some thirty years—been puzzled with a fact, which we have constantly and invariably observed ; namely, that when a flood occurs—opportunistically, as is often thought, at the very period (say the beginning of May) when the fry are on their passage to the sea—the very result that would naturally be expected from the safe transit of the whole body of the fry, from the river to the sea—does not actually take place, but the very opposite ; and the ensuing and corresponding salmon season often shows, not an increase beyond the average of other years, but very frequently a diminution. Many years back we were so much struck with this circumstance, that we resolved to keep, and did keep, a registry of floods ;

and we have found the result invariable—viz., that when the whole brood has been carried off to the sea, on a flood, in the month of May, realizing the piscatory proverb—

“The first flood in May,
Takes all the fry away,”

the produce, in salmon, of ensuing and corresponding years, has been frequently less, and not, as might have been expected, immeasurably more, than in seasons when the fry were detained in the river, in comparatively dry seasons, making their descent gradually, detained and obstructed by mill-dams, and subjected, during their tedious passage downwards, to all the ills that fry are heir to. The same observation may be made, with reference to winters, when unusually large numbers of salmon have been known to spawn in rivers, and unusually large numbers of fry have been produced, and yet the produce in grilse or salmon of succeeding years has been very deficient. It will be said, in answer to these perplexing facts, that we perhaps miscalculate the age and periods of migration, respectively, both of the fry going down, and of the grilse coming up; and, consequently, miscalculate the periods that would correspond with the descent of the one, and the ascent of the other. We are aware of the arguments that can be founded on that objection, but have taken a large margin, and several rivers, for our observation; and our conviction remains clear,

that when countless myriads of mature salmon-fry have passed off to the sea in safety, by means of floods, ensuing seasons do not at all show those results which might naturally be expected to follow.

Our conclusion from the above premises is, that an immense waste or destruction of fry takes place in the sea, or at the mouth of the estuary.

This waste may be occasioned in all seasons, by the havoc made upon the ranks of the tiny brood on their first appearance in the sea, by fishes which await their descent at the mouth of the river; or, in case of floods, the whole brood may suffer from being launched too rapidly into the sea, before they have been sufficiently "acclimated," if we may so use the word; or they may be carried away so far to sea, by the force of the flooded waters, as to be unable to regain the sandy banks or shallows, which would seem to be the primary resort of those minute creatures, on their first arrival in the sea; or—but we need not suggest theories. We grapple with the fact, and rest our fulcrum upon it: that a vast destruction of salmon-fry does actually take place, in all seasons, in the sea.

We have just escaped from a theory—we ignore theories, and studiously avoid them: in following the finny tribes into the recesses of the deep, theories may be multiplied without end, and yet no advance be made: we shall offer our views with diffidence, but yet offer them, as they are founded on experience and observation, and the conclusion we

have arrived at is, that if success, with marked and ample results, is to be attained at all, in propagating by artificial means, the migratory fishes, it will be by seeking, in some degree, to extend our control over them in the sea. This, to a certain limited extent, might, we conceive be done, by retaining them even for a short period in salt-water lakes, or in enclosures of sea-water, formed in the shallows of sandy bays. In such shallows we see other minute fishes, of various species, developing themselves in endless multitudes, and securely awaiting, in those safe retreats, a more advanced stage of their existence.

Though the growth of the salmon-fry is so slow and gradual in the river, its growth in the sea is as remarkably rapid. A fry of two ounces' weight, when it reaches the sea, becomes, in eight or ten weeks, a grilse, or young salmon, of five or six pounds. We conceive, then, that if means can be devised to retain the young brood in salt-water enclosures, for a portion of this period, even for a fortnight, or for a week, a position would be arrived at, a *locus standi* would be obtained, from which extreme results, might, with some confidence, be calculated.

We shall—but merely for example—suppose a locality, or localities. We take, for instance, in the vicinity of Dublin Bay, that portion of strand covered with sea-water, which is enclosed by the line of the Dublin and Drogheda Railroad, and into

which the river Tolka discharges itself. It is manifest, that with little difficulty or expense, salmon-fry, in any quantity or profusion, could be produced in the Tolka, and be then, at the proper periods, discharged into this large tract of sea-water, and there retained, by suitable arrangements, for a few weeks, during which they would acquire strength, and become "acclimated" gradually; and, above all, be protected, at that period of their growth, from the various dangers which await them, from natural enemies, on their first ingress to the sea. We do not, however, think that the neighbourhood of a large city is the suitable place for such experiments—particularly when so many pure mountain streams and secluded localities can be so easily selected.

In the small streams which discharge themselves into the sea at Bray, near Dublin, and which are excellent spawning streams, frequented by their own native salmon, salmon-fry could be produced in any conceivable profusion, and be discharged at the proper season into a suitable enclosure, accessible to the sea-water; and be thus protected, at all events for some portion of their existence, in their new element.

But we shall select a locality, where this experiment, or rather this series of experiments, might be tried on a large scale, and at a small expense, and under the most favourable conditions. We mean that large reach of sea or tidal water, which flows up near the town of Wicklow into a *cul de sac*, forming a large salt-water lake, and into which the

little rivers Vartry and Rathnew discharge themselves. We shall endeavour, in relation to these two rivers, to exemplify the process we propose, for breeding fish by artificial means; not doubting that numerous other localities equally suitable, will be found in various other counties in Ireland, where this process, if found desirable, might be carried out. These two rivers, the Vartry and Rathnew, are both excellent spawning rivers, abounding in beds suitable for the deposition of the spawn, supplied with the pure mountain stream, and resorted to annually by their own native salmon; but, unfortunately, it is only a lucky pair or two, in any season, that are allowed to spawn in these rivers; for, no sooner do the male and female salmon make their appearance on the spawning-beds in the commencement of autumn, than they are recklessly speared in large numbers. We say, then, take a couple of miles, or less, respectively, of each of these secluded, well-sheltered, and easily protected rivers, and restrict the salmon to that range; protect that limited distance thoroughly, night and day; provide against the disturbance of the beds by floods, and against the deposition of mud from the same cause; provide also, by a slight regulation process, against the falling off of the water below a certain level, merely to ensure that no part of the spawning-beds shall be left dry. Make all these provisions, simple and feasible as they are, and in four months those rivers, by the natural process alone,

will contain one living mass of the small fish called "gravelings," which subsequently become salmon-fry. The oldest inhabitant, for the best of all reasons, will have never seen anything like it. We say, then, protect these fry while they remain in these rivers: allow them, at the proper period of their growth, to pass off into the salt-water lake just described, (called in the locality the "Leitrim," but marked on the Ordnance map as the "Broad Lough,") which they will do in their respective seasons—about the commencement of May: retain them in that marine locality even for a brief period, and the whole process, we conceive, will be carried either to a successful, or at all events, to a decisive issue. We are averse to hazarding an opinion as to the results that might be expected; but we should be slow, indeed, to affirm, that extraordinary results might not issue out of such an experiment.

Having offered our mite, in the way of suggestion, upon this topic—in its relation to the breeding of salmon—(of the feasibility of breeding other fish to useful purposes, by artificial means, no manner of doubt exists)—we would again observe, that the migratory habits of the salmon species interpose a very serious difficulty. Still we conceive this should not deter experiment and careful investigation. If the whole process of propagating salmon by artificial means, were carried out now, and at once, with the most stupendous results, and to the fullest measure of success, it would yet be a mere cypher to the

marvels which the present age has already accomplished.

But a serious difficulty, as we have already intimated, is to be encountered in Ireland, in dealing in this way with rivers, as no individual has such an exclusive property in any river, and the coast adjoining, as would enable him, or would warrant, his entering upon such large experiments. We shall, however, at all events, carefully observe and note any "progress" that may be made in this line in Scotland, or by the French Commission just appointed—from which latter, important results are expected. In the meantime, our suggestion would be—adopt, without further loss of time, the practical measures for the resuscitation of the Irish Salmon-fisheries, contained in the Bill lately before Parliament; and, failing these, we can then have recourse to the French methods.

But since these processes can at all times be availed of, advantageously, in small, and in much exhausted rivers—as the breeding of salmon-fry, by artificial means, in enclosed streams or ponds, will be always an aid, and useful addition, to the ordinary stock of salmon-fry produced in the river; and since it may be assumed, and taken as a general rule, that the greater the mass of salmon-fry, sent down to the sea, the greater will be the per-centage that may be expected to return;—for all these reasons, we think it would be well, to have in the new measure, a clause exempting from the penalties of the Act, any per-

sons found taking salmon, trout, or other fish, off spawning beds, in the close season, for scientific or for practical purposes: provided such persons have the licence of the Commissioners for so doing.

In the preceding article upon the Fisheries, which was written with the view, to illustrate and explain the provisions of the Bill, relative to the fishery laws, then before Parliament, the policy of permitting the use of fixed nets, within rivers and harbours, was very fully discussed: since the period of its publication however, some discussion has taken place in Parliament—we mean, the discussion which took place when the Bill in question was brought forward for second reading; and from what then transpired, it is plain that any effort for the total abolition of those engines in rivers and harbours, will be attended with great difficulty. It is not our intention to alter one iota of our opinions upon that question. Indeed, we wish it to be understood, that we put forward the article in question as a complete practical system for the improvement of the salmon-fisheries: we propounded our own opinions, and drew solely from practical sources, having their origin in our own experience. We shall not now modify or vary any of those, our carefully considered opinions; if we here re-open the questions as to fixed nets, we do so, not upon practical, but upon political grounds.

Our opinions remain the same. We consider that the legalisation of stake and bag-nets by statute, and the permission thus given to erect such fixtures in

our rivers and estuaries, was a most unfortunate and mistaken act of legislation ; interfering with the free navigation of our rivers and harbours, and the personal liberty of the subject ; being in direct opposition to the provisions of our most ancient statutes ; and in derogation of Magna Charta itself, or the clause in it which prohibits the use of *kidels*, or fixed nets, except upon the open sea-coasts. The Fishery Act of 1842, we conceive, was passed in contravention of all these ancient statutes, and of the common law, being subversive of the right of the subject to the free fishery, and free navigation, of the waters of the great harbours and estuaries of the kingdom. The Act in question, indeed, might have been intitled, “ An Act to make the rich richer, and the poor poorer,” since it transferred the public right of fishery, from the poor, who exercised it from time immemorial, in our harbours and estuaries, to the landowners, who possessed land upon the shores. Our opinion, therefore, as to the impolicy and injustice of that enactment, remains unaltered.

But a grave and difficult question remains : will the Legislature now consent to retrace its steps, and make void those titles which have become vested under the Act of 1842. On public grounds, we would say, yes ; and that a strong and vigorous Government should meet an acknowledged public evil with a resolute and vigorous hand. This, however, is an important question in a legal, and perhaps also, in a constitutional sense, upon which the Government,

and the legal advisers of the Government are the proper parties to decide.

But as the discussion which took place in the late House of Commons, on the motion for the second reading of the Fisheries Bill, introduced by Mr. Conolly, does not seem to augur favourably for the views of those, who seek the total abolition of those fixtures, it might be useful, should the present Government be averse to introduce any very sweeping measure as regards those fixtures, here to inquire what practical means can be adopted to lessen the evil, and confine the operation of the statute to its strict letter, making it conformable with the evident intent and meaning of the Legislature in framing it.

We shall endeavour to state our views, and make our suggestions on this head, with as much brevity as possible. First.—We conceive, that a *rule* for defining the mouths of rivers, should be appointed by the Legislature. In the Act of 1842, a power to fix the mouths of rivers in Ireland, was given to the Commissioners of the Board of Works; which power has been exercised by them in an arbitrary manner, without any regard whatever to scientific rules. We may give, as one out of many instances, the metropolitan river—the Liffey. The Board of Works, in 1843, fixed its mouth three miles inside its natural or nautical mouth: this, in legal parlance, was a fraud upon the power—an undue exercise of the obligation imposed by the Legislature. A mere reference to the Admiralty charts would have enabled the

Commissioners to have fixed the mouth in accordance with natural, hydrographical, and nautical rule. In the case instanced, it was done to answer a purpose, or meet a particular case; but no such purpose was contemplated by the Legislature, or is within the meaning of the Act; it is not, therefore, inconsistent with the previous legislation, to resume a power which has been improperly exercised, and now appoint, by positive enactment, a fixed and determinate rule for defining river mouths.

Secondly.—We should recommend a vigorous application of the rule provided by the 22nd clause of the Act of 1842, prohibiting (except in certain specified cases) the use of these engines in rivers and harbours, in places, where the width of the channel, at low water of spring tides, is less than three-fourths of a mile.

Thirdly.—We should suggest a declaratory clause, effectually preventing the erection of fixed nets from piers or artificial harbours. The enabling clauses (18th and 19th) in the Act of 1842, empowered owners of land to erect such engines “*attached to that part of the shore adjoining such land;*” but clearly, it was not the intention of the Legislature to authorise their erection from piers, projecting perhaps, a mile or more into the sea, from the boundary or shore of such land.

Fourthly.—We should suggest such a regulation of the mesh of all fixed nets, or such other means as may be approved of, for preventing the capture of

unsizeable salmon, or salmon-peal, under the weight of five pounds.

Lastly.—An adequate and stringent administration of the existing or amended law. Unless a speedy provision for this purpose be made, the rights of the public will be continually invaded, and the public fishery be gradually appropriated by private persons, until, at length, encroachment and usurpation will become prescriptive right.

These are the practical measures we would suggest to modify the injurious operation of these fixed engines upon the fisheries at large. We confess, however, we should much rather see a Government willing and strong enough, to assert the public right by a vigorous enactment, and sweep away for ever from our rivers and harbours those pernicious fixtures, at least all those erected under colour of the Act of 1842. This, we conceive, might be done by a mere declaratory law, as these novel engines are almost all illegal, under the terms and provisions of the Act itself, which saves and excepts the rights of *navigation*, and the right of the *public fishery*.

It would be well here to direct attention to the manner in which the new code of fishery laws has been carried into execution. It is a saying, that Englishmen forget all their good, sterling common sense, when they come to deal with Ireland. In 1842, all the Irish Fishery Acts, from the 5th of Edward IV. to the 1st of Victoria, were repealed, and the Government then confided to the Board of

Works the administration of the fisheries, rendered truly difficult and arduous by the repeal of so many ancient statutes. In place of many express provisions of those statutes, was substituted a power to make by-laws and regulations, which demanded from the Board appointed to frame these by-laws and regulations, an extensive acquaintance with the very technical subject with which they had to deal, and one which, in its nature, was intricate and complicated ; but neither the Board collectively, nor any individual member of it, had the necessary experience or knowledge of the subject to guide them ; and the consequence was, that theories the most absurd took the place of substantive facts, long known and ascertained ; by-laws were made, and regulations promulgated, repulsive to the understanding of the whole fishing community ; and Acts, and amended Acts were passed, making confusion worse confounded : memorials were daily laid before the Commissioners, who, having no independent knowledge of their own for their guidance, groped their way as well as they could, until at length the public prints, public meetings, and, finally, a Select Committee of the House of Commons, proclaimed the utter incapacity of the Board of Works to administer the fisheries.*

* “ Considering the number and extent of duties devolved upon the Board in so many other departments of public business, your committee is of opinion, that under the peculiar circumstances of the Salmon-fisheries of Ireland, and regard being had to the many conflicting rights and claims arising out of the same, it is abso-

But let us not be severe on that Board. On its chairman, in the highest assembly in the world, a high eulogium has but recently been pronounced; and every member of the Board, is entitled, we believe, to unqualified respect—but we stop there. Their mal-administration and mismanagement of the fisheries we have always unflinchingly exposed, and submitted to the public gaze. We had the most cogent reasons for doing so. We saw the Salmon-fisheries declining from year to year, from the mismanagement of the Board. Had evidence of our assertions been necessary, we might, amongst other proofs, have submitted in testimony against them, their own annual reports to Parliament. These published records, although entombed in blue books, go directly to the point at issue.—Without assigning any sufficient cause, these reports, taken separately or collectively, just amount to this, that from the appointment of the Board, in 1842, down to the present day, the fisheries have been going from bad to worse.

Still we would not deny to the Board some degree of anxiety properly to fulfil their trust; but the difficulty interposed by the want of adequate knowledge on their part, was not to be overcome; they

lutely necessary to their due administration, that it be confided to a separate department of the executive Government (not connected with the Board of Works,) and that adequate means ought to be immediately provided for that purpose.”—*Report of Select Committee of House of Commons, 1849.*

were driven on technical and intricate subjects to rely on hearsay evidence, or the fallacious authority of parliamentary reports; of the weight, or, rather, of the value of which they could not judge; and thus decisions were arrived at, and by-laws and regulations made, subversive of private property, and injurious to the interests of the public. We cannot better illustrate our ideas upon this head, than by a quotation from an article in a recent number of *Blackwood's Magazine* (upon a totally different subject however), which very clearly expresses our views. In reviewing the merits of a recent publication, and descanting on the difficulties encountered by any party, anxious to form a correct judgment on matters of opinion, without the aid of *independent knowledge*, the reviewer proceeds:—

“He may form a perfectly honest and a perfectly sound judgment, as far as the data before him are concerned; but unless these data contain all that is required for the formation of a just opinion, or unless his own acquaintance with the case can supply the deficiency of the documentary evidence supplied him, he may be led into the strangest fallacies, and his decision may be utterly worthless.”

And further on, he observes:—

“Written evidence, whether statistical or other, is only available and safe in the hands of a man who can sift and test it.”

In the import of these observations we fully and entirely concur. Had even one of the Commissioners

possessed a stock of independent practical knowledge, paradoxes and fanciful theories would have been rejected; complex questions in relation to the fisheries would have been subjected to patient and competent analysis; natural facts might have been recognised, and plain solutions admitted: he might on all occasions, have given a reason for the faith that was in him, and so, upon momentous public questions, have helped to a wise and sound decision—since we do believe, that when an important truth or a practical fact is submitted to the test and analysis of impartial examination, we do, we say, believe that truth and fact, and particularly a natural truth or fact, cannot escape recognition.

But the Board of Works, overwhelmed in engineering, architectural, and statistical pursuits; immersed in questions of drainage, or of inland navigation—in geological researches, or in vast works of computation, found themselves suddenly entangled in the meshes of nets, and all the mysteries of trammel and trawl—the regulation of the seasons and periods of fishing—the extension of artificial oyster-beds—the processes of curing—the adjusting and composing the disputes of fishermen—regulating the complicated details of the Salmon-fisheries, stake, bag, and seine, with all their meshes and entanglements, queens-gaps and fishing-weirs, hecs, cruives, inscales, and all the rest—the very names of which, much less their uses, they did not understand.

The many occasions on which the Board of Works,

as Commissioners of Fisheries, were at fault can readily be conjectured: this may be exemplified, however, by describing, with particularity, their perplexities and mishaps in relation to the fixing a proper "close season" for the Salmon-fisheries, a question, perhaps of all others, the most important in the whole range of Salmon-fishing subjects.

The Commissioners, first of all, were given a power to fix a separate close season suitable for each river in Ireland; the difficulties incidental to the exercise of this power they prudently avoided, by espousing a theory of *uniformity*—that is, they resolved to allow all rivers, early and late, to enjoy the same close season.—This was cutting the Gordian knot.

But then came the question, what should the proper uniform season be? and in deciding this question they committed a vital error, sufficient alone to account for the decline of the Salmon-fisheries.

The error may be shortly stated thus:—In the year 1722, the Legislature enacted, (8 George I. c. 7) that Salmon-fishing in Ireland should cease on the 1st of August in every year; but in the year 1842, new and most destructive engines for capturing salmon had been invented, and were then, by an Act of Parliament passed in that year, legalised. The Commissioner of the Board of Works, who had the preparation and conduct of the Bill, in its progress through Parliament, fixed the 20th of August; and, by a subsequent Act, the 1st of September, as the commencement of the close season. This extension

of the killing season, just at the period when the salmon are running up to spawn, was, and is, of the most vital injury to the Salmon-fisheries. The error is, that with engines of capture vastly improved since 1722, a *prolonged* period of capture was appointed by the Board—the reverse should have been the course adopted: as the means of destruction are increased, the opportunity for reproduction should be enlarged, not diminished—additional waste, additional compensation, will be now, and always, a good maxim, or rather axiom, of Salmon-fishing.

But when the sanction of a public Board is given to an error, or series of errors, however manifest, it is difficult to combat them; nevertheless, the task was undertaken, and more particularly upon this issue respecting the close season, as it is the very corner-stone of the well-being of the Salmon-fisheries. The demonstration was first attempted with the Commissioners themselves; there it utterly failed. It was next submitted to the test of public opinion, in the public prints; and, finally, an opportunity was taken during the sittings of the Commission of Inquiry, held in 1844, to submit it to Parliament and the Government in a documentary form, and under the sanction of an oath. This, we believe, settled the question; the document we refer to* having been published in the Fourth Annual Report of the Commissioners of Fisheries to Parliament,

* See Appendix, p. 129.

circulated throughout the whole fishing community, both in Scotland and Ireland, and silently worked its way; but even subsequently to its publication, and in direct opposition to its suggestions, the Board of Works, in 1846, procured the passing of another Act (9 & 10 Vic. c. 114) *extending* the fishing season to the 1st of September in each year. The ruinous consequences which ensued, and which had been confidently predicted, have at length produced the reaction. Nobody now doubts that all the rivers in Ireland have been overfished, and that *that* tells the tale of their rapid and progressive decline. The Select Committee of the House of Commons (1849) has so declared it; the whole fishing community in Scotland and in Ireland now acknowledge it; and, finally, the Board of Works themselves now reluctantly admit it.

The first step in the right direction taken by the Commissioners, on this head, since their appointment, was made on the 5th June last, when they issued their preliminary notice, fixing the 13th day of August as the commencement of the close season for the Limerick district; but it is not likely that this, and other all-important questions relating to the fisheries, will be left any longer to the adjudication of the Board of Works; it is more probable that a prompt legislative remedy will be applied. The Duke of Argyle brought in a Bill last session, to curtail the fishing season in the Scotch Salmon-fisheries; and it is not unreasonable to expect that the Bill

about to be introduced by the present Government for the improvement of the Irish fisheries, will in this respect, adopt the recommendation of the Select Committee of the late House of Commons.

Our own opinion is, that no radical improvement in the Salmon-fisheries can be expected, or will take place, until the propensity to over-fishing be peremptorily met, and an accurate adjustment made, and *balance kept*, between the means of capture on the one hand, and the means of reproduction on the other. This restriction upon over-fishing, we conceive to be a *sine qua non*: it should, however, have the necessary incidental aid of other and concurrent remedies; but we think, if even twenty, or five and twenty days, be taken off the fishing season, at the proper end, that is, when the salmon in large numbers are on their actual passage to the spawning-beds, that, very remarkable and immediate results will follow, derivable from two sources. We think that, from this single restorative measure, the increase of food to the community, and of advantage to the Salmon-fisheries, may be predicated with something like certainty, and be estimated in the aggregate only by some great arithmetical approximation.

For years we have harped upon this topic, knowing its paramount importance; the task, however, has not been an unpleasing one. There is perhaps no more genuine source of satisfaction than that of promulgating a plain and unsophisticated fact,

however strenuously opposed and continuously resisted; nor do we know of any more legitimate object of ambition—nay, of ardent aspiration, than that of being instrumental in carrying into practical operation and effect (when duly and successfully demonstrated) a system, or series of facts, which experience and conviction assure, will be useful to mankind.

To trace effect to cause, or from known premises to anticipate results, is surely not presumption—it is rather, we should say, the fit exercise of reason and province of experience. If the decline of the Salmon-fisheries has been predicated continuously for a series of years, from known causes of waste, it is equally consistent to predicate their prosperity, from known means of reproduction.

A few observations of a general and political tendency may not here be misplaced—in the approaching session of Parliament, two important measures relating to Ireland, await discussion, and we hope satisfactory settlement; each calculated, in no ordinary degree, to promote industry, and awaken the dormant energies of this country—we mean the landlord and tenant question, and the fisheries question. The whole material surface of our island, the land and the water, will now, as it were, pass in review before the Legislature. Let us hope, that in this transit through Parliament, these important sources of national prosperity and wealth will obtain, at length, a wise and judicious settlement. The land question is in able hands; if the present Attorney-General,

with his great experience, and acknowledged ability, cannot frame a wise and equitable measure, from such a mass of confused enactments, we might almost despair. But we do not despair—we have confidence in any workman who is master of his work; but in dealing with legal or social questions of great magnitude and difficulty, the danger to be apprehended always is—"lest fools rush in, where angels fear to tread." Without in the least, by such quotation, intending offence to the one side, or flattery to the other, we think the land question has now a fair prospect of judicious treatment; and that the measure about to be proposed by the present Government will be a wise, just, and impartial settlement of that great question.

Property is the very key-stone of the social arch—the bond that holds society together. We regard with suspicion every attempt to sap the rights of the landed proprietor, or interfere with his just privileges: any such interference, disguise it as we may, should be looked upon, as only a step towards communism: theories that tend, not to improve, but to reverse the relations of landlord and tenant, may be "progress" certainly, but it is progress on the road to anarchy, for with very rare exceptions indeed, it will be found that those who assail the rights of property, are those who have no property themselves.

The fisheries question will supply a useful moral: that question, too, is a complicated one of property; but some theorists in 1842—professing, by the way,

nothing but regard for the public good—palmed their crude opinions on the Government of the day, and upon the public, and proceeded to unsettle, and shake to its basis, the ancient adjustment of that species of property; repealing the whole code of fishery laws, and substituting in their place a statute, embodying the rashest innovations. And what has been the result?—anarchy and confusion from that day to this: the recognized maxim and practice, in fact, now being—

That he should *take*, who has the power,
And he should *keep*, who can.

Public rights of fishery invaded—private rights sacrificed, or reduced to a mere scramble; and eventually, the fish itself, in complete horror (as an honourable member lately expressed it in the House of Commons) at such defective legislation, was retreating gradually before the assaults of that honourable House, and had absolutely, almost forsaken our rivers altogether.

A wise, and just settlement then, of both these questions is now absolutely required; and is indeed necessary to the welfare and tranquillity of the country; and we have every confidence, that both will be proceeded with, under the auspices of the present Government, upon sound, just, and equitable principles. The adjustment of the practical machinery by which our agriculture and our fisheries shall in future be regulated, would, indeed, appear to be

almost the very first step in useful legislation. When the political turmoils of 1849 had subsided, an effort was at once made, to direct the national mind to our neglected resources. The land, it had been calculated, did not produce more than one-fourth its capabilities : our river fisheries were exhausted, and our sea fisheries totally neglected : our mines and other sources of national prosperity seemed to be absolutely unthought of. A system of practical instruction, combined with measures for the development of all our resources, was then, for the first time, initiated. Lord Clarendon endeavoured to ingraft the Saxon energy of character, upon the instability of the Celt, and thus an impetus was given, which we do believe—if these two important measures be now equitably settled—will tend to our enfranchisement from national indolence, and effect a complete change in the national character. When employment and education, together with improved social habits, and increased comforts, come in at the door ; combination, and outrage, and discontent will fly out at the window.

We have just mentioned the sea-fisheries. It is scarcely credible that so little attention has been given to that vast resource. On a former occasion we contrasted the manner, in which the Scotch Sea-fisheries are encouraged by the Government, with the utter neglect of our own—the produce of the Scotch Herring Fisheries alone, for the year 1849, amounting to 1,151,979 barrels—worth upwards of

one million sterling. We do not at all over-estimate that resource in our own country—we mean the herring fishery—when we say that our fishings might equal, probably surpass, those of Scotland, if properly encouraged; we have little doubt, that if our sea and coast fisheries were fully and adequately brought forward, Ireland might export annually, cured fish, to as large an amount as Scotland; and thus be enabled, to give profitable employment, in various ways, to a large portion of our population. Certainly, a rivalry and competition in the export trade, might then arise between Scotland and this country, but if free trade makes way in this commodity, the combined fisheries would hardly suffice to supply the Continental demand; there is every reason to suppose, that the want of that species of food in different Continental States would open up an unlimited market—at least, such are the free-trade doctrines.

But what should be the mode of development? We admit, the old system of bounties will not answer: still, we contend, that the Sea-fisheries of Ireland cannot be brought into activity, without ample assistance from the Government: our coast population have no means—without capital, without bank accommodation, and without the assistance and encouragement of a wealthy landed proprietary—to procure for themselves, the expensive equipments necessary for embarking in the deep sea fishery. Some assistance, therefore, from the State might

reasonably be expected. Large Government grants and facilities for bank accommodation, give the necessary impetus to the fisheries in Scotland: private capital, to a large amount, is also made available to the Cornish fishermen: the result is, the men employed in these fishing boats, which, with their equipments, are worth about £200 each, soon become *owners*. We think this system, or a somewhat similar one, might be carried out in this country, on a large scale. But employment at fixed wages, will not be found to answer with fishermen: there must be a *venture* to stimulate the incessant hardships which fishermen are forced to undergo. If the necessary equipments be obtained—say, for instance, by means of a loan-fund, the fishing should then be prosecuted on *shares*, upon a system, well known and recognized, in this country, as well as in England, and found to answer:—the capture, or produce, if represented by *seven*, is divided thus: the boat gets one-seventh; and the other six-sevenths are divided equally: three-sevenths go to the train of nets and fishing-gear, and three-sevenths to the crew. This adjustment is found to remunerate the men amply, and if it be a fair and equitable one (which we believe to be the case), it follows, that the account for boat, nets, and equipments balances itself—practically, and in effect, the result is so: and the capital being supplied, and the boat and equipments purchased, and leased out as it were, in this way; two or three average seasons suffice to make the crew

owners : frequently some individual of the crew becomes sole owner. Now this system, we conceive, can only be carried out in Ireland by means of Government aid, through the medium, for instance, of a loan-fund, which might be formed, we conceive, by the Government, upon a system perfectly safe as regards security.

But the political economists!—what will they say? They will certainly raise a host of objections. It was a saying of Napoleon's, “that a government of political economists would grind an empire of adamant to powder.” But what will they say? They will begin with *capital*, and make us acquainted with its rights; and having expatiated upon the *laissez faire*, or principle of *non-interference*, they will then explain to us the law of *competition*. Then, say they, leave competition unrestricted, and capital free, and it follows quite plainly, that your manufactures and resources will develop themselves. This reasoning, which the economists are so fond of, stripped of its technicality, and addressed to the labourer, or the artisan, means simply this:—let money be the tyrant, and labour the slave, and let wages bow down for ever before the Moloch of capital—but this is digression from our subject : our purpose is, in relation to our fisheries, to see how these economic principles have been applied, and are still sought to be applied, to Ireland—the political economists in effect say : let prostrate Ireland, which can neither walk, nor creep, get up, and compete with England,

having at her command the accumulated wealth of ages ; foster and encourage the British Fisheries (we prefer calling them the Scotch Fisheries) by Parliamentary grants, and Government aid, and—let the Irish Fisheries develop themselves, by the ordinary processes of capital uninterfered with, and free competition.

The result follows : capital has it all its own way ; the Irish Fisheries languish and lie waste ; while Scotland, until very recently, exported to Ireland cured fish, to the amount of from £200,000 to £300,000 annually : even in our present prostrate condition, she exported to us for the year ending 5th of January, 1852, (as appears by the Report of the Commissioners of British Fisheries) 81,340 barrels of cured herrings ; the exports of the same article, for the same period, to all other parts of Europe together, only amounting to 182,659 barrels ; so that Ireland took nearly one-half of the gross total of export ; and if we had not been in our present depressed state, it is not improbable that our imports of Scotch herrings, and other cured fish, might by this time have reached half a million sterling.

But another view of this subject, of our Irish Sea-fisheries, may be taken : it may be argued, that independently of the humane duty of providing remunerative employment for the starving population of our coasts, and thus reducing the pressure of rates upon the land, Government aid to our fisheries is a measure of political importance, with

the view to forming a nursery of seamen, for the national defence, as well as for the mercantile marine.

We do not intend here formally to enter upon the subject of war: war, for aggressive purposes, in the present commercial relations of Europe, does not seem very probable; indeed, one unmixed feature of good, presented by the free-trade system, is, the tendency it has, to bring all nations into friendly unity and harmony; still war is at all times possible; very recently, warlike rumours floated gently from the distant shores of the Atlantic, all about some mackerel in the Bay of Fundy. On that occasion peaceful doctrines and sound commercial considerations aided the diplomatists, and we hope will always aid them, in preserving amicable relations. Laertes says: "*Beware of entrance to a quarrel*"—but it was our own Sterne, most probably, who supplied a precedent for the recent protocols: at all events, certain it is, we fraternised at once, both exclaiming with our own old uncle Toby—"Brother, brother, we were both of us in the wrong."

Still war is always possible; but our historians, and naval and military commanders assure us, that the best way to preserve peace, is to be prepared for war. Let us then above all things, maintain in efficiency, the right arm of our strength—our navies—and provide men to man them. War, when it does come, will be a dire misfortune, and will bring in its train, dangers and calamities unknown to former

times. Vast armaments will move over the seas, regardless of the winds or tides; new and dread engines of destruction will change the whole face of war, and all bravery and martial spirit must yield before the modern improvements of military science. Death will revolve in many shapes; space be calculated nicely, but not for humanising ends; and the deadly Minié do its fell and fatal work of sure and distant assassination.

But in our comments we would eschew war: we hate war; it is not our subject, and it has none of our sympathies: but we say to Britannia—duly and impartially develop our resources; give to a people perishing for want of employment, a field for industrial exertion; cultivate and foster the Fisheries of Ireland for economic purposes, and if it answers any other purpose—*tant mieux*.

But we cannot doubt that in the ensuing session of Parliament, a wise, liberal, and humane policy towards this country will be unfolded; if much longer delayed, our green Erin will run the risk of becoming one vast Sahara, or unpeopled desert. National spirit has almost died out amongst us: political individuality we have none: our brightest names, and most gifted sons; our bravest and noblest enthusiasts, have tried that question in vain; but there is a path by which we can gain a moral victory over England, and this, nothing prevents us from obtaining, but our own unattainable desires, and endless polemical dissensions.

It cannot be, that amidst all her achievements and renown ; amidst that moral and material splendour—that wealth and status, which makes happy Albion the gaze and wonder of the nations ; the emulation of the good and wise, the envy and the hate of the malevolent—it cannot be, that as regards this unhappy country she will any longer hesitate in the good work of—aye, we will say it—reparation: fain would we see her even now, by a series of humane and equitable measures, erasing at once and for ever from her escutcheon, those dark stains, which, like the spots upon Macbeth's dagger, will not “out” until full justice be accorded to us ; not partial, niggardly, bit by bit ameliorations and developments, but good and ample measure, heaped up, pressed down, and flowing over.

Sir Robert Peel spoke of “Ireland” as the great political difficulty of his day : we are humbly persuaded that the policy here indicated, is the only lever that will ever raise and overthrow it.

Never was more fit or apposite quotation, than that lately enunciated by Lord Eglinton at a public meeting in Belfast :—“There is no nation,” says Sir John Davis, “under the sun, that doth love equal and indifferent ‘justice’ better than the Irish.” Let *that* be our ultimatum ; that, the practical and tangible object of our pursuit ; that our propaganda : justice to our commerce, to our manufactures, to our agriculture ; justice to our fisheries, justice to our ports—justice, justice, justice. The advice of Lord

Anglesea was “ agitate, agitate, agitate.” The word of Lord Eglinton is—justice.

If we read our history in events, or on the pages of the statute book, we shall see a sad and chequered story ; it is easy to ascribe our misfortunes, and our prostration, to a hundred causes, and yet omit the true ones : let by-gones be by-gones ; but as regards this forlorn isle, let the practical issue to be now put upon England, in the approaching session, emphatically be—Is this country to be resuscitated—to be at length released from her cruel sufferings—become the co-equal in arts, in industry, and arms—the participator in the prosperity, the companion and sister of happy Albion?—Or is she to be dragged, without concern and without remorse, suffering and prostrate at her chariot wheels.

Hopefully ; nay, under present auspices, almost confidently, we await that issue : we are now as a nation in transition ; our destinies, are, in the balance : —Let us here pause, and Mirza-like, throw a hurried glance around our social and political horizon, endeavouring briefly to shadow forth its manifestations.

Foremost, our polemical dissensions ; do they not blast for us all word of promise, all germ and hope of national regeneration ? Religion—we almost fear to touch upon a subject of such controversy ; so pregnant is it, and fraught, with sectarian bitterness. Too often do we see it made the mere tocsin, and talisman of discord ; the watch word of party, the rallying cry of zealots. Now on one side, fresh seeds

of dissension are in germination ; on the other, new schisms intervene, splitting off into sects, and sections, until the weary traveller is bewildered on his way, and knows not which road to take. Oh ! could we but resolve on all sides, to cultivate true toleration ; make true religion our end and aim, and leave it to men's hearts and consciences, in faith, hope, and charity, to choose the way, instead of wrangling about the formula. But no : daily do we lift ourselves up in self-exaltation and uncharitableness, forgetting those divine precepts, which above and beyond the soar of all philosophy, vibrate upon the heart, with the force and sanction of unerring truth. Where—unfailing test—is that ethereal charity, defined for us upon the everlasting page ? That soul-becoming, heart-pervading, love-begetting charity—where, oh, where ?

See the very earth denies to us its fruits : its blackened surface tells but too well the tale of woe. See our Fisheries, inestimable resource, designed for boundless measure of productiveness, yet lying waste by the perversity of man. Again : another apparition ! the gaunt and living tide of emigration pours from our shores, like some pent-up torrent bursting from its bounds ; our care-worn sons of toil flee from the land, forgetting their homes, their altars, their traditions, and even the long-enduring love which once bound them to the native soil. Whence comes the change ? It is not yearning for some fair Utopia—some fond, some distant land of promise : it is not hope, it is not enterprise—it is despair.

Again : the calamities of the rural districts reflect themselves upon the towns. Are not all avenues of industry closing up about us—all trades, professions, occupations stagnating?—our resources neglected : our commercial and manufacturing interests rivalled, and depressed. All, bow down before the competition of England, with its accumulated powers of credit, capital, and wealth. We stand beside a Goliath, and are obscured, and thrown into the shade—Formerly in our capital, our great Institution of learning ; the public departments ; the learned professions ; and our great medical schools, the Hospitals, almost sustained the social edifice. But see—they totter, they oscillate to the centre—Let us calmly examine our position and prospects.

Our *law*—there was a word!—"the expectancy and rose of the fair state : " but a devastating simoon has swept around our halls, penetrating to their very innermost recesses. Where is that fabric of feudal origin—that pile of venerable fictions, built up by the learning and the research of so many by-gone sages? Where are now the tortuous and never-ending labyrinths of the equity suit? the huge unwieldy Bill, the ponderous, reverberating Answer? and last, though least to be regretted, where is that science conversant about the "special plea," with all the fruitless and interminable mazes of its Penelopean web?—All this has passed away : a better jurisprudence opens to our view ; justice again assumes her plain and simple dress, and with one ac-

cord the legislator, and the advocate, have swept for ever from our halls, the long-prized cobwebs.

Proud are our recollections of the wit and eloquence that once resounded through our domes; sincere our admiration and respect, for all those sages of our law—present and past—whose learning, wisdom, integrity, and independence, adorned, or still adorn our halls; deep and warm our sympathy with the many learned, laborious, and honourable men, who, toiling in an humbler sphere of forensic usefulness, are now left stranded by the receding tide; but small our grief, and light is our regret, for wasteful privileges, useless forms, and empty technicalities.

And what, alas! remains, for honourable pursuit or practice, of all that mighty fabric, which once rivalled the proud halls of Westminster?—a mere wreck. ‘Progress,’ demon or angel, said the word, and lo!—slowly, but sure,—a proud profession fades before the wave of the magician’s wand. Still we must admit, our legal system was all too unwieldy for our wants—no more the butterfly will be spread upon the wheel, or vast machinery be set in motion to do some Lilliputian work.—Lofty was the system, high and independent was its practice, and proud its prestiges: but it is gone; shorn of its rays, its profits, and its privileges—it withers, and it dies.

And what at length will survive, of all our anci-

ent lore and forensic reminiscences?—a mere ideal;—the charm and gift of eloquence! the high and patriotic aspiration! the poetic fire! and those purer and simpler traditions of the jurist, and the statist, that would make eternal truth, and social good—free from contentious wish, bias, or worldly dross—the only rule, and purpose, object, aim, or end, to be attained.

And our *Church*; our *University*—shall these be touched? The lofty spire; the ivy-clustered wall! dear to our thoughts, and cherished in our recollections.—But let us pass hastily from this: revered, beloved, time-honoured is the retrospect; but “shadows, clouds, and darkness,” we fear, “rest upon it.”

Our *Medical institutions*, and the science, and practice of the ‘healing art’—Have not these also felt the ruthless hand of innovation and reform? We may safely answer in the affirmative: the decline, too, of one profession or resource re-acts upon another: so many links displaced, the whole social chain is in disorder. But so long as disease and pain, and all the motley train of mortal ills, must be the lot of humanity, and man must still, in health or in disease, but onward “crawl toward death,” the healing art, with all its humanizing attributes, will hold its enviable place, and have its honourable fame; but its pulse will throb, and rise or fall, with the advance or retrogression, of our national resources. The issue for it too will be momentous; its institutions may wane, its honorary distinctions diminish,

its practice decline—its contributions to science, its distinguished names, its prestige will remain.

But new fields, fresh prairies must be sought out ; other vistas will arise, and other springs of industry and enterprise be set in motion ; nor will the stalwart arms, and vigorous minds, which now droop listlessly in our isle, want useful occupation, if *equal and impartial justice* be extended to all our material, commercial, manufacturing, and national advantages.

When will the pioneer come forth, to clear away the rubbish that retards our national progress, and forbids our ports to open their capacious bosoms, to the sails and paddles crowding from the Atlantean wave ? See our great iron highways inviting the commerce, and the traffic of the western world. See our tumultuous torrents pouring from a hundred hills ; deep-rushing and impetuous rivers, or tumbling over-falls ; mill-sites formed by nature, not by art, inviting the wheel to the rivulet, not the rivulet to the wheel : water-power to rival all the tall chimneys of Birmingham or Manchester, and turn the industrial machinery of the world. Here are the paths of progress—these be the useful propaganda.

See the great telescope of Rosse, opening out the milky-way, giving new worlds to our insatiate, boundless thoughts, and enlarging our conception and our admiration of the Infinite : see air, earth, fire, water put to new uses, and compelled to do our bidding ; see winged lightning bearing to and fro the messages

of man! These are the paths of progress in the world of thought—this the interminable struggle, to make the world of matter, subservient to the world of mind.

Such then, must be our future.—Our sciences and useful arts; our rising energies; our commerce and our manufactures, our agriculture and our Fisheries, our broad expansive fields and golden valleys: the material elements around us are the primary sources of prosperity and national wealth, and nature has not been illiberal to us: the native intellect, with the capacity for arts, enterprise, and manufactures, if duly encouraged, is in no wise inferior: our soil is fertile, and our shores and rivers prolific.—We have the earth to subdue it, and the fishes of the sea, to exercise dominion over them. Have we hitherto done so wisely or well?—For our misuse of the one, the doomed potato is our lesson; for our abuse of the other, our deserted rivers are the retribution.

We have thus cast a hurried glance, and transiently shadowed forth our social indications: we see in the past, a sad and harrowing scene; and in the present, scope and field for hopes, and fears, and many gloomy apprehensions: fain would we lift the veil, and peer into the future—but this vision is withdrawn from us. It may be dark and lurid; or calm and peaceful as the summer sun, sinking with mellow ray upon the western wave, it may be bright and hopeful. Our night may pass—the dawn of day may come—but let us up and be doing.

APPENDIX.

APPENDIX.

THE following letters are a selection from a great number, published originally in the leading journal of Dublin—*Saunders's News Letter*. The first of the series was addressed to Lord Clarendon, at that time Lord Lieutenant of Ireland, and being favourably received, I continued the subject, until eventually, the preparation of the Bill for the amendment of the Irish Fishery Laws, was placed in my hands.

[*The Bill stood for second reading in the House of Commons in April 1852, when the Ministry was dissolved, and on the formation of the Conservative administration, it was postponed.*]

IRISH FISHERIES.

TO HIS EXCELLENCY THE EARL OF CLARENDON, K.G.

MY LORD,

It has been said that he who causes two blades of corn to grow, where only one grew before is a benefactor to mankind. Your Excellency, for great national services conferred upon Ireland, and by devising means to teach the tillers of the soil

how to improve, and cultivate the land, will be distinguished in history as the great practical instructor of the age. Go one step further, my Lord, and restore the rivers of Ireland to their former productiveness. Your Excellency, it is well known, takes a deep interest in this subject, and its importance is apparent—the river Foyle alone, before the late Fishery Acts came into operation, increased its produce in three years, (according to parliamentary returns,) from 43 tons of salmon per year, to 140 tons. This alone would show the magnitude, and importance of the matters at issue.

On the 8th of this month, Mr. Anstey's Fishery Bill was thrown out in the House of Commons by a majority of 160, and on the 16th instant a new Bill was brought in, and ordered to be printed. What will be the fate of the present Bill, it may not be proper to inquire, but Sir W. Somerville having declared in the House, that further legislation upon the subject was necessary, it is now hoped that the Government will undertake the measure, under your Excellency's auspices. If this be done, effectually, it will add one more, to the benefits your Excellency has already conferred on Ireland, and will complete the circle of her industrial improvement.

Having, my Lord, for a long period, given to this subject much consideration, and having five and twenty years' experience as a practical salmon fisher, I have been recommended by those to whose judgments I defer, to bring the whole of this ques-

tion, if necessary, directly under the notice of your Excellency, as being the best mode of ensuring attention and effect to anything calculated to benefit the country.

I do not fear, my Lord, that this letter will be considered by your Excellency, unimportant for public purposes. To a professional salmon-fisher it may be said, "serve mankind and you serve yourself;" there is therefore, something of personal interest in it; but there is too, I hope, some portion of a better motive—the man who may happen to possess some knowledge that may be useful to his fellow-man, and who withholds or conceals it, must feel that it is an omission, for which he is accountable.

My Lord, the Salmon-fisheries of Ireland are rapidly going to decay: the causes are patent to the few, though obscure to the many; but the industrial requirements of the country demand an immediate investigation into the subject. As an article of ordinary food, salmon is fast disappearing: the present price is the best test—consignments of Limerick salmon fetched one shilling and sixpence per lb. in the wholesale market on Saturday last! One shilling and sixpence per pound for salmon, in the month of May, is the finger on the wall, which points to the extinction of the Irish Fisheries.

It may be asked, what is the cause of this rapid decline? The answer is, the defective laws upon the subject. Acts of Parliament prepared by eminent lawyers, and confident engineers, but defective

in all the practical, and technical details, known only to the professional salmon-fisher. I would pray your Excellency's attention to a paper written by me in 1844, and published by the Commissioners of Fisheries, in their Fourth Annual Report. The Commissioners communicated to me, their sense of the importance to be attached to that document, and requested me to verify it on oath, which I did, and it is published in their Fourth Annual Report to Parliament.

If your Excellency will peruse that document, you will see the demonstration it affords, in facts which it authenticates, that the complete restoration of the Irish Salmon-fisheries is within the control of the Government, and requires nothing but a suitable enactment.

If the Commissioners of Fisheries be asked, who is the individual competent to undertake this task, it is not for me to say, what their answer may be. They have, however, already expressed it, and written it. If the Fishery Proprietary of Ireland be consulted, they also, I believe, will express their opinions; they are aware of the danger of rash legislation, and they know the perplexities and legal difficulties which surround the subject; their property is at stake, and they conceive, that in the preparation of a proper measure, legal knowledge should be combined with a thorough, and intimate acquaintance with all the practical details of salmon-fishing; and that, without this, any Fishery Act will be a nullity.

If desired, or commanded, I shall, without fee or

reward, prepare a Bill, either de novo, or else a Bill engrafted on the present Fishery Act, 5th and 6th Victoria. Such a Bill might be then submitted to the Law Officers of the Crown, for their revisal and amendment, and further submitted to the Commissioners of Fisheries, for their suggestions. Passed through these alembics, your Excellency may confidently rely upon a sound and useful measure. The fisheries will be at once revived and restored, and if the expression be permissible, “ I will give my head upon a block ” if the rivers of Ireland do not, within three years, teem with salmon as they did 50 years ago.

I have the honour to be, my Lord, with the highest respect, your Lordship’s most obedient Servant,

Robert Worthington.

Island Bridge Fishery,

May 28th, 1850.

Paper published, in the Fourth Annual Report, of the Commissioners of Fisheries to Parliament.

As the question, what should be the proper close season for salmon is now undergoing investigation, and as this subject as well as that of agricultural improvements, occupies, and deservedly, so much public attention, both tending, as they do, to increase the amount of food, I have no objection to submit my views, and the results of my experience, since opinions the most discordant, have been promulgated

upon the subject in the south of Ireland during the present investigation—some proposing, that fishing in the open season, should commence the 1st November, while others propose, that it should not commence until the 1st March. In submitting my views, I think it proper to state, that I have given the matter long and mature consideration, and bring to the examination of it, the experience of at least twenty years. The difficulties that surround the question are great, as the Commissioners have no doubt already experienced, the object being, if possible, to fix one general close time for all the rivers in Ireland; and further, which involves a still greater difficulty, to fix a close time, that will suit the various fisheries, whether those fisheries be situated in the sea or tideway, or in the upper and remote parts of rivers. This subject opens up a very extensive field of inquiry, and affects property throughout the kingdom, to a very serious amount; but I shall endeavour to limit my observations to as small a space as possible. With respect to the first question, namely, to fix such a close time as will suit all the rivers of Ireland, the difficulty consists in the fact, well ascertained, that salmon frequent some rivers, at a much earlier period than they frequent others; the salmon called ‘the new-run’ or ‘winter salmon,’ or, as it is called in some districts, ‘the spring fish,’ is not to be found at all, in many of our rivers. I might instance the Erne at Ballyshannon, one of the most productive rivers in Ireland; the fishery of which pays, or paid

a rent of £1,600 per annum to the proprietor; while in the Bundrowse river, which empties itself into the same bay, the 'spring fish' is abundantly found. It is unnecessary to enlarge on this subject, as the fact that such a fish frequents, at an early period some rivers, and not others, is admitted; it has indeed been satisfactorily proved, during the pending inquiry, that this fish, in prime season, commences running up the Caragh river, in Kerry, so early as October and November; but it is found in tolerable abundance in various rivers in Ireland during the months of November, December, and January. Now, it is during this period, namely, in November and December, that the spawners in all rivers are depositing the ova; it may, indeed, be confidently stated that the bulk of the spawning in all rivers is completed during these months. A few fish may spawn later, but late spawning, in my opinion, does little good. It may also be asserted, without fear of confutation, that the 'new run or winter salmon' is a distinct fish from the spawner; it is the spawner of another season: but it will be sufficient for the present purpose to state that this fish at the spawning season, namely, in November and December, is at the most remote possible stage from the state of spawning—the pea of a twenty pound winter salmon, not being larger than that of a herring. The second question, namely, to fix a close time that will suit the various Fisheries of Ireland, whether those fisheries be situated in the sea or tideway, or in the

upper parts of rivers, involves the same difficulty. The period at which salmon frequent different fisheries depends entirely upon their local situation. The spring or winter salmon will not enter rivers at all while snow-water is descending, and as most of our rivers have their sources in mountain districts, snow-water, more or less prevails, during the winter and spring ; it may therefore be alleged, subject to very little exception, that the spring or winter salmon is only to be caught in the sea and tideway. No doubt a few of them, in favourable seasons, may run up rivers, but the instinct of the spring or winter salmon is, to remain in the sea or tideway, until snow-water from the mountains has disappeared, which seldom happens before March or April. This is the reason that those who have interests in the upper parts of rivers advocate a late commencement of the fishing season, and, as a necessary consequence, a late termination. The difficulty, therefore, in my opinion, is to be met, by fixing the close season to end, and the fishing season to commence, at the earliest possible period consistent with the due protection of the spawners, which are then at the head of the river ; and I conceive that the 10th or 15th of January will fully attain that end. The bulk of the spawning in all rivers is over at Christmas, and the kelts or spent fish are then on their return to the sea ; but having spawned, the loss of a few of them is a less evil, than prohibiting the fishing for spring or winter salmon, beyond the 15th January, as those

splendid fish, which are all of a large size, and are worth from two to three shillings per pound, in any market in the United Kingdom, (the best proof of their perfection,) will inevitably be lost for the purposes of man, as while wandering round our shores and estuaries, as it is their instinct to do, at that season, they become the prey of seals and porpoises, which destroy them in vast numbers. No doubt can exist that the public interest requires, that the restriction upon catching these fish in the sea and tide-way, should be of as small duration as possible. To fish for them in the sea, even in December, could do no injury, as the spawners have all gone up, and the spent fish have not yet come down. Having canvassed the question when the close season should end, I am happy to say that less difficulty, though not less controversy, exists, as to when the close season should begin. No person at all conversant with the subject can have the slightest doubt, that the prosperity of our salmon-fisheries altogether depends upon having the close season to commence early, and to continue for a sufficient length of time. The present Act empowers the Commissioners to alter the close time, but provides that it shall not comprise less than 124 days in each year. I would most strongly observe that this is the minimum fixed by the Legislature, but submit that the close season should consist of at least five full months; and I would urgently impress upon those interested in fisheries, that seven months' fishing is a very ample sea-

son—nay, that five or six months' good fishing would be better than twelve months' bad. The old Irish Act, 8th Geo. I., cap. 7, fixed the 1st of August as the commencement of the close season, and the present Act fixes the 20th of August. I would certainly prefer the former (although public meetings have been held proposing the 1st of October !); indeed I conceive, that to stop all fishing on the 1st of August, would be the measure above all others, that would ensure the prosperity of the Irish Fisheries. But here again the upper proprietors in various rivers, offer their opposition, and wish to continue fishing until the 1st of October; but our laws should be made to be subservient to the laws of Nature; and if Nature gives salmon the instinct not to visit the upper parts of rivers, until the spawning season approaches, it is unreasonable in the owners of estates in the upper parts of rivers to seek to kill them at that period. Those who advocate thus continuing the open season to a late period of the year, forget that in removing the prohibition from themselves, they must also remove it from the lessees, and those interested in the sea and tidal fisheries. If the upper proprietor is to be at liberty to fish in August and September, the bag and stake net in the sea, and the draught net in the tideway, must have equal privilege; and the result will be, that all should fish, until the migration upwards, of spawning fish, had ceased, and then the protection for the breeding fish, would commence

when there were no breeding fish to protect. This was precisely the evil of the old system; the close time never commenced, until we could catch no more salmon, or until, in fact, there were no more salmon to be caught; and then (in an Irish way) we all agreed to let the salmon up to spawn. Is it patriotic, or rather, is it not selfish, to urge the destruction of the salmon at, or very near to, the spawning season, because the salmon will not visit, until a late period, those who propose this late season? It may be observed, that I lay little stress upon the weekly close time, under the new Act, as a provision for stocking the rivers, although for other purposes it is a very useful enactment; it is assumed, and indeed, is conceded, by those conversant with the matter, that anglers, otters, and poachers may get the whole of them, during their long sojourn in the river; but even if a few of them should escape, they would answer little purpose as spawners; the useful spawning fish are, emphatically, the August fish, which run up in full vigour from the sea, having the pea matured, and then advance, at leisure, upon the spawning beds, with the floods of October and November; these are the fish, beyond all controversy, that breed, and replenish our rivers, producing a strong brood, unlike that of the exhausted fish that reach the spawning beds, at a late period, and under unfavourable circumstances. I feel so strongly, the importance, the extreme importance, of stopping all salmon fishing at an early period—say 1st or 10th of August—that

I am tempted to mention a circumstance, personal to myself, which I think fully demonstrates the importance of fixing an early commencement of the close season. Having, with little effect, tried various methods to improve this Fishery (which formerly was of considerable value), I adopted a proceeding, which, as I shall be examined on oath during the pending inquiry, I shall now detail, as minutely as I shall, if necessary, depose to on my examination. In July, 1839, I directed my men to 'open the weir,' as it is technically called, which I was not bound to do until the 1st of October, under the 32nd Geo. III., cap. 40. Very reluctantly, my orders were obeyed by my men, and on the midsummer flood, which occurred on the 19th July, 1839, the gates on this weir were opened; by this operation I sacrificed £50 or £60, which, as salmon were then sold at a low rate, represented a very large number of salmon; I looked for a great increase of fry, and of salmon peal, on the following year, not being then aware of the recent discovery in Scotland made by Mr. Shaw, relative to the slow growth, and long duration in the river, of the salmon fry. Mr. Shaw's discovery did not become generally known until published in *Blackwood*, in April 1841; however, having let up the fish, I looked for produce (according to the old opinion) in 1840, but was disappointed: 1840 was a very bad year, so was 1841; but in June, 1842, I was greeted with a run of salmon peal, unlike anything I had ever before seen. The

new Act had not then passed, and the small-mesh net was in use, consequently these salmon, which averaged about five pounds each, were almost all captured ; in number, with me, they exceeded four-fold that of any other year ; and taking into account the sea-fishing at Poolbeg, which is carried on by a great number of persons, the increase was altogether, to the best of my belief, ten-fold upon any previous year, for the last twenty years, as various adverse parties can testify as well as myself ; but the number was not by any means, in my judgment, so remarkable, as the extraordinary difference in the size and quality of the fish. These peal were all what salmon-fishers call ' well fed ' fish, which term has a particular signification, well known to sportsmen and salmon-fishers ; suffice it to say, they were in appearance, colour, and size as unlike the peal of former years as can well be conceived. This I account for by the parent fish, (those of 1839,) having reached the spawning beds in good time, and in full vigour ; and I conceive that the complaint made in all the rivers of Ireland, that the fish have degenerated in size and quality, is solely attributable to late fishing. The August fish are all killed, and in September and October good spawners become scarce, and they reach the spawning beds, which are at the upper parts of rivers, (many obstacles intervening,) in a jaded and weakly state, and too late for early spawning. From this experiment, broadly defined as it is, I am entitled to say that

the Fisheries of Ireland will rapidly increase in value, and the fish in size and quality, if salmon fishing be stopped upon the 1st of August or thereabouts. The close season should then consist of five full months; and I should say, (if a general close time, the same for all rivers and all localities be decided upon by the Commissioners,) that a close season, commencing 10th or 12th August, and ending the 10th or 12th January, would best amalgamate conflicting interests, best suit various localities, and, above all, would best tend to the improvement of the fisheries, and to the public advantage.

Island Bridge Fishery.

December 9, 1844.

MR. ANSTEY'S Bill having been thrown out in the House of Commons, by a large majority (160), it becomes important to the public to inquire what steps the Government will now take: it may, therefore, be no harm for any person conversant with the subject, to put forward a few plain facts, in case the Government should decide upon bringing in a new Bill.

The Act of 1842 was a failure, because, though prepared by eminent lawyers, it exhibits throughout a total deficiency of technical knowledge, and the practical effect is, that all the important clauses have become a nullity, or are evaded: this was soon perceived, and no less than four Acts have been since passed to amend it; and it would seem, from the

debate on Mr. Anstey's Bill, that further amendment is necessary. Mr. Napier *special pleaded* a little, by stating, that the ambiguity was not in the law itself, but arose from the construction put upon it by those who administered it; but Mr. Napier forgets that magistrates sitting at Petty Sessions are not likely to bring very great acumen and legal research to bear upon the subject. Be this as it may, one thing is certain, that the law itself is very defective in some respects, and in others is so doubtful that, to use a familiar expression, it is quite easy "to drive a coach and six through it."

A clear and concise Act is what is wanting, not the voluminous Acts at present on the statute book, nor yet Mr. Anstey's Bill, containing 83 quarto pages, and 182 clauses—enough to puzzle a whole bench of magistrates; and practically the effect of such legislation is, to make the law a nullity. Another objection is, giving to the Commissioners any power to make bye-laws. In many matters of the utmost importance, but involving great technical difficulty, the Legislature evaded the difficulty by giving to the Commissioners a power to decide those questions by making bye-laws; the practical effect of this is, that the Commissioners make no bye-laws at all, and thus evade the difficulty the Legislature itself felt. I may instance the close-season question, which is the Alpha and Omega of any measure intended to improve the Irish Salmon-fisheries. Why, the Commissioners have had it before them for the

last six years, and there is a board, I believe, to sit upon the subject on Wednesday next, at the Custom-house: but the Commissioners, like other men who have fixed salaries, are not averse "to let well enough alone"—the "*Dolee far nieute*" is pleasant to them in this matter; and although applications from all parts of Ireland are before them, to decide this question, it is more than probable they will not decide it at all.

A concise Act of Parliament is the desideratum, meeting the difficulties, and deciding them by positive enactment: at present we are all at sea. The Fishery Act is everything, or nothing, and the consequence is, as the honourable Member for Cork stated, "that the fisheries are dwindling away to nothing." Salmon is at this moment worth more than one shilling per pound in every part of Ireland; the public feel this no doubt, but they do not inquire the cause; it is caused by the great scarcity of salmon everywhere, and this latter is caused, solely, by the defective laws upon the subject.

The Fisheries are said to be a mine of wealth to the public if properly cultivated; but it would seem as if the perversity of man prevented this mine from being worked; they are in gradual process of extinction, and this arises from causes flagrantly open to those who understand the subject. The matter well demands the prompt attention of the Government. Cheap food is one of the "great facts" of the present day. To produce it from the land re-

quires skill, capital, and outlay; but to produce it from the rivers requires no outlay at all. The salmon produce themselves. All that is required is a good law. Is it not sinful, therefore, to evade the question, and withhold a proper Act of Parliament, which those who understand the subject, know perfectly well would make salmon so abundant in three years, that the price would not range higher than 4d. to 6d. per lb., from the large quantity that would be thrown upon the market. This is surely such a public question as the Government ought at once to look after. At present the fisheries are at the mercy of the Commissioners, who are eminent as engineers, but cannot be supposed to know much about Salmon-fishing. To restore the fisheries is not an engineering question, and as gentlemen of that profession form a majority of the board, it is almost impossible that the questions left to them can be properly decided. Let us have positive enactment, and then the Commissioners will do well enough.

Island Bridge, May 1850.

THE Select Committee of the House of Commons appointed in 1849, to inquire into the present state of the Irish Fisheries, have reported to the House, that the interests involved are too important, to be suffered any longer to depend, upon the ambiguous

and inconsistent language of an Act of Parliament, and have recommended that the existing code should be revised, amended, and consolidated.

The original Act, 5th and 6th Vic., c. 106, was passed in 1842 : as a specimen of legislation it stands unrivalled : five Acts have been since passed to amend it, and the six Acts now form a code so complex, intricate, and contradictory, that no bench of magistrates can administer it.

I now proceed to suggest the remedial measures that should be introduced, in consolidating the present Fishery Acts, convinced that practical details are better than any circumlocution.

The fixed nets introduced by the Act of 1842, will form the first subject of inquiry : the extended use of these engines, since the passing of the Act, has perhaps, done more of permanent injury to the fisheries, than the charter weirs had effected in five centuries. The Report of the Select Committee condemns the policy by which this new monopoly was created—to have permitted the use of these engines upon the open sea shore, would have been in conformity with the provisions of ancient statutes, which prohibited fixtures except upon the coasts of the sea ; but to have permitted their use in rivers and harbours, where no prescriptive right before existed, was an encroachment upon public rights without any parallel in modern times.

The manner in which this was effected, was, by tacitly repealing one of the clauses of Magna Charta,

and by expressly repealing the 10th Charles First, which prohibited the "setting of stop nets, still nets, or standing nets in the rivers, where the salmon should pass up from the sea;" and upon this important question, on the construction of the statute law, one of the greatest judges that ever sat upon the bench in Ireland has decided, that the 5th and 6th Vict. has not repealed the provision of Magna Charta: the right, therefore, to use these engines in the way they are used, remains unsettled, and so important a matter demands an immediate adjustment. The Fishery Act, in this respect, is inconsistent with itself; it saves the rights of navigation, and of public fishing; by which exception it may be said to repeal itself. From this uncertainty the worst results take place, and in different districts, the humbler classes have proceeded, by force, to abate the nuisance of this vast monopoly.

No matter what the secret machinery may have been which produced this Act of Parliament, the practical question now is, how to remedy or modify the mischief. A Bill will be brought in. If the Law Officers of the Crown have doubts as to the illegality of these structures, erected under the Act, in rivers and harbours, I can suggest nothing but a commission of inquiry, to report upon a proper limit; but if it be conceded, that these engines when so used are illegal, the Legislature can deal with the subject by a short clause, and no such inquiry will be necessary. The ablest jurists have laid it down that

public rights in which the subject has an interest cannot be alienated, and under the Act itself these engines are illegal, if they interfere with navigation, or the public right of fishing, which they unquestionably do. It is now maintained that the statute does not authorise their use, and that they may be abated as a nuisance. This abnormal state of things cannot be continued—it endangers the public peace, and trains up a whole population in acts of insubordination: the Government will not persevere, or again send a brig of war into Ballyshannon roads, to do duty over a bag net, nor can her Majesty's cutters in Waterford harbour, manœuvre any longer with a whole fleet of cotmen; the judges have pronounced the law, and let the promoters of the Act of 1842 now aid to remedy the mischief; they have failed to establish a right, although some of them on the Shannon, reap a handsome reward for their legislative labours.

Public rights of fishing obtain largely in Ireland; they exist to a very great extent in the rivers Suir, Nore and Barrow, and also in the Cork river, and in the Shannon, Blackwater and Slaney. Moreover, at every river in Ireland, a public right of fishing for salmon, with draught nets, exists outside the mouth, and in dry seasons this mode of fishing is very productive to the poor persons who follow the occupation. At the mouth of this river, (the Liffey,) there were in 1843, upwards of one hundred families supported by Salmon-fishing. There were then in use

in that locality, twelve boats with large crews, and nets of 400 yards in length; all these persons obtained a good livelihood from it, and the Island-bridge Fishery had at the same time an ample harvest. I sold in that year £800 worth of salmon, as the books of my factor in the wholesale fish-market will prove. But the statistics of the present year stand thus—all these parties at the mouth ruined, and the take at this Fishery barely sufficient to pay the wages of the men. Similar results have taken place at all the other rivers of the kingdom, showing the extent to which property, employment, and occupation, have been prostrated by the Act of 1842.

The Scotch Salmon-fisheries, where fixed nets are also in use, are differently circumstanced as regards public rights. There the fisheries are mostly private property. The evidence of the Lord Advocate of Scotland is, that in Scotland, private rights are the rule, and public rights the exception. The owners can therefore regulate their fisheries as they think fit. The Duke of Sutherland has lately, to recruit one of his rivers, stopped all fishing in it for two years, and the Duke of Richmond and other great proprietors have ample control over their own rivers; but in Ireland, no such mode of stopping the exhaustion can be adopted. The framers of the Act of 1842, made no adequate provision to compensate for the additional waste, and they need not now resort to the plea that the season just terminated has been bad everywhere. No such decline as that of

the Irish Salmon-fisheries can be instanced in Scotland or anywhere else—it has been gradual, uniform and progressive since 1842.

The present exhaustion of the Irish Salmon-fisheries, and their prospects for the future, may be exemplified by some statistical facts connected with this river. The salmon that go up to spawn in the Liffey, can be counted with considerable accuracy in passing over the Salmon Leap at Leixlip. The salmon, to surmount that fall, must leap perpendicularly out of the water about ten feet. The period of the day during which they leap, is limited, and it is also only during two or three days after each flood that they leap. Some years ago I had a registry kept of the number that passed up, and I have counted myself, with some friends, as many as 60 pass over in one afternoon; but I do not think that 20 salmon have passed over during the present season, and the proportion to former years, I should say, was about as one to 50. It would, therefore, be a manifest absurdity to expect anything but a continued diminution of the supply.

A more efficient Government control will be the next requisite in the amendment and consolidation of the law. The principle of non-interference has been tried, and has lamentably failed; it was suggested by those, who forgot, that public rights of fishing obtain largely in Ireland. It may be said that there is at present no control at all, and the acting Commissioners have publicly stated in their Report, the

insufficiency of the Government establishment to carry on the business of the department—the result is, that the fisheries decline, both public and private rights are invaded, and unless a sufficient Act, and efficient Government control be interposed, public rights will cease altogether, and be replaced by a new vested interest, founded on usurpation.

The sea fisheries form a branch of the subject which is foreign to the present inquiry, and I shall here only incidentally allude to them. Nations have been founded on their fisheries. The Dutch, according to De Witt, employed 450,000 men in their sea fisheries—from these hardy fishermen their navies were recruited, and Van Tromp put the broom at his mast head. But in these peaceful times, our mercantile navy could not be recruited from a better nursery, than from the coast and deep sea fisheries. These are wholly neglected in Ireland; though capable of great extension if a nucleus of development were formed. On our western shores, Scotch barrelled herrings are bought by our own poor people, although the live ones in boundless profusion are beside them! Surely, when £14,000 per annum is the Government grant to the Scotch Fisheries, one half that amount, in common justice, ought to be accorded for the development of the Irish Fisheries.

The close season, will be the next subject for amendment. This question has been so frequently discussed, that little need be now said about it. It has been dandled by unskilful hands before the Le-

gislature for the last eight years, but it may be casually observed, that the proper course respecting it should be, one, in which the principle to be adopted should be, to compensate for additional waste, by additional restriction.

A more stringent protection of the salmon in the spawning season, will form a very important consideration in the amendment and consolidation of the law : the penalties in the present Act bear too great a disproportion to the offence. I have prosecuted extensively under these Acts, and have found, that poachers and other offenders make it a subject of calculation, as to profit and loss. The poacher, no doubt, conceives that he is doing a good business when the penalty is ten shillings, and the offence produces him double the amount ; but the offence of killing salmon on a spawning bed, is one against society, and one that ought to be visited with severe punishment ; and the facilities for its commission are so great, that without an exemplary penalty it cannot be repressed. It has been calculated, that the destruction of a pair of brood salmon on a spawning bed, is a loss to the public of nearly two tons of food. I can refer to a publication—Marshall on Landed Property—which proposes to make it a felony to kill salmon on a spawning bed. I would not certainly go that length, but the Legislature will be called upon, to affix a sufficient penalty to repress that pernicious and increasing offence. A sanction higher than human laws has said—Let the waters

bring forth abundantly the moving creatures that hath life.

Migration-passes will form a subject in an amended Act, second to none in importance, and an improved assessment for their construction will be necessary: they will undoubtedly form a chief element in any extensive improvement of the salmon-fisheries, and a material consideration will be their due and scientific construction; which can, and should, be accomplished with due economy, and without in the slightest degree interfering with the water-power of the mill. While upon this subject, I may mention that the making of these passes is only now commencing, and it is important to see to their proper and skilful construction. The pass over the Glandelan weir, near Fermoy, is now about to be commenced, and the amount required—£100 and upwards—has been lodged with the Board of Works. The model has been prepared, and lies upon the table of a public office of the department, with a paper annexed to it, signed by one of the Commissioners, and stating, *ex cathedra*, “I approve of this model,” and directing its construction accordingly; the model and the paper may, therefore, be considered as published. I have carefully examined both, and I state, for the information of the public, that a pass constructed after that model will be perfectly useless for the purpose intended. If it be asked, what right have I to interfere respecting the pass over the Glandelan weir? I may say, “proximus

Ucalegon.”—The weirs upon the Liffey have been surveyed, previous to the construction of passes, and if they are to be made with the public money, it is important to all concerned that they should be made effectual for the purpose intended. The estimated cost for the pass over the Glandelan weir, is, as I have said, upwards of £100, and I state guardedly, that it will not be worth the wood of which the model is made. Some of the Commissioners have stated (certainly in too kind and flattering terms) that I am better acquainted with these subjects than any individual in Ireland. I may however, at least, take it for granted that I am qualified to offer an opinion upon the subject: it is an old saying that a man may lead a horse to water, but 100 men cannot make him drink. I respectfully ask the Commissioner, how he brings his salmon to the pass. When he answers that question, I shall show him, in the public prints, (the only place in which I will discuss the question), that his pass is wholly and absolutely useless.

I do not in these observations presume to find fault with the Commissioner; I have too high a respect for him to do so. The fault is, in the Act of Parliament, placing upon him these incongruous duties. Even judicial functions are required of him by the Act of Parliament; and when he took his seat upon the bench at Waterford, to try a fishery question, the counsel in the case asked him, was he going to look at the Act of Parliament through a theodo-

lite ! The learned counsel no doubt, felt nettled, that a question upon the construction of an Act of Parliament, upon which the twelve judges of the land sat in deliberation, was about to be decided by an engineer. No possible blame can, therefore, attach to the Commissioner for undertaking these duties, which are thrust upon him by the Act of 1842, and for which he must feel his insufficiency. The Fishery Acts place these incongruous duties upon the Board of Works, and a Select Committee of the House of Commons have reported, that the Board of Works are not competent to the task.

I will undertake to make a model for the pass over the Glandelan weir, with my penknife, which shall be perfectly efficient for the purpose intended, and of which pass, the cost of construction by an engineer, shall not exceed £20. The money is public money, and the work is an important public work ; the public, therefore, will not be dissatisfied at these discussions, if they get a pass for £20, instead of £120, and a better article.

I shall endeavour to diversify these dull details with a few concluding observations, relative to fixed nets ; and I should not for a moment trespass even with these, unless they bore practically upon the subject.

In a letter recently published by me, which has been observed upon, I mentioned the capture of a large seal which was taken in the chamber of a bag-net set in the Bay of Dublin. The seal in question

was the larger seal, and was captured in a very unusual way, having become entangled in the net, in forcing his way through the small door, or entrance of the chamber ; and had he not been captured just at the time he became so entangled, he would, I have little doubt, have escaped by forcing his passage through, as it is a very common occurrence to find a fixed net much torn and damaged, without being able satisfactorily to assign the cause. For various reasons it is very difficult to capture these animals ; but the depredations they commit upon the salmon, when enclosed in the fixed net, are truly distressing, in an economic point of view : distinct statistics on this head can never be supplied ; but it has been calculated, that seals and porpoises devour more than ten times the number captured by nets. It has always been my opinion that the smaller seal (the *Phoca vitulina*) is by far, of the seal tribe, the most destructive of the salmon. This seal is not larger than a spaniel. The door of the bag net is eight inches wide, but about seven feet in height, and with but very slight effort, this seal can go in at the door, and come out with a salmon in his paws ; nor can it be doubted that this animal resorts regularly to the fixed net for his supply of food. That he is not frequently captured is no more remarkable than that a rat should not be caught in a trap, if the door remained open ; but I have seen on numerous occasions, too many salmon in the chamber of the net, having fresh wounds upon them, to leave any doubt

on my mind that a seal had been a recent visitor there. I need scarcely mention, that the salmon is prevented coming out of the bag net, or fixed net, by a peculiar instinct, although the door remains open. By the kindness of my friend Doctor Ball, Director of the University Museum, I have been enabled to take the dimensions of a seal of this class, which is at present in the museum, and which was shot by one of the coast guard, in the River Liffey, opposite the Custom House. It is two feet six inches in girth, which would give a diameter of about nine inches; and without even making allowances for the flexible motions of the animal when alive, I state it as a fact, that a herd of such animals could go into a bag net, at any hour of the tide, day or night, and help themselves to salmon, which it is their habit to carry off to their haunts. Some guess, therefore, may be made at the amount of their depredations. Doctor Ball, who is a high authority, informs me that the small seal might require for its sustenance about a salmon per day, and the large seal probably six or eight salmon.

In a former letter I mentioned incidentally the insufficiency of the present Act of Parliament for the protection of the gravelin; that little fish is now ascertained to be the young of the salmon; it is not protected by the Act, by reason of a technical error in the words used, which I formerly detailed, and the injurious effect of the omission must be self-evident. It is now proved not merely that the gra-

velin is the young of the salmon, but circumstances also of the most curious nature relative to that little fish are asserted, which it would not be suitable to advert to more particularly here, but which are stated at length in the Transactions of the Royal Society of Edinburgh, vol. 14. The destruction of gravelin in the interior of the country is carried on I may say without any restraint; in the great mills near large towns, improper practices are not often permitted, but in the petty mills in remote districts the destruction of gravelin is enormous. It has occurred to me to prosecute under the following circumstances:—In a petty mill, a trap was found, constructed at the waste gate of the mill, and capable of taking a barrel of gravelins in a single night; I came upon the engine myself, and on the trial at the ensuing Petty Sessions, the first witness was a contumacious miller, who for some cause had been discharged from the mill, where, with five others, he had been dieted, (a custom in country mills.) He stated on his oath, that a large boiler of gravelins was put down each day, and that he was discharged from his employment because he complained of getting nothing but fish; or, in the miller's own words—"it was gravelins for dinner, and gravelins for supper, and I could stand it no longer."

With such occurrences as these, I think it must be admitted that the Act of Parliament should have given the proper name of the fish, and not have used a term, upon which no prosecution can be safely founded.

I shall conclude this letter with some practical observations on the extraordinary appearances which the peal or grilse of the present year presented—appearances from which it can be inferred, almost with confidence, that the ensuing season will exhibit a marked deficiency, and a continued decline of the salmon species. I am aware how open any observations of this kind are, to attack, but as we have been given the fish of the sea and the fowl of the air for our use, it is incumbent upon us not to abuse the gift; and the indications to which I am about to refer are but forewarnings to which we are bound to attend; and I say it confidently, as the result of all experience in salmon fishing, that the appearances presented by the peal or grilse of the present year, indicate, that the ensuing season will be worse than the past.*

Those appearances are the following; and they have been observed in every part of the kingdom:—The number, the shape, the scale, and the weight of the peal were all defective; the peal at their first appearance in May, averaged about 3 lbs. when they should have averaged 5 lbs., and in July and August they averaged 5 lbs. when they should have averaged 7; in shape, and adhesion of scale, there was a marked defect, and in number, the most extraordinary deficiency. When these appearances present themselves, the worst anticipations of the ensuing season may be formed. The converse of this proposition also holds

* The following season was the worst salmon season ever remembered in Ireland.

good, and I am enabled to refer to my own evidence on oath, in the year 1844, to the effect—that when the peal are abundant, well formed, and perfect in scale, the ensuing season may be regarded with sanguine expectations. This fact I mentioned casually in my evidence before the Commissioners, to show that the splendid appearance of the peal of 1842 indicated a very large increase in the ensuing season, which large increase did actually take place. I refer for this fact, and the explanation of it, to the minutes of evidence as published by the Commissioners, in their Fourth Report to Parliament, page 95.

Unless, therefore, Government interferes, the expectations to be formed as to ensuing seasons must be truly desponding. If we come to any other conclusion, we set at nought all the experiences of Salmon-fishing.

It remains, then, a question for consideration, will Government any longer rely upon the control and management hitherto adopted? The duties of the Board of Works are multifarious. Since the fisheries were placed under the control of the Board in 1842, the decline has been rapid. This is evidenced by their own annual reports to Parliament, in which it is admitted that the fisheries have been gradually going from bad to worse; but the report for the present year, if framed by the Commissioners with their usual fidelity, must state to Parliament, a decline unprecedented and alarming. The various onerous duties of the Board of Works require their

undivided attention, and I trust it will not appear invidious if I give an extract from the Report of the Select Committee of the House of Commons last year ; it is in the following words :—

“ Your Committee is of opinion, that, under the peculiar circumstances of the Salmon-fisheries of Ireland, it is absolutely necessary to their due administration that it be confided to a separate department of the executive Government, not connected with the Board of Works, and that adequate means ought to be immediately provided for that purpose.”

I have thus endeavoured to show, that the laws, the control, and the management of the fisheries, are defective, and that a consolidated law, and efficient control are urgently requisite. The support of the Government may be confidently expected, under such a Report from the Select Committee of the House of Commons, and a deputation from the meeting which is about to be held, will seek to obtain the interference of his Excellency the Lord Lieutenant, on behalf of the Irish Fisheries.

To a great statesman the improvement of the resources of a country will always be a cherished object. The promised remedial measures to Ireland have been withheld, and the fisheries are annually declining through want of that protection and encouragement to which they are justly entitled.

I have in former communications stated, that the complete restoration of the Salmon-fisheries is within the control of the Government, and I trust no unbe-

coming confidence has been shown, in dealing with facts, or duly investigating causes.—We are given the fruits of the earth to use, but not to abuse them; and while a continued neglect, and an unskilful management are persevered in, we cannot expect a blessing to attend our fisheries.

Island Bridge Fishery,
Dublin, Sept. 28, 1850.

A MEETING, of all those interested in the Irish Fisheries, is about to be held in Dublin, and it is considered desirable for public purposes, that full publicity should be given to the objects contemplated.

Queries have been circulated throughout Ireland by the Committee nominated at the meeting held in October last, addressed to the respective Boards of Conservators of fisheries, elected under the provisions of the 11th and 12th Victoria, c. 92, and also to proprietors and lessees of fisheries, as well as to the owners of stake and fixed nets. The replies which have been returned, embody a mass of information obtained from practical persons, which cannot fail to prove of the utmost importance, in aiding the contemplated legislative enactments.

In reference to these replies it may be said, in few words, that in matters of detail little diversity of opinion prevails amongst practical persons, while upon important principles, there seems to be a full

concurrence. In enumerating the causes which have led to the present depressed state of the Salmon-fisheries, the first place is given to fixed nets, and to their undue and unnecessary extension by the Act of 1842, which gives a prescriptive right, to admitted usurpations of twenty, and even of ten, years' duration; it cannot be concealed, too, that to the fishing community at large, the administration of the fisheries by the Board of Works has given general dissatisfaction. Large powers are given by the Fishery Acts to the Commissioners of Public Works, and it is complained that those powers have not been exercised at all, or have been exercised in an objectionable manner. The cases enumerated are, 1st, the non-exercise of the power vested in the Commissioners, by the several Acts, respecting the close season. 2dly, the neglect to construct migration passes, when the required funds were lodged with the Board. 3dly, the omission to define the mouths of rivers, which is one of the most important duties prescribed to their Board by the Act. During a period of eight years the Commissioners have only in a few cases meddled with this important question; and in rivers where they have defined it, they have, in some cases fixed the mouth, three, four, or more miles distant from where it actually is.

It is submitted, that this is an objectionable mode of exercising a power, in the due exercise of which so vast an amount of property, both public and private, is involved, and it is suggested that the mouths

of rivers should be defined, not by the Commissioners, but by positive enactment.

It is proposed, that the mouth of a river be defined to be at its outer bar, being the shallow, caused by the flux and reflux of the tide, at the point, where the current of the river meets the tide. This is a limit proposed upon the precedent of the decision of the House of Lords in 1817, in the Tay case; or in cases (if any) where no deposit is made, that the mouth be fixed at the point of confluence, namely, the place where, at low water of spring tides, the current of the river first meets the incoming tide. These points, it is submitted, afford a distinct and adequate hydrographical definition of the termination of the river, and the commencement of the coasts of the sea.

It is then proposed, that no fixed net shall be permitted within two statute miles of the mouth, as above defined. This proposition is founded upon the purview of the statutes which regulated fisheries both in Great Britain and Ireland, before the Act of 1842. The 23d clause of Magna Charta prohibited kidels to be used except upon the shores of the sea, which word, "kidelli," Coke translates—"Open weares whereby fish are caught." The fact of these being thus permitted upon the coasts of the sea, indicates clearly their structure to have resembled the "open weir" or fixed net, of the present day. The Scottish law prohibits fixed nets down to the "fauces terræ" at the mouth of the frith; and the Irish Acts

(which were in force previous to the Act of 1842) prohibited them altogether.

It is therefore submitted, that the giving legality to fixed nets in rivers and harbours, by the Act of 1842, in cases where no prescriptive right before existed, was an enactment framed without precedent or equity, and in derogation of common right—that it has acted injuriously, as well by over-capture, as by turning the salmon from their course, and rendering them a more easy prey to their natural enemies; and that, it is not consistent with the policy of the present age, to appropriate public rights, by establishing a monopoly, giving to the owners of land new rights both upon the shores of the sea and the banks of rivers. In the amended Act, (in limiting the use of fixed nets) it is proposed to save all existing ancient, or prescriptive rights, and in accordance with the principle contained in the Irish Acts (3d George III., c. 35, and 26th Geo. III., c. 50), and in conformity also, with the existing Scottish law, it is proposed that in every case, the period of prescription be, 40 years.

In consolidating the law, the principle will be recognised of adapting a close season suitable to early and late rivers—provisions will be introduced to regulate the due and scientific construction of migration passes—severer penalties will be recommended, and stringent provisions made, for the due observance of the weekly and general close-time. With respect to the unlimited permission given by the Act of 1842

to the owners of lands upon the banks of a river, to use nets, that question will be examined into. It is submitted, that the enactment to that effect in the Act of 1842, is deficient in sound policy, and was not made, upon a due consideration of the question. The owner of the soil, or proprietor upon the banks of a river, has certain rights connected with the stream, but these rights are subservient and secondary to the rights of the public in the preservation of the fish.—We have a right to the moderate use of an animal for the purposes of man, but we have not a right to exterminate it.

In conclusion, it may be observed that the answers received, afford ample evidence of the depressed state of the Salmon-fisheries throughout the country. During the present year some of the largest fisheries have been surrendered, and in districts where public rights of fishery were largely exercised, great destitution has been caused. Both public and private rights have fallen before the Act of 1842, and both are now in a state of complete prostration. In the Waterford district alone, 1,120 families have been deprived of their livelihood—the number of cotmen in that district in 1842, being 1,200, and the registered number during the season just terminated being 80. Similar results have taken place in other districts, and the aggregate presents a sad spectacle of destitution, caused by the mismanagement of the fisheries, combined with effects resulting from an improvident and inequitable law, passed without due

consideration or notice, and without the aid or information of practical persons.

These answers, publicly obtained, supply a useful commentary upon the existing law. It is to be observed that they come in every instance from skilled and scientific persons, and it is the recorded and universal expression of opinion, that the fisheries are sacrificed to absurd theories and unskilful management. It is stated in almost every answer, that there is nothing wanting, humanly speaking, to the full development of the fisheries, but a good law, and a due administration of it. If these requirements be obtained, it is the recorded opinion of almost every practical person in the kingdom, that the fisheries will at once resume that position which they held fifty years ago, as one of the great resources of the country.

ROBERT WORTHINGTON, Hon. Sec.

Fishery Association, Jan. 30, 1851.

The Screw-steam Fishing Company.

I HAVE lately seen in the newspapers some notices and advertisements of a proposal to develop our fisheries by means of a Screw-steam Fishing Company, and would venture to make a few remarks, and suggestions on the subject—not that I would throw any obstacle in the way of the proposed Company—far from it: I conceive that such a company, or any

other well organised Fishing Company, might reasonably expect to have an annual dividend, beyond outlay and insurance, of from thirty to forty per cent. upon their capital, and it would take but little space, to prove by facts, that the above estimate is not beyond what might fairly be calculated upon. But I think the subject admits of a somewhat wider scope than that suggested.

The prospectus of the company states that the project is a gigantic one, and such truly it is, if it could put in motion our national fisheries. Let us look for a moment, however, and see how they manage these things in Scotland, and we shall then be better enabled to understand the question—pre-mising in the first place, that in natural advantages, and in the abundance and quality of the fish, the Irish fishing grounds, equal, if they do not surpass, those of Scotland.

A century back the coast population in Scotland were bare-footed and bare-legged, half-clothed and half-fed, and not in the least degree superior, in any of these particulars, to our own neglected country-men at the present day. But what is the condition of this coast population in Scotland now; and how was the change brought about? The whole coast of Scotland now, may be said to form one thriving and prosperous community—smiling cottages, decent habiliments, safe harbours, good exports, and above all, a healthy import of the chief necessities of life into all the sea-coast villages.—This happy change

has been effected solely by the development of the Sea-fisheries.

The cant—in an impoverished country—about capital, and competition, was not then raised; but Government, in co-operation with the Scotch gentry, set to work to open out to these starving populations this vast field of industry, on a suitable and national scale. Funds were procured, fleets were equipped, harbours were built, and at present Scotland supplies not only Ireland but the half of Europe with cured fish; the value of herrings alone, caught annually on the coasts of Scotland, averaging about one million sterling: the quantity caught in 1849, (Vide report of the Scotch Commissioners of Fisheries) being 1,151,979 barrels. These are the results in Scotland; but how, let us again ask, were these results obtained? Could the starving population of those coasts, supply these funds, equip these fleets, build these harbours?

We are told to follow the example of our English and Scotch neighbours—I wish we could copy them in some things. These results were not brought about without ample Government grants in the first instance—continued to the present day, and now all amply repaid in the prosperity and national wealth created. There is at the present moiment at Edinburgh an efficient executive department for the fisheries, consisting of a Board of Commissioners, forty well-paid Inspectors, an armed cutter or two from the Royal Navy, to preserve order on the fishing

grounds, with all other due appliances; and so this great national resource has been developed, as it ought to be, on a great national scale.

Do we in Ireland ask, or even hope for, these things? No: it would be useless to expect it. The whole present expenditure upon the Fisheries of Ireland by the Government, amounts to £1200, which sum is passed in the votes at the same time that £14,000 per annum is voted for the Scotch Fisheries: we have for our administrative and executive department, two Inspecting Commissioners and a clerk: and when these two efficient officers are absent in the provinces on harassing duties, and the clerk is up-stairs attending the Board of Works, the fishery office is shut up, and any one who calls must call again. This burlesque upon a Government department should cease—either the department should be made an efficient one, or should be done away with altogether.

The inland fisheries form another important subject. France is going a-head in this direction, and a new system to improve their river fisheries is just now being put in operation by the French Government—I mean that for stocking rivers and lakes by artificial means. This system cannot be resorted to generally in Ireland by proprietors of fisheries, for in few cases could the proprietor expect to catch anything but a very small proportion of the fish so propagated and reared by him; the remainder would be caught in the sea, by owners of other fisheries, as

well as by the public at large. If the good to be attained is a public one, the action should be public also. These artificial processes should be carried out, if at all, under the sanction of the Government, on behalf of the public; individual proprietors will not do it for the reasons above stated.

Instead, therefore, of trusting to Companies for the improvement of our sea-fisheries, or to steam ships, whether propelled by the screw, or by the paddle; we ought seriously to turn our own attention to our national fisheries, as a means of employing our people. I would desire to offer here a few practical remarks upon the subject. The *Times* is quite welcome to examine these suggestions, and discover is there too much "justice to Ireland" contained in them.

Let the same means by which the Scottish Fisheries were developed be adopted with us, though even on a miniature, or reduced scale, and let the State supply, for a national purpose, those means, and appliances which an impoverished people cannot supply for themselves. Unpaid Boards of Conservators of fisheries are established all round the coasts of Ireland, under a recent Act of Parliament, somewhat similar to Boards of Guardians under the poor law Acts, but these Boards of Conservators are becalmed like ships without the wind: establish an efficient central department, and affiliate these Boards upon it; exercise a vigilant and active executive control over the whole; supply these Boards of Conser-

vators, and through them, the uncultured fishing population, with accurate practical information and sound practical instruction; survey and ascertain the best fishing grounds in each locality, and the best modes of fishing them; provide in the provinces and on the sea coasts facilities for the artificial production of fish, and by those means, aided by suitable enactments or bye-laws, fill the rivers and lakes with fish; then start your companies—pay the crews by shares and not by wages—three-sevenths of the capture will be a fair apportionment—this will remunerate the crews, prevent combination, and stimulate and ensure unwearied exertion. Start in the first place, if you please, a model company; if it should only equal in capture that of the immense Cornish fishing fleet which annually visits Howth Harbour—fishing within sight of Dublin, it will divide 30 per cent. upon its capital, and we may then safely indulge the hope that fishing fleets and fishing companies will start up, and sturdy crews be seen engaged in useful and profitable employment all round the coasts of Ireland.

I think it is a mistake to suppose that this scene of Irish industry, if thus brought out, would at all interfere with the Mediterranean trade carried on so extensively from the Scotch fisheries—that apprehension does not appear to be well-founded; fish is now everywhere largely consumed in a fresh state, and is not exported, being scattered a few hours after being caught, over the whole country, by rail-

roads ; our exports, of cured fish would not therefore be very great ; besides, if the tariffs on the Continent should be at all modified, Ireland and Scotland together would not half supply the European inland States, where fish is a prime necessary of life, whole populations requiring it twice, or three times in each week.

Merrion, September 9th, 1853.

*Article published at the opening of the Royal
Exhibition.*

ARTIFICIAL PROPAGATION OF FISH.

WE yesterday inspected the department, in the Great Exhibition, called the Fishery Department ; being the space allotted for the exhibition of articles relating to the fisheries ; in which department of the Exhibition some important additions have recently been made. There we saw, and examined with much interest, plans and sections of boats, suitable for both the sea and inland fisheries, miniature stake-nets, bag-nets, and many other curious engines of capture ; models of salmon-ladders, or devices for enabling salmon to get over mill-weirs, with various other implements pertaining to the sea and inland fisheries ; matters which would each, for adequate description, require a separate portion of our space, and all of which are of interest, as relating to one of the chief resources of the country.—But on entering the compartment our attention was at once attracted to a vase, con-

taining some live fishes, which, at a cursory glance, might not appear to merit any particular attention, resembling at first sight, merely those collections of little gold and silver fishes which we sometimes see displayed for ornament, in parlours or drawing-rooms ; but, upon inquiry and closer inspection, we found, that we were approaching, nay, were in the very presence and perception of, one of the most remarkable discoveries in Natural History of the present day ; we found, in short, that the little fishes before us, were not placed there for mere ornament, but were specimens of the salmon species—being the young brood, the veritable offspring of the salmon—and that, the fact of their being so, is as clear, and as capable of demonstration, as any fact in natural science can be.

Strange as it may appear, not only the habits and the growth, but even the identity of the young of the salmon was involved in great obscurity until quite recently. A very minute fish had always been observed in our salmon rivers, designated, in different localities, by different names ; but it had never been conjectured, either by naturalists or practical fishermen, that the little fish so observed was the young of the salmon, until about the year 1835, when the manager of one of the Scotch Fisheries, Mr. John Shaw, suspected that such was the fact, and he immediately proceeded to test his opinion in various ways—amongst others, by pressing the ovum and milt from an adult pair of salmon at the proper

season, and then covering this spawn in gravel, laid in streams or rills of water, formed within his own premises, he there observed the development of the embryo fish, and watched their progress through all the stages of their growth, until they became full-grown salmon-fry. All these experiments were performed under the observation both of philosophical persons, and practical fishermen in Scotland, and the demonstration was rendered so complete, that no doubt is now left upon the subject, neither is there any difference of opinion that Mr. Shaw is the person fully entitled to the merit of this discovery.

But this is a practical age, and the problem which now awaits solution, is not, who was the first discoverer of a curious and interesting truth—but how to turn the newly-ascertained fact to useful purposes?

The first thing which strikes the visitor on entering this department of the Exhibition, is, the very minute size of these fishes. Let us, in the first instance, however, give the birth and parentage of the identical specimens before us. These little fishes were produced at Oughterard, adjacent to the Galway Salmon-fishery, by the artificial process, which is now attracting so much attention; and we believe they are the first which have been produced in Ireland by such means. Messrs. Ashworth, of Eger-ton Hall, Lancashire—gentlemen of large capital, purchased recently in the Incumbered Estates Court the Galway Salmon-fishery, and not satisfied with

paying down £5,000 as the purchase money of the fishery, these gentlemen resolved to embark their energies and intelligence, as well as capital, in this new and interesting pursuit—they have determined to test to the uttermost the merits of the artificial process of production, and solve the question—can the salmon-fisheries of this kingdom be restored to their former abundant state of productiveness; and in solving this important question, they are resolved, we hear, to spare neither trouble nor expense. The Galway Salmon-fishery is one which has been very much exhausted, and Messrs. Ashworth, as a means of recruiting it, at once decided upon putting into operation the artificial process; accordingly, they caused the necessary reservoirs for this purpose to be constructed, and all other suitable arrangements to be made during the autumn of last year. All the necessary preparations were completed before the winter set in, and in December last, the operations for depositing the spawn were commenced. Some full-grown salmon, male and female, about to spawn, were taken from the river—the spawn was carefully exuded from them by pressure, and the parent fish were then returned uninjured to the river; the spawn so obtained was immediately deposited in gravel beds, previously prepared, watered by artificial rills: in March and April of the present year, thousands and tens of thousands of the young brood came to life—they emerged from the gravel like blades of corn issuing from the ground;

they grew and flourished apace, and lo, and behold you, here is a portion of the first crop.

The only obstacle experienced, as we have heard, in this the first year of the experiment, was, the difficulty of procuring a sufficient number of female fish; the males found in the river being in a very large majority (fourteen to one) to females. This scarcity of female fish, with superfluity of males, has been before observed in other rivers, and we would here merely point attention to it, incidentally, while describing this process of artificial breeding. It is a disproportion also observable, to an incredible extent, amongst graveling, or early young of the salmon, in their first and second years, as every sportsman knows; and it is a circumstance well worthy of ulterior consideration; but at present we prefer pursuing the course of our observations.

Messrs. Ashworth, while thus devoting time and money to the elucidation of this curious subject, have not confined their investigations solely to their own fishery at Galway, but have, we believe, visited the Continent during the present summer, for the purpose of extending their inquiries; at least we have just seen, and have read with much interest, a letter from Mr. Edmund Ashworth, dated Geneva, 26th June 1853, in which he describes the Government establishment for the artificial propagation of fish, at Basle, which he had just visited; the reservoirs breeding places, and suitable constructions, cover a space, he states, of from 20 to 30 acres of ground,

where were propagated, not only salmon, but carp, tench, and those various other fresh-water fish, of which, in their culinary preparations, the French people are so fond; (in which, by the way, and in the whole economy of food, they so much excel us). The Commissioner in charge of this establishment mentioned to Mr. Ashworth, as he states in his letter, that they had just introduced from the Danube some new species, and that, as far as they had yet gone, the most remarkable success had attended their operations, which, however, are only as yet in their infancy. At Huningen also, there is another extensive establishment for the production of fish, in which trout, and other fresh-water fishes, are propagated in myriads, and the neighbouring rivers and streams are supplied with stocks, from this useful reservoir. Thus, while our great national resources and local advantages at home, are neglected, the French people are setting us a good example, and bid fair to rival us, not in the arts of war, but in the arts of peace.

The propagation of fish by artificial means, seems indeed, to be a legitimate object of art, and to be now necessary in order to counteract obvious and increasing sources of waste, and we cannot doubt that many species of fish may be multiplied almost indefinitely by these methods; it cannot reasonably be regarded as a preordinate arrangement that any of those animals inhabiting the ocean or the rivers, which produce their young by thousands and tens of thou-

sands, should decline; while terrestrial animals, which are subjugated to our use, increase and multiply, though endued with far inferior powers of fecundity.—We must, however, adhere strictly to our subject, and will here sum up our observations with a few general remarks relative to the question immediately before us—the propagation of salmon by assistance from art, and the consequent improvement of the salmon-fisheries.

In the first place, we should say these processes may be availed of to stock our larger rivers, without perceptibly interfering with the ordinary operations of the salmon themselves, in either the river or its tributaries; in other words, both methods, the natural and the artificial, may go on simultaneously. The artificial process will undoubtedly be a useful auxiliary, and in small rivers (where it is so difficult to protect spawning salmon), may almost supersede the fruitless efforts of the fish to deposit its spawn in the natural way. We may assume that ten or twenty pair of salmon in a secure and well-protected artificial stream will produce a larger quantity of fry than a much greater number of salmon could possibly do in the river at large, where they are exposed to so many casualties, which casualties are prevented or neutralized when we place the spawn in security in boxes, or else enable the salmon themselves to deposit it in artificial beds carefully provided for them.

Another useful purpose to which this process can

be applied will be the re-stocking of rivers which have been much exhausted, or those in which the breed of salmon has become altogether extinct. There are many small rivers in Ireland so circumstanced, which might be re-stocked, and many beautiful rivers in England, particularly in Devonshire and Cornwall, into which a new breed of salmon could be introduced with certainty and effect. The stock of salmon in all the Irish and Scotch rivers is declining; in the smaller rivers, since the invention and use of improved modes of capture, the decrease has been rapid and alarming. The large rivers, such as the Tay, in Scotland; and the Shannon, the Erne, the Moy, Foyle, Suir, Nore, Barrow, in Ireland, may hold on much longer, and maintain considerable supplies, but the time has undoubtedly arrived when our best efforts should be directed to improve our fisheries by methods of modern industry, and those adventitious aids which the ingenuity of the age supplies.

We would, if possible, avoid any theoretical views upon this subject, but there seems upon the whole to be no reason to doubt that if a sufficient number of brood salmon be allowed to pass into a small stream, and be there left to their own operations, protecting them merely, and guarding them against outward injury, or casual accident—or, if we adopt the methods above detailed, of exuding the spawn by pressure, and depositing it in boxes, or in artificial beds in the manner described, there appears to be, we

think, no reason to doubt that by such means a vast addition may be made to the produce of our salmon-fisheries. The induction to that conclusion at all events is simple and reasonable. We know the immense productive powers of the salmon species; we see that by allowing the fish to choose their own ground it is impossible to protect them throughout the whole course of a river, and that great waste and loss necessarily ensue—the breeders themselves become the prey of poachers and other enemies to a pitiable extent, and are liable to other accidents, while the pea in the very act of being deposited in the gravel, is devoured in mouthfuls by trout, which hover about the spawning beds; or when deposited is raked up by water fowl, or swept away by floods; and when at length the infant fry make their appearance, they must live and grow up amongst their enemies, who prey upon them in detail, swallowing them alive, like the pike, by the mouthful. These destructive agencies were doubtless necessary at some primeval or remote period, to check the productiveness of fishes; but the evil to be apprehended now, is not excess of any species of river fish, but exhaustion and diminution, and it would appear to be a fit and proper direction of the will—indeed, to be imperative upon us, to use all due efforts of art, to preserve and uphold this species, and maintain the stock of all other species of fish in our rivers.

In conclusion, we must again turn with pleasure to contemplate this vase, with its living occupants,

and we confess that we view these little silvery creatures with a more lively interest than perhaps any other object in the Exhibition. It has been finely observed by a great medical author, the late Doctor Graves—a distinguished light in our City lately departed from amongst us—“there is,” he says, “more to strike and impress the mind in one atom that has life, than in a whole revolving mass of inert matter.” Here in our Exhibition these little fishes present themselves as the starting point, in a novel and useful discovery. We here recognise and have before us, a new fact just added to our store of natural science, inviting all who visit our Exhibition, with inquiring minds, to enter upon and follow up this hitherto unexplored path.—Who shall say, to what useful results these living specimens here exhibited in this vase may herald the way? Who will say, that lasting benefits to mankind, in the increase of food, may not originate from this display in our National Exhibition of these little fishes, propagated by new methods, by the aid of art?

A BILL

TO CONSOLIDATE AND AMEND THE SEVERAL ACTS RELATING TO
THE IRISH FISHERIES.

[As the Bill, (the subject matter of the first article of this book) entitled, “A Bill to consolidate and amend the several Acts relating to the Irish Fisheries,” was a work of no ordinary magnitude and labour, both to Mr. Conolly, the Member of Parliament who prepared and introduced it, and to myself, who assisted him; I think it desirable to give here, the preamble and heads of sections from the Bill itself, in the form in which it stood for second reading in the House of Commons, on the 21st April 1852.]

WHEREAS the Fisheries of Ireland are much exhausted and decayed, and the laws relating thereto have become complicated, and it is expedient to consolidate and amend the said laws, and provide a rule for the due governance of the said fisheries by the

local authorities appointed for their control, and that for such purpose all enactments now in force in Ireland relating to the fisheries thereof should be repealed: Be it therefore &c.

I. Repeal of Acts—5 & 6 Vict. c. 106: 7 & 8 Vict. c. 108. 8 & 9 Vict. c. 118. 9 & 10 Vict. c. 114: 11 & 12 Vict. c. 92: 13 & 14 Vict. c. 88.

II. Treasury may appoint Commissioners of Fisheries, or other officers.

Salaries to Commissioners and other officers.

III. To have a common seal.

Awards, &c. sealed therewith to be received as evidence.

IV. Commissioners may delegate powers.

V. Commissioners to report to Secretary of State. Annual Report to be laid before Parliament.

VI. Commissioners may make bye-laws.

Bye-laws to be approved by Lord Lieutenant; and deposited for inspection.

Appeal.

VII. Publication of bye-laws.

VIII. Existing bye-laws and offices may be adopted for the purposes of this Act.

IX. Commissioners for executing this Act to adopt existing districts, or otherwise to divide Ireland into districts for purposes of this Act.

X. Commissioners may hold meetings, and examine witnesses.

XI. Conservators of Fisheries to be elected for each district, and existing Conservators to remain in office until the first elections under this Act.

XII. Commissioners to prescribe number of Conservators to be elected from each Electoral Division.

XIII. Owners of several fisheries of a certain value to be Conservators in like manner as elected Conservators.

XIV. Elected Conservators to be chosen triennially.

XV. All engines, &c. for capture of salmon and trout to be licensed, and pay an annual duty.

XVI. Persons who have paid licence duty entitled to vote for Conservators.

Votes to be cumulative.

XVII. Commissioner for purposes of first elections to adopt old or fix new scale of licence duties.

XVIII. First meetings of persons paying licence duty for the election of Conservators to be called by Commissioners.

XIX. Persons assembled at such first meetings and at all future triennial meetings to elect Conservators for three years.

XX. Power to Boards of Conservators to fix the amount of licence duty and rates for engines, nets, &c. set forth in the schedule of this Act.

XXI. For engines, nets, &c. not enumerated in schedule, licence duties to be also fixed by the Board of Conservators.

Saving as to rods not used for salmon or trout.

XXII. Appeal against amount of licence duty.

XXIII. Boards of Conservators, when constituted, to fix times and places of meetings.

How Meetings to be called.

If Board of Conservators fail to give notice of triennial meetings Commissioners may do so.

XXIV. In case of failure of any electoral division to elect, Conservators of other divisions shall act for the district.

On failure of election of any Conservators, the former Board to act.

XXV. Quorum of Boards of Conservators.

Commissioners may attend and advise at meetings of Conservators.

XXVI. Boards of Conservators at the triennial meetings to nominate treasurer, clerks, sub-inspector, and water bailiffs.

Appointments of officers by Boards of Conservators not liable to stamp duty.

XXVII. Conservators empowered at general meetings to depute Conservators for electoral divisions, to act for such electoral divisions.

XXVIII. Conservators may apply funds of district towards providing passes for fish through natural and artificial obstructions.

XXIX. Provisions in case of vacancies in the Board of Conservators.

XXX. Justices of the peace, being Conservators, not disqualified from sitting at the trial of offences against this Act.

XXXI. All several fisheries, or other productive fisheries, to be subject to an annual rate according to valuation.

XXXII. Last-mentioned rate recoverable before justices as wages, or by civil bill, or by action.

XXXIII. Valuation of such fisheries.

XXXIV. Collection of such rate.

XXXV. Penalty on using engines, &c. without licence.

Forfeitures to be applied to funds of the district.

Recovery of forfeitures and penalties.

XXXVI. All monies received for licences, rates, penalties, &c. in each district to be lodged in bank, and applied to defray the expenses of such district.

XXXVII. Form of licences.

Penalty for misusing or counterfeiting same.

Proviso as to general licence.

XXXVIII. Penalty on persons using or having engines, nets &c. in their possession, not producing licence when required.

Parties having them for sale, &c. exempt from penalty.

XXXIX. Licences how sold.

XL. Licences to be sold to all persons demanding to purchase, but such licences not to confer rights or alter rights of parties.

XLI. Account of sales of licences to be furnished.

XLII. Security to be given by the clerk of Conservators, and duties of clerk and other officers.

XLIII. Proprietors of fisheries in rivers or on the sea coast empowered to appoint water bailiffs to protect the fisheries in which they shall be interested.

Stamp duty on instrument of appointment of water bailiff.

XLIV. Powers of water bailiffs for the protection of the fisheries.

XLV. Justice may grant a warrant to enter suspected places.

XLVI. Officers and men of her majesty's cruisers, and officers and men of coast guard service, and of the constabulary and revenue police forces, empowered to enforce provisions of this Act.

XLVII. Fishermen &c. may use waste shores for the purposes of fishing ;

XLVIII. Or for watching for fish.

XLIX. Penalty on persons resisting or obstructing fishermen in using such shores, &c.

L. No herrings or other nets, save as herein provided, to be shot or left floating in the daytime.

LI. Penalty on fishermen not hauling up their nets.

LII. Penalty on use of trawl and trammel nets.

LIII. Nets shall not be set or lines laid contrary to the byelaws.

LIV. Bait-beds may be made.

LV. Penalty on persons discharging ballast in improper places.

LVI. Fishing vessels on the coast of Ireland to be registered and marked.

Penalty for using vessels not registered.

LVII. All bodies corporate, &c. empowered to demise lands for the purposes of this Act.

LVIII. Penalty for stealing oysters from oyster beds held by charter or prescription with defined limits.

LIX. Power to make artificial oyster beds.

LX. Penalty for unlawfully using dredges, &c. within the limits of oyster fisheries.

LXI. Power to dredge during part of the close time for oysters to supply beds.

LXII. Power to Commissioners to suspend for a fixed period the oyster fishery in any particular locality.

LXIII. Commissioners to make bye-laws for improvement of oyster fisheries.

LXIV. Proprietors and lessees of lands adjoining the sea coasts empowered to erect stake-nets and bag-nets, and other fixed-nets, where no several fishery exists.

LXV. Proprietors and lessees of lands adjoining the sea coast empowered to erect fixed-nets where no several fishery exists.

LXVI. Stake and other fixed-nets shall not be placed at or within the mouth of any river, or within two statute miles of mouth.

LXVII. Stake and other fixed-nets shall not be placed or erected within the entrance of any harbour, estuary, or tideway, if entrance be of less width than two statute miles.

LXVIII. Definition of mouth of river.

Existing definitions to be null and void.

LXIX. Saving for stake weirs and other fixed engines erected or maintained under a charter or patent.

LXX. No persons other than those entitled as

herein to use fixed nets in the sea or tideways on the coast of Ireland.

LXXI. Stake-nets and other fixed-nets shall not be erected so as to be injurious to navigation.

LXXII. Size of meshes of stake, bag, and other sea nets.

LXXIII. Commissioners empowered to abate and remove illegal stake weirs and nets in places prohibited.

LXXIV. Net to be deposited pending appeal.

LXXV. Penalty for erecting or re-erecting weirs, &c. after conviction, or after decision by Commissioners, unless reversed on appeal.

LXXVI. Decisions, definitions, &c. of Commissioners to be recorded.

LXXVII. Nets for taking salmon not to be used at the mouths of narrow rivers, nor to be stretched across the mouths or any other parts of rivers.

LXXVIII. Penalty on persons obstructing others legally fishing, or using violence.

LXXIX. Application to presentment sessions for compensation for malicious injury to legal fishing weirs or nets, &c.

Grand jury to adjudicate.

Traverse.

LXXX. In case of injury done on the verge of two or more counties, the amount may be apportioned thereon.

LXXXI. In all weirs for the taking of salmon or other fish a free gap or queen's share to be left.

LXXXII. Commissioners may require owners of weirs in certain cases to make gaps therein, and furnish a claim for compensation.

LXXXIII. Satisfaction may be made and accepted.

LXXXIV. Commissioners empowered to assess the value in case of dispute.

LXXXV. Any person dissatisfied with the adjudication of the Commissioners may appeal to a judge at the assizes.

If no appeal within twenty-one days award to be final.

LXXXVI. Judgments to be final.

LXXXVII. Awards and judgments to be recorded.

LXXXVIII. How the award or judgment shall be enforced.

LXXXIX. If not paid it may be sued for.

XC. Compensation to be paid over when received to parties entitled.

XCI. Application of compensation when amounting to or exceeding £200.

XCII. When less than £200 and amounting to or exceeding £20.

XCIII. When less than £20.

XCIV. Spur and tail walls of such queen's share not to be more than twenty feet long, above or below the weir.

XCV. Not to extend to weirs, banks, or heads used for purposes of mills or navigation.

Saving for mill weirs, legally used in fishing.

XCVI. No obstruction shall be placed in, or near the queen's share, nor shall any person fish in or near same.

XCVII. Regulations as to cribs, cruives, boxes, and other devices in fixed weirs for the taking of salmon, &c.

XCVIII. Power to enforce the construction of fixed weirs, in conformity with the provisions of this Act.

XCIX. Commissioners not bound to do more than open passages required by this Act, and not liable for consequent damage.

C. Nothing herein contained to legalize any weir, nor to empower any person to erect new weirs.

CI. In all dams or weirs which shall be hereafter constructed, means shall be provided for the free migration of salmon and other fish.

In existing dams and weirs similar means for migration of fish shall be provided, no injury being done to mill power or navigation.

Sluices to be kept open when mill or factory not at work.

Sluices to be kept shut at certain times, except sluice for passage of fish.

CII. Natural obstructions in rivers may be altered or removed, no injury being done to several fisheries, or to mills or factories, or drainage of lands.

CIII. Migration passes for fish in mill dams or natural obstruction shall be preserved in like manner as Queen's shares.

CIV. A grating shall be placed in all water-courses diverted from rivers, to prevent salmon, trout, or fry entering therein.

CV. Penalty for any person taking or attempting to take fish, or the fry of fish, in works appurtenant to mills or factories, or in water-courses diverted from rivers, for such purposes.

CVI. Nets and other engines not to be used within certain distances of weirs.

CVII. Close time for salmon in the sea, and tideways shall be from 1st August to 1st February.

CVIII. Close time for salmon in rivers and lakes above tideway from 1st September to 1st March, but from 1st August to 1st September salmon shall be taken only with rod and line.

CIX. Fishing weirs above termination of tideway, and within two miles therefrom, to be subject to the same regulations as if situated in tideway.

CX. Close season for trout, 1st of September to 1st March.

CXI. Fixed nets or engines for eels shall not be set in rivers between 10th January and 1st July.

CXII. Close season for oysters, 1st May to 1st September.

CXIII. Nothing herein contained to prevent fishing in any district where fishing shall be permitted by the Board of Conservators of the district.

CXIV. Boards of Conservators empowered to alter the close season in any river or district, upon inquiry held, and subject to approbation of Commissioners.

CXV. Decision of Boards of Conservators as to the close season shall be published.

CXVI. Close season thus determined to continue for three years, and until like proceedings for alteration be again had.

CXVII. All machinery, nets, and tackling for the taking of salmon, &c. in salmon weirs, or other fixed engines, shall be wholly removed during close season.

CXVIII. All bag and stake nets, sole, fly, and other engines, for catching salmon in the sea and tideway, shall be removed during close season.

CXIX. Saving for weirs to catch sea fish.

CXX. Penalty for any person catching, taking, having in his possession, or offering for sale, salmon or trout caught in close season.

CXXI. Salmon or trout not to be taken in any traps, nets, or fixed engines from six o'clock on Saturday evening to six o'clock on Monday morning.

Leaders of bag-nets, &c. to be removed during that time.

A free passage of four feet wide to be left during that time through each crib or trap for taking salmon.

Commissioners to determine, in case of dispute, whether weir is in the tideway or fresh-water.

CXXII. Additional powers to enforce observance of the weekly and other close times.

CXXIII. No person to use nets for taking salmon in inland rivers where no several fishery exists, or in places hereby prohibited.

Proviso in favour of rods.

CXXIV. Penalty for killing or taking or attempting to kill or take fish from several fisheries.

Magistrate may adjudicate in such cases, if illusory title set up, with appeal to Assistant Barrister, and afterwards to judge of assize.

CXXV. Size of meshes of nets in inland lakes and rivers.

Commissioners may alter size of mesh in inland rivers, upon due inquiry.

CXXVI. Power to prohibit the use of engines injurious to fisheries.

CXXVII. Penalty for using unlawful nets.

CXXVIII. Illegal nets shall be brought before magistrates at petty sessions, and destroyed; and legal nets, when used illegally, shall, upon being forfeited, be sold.

CXXIX. Questions of title in certain cases may be referred for trial to the Assistant Barrister's Court, with appeal to judge of assize.

CXXX. Commissioners and other officers empowered to enforce provisions of this Act.

Penalty for assaulting commissioners or other officers in execution of this Act.

CXXXI. Offenders may be apprehended if they refuse to tell their names.

CXXXII. The names of owners shall be painted on fishing boats.

CXXXIII. Cross lines prohibited.

CXXXIV. Angling.

CXXXV. Penalty on persons taking or using boats or entering lands without permission.

CXXXVI. Penalty for killing, chasing, or disturbing salmon or trout in the day-time, on any ford or spawning bed, during the close seasons.

CXXXVII. Penalty for taking or attempting to take salmon or trout at night, in inland lakes or rivers, in close season, with lights, spears, or nets.

CXXXVIII. Penalty for using gaffs, &c.

Justice may grant a warrant to search for spears, &c., in suspected places in day-time.

CXXXIX. Penalty for having, taking, or attempting to take fry and spawn of salmon, trout or eels.

CXL. Penalty for taking salmon or trout, or their fry, in eel weirs.

CXLI. Penalty on persons throwing or allowing matters poisonous to fish to flow into inland rivers.

CXLII. Penalty for poisoning rivers for the purpose of taking fish.

CXLIII. Penalty for fishing in private ponds.

CXLIV. How offences against this Act may be tried.

Penalty to be recovered by distress and sale of offender's goods.

If no goods or chattels, then offender may be imprisoned.

CXLV. Jurisdiction of magistrates of maritime counties extended to offences against this Act at sea.

CXLVI. Conviction, not removable by certiorari.

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CLX. The mode in which penalties are to be levied.

CLXI. Recovery of expenses.

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CLXIII. Acts may be done by agents duly authorized.

CLXIV. Persons punished under this Act not liable under any other Act.

CLXV. Lord Lieutenant may extend mercy to convicted persons.

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