IV.—SPECIAL ARGUMENTS IN REGARD TO REGULATING THE SEA-FISHERIES BY LAW.

ARGUMENT OF SAMUEL POWEL, ESQ., DELIVERED IN THE RHODE ISLAND LEGISLATURE.

This question of the protection of the fisheries of Rhode Island is one demanding the most careful examination.

The most important aspect is the supply and cost of valuable food supplied by fisheries.

How shall the amount be rendered most ample and how shall the cost be reduced to the lowest price?

An able committee, with great labor, patience, and care, have devoted much time to the subject. They have taken a vast deal of testimony, and, at pages 22 and 23 of their formal report, they give us this deliberate opinion upon the subject, in these words: "The opinions—depend." And again, on page 23, they say: "As was anticipated—irreconcilable."

At pages 29 and 30 the committee admit the testimony of Mr. Tallman, to the effect that forty-five years ago the menhaden-men pulled up their nets to allow scup to pass, *lest they should cut their nets;* that ten years afterward (*i. e.*, 1835) "We sold them at ten cents a barrel, for manure."

Now, bearing in mind that the present constitution dates in 1842, this authoritatively fixes and establishes the custom of netting scup as existing seven years, say, prior to the constitution. This is a *very important point in one aspect of the case.* It is the testimony adduced by the committee, and not by me. At page 30 they further state: "Ten years after [*i. e.*, 1845] we begun—knowledge." Now, our committee met many witnesses face to face; they had witnesses representing both interests, and their secretary himself had the previous winter represented, as a sort of counsel, the appellant interest. And with all this, the best means of reaching an opinion, they have told us, (pages 21 and 22:) "The subject," &c.

Now, besides taking personal and written testimony, our committee have earnestly examined the most important documents and reports, both upon our own and upon the fisheries of foreign countries; and with perfect frankness and sincerity they show us what I must display to you in regard to the wandering fishes of the mighty ocean, to which families the scup belong. The United Kingdom (English) report (cited at our report, page 15) asserts that, notwithstanding the most careful inquiries, there was no instance where it was statisfactorily proven that various nets and weirs, "used in bays or estuaries," have "been permanently injurious to the supply of fish," while, on the other hand, it is proved that, in certain bays and estuaries, such fishing has gone on for years without permanent injury to their fisheries.

A Frenchman disputes this in some degree; still it is the deliberate opinion of the British official report. Then our committee cite a counter-report of the commissioners of inland fisheries of Massachusetts,

who criticise the above report of the British commissioners, chiefly because, to arrive at their conclusions, they (the Englishmen) adopted the very same and about the only course acted upon by our own committee. It is true the Englishmen asked 62,000 questions, while our committee did not do so extensive a wrong, for they asked, I believe, only about 5,000. The only way in which our committee departed from the English procedure was that three of them spent a day in a steamer visiting our traps. However, they have not thought this visit even worthy of mention. So we may suppose it yielded no important results in their eyes.

I understand our commissioners to quote, at page 21, from these inland Massachusetts commissioners, the following words: "On our—— of menhaden." "At times—— but absence."

Here allow me to remark that while our committee claim the evidence that horse-mackerel (blue-fish) do not devour large scup, it was fully proved they do devour all the young scup.—(See minority report of winter of 1870.)

Now, I might read the last two paragraphs on page 21, still quoting the last-cited authority, the inland commissioners of Massachusetts, who merely admit that it is claimed—not proved—that no amount or kind of fishing can diminish the "schooling or wandering fish of the high-sea," citing the kinds, and that it is likewise claimed—not proved—that the local bottom fishes, which are peculiar to certain limited areas near the shore, may be greatly reduced, or even practically annihilated, in certain places by improper fishing. Among these they cite the tautog, some others, and also the bass and the scup.

Now, the scup are known to be schooling, wandering fish of the high seas, and come from the Gulf Stream and from the Florida Cape. This is their undenied history, except here, *where the whole question as to scup is begged and distorted* by the Massachusetts report. This point thus makes against them.

All the evidence of our commissioners shows when and how the various runs of scup strike our coast, and that they are not local, but come in from the high seas. I ought to read our report at pp. 12, 13, and 14, to show the judgment of another Massachusetts committee. They sum up by saying, (p. 13,) "In view—legislation." And upon the next page they cite the report of the most able scientific English commission thus: "Yet that commission—be repealed."

I may dismiss the Massachusetts report by citing from p. 14, that they, among other causes accounting for the diminution of the scup, tautog, &c., in Buzzard's Bay, ascribe it, in part, to a scarcity of food, owing to the deleterious substances thrown into the water from manufactories, which affect the clams and other species of mollusca, and also to the advent of blue-fish, who drive away nearly all other species of fish.

Captain Atwood, and I believe others, give the date of the first appearance of the scup in the waters of Buzzard's Bay at 1793, which, let me remark, was just seven years *after* the terribly severe winter of 1780, and that our scup diminished after 1856–'57.

Now as to the variableness of many species of sea fishes, Dr. Storer, in his History of the Fishes of Massachusetts, which includes the waters of our bay, gives the following facts, written in 1853: "In August, 1846—quite small." Page 45, Storer says: "Dr. Yale—blue-fish came," and more to the same effect, on same page. On 23d of June, 1847, a squeteague, &c.; page 53, Storer says: "Captain Atwood has seen," &c. Page 73 speaks of the great abundance of sword-fish at Martha's Vineyard, which eat shoals of mackerel and menhaden, &c.

[Quotations are made from Storer at pp. 277, 422, 334, 339, 365, 226, 231, 82, 83, 265, and 269.]

So much for Storer. Star-fish and oysters are notoriously bad friends. An old fisherman of Newport, and I believe he is far from being alone in his views, often said the steamboats seriously injured the fishing. Now, without claiming undue weight for all these restraining or repressive causes, they should have due and that a very great weight when we form our opinions. Every one of these facts has a direct bearing upon the intricate question before us.

There is a sound principle of philosophy to be applied to questions of science, and most especially in the department of natural history. It is, not to mistake a succession of phenomena or a coincidence for cause and effect.

Now, in the reptilian family, low down in the scale of creation, where we find the fishes, the variety of circumstances which attend their existence is very great, and very curious; so that the most learned men have been unable to indulge with any safety in dealing with analogies. The circumstances which mark the habits of each species vary with one another in a most extraordinary way. Thus the United States commission, in running the Texas boundary line, found fresh-water fishes which produced their young alive. Other fishes are curious, and especially, I believe, the salmon family, which appears in both fresh and salt water; and this is the family which most especially has been proved to return to its native waters. It has no relation whatever to the migratory fishes of the sea, which range the coast from the Mexican Gulf to the waters of Massachusetts Bay—few of them pass that cold point, Cape Cod.

The food of fishes has a vast deal to do with their presence. We know very little about their food. Can any one tell me what is the food of the rich and valuable shad, and that of most of its relatives in the herring family? The food of nearly all fishes, as far as we know, is of an animal nature, and in its turn requires food; and any failure of this secondary supply of the *food of the food* will entail the absence of the fishes which consume the first kind of provender.

Fishes are liable to disease, to parasites. All the perch in the ponds about South Kingston have little black specks in their scales. [Other parasites were referred to.] [Certain enemies named.] I do not wander further into this intricate field. It is enough *to show how many grounds there are for the conflict of testimony so decidedly announced. It has convinced me that there is no sufficient ground, and especially taken in the whole broad spirit of our report, to pass a measure so fraught with the direst ruin to many of our citizens.* * * * *

STATISTICS.

J. M. K. Southwick, from Albro's market, November 2, 1870. (All hook and line.) George Crabb, (alone,) 439 pounds tautog, one day. Mr. Brown, (with man and boy, 3,) 718 pounds tautog, one day. Benjamin Nason and father, (2,) 600 pounds tautog and cod, one day. Samuel Young and Lawrence, (2,) 800 pounds tautog, two days, (not from the books.)

Cary's market, same date, November 2, 1870. Hook and line only. John Heable, (1,) 193 pounds tautog, one day. Mr. Osman and man, (2,) 126 pounds tautog, 97 of cod, one day. Champlin & Huddy, (2,) 260 pounds tautog, 330 of cod, one day. Wm. Champlin and Young, (2,) 388 fish of various sorts, one day.

ARGUMENT OF J. M. K. SOUTHWICK.

NEWPORT, RHODE ISLAND, *October*, 1871.

DEAR SIR: It is with diffidence that I, in compliance with your request, attempt to prepare for you this paper on the fish question; for, as my resources of information have been limited, I cannot claim thoroughness, either in reading or personal observation. Therefore I fear I shall, like too many others who have written upon this subject, give too much of theory without practice; and to escape the study of cause and effect, *jump* at the first plausible theory for the solution of an important question.

That my conclusions are mainly right I can only hope; but I feel assured that your very thorough investigation will establish what is right, and expose and reject what is wrong. If it aids you in settling any point of fact, or helps you to arrive at a philosophical truth, I shall feel repaid.

As much of it was written during a local controversy in this State, it will contain much that may not be of general interest; but, as you said "Don't stop," I give you all as I have written it, hoping that you may be enabled to glean something from it.

THE DIMINUTION OF FISH APPARENT, NOT REAL.

In former times, before the facilities of transportation in ice became the means of supplying the great markets and the interior country with the products of the waters, fish was an article of food only to the few living along the coast, and a small amount sufficed for the demand. Any extra catch, at this time, overstocked the market and caused a glut that gave the appearance of the great abundance that has been attributed to those times.

LOW PRICES.

In consequence of the limited market the prices were very low, and the fisherman never realized pay adequate for his toil, notwithstanding he saved to himself (or to the consumer) the large profits that now go to the marketmen, by daily taking his catch in a barrow to some prominent corner or to the houses of consumers for disposal.

HARD TIMES.

In that day, by dint of lobstering, piloting, and acting as city watchman winter nights, the fisherman who was very industrious and very prudent, managed to make both ends meet; but where one *was* so very fortunate it was only by working early and late, and using the utmost economy.

AVERAGE CATCH.

The fish most caught were cod, haddock, tautog, bass, and mackerel. They would usually get from one hundred to one hundred and fifty pounds, but sometimes failed to catch so much, and then they would complain that "fish were not so plenty as they used to be."

We are told that, sixty years ago, the above complaint was chronic among fishermen, but not of so virulent a type as at the present day, as there were *then* no trappers to charge with being the cause; but *now* there is a competition with them in the waters and markets, where those who will not use improved methods are outdone.

Yet we believe that, where the fisherman really applies himself to his business, he does as well as at any former time, though we would by no means convey the impression that hook and line ever *was* or ever *will be* a profitable way to catch fish.

WHY LESS ARE CAUGHT IN SOME LOCALITIES.

1. Because they are made wild by steamboats, vessels, and an infinite number of small craft, and by being fished for by everybody, and in every way.
2. The fish whose numbers have most diminished in those localities are of the less belligerent kind, while their enemies among fish have increased and driven from their favorite grounds.
3. The failure, or partial failure, of crops of sea-vegetation and small animal life that, according to natural laws, will vary from one year to another, and the great amount of filth that must accumulate on some at least of the feeding and spawning-grounds, may cause a permanent failure in such localities.
4. The impurity of the water that so affects the oyster as to destroy its value for food, as in Taunton River and at other points.
5. The destruction of muscles by the occasional storms that drive the shells up on our shores in windrows two or three feet thick.

OTHER CAUSES OF DIMINUTION.

1. Their destruction at sea from natural enemies there.
2. Convulsions of nature.
3. Distempers.
4. Being chilled by the excessive cold of some of our winters, as in 1856–'57, when tautog were driven ashore in large quantities.
5. The enormous destruction of the spawn and young by natural enemies, that may increase or diminish unobserved and unknown. These enemies may be of their own kind when food is scarce.

From all these causes, may we not find the answer to the question, "What has become of our food-fishes?"

It may be objected that most of these causes are natural ones, that may have operated at other times as well as at present. We answer, they *have* so operated; and perhaps the fluctuations of fish were more remarkable for the half century previous than for the one just passed, and to what, we ask, can it be attributed? Certainly not to fishing.

WHAT FISH HAVE DIMINISHED, WHAT INCREASED, AND WHAT NEITHER WITHIN FIFTY YEARS.

We have stated that there was an apparent, when there was not a real or general diminution. We believe this to be true of bass, and also of tautog. While the indications are that scup have really diminished, the bull's eye have entirely disappeared.

The horse-mackerel, squeteague, butter-fish, and Spanish-mackerel have increased very much, and are fish that were scarcely caught at one time, but are now numerous, in spite of the means used to catch them.

But before we proceed to examine in detail the different fish peculiar to our waters, we will say that their numbers fluctuate in such irregular manner—a season of scarcity often followed by a season of unusual plenty—and their entire disappearance from certain localities for a series of years, to re-appear again, are phenomena that upset our best theories, and make past figures of little account for the future estimate of numbers, as, for instance, in the course of five, ten, or thirty years, there may be an apparent gradual diminution from one year to another, preceeded by a year of abundance. We here submit some facts that lead to the conclusion that bass and tautog are about as plenty as ever.

1. Fifty years ago a shore-seine was used in bassing two weeks; but the men engaged did not get enough to pay for their food while so engaged. A failure to catch, in that time, was not rare.

2. At this writing, July 28, 1871, a boat is in the harbor with 9,000 pounds of bass, the result of one haul with a shore-seine, for which they will probably realize $900. One day this month, one man, Mr. H. G., caught with hook and line 1,000 pounds of bass in two hours!

3. Ten years ago, fishermen caught from 100 to 150 pounds of tautog in a day's fishing.

4. There were sold on the 3d day of November, 1870, at two of our markets, as the day's catch of fifteen men, 2,800 pounds of tautog, besides cod-fish caught by the same, amounting to 600 pounds, being an average of over 226 pounds to each man.

The fishes of our waters may be classified—1. As local and bottom fish, being those that remain in the bay the year round. Of such are the cod-fish, haddock, tautog, flat-fish, and eel. 2. The migratory fish, that visit our waters and remain with us but a part of the year, such as the bass, horse-mackerel, squeteague, sea-bass, scup, herring, Spanish-mackerel, butter-fish, and mackerel.

THE COD-FISH.

The cod-fish are very generally distributed, during the cold weather, in the lower waters of the bay, and, on the approach of warm weather, work off into deeper water outside the bay, and are then less generally caught, but may be taken at all seasons the year round. They are taken by hook and line, troll-line, not otherwise to any extent. They live on shell and other small fish.

I hear of tautog being taken from them that would weigh a pound. I am told by many fishermen that they are as plenty—some think more so—as ever; while some of our local fishermen think they are not so plenty as thirty years ago.

The haddock, the colleague of the cod, are caught with them.

BASS.

This fish has been generally abundant in our waters, but during the last, as in the present century, there have been seasons of scarcity. They first appear in our waters early in May, going eastward. They are caught in traps in May, to some extent, but are of small size, say from one to four pounds in weight. They are caught in July with hook and line and shore-seines, but are of larger growth, say from ten to forty pounds weight. They frequent the bay much less than formerly, but are caught quite plenty at more remote, or less disturbed places, as at the Vineyard Islands, where they appear as abundant as ever they were.

We are told that now, August 21, they are schooling up, and will very soon be, if they are not already, going west, taking the same route by which they came, but, perhaps, a little farther from shore. They are very shy when alarmed, and are made wild by fishing, steamboats, and small craft that swarm in our waters; and from that cause, are kept from the bay. They go very fast when migrating. A very great increase in their numbers might cause an increase in these waters, on old fishing-grounds, but from causes above named I cannot think that their increase can again cause them to come into the bay as formerly.

The most successful fishing for them that I know of is done at the Vineyard Islands, by small craft, fitted with ice, shore-seines, and experienced men. These rarely fail to make a good catch.

We know of the following catches this season by two boats, most of them the result of one haul with the shore-seine; 500 pounds; 3,500 pounds; 3,000 pounds; 9,000 pounds; 3,000 pounds; 2,000 pounds; also with hook and line in our waters, 1,000 pounds in two hours' fishing.

I know of a locality near Tappahannock on the Rappahannock River, where there is very good fishing for them; have caught them there in *January* with troll-lines, but they are most abundant in February. In February, 1867, I saw 6,000 pounds that had been caught there at one haul. There was one fish among them that weighed 80 pounds, the largest I ever saw. The smallest of this lot would probably weigh 10 pounds.

THE TAUTOG.

This fish winters near the mouth of the bay, comes into the bay in the spring—in March or April—remains until November or December, and then returns to deeper waters.

They are caught in May in traps, still later in heart-seines, but more generally by hook and line. They feed on rocky bottoms where seining is impracticable; are caught, sometimes as late as Christmas, in the bay in some deep holes where *some* may winter, but most of them go outside and feed on the ledges until very late, and remain there nearly all the winter.

In February, 1857, after a very cold spell, there were large numbers of tautog driven ashore at Black Island and many other places, chilled, doubtless, by the excessive cold, and from this event many fishermen date a *diminution*.

HORSE-MACKEREL (SNAPPERS, BLUE-FISH) AND SQUETEAGUE, OR WEAK-FISH.

These fish have similar habits, come and go about the same time, and are very destructive to smaller fish. They disappeared from our waters about the first of this century, and returned again thirty-five or forty years ago, and are now generally very plenty; but the present season they have been less so in the bay, though as plenty as usual outside, and I hear they are abundant on the coast of New Jersey.

Although *scup* came some twenty days earlier this season than for a number of years, *these* fish were about as much *later* than usual. They are not much caught now, but what are caught, are generally full of the *small* scup that are so numerous in our waters this year.

The horse-mackerel and squeteague are, perhaps, the bulk of the fish that are caught in heart-seines and gill-nets. When numerous they are very destructive to most kinds of smaller fish, driving them off

when they do not destroy them, and following up schools of them to prey upon them.

SCUP OR PORGY.

That these fish first appeared in these waters the latter part of the last century, seems confirmed by all our traditions of them. The first caught being exhibited as a new and unrecognized wonder of the deep, leads us to infer that if ever before they had been here it was too long before that to be remembered by the men of that day. At least they have left us no tradition of their presence here before that time.

It appears that they came here in small numbers, but, favored by certain conditions, they multiplied until they became the most numerous of all our edible fish. If we study the conditions under which they then increased, we may arrive at a correct solution of the question of the cause of the present increase. Here we fail to obtain information that is wholly satisfactory; but it is certain that about the time scup first appeared, horse-mackerel (blue-fish) and squeteague disappeared; and during their absence scup increased to their greatest number; but at the increase of the former they again decreased. Therefore we conclude that the increase of the one is in proportion to the decrease of the other, and also contingent upon the same.

The present season gives us a new phenomenon, corroborative of this inference, the appearance of small-fry of scup in myriads directly after the great run of scup; first, outside, three or four weeks later at the lower waters in the bay; and the late appearance and small number of horse-mackerel. These latter seem to have chosen another field for their operations, and allowed these small scup to escape the destruction that has so commonly been their fate.

In former years scup migrated to our coast about the middle of April, and then appeared to be plentiful all over the bay. For ten years to the present time they have not favored us with their presence until nearly a month later, and then they came in less numbers, and were scattering in the bay. What connection there is in their late coming and apparent consequent small numbers does not appear; but fishermen have a theory that the time and number depend much on the weather, warm southerly winds being most favorable. How far the adverse weather may have operated to keep them back in their migrations to our coast, until the horse-mackerel and squeteague have marshaled their hosts and cut them off, we know not.

TRAPS VS. SCUP.

It is said that traps destroy this fish while seeking an entrance to the bay to deposit their spawn; and this is insisted upon, notwithstanding the traps catch only one way, *i. e.*, when the fish are going out. But if this is true, and the trappers by some legerdemain turn their heads down stream and capture them, what can be said about the spawn, when, as at the present season, precocious little fellows, two or three months old, come paddling their own canoe directly after their fathers and mothers, and fill our waters with their young life? It certainly seems to settle the question conclusively that we do not depend upon the product of our own waters for supplies. And is it not a little singular that objections should be made to the capture of fish while in spawn, when the legislative authorities, in one of the most enlightened States of the Union, passed a law to prevent their being sold at any other time than when in spawn, as being then, and only then, fit for food?

Scup, as an article of food, were little prized until, by the aid of traps, ice, and steamboats, fish were utilized as such over a large area of country; and the immense demand thus created required a vast amount to satisfy it, and has operated to build up this branch of industry to its present magnitude.

OVER-FISHING.

That every fish caught makes one less in the water is true, but if that one, if left, would destroy ten others, then the catching of that one saves the other ten. This may not apply to scup as to more destructive kinds, as horse-mackerel, squeteague, sharks, dog-fish, porpoises, &c.; but in some measure it may apply to scup, for aught we know.

It is known that herring destroy their own spawn, and we believe that all others would in a case of scarcity of food.

The small horse-mackerel are often the little bait upon which many fish feed, and we very much doubt whether their own fathers and mothers would stop to discriminate between their own and the young of another.

That it is possible to so diminish their numbers by fishing that those remaining cannot repair the loss, independent of the vicissitudes of ordinary fish-life, we cannot believe. They are scattered over so much ground that all the devices of man can never reduce their number, without some great auxiliary aid from nature more destructive than anything man can devise, although it may be, when natural conditions are such that they must diminish, from year to year, as some species have, to the point of extermination—then it may be that fishing may hasten; but, as has been said by others, "Under favorable conditions, no amount or kind of fishing can ever make any material diminution of the fish of the sea: 1, because of the small proportion of the whole number that can be caught by any means possible, scattered as they are over so great an area; 2, because of their vast reproductive powers, requiring but a small number to keep the stock good; 3, because the same means that are used to catch food-fishes are equally destructive to other fish, their enemies, the destruction of one of which saves numbers that would otherwise be destroyed.

IMPURITIES.

That the great amount of impurities that are emptied into the waters of this bay from the sewerage of cities, the *débris* of manufactories, and the accumulation of filth from various sources; the ashes of steamers and other substances thrown into the water, while it may not be unfavorable to some kinds, it seems impossible that it should not affect others that inhabit the pure waters of the ocean for a large part of the year.

We know it is said that the impurity either rises on the top or settles to the bottom, and that between these two extremes the water is pure. In some degree we think this true, and to the measure of its truth we ascribe the presence of what we have of the sea-fish in the upper waters of the bay.

Fish, coming to our coasts in schools, swim near the surface. May they not be diverted another way where they come in contact with impurities; or would they find a clear streak of pure water, and follow it to the source of impurity to investigate causes?

Instances are not wanting where the total disappearance of certain fish has been traced to this cause, as the desertion of the river Thames by the salmon; yet the white-bait continue to thrive there in spite of

all the filth. So may the cat-fish and the eels thrive in the mud of our rivers, but the bass and tautog never can.

But the impure water is not the only nor the greatest evil of filth emptied into the bay. The great deposits that settle from it and cover the bottom, where the tide is insufficient to carry it off, by its accumulation must destroy much of the small animal and vegetable life that would otherwise furnish food and shelter to the fish. The effect of the impurity in the water is very observable in the oysters of Taunton River, which have become so impregnated with copper, since the introduction of the works near the river, as to destroy their value for food. Similar results have been noticed from gas refuse.

FREEDOM OF FISHING.

At the Creation, "God said, Let the waters bring forth abundantly the moving creatures that have life, and every living creature that moveth, which the waters brought forth abundantly; and God saw that it was good."

After the creation of mankind, male and female, the first great boon conferred upon them by their Maker was dominion over the fish of the sea. So it appears that man's dominion over the fish of the sea does not date with the charter of Charles II and his Rhode Island Colony, but is contemporaneous with the creation of the world; since which time man has continued to exercise it without limit or restriction, as inclination or interest dictated.

That he first exercised it by the use of that most suggestive and simple appliance, the hook and line, of which we have a very early account, is evident; but the increased population causing an increased demand, soon suggested to the progressive spirit of man a better way, and 2,500 years ago the Sacred Historian says: "As fishes of the sea that have no ruler over them, they take up all of them with the angle, they catch in their net and gather them in their drag, because by them their portion is fat and meat plenteous." Thus defining God's first boon as an unrestricted use of the fisheries, that were without a ruler, and showing an appreciation of the means used and the great good resulting from their use; and then exclaimed the good prophet, "Shall they therefore empty their net that brings fatness and plenty?" Not only was an advance made in fishing, but they also made sluiceways and ponds for fish.

In Christ's time nets were much used, and a sort of net that was cast from the ship's side, and thence taken back into the ship like the purse-nets of our day. The shore-seines then used must have been large ones, for it was not considered that 200 cubits (300 feet) was far from land. "They were not far from land, but, as it were, 200 cubits, dragging their net with fishes." "Simon Peter went up and drew the net to land full of great fishes, an hundred and fifty and three." It was thus that they exercised dominion over the fish of the sea, and *sometimes* made great catches, but often "toiled all night and caught nothing." A fluctuating fortune, common to fishermen of all ages.

Those fishermen of Gallilee were countenanced and encouraged by Christ, and were of the first from whom he chose his Apostles. We hear nothing of hook and line at this time, but can hardly hope to make our hook-and-line friends believe it was because that method had become obsolete; but certainly we do not find them mentioned by the Sacred Historian after other methods were mentioned.

It then appears that in other ages improvements were made in fish-

ing as in other industries, and that they then had the means of catching them in quantity, and that hook and line were not the prime means for catching fish.

Coming down to the early days of our colonial existence, we find that the Indians used weirs and nets in fishing, and fish was to them an important staple food; and it became so to the early settlers also, they using weirs, shore-seines, and gill-nets to catch them.

So important was this interest at the time the charter was granted by Charles II, that a special provision was made in it, securing this right, (*e. g.*:) "That it should not in any manner hinder any of our loving subjects whatsoever from using and exercising the trade of fishing upon the coasts of New England, in America. But that they and every or any of them shall have full power and liberty to continue and use the trade of fishing upon the said coasts in any of the seas thereunto belonging, or in arms of the seas, or salt-waters, rivers, and creeks, where they have been accustomed to fish, and to build and set upon the waste lands belonging to said colony and plantations, such wharfs, stages, and work-houses as shall be necessary for the salting, drying, and keeping their fish to be taken upon the coast."

Living under this charter our grandfathers and fathers continued to exercise this inherent natural right with as much freedom as they used the air to breathe and move in, choosing their implements and using them without limit or restriction. And under a constitution that continues to us the same guarantees, we have so increased this productive industry as to make it second to none in a large section of the State.

("The people shall continue to enjoy and freely exercise all the rights of fishery, and the privilege of the shore, to which they have been heretofore entitled under the charter and usages of this State."—Article 1, section 17.)

We do not doubt that our heart-seine is an improvement on the weirs of former times, and that our purse-nets are in advance of those used by the Apostles is likely; perhaps, too, the fish-hook of to-day has a different bend, a sharpness of point, or a larger barb than those in use when man first exercised "dominion over the fish of the sea, that had no ruler over them," but were free to all. And *freedom* did not mean restriction, as it has been defined by the committee on fisheries, where they, alluding to the clause in our constitution containing the charter-rights, say that, "constitutional scruples may make it necessary to restrict fishermen in Rhode Island."

This, then, the most ancient of man's rights, conferred upon him at his creation by his Maker, continued to be exercised and enjoyed by him without interruption for nearly 6,000 years, confirmed to him by the laws of the State, approved and justified by the best informed of this and other countries, who have most thoroughly investigated its merits, is in these latter days brought to trial for its continued existence, and the liberty-loving little State of Rhode Island is asked to lead the van in the crusade against it.

OPPOSITION.

About fifteen years ago many of the most enterprising of the fishermen, better to facilitate and render more successful their business, adopted the method of catching fish known as "trapping," which, as a natural consequence of their better success, provoked the opposition of such of the fishermen as lacked the necessary enterprise or energy to adopt the measures, without which they could not compete in the mar-

kets and waters. Re-enforced by occasional and sporting fishermen, they succeeded in creating a prejudice against this method of fishing, such as has been arraigned against every labor-saving machine adopted by other industries with the same result, until parties of wealthy young men, seeking relief from *ennui* or the cares of business, and thoroughly furnished with the most approved tackle, turn fishermen for a time; but, disappointed in consequence of not catching fish, are easily persuaded that it is because traps have destroyed them; then, without taking the trouble to investigate the matter, an effort is made to unite every element of aggrieved (or imagined to be aggrieved) interest against the net-fishermen, with a determination to exterminate their, the only admitted profitable method of fishing.

By dint of great efforts and one-sided statements by canvassers, they enrolled the names of a long list of petitioners.

That very many well-meaning persons signed the petition, we doubt not; and that some advocated it from a sense of public good, we believe; for the fish question, when first brought to issue before the people of this State, so long as the facts remained obscure, did have some show of fairness to those content to know simply that traps had increased and the price of fish increased, while the catch of fish with hook and line, in some localities, had decreased. While this constituted the whole bulk of the information made available to the mass of the people, and was enforced and made to appear plausible by the eloquent rhetoric of scholastic lore—that the first was the cause, the latter the effect—it is not surprising that many were influenced by it.

But while they are discussing the means of restoring the fish to our waters, the fish themselves re-appear and upset all prognostications of their extinction by human means, and establish the fact that they, like insects, in the lapse of years, fluctuate in numbers, though left to themselves. First, one species, favored by certain conditions, multiply and increase to a number limited only by the amount of food produced, and the ordinary vicissitudes of fish life, until some deadly distemper, a convulsion of nature, the destruction of their normal food, an increase of natural enemies, or the invasion of their grounds by new enemies which take their place and multiply until some of the above-named, or other causes, produce the same effect upon their numbers, and they in turn give place to the former or other species.

Such changes are constantly going on under the inexorable laws of nature, that produce a like effect upon vegetation, sometimes by visible, sometimes by invisible causes; and man can no more change the result by legislation than he can limit the drops of rain that shall fall upon the earth.

To account for all the causes that produce the effect is much beyond the grasps of finite minds; its roots are deeper than they can penetrate. It is comprehended, in all the relations of cause and effect, only by the Allwise Ruler of the universe.

We can only theorize and speculate about the hidden, unsolved mysteries of nature, that show man's weakness, and point the limit of his attainments.

The following communications may serve to illustrate what I have said:

Captain TIMOTHY GAVITT, of Westerly:

Has known bass caught in June that weighed from one-half to one pound, that were put in a pond, and, when taken out in October, weighed six pounds.

A boy living with him caught, by wading in, a tautog weighing five pounds, at the mouth of a little brook two miles above the fishing-ground at Pawcatuck River. It was a female fish, very full and very far developed spawn; he thinks the spawn would weigh one pound. He also states that the light-house keeper at Watch Hill, Mr. Pendleton, (not the present keeper,) lost a bob fishing for bass that was taken next day with the fish on Long Island. It was identified and returned to him. Bass return west in August and September, by the same route they came, but wider off shore.

Statement of JOB TEW, aged seventy-six:

Ten years ago saw the heads of scup in the water and along shore, and considered it as an indication of the presence of horse-mackerel, as there were no other fish in water at the time that would do it, it being too early in the season for sharks.

In 1810 bass were scarce.

Fishermen used to complain sixty years ago that fish were not as plenty as they used to be. Have known bass to be very plenty in a particular location, and never appear there again in numbers, without apparent cause for the change.

Think fish generally as plenty as ever. Always did vary one year with another.

BENJAMIN DUNWELL'S statement:

Has fished thirty years with hook and line. Two hundred and fifty pounds tautog used to be considered extremely good fishing. Often did not catch enough to eat during the month of August. My day's catch is about the same now as it used to be, both in tautog and codfish.

The seasons vary, but average about the same; do not observe any reduction of fish; go further when fishing for tautog; think that owing to the destruction of them, by being chilled in 1857, since which they have not been so plenty in the bay.

Scup used to be plenty in the bay, but horse-mackerel have driven them off. There are a great many more half-way fishermen now than formerly, and they do not follow it up so well.

EDWIN BROWN'S statement:

Early in May, 1866, saw at Gardner's Bay very small fry of scup and sea-bass, just large enough to distinguish their species.

Fished at Seconnet in 1857; sea-bass were very plenty then. Since that time they have very much decreased, but have again become very numerous, and the last season were as plenty as at any time since I first fished at Seconnet. Caught more tautog the present than any previous year.

PELEG HUDDY'S statement:

Has been a hook-and-line fisherman thirty-five years. Sea-bass were very scattering, when first fished; were told that they were very plenty before that time. About ten years ago they became very plenty, since which they are not so abundant.

Mackerel were more plenty in August, 1870, than ever knew them to be before. Fish generally are quite as plenty as ever, except at certain localities in the bay. While some kinds have decreased, others have increased. Don't believe nets or traps materially affect their number.

Statement of NATHAN KING:

Is now, and always has been, a hook-and-line fisherman; thinks fish, generally, as plenty as ever, but are driven off shore by the steamers; thinks they are the chief cause of scarcity in the bay; has watched them darting from a boat, and thinks that steamers must have great effect in driving or scaring them from the waters.

About twelve years ago, knew of a boat that went to Point Judith for tautog; fished some, without success, at the usual fishing-grounds, then hauled up killick, and worked along slowly—watching all the time for fish; came to a clear spot on the bottom and saw them; carefully dropped anchor, and in a very short time had a good fare of very nice, large tautog. Repeated the same several days, with good success.

When the sun is very hot, tautog leave the clear spots for shelter in the weeds and rocks. Mr. King thinks the fish are very much harassed all along the shore by fishermen; but when they are found in a quiet spot, can be caught quite as well as ever they could. He remembers hearing the complaint, "that fish were not so plenty as they used to be," when he first went fishing; but fishermen forget the poor fares, and remember well the good ones. The nearest places are so much more fished, is a reason for catching less at those places, if there were nothing else to disturb the fish.

Lobsters are quite as plenty as ever; that is to say, that the same number of pots catch as many pounds as thirty years ago.

NEWPORT, *September*, 1871.

HENRY MERRITT'S statement:

Have been engaged in hook-and-line fishing twenty years—principally for tautog; used to catch from thirty to three hundred pounds. The latter was an extra good catch. We considered one hundred and fifty pounds a good day's fishing. The seasons varied somewhat, but cannot tell just which seasons they were most plenty; but think they were more scarce the season after so many were chilled in the winter and driven ashore. They were very scarce two years ago, but very plenty last year; never saw them more so than then.

Caught three hundred pounds tautog several days running, and sometimes two hundred pounds cod-fish on the same day. Fished from Beaver Tail to Point Judith. Thinks the average catch equals former years at same places. Have caught tautog as late as Christmas on the ledges. Have seen scup very plenty on the ledges almost every year, but more last year. Should say there were three times the number fishing now that there were twenty years ago.

Scup are very plenty in the bay at present; have been since June.

P. SOUTHWICK'S statement:

Is seventy-six years of age. When about twenty years old, went several times to the Vineyard Islands, with a seine, to fish for bass; sometimes staid two weeks, but never with success; did not realize enough to pay expenses, and often not enough to pay for food consumed while so engaged.

The fishermen used to say fish were less plenty than formerly, as long ago as I can recollect.

Mr. T. STEVENS, one of our oldest hook-and-line fishermen, says that he, with two others, went to Martha's Vineyard to fish for tautog about thirty-five years ago; would get from one thousand to three thousand pounds in a week's fishing. Went east because they could do better than at home.

NEWPORT, *August* 12, 1871.

WILLIAM SISSON, of Westerly, commenced fishing fourteen years ago; fished all the time since, except from 1861 to 1865, from June to October. Used shore-seine; fished from Long Island to Cape Cod with it. Find bass first appear on western part of fishing-grounds; later, further east. The first that come are smaller. Have not failed to catch good fares any year that I have been fishing, but never caught more than at the present season. The spawn is well developed in most of the bass now; saw last week small bass, smallest four inches long, at Waquoit.

Horse-mackerel are not so plenty the present season, but have been very much more plenty the last few years than when I first fished; think three to one.

Bass feed on the bottom, on small fish, worms, and roots; swim near the surface, sometimes very fast, so that it would take a smart sail-boat to keep up; catch them best on the flood-tide.

Both bass and horse-mackerel attack birds. Have seen small quantity of spawn of bass in seine. They go together to spawning-grounds in the rivers. Have seen scup cut by horse-mackerel, and have taken from them the tail-end of scup that I think would weigh half a pound. I think them very destructive to all kinds of smaller fish, more so than anything I know of.

Fish are just as plenty as ever, but more wild, and keep more off shore, owing to traps and other fishing for them. Bass will take hook any time.

STATEMENT TAKEN FROM MY BOOKS OF THE FISHERY AT PINE TREE.

In 1866, up to May 11, caught $2 25 worth of fish. On the 11th caught 168 barrels of scup, at $2 per barrel.

In 1867, up to May 14, caught $10 worth of scup. On the 14th caught 76 barrels, at $2 a barrel.

In 1868 fished from May 1 to 23. Total sales of all kinds of fish, $86 72.

In 1869, May 6, catch, 2 scup; 10th, catch, 1 barrel; 13th, caught 32 barrels, at $3 a barrel.

In 1870, May 2, catch, 11 scup; 8th, 6 barrels; on the 15th, 60 barrels, at $2 per barrel.

This fishery had been fished about seven years before I fished it in 1866; and I am told that large bodies of scup were taken as early as

April 20; that 200 barrels have been taken at Seconnet as early as the 15th of April.

J. M. K. SOUTHWICK.

The fish question might be summed up thus:

Fish have diminished in certain localities. It is charged that the diminution is in consequence of trapping. Is the charge sustained? If so, then we may stop here. But if only met by the query, what else can be the cause? we might ask by what maxim of law are trappers adjudged guilty without proof, and compelled to seek relief by fixing the guilt? But answer: If no other cause could be given, then it may not be traps; for who can explain the working of the mysterious laws of change written all over the universe? Yet numerous and sufficient causes have been assigned to account for all the real or apparent diminution, besides the fact shown the present season, that an increase of fish is possible without a reduction of traps; that scup, like the herring of England, may increase in spite of the enormous and increasing fishing.

It is proposed to stop trapping three years as an experiment—a sort of sedative to popular clamor. And then what? The business would be destroyed for all time, for none would venture capital in material once rendered valueless, and liable to be again, at the caprice of experimenting legislatures.

As well charge the ice-merchants with short crops of ice, because of large ones gathered in former years, and suspending their business on their failure to demonstrate that it was from other causes.

To stop trapping two days and three nights in the week. Although the scup-traps are down about twenty-five days, the great bulk of the fish are taken within ten days. Now, if allowed to fish but five days of the ten, as may then happen, there would be no chance left the fishermen at this, the most important trap-fishing in Rhode Island.

The effect would not be so detrimental to the heart-seines, although discouraging to those not now very successful. I believe any restriction of the scup-traps, beyond that from Saturday night to Monday morning, would amount to prohibition.

THE FOOD-FISHES OF THE NEW ENGLAND COAST.

BY GEORGE H. PALMER, OF NEW BEDFORD, MASSACHUSETTS.

Within a period of about twenty years, four of the best food-fishes of the New England coast, of different *genera*, different habits, and feeding to a certain extent on different food, have been observed to become, year after year, less in numbers and smaller in size.

These four fishes are—

The striped bass, *Labrax lineatus*, (*Roccus lineatus*, Gill;) sea-bass, *Centropristis nigricans*, (*C. atrarius*, Gill;) tautog or black-fish, *Tautoga Americana*, (*T. onitis*, Gill;) scup, *Pagrus argyrops*, (*Stenotomus argyrops*, Gill.)

For several years this fact attracted but little attention, and called for no special investigation.

At length, however, the subject began to excite the alarm of the fishermen who depended upon fishing for their entire or partial support, and grew to be a subject of very general complaint.

Of these fishes there is no evidence that they have not always been

abundant, until within the time mentioned, except the scup, about which there is a tradition that it first became known in Buzzard's Bay, in 1793, since which time it has always frequented the waters south of Cape Cod.

Up to about 1851, no means of taking these fishes were commonly in use, except the hand-line, with a baited hook.

All but one were caught at the bottom, upon their feeding-grounds, with a still bait.

The exception, the striped bass, was fished for, for the most part, among the rocks near the shore, by throwing and hauling an eel or other bait, or sometimes in the tide-ways, and at the bottom, with shrimp or dead or living fish, and in the surf with a bait floating upon or under the surface of the water.

They were all caught in large numbers throughout the entire season, except the tautog, which appeared in the spring and again in the autumn.

The catching of these fishes gave employment to thousands of fishermen, and furnished a cheap and wholesome article of food to all the inhabitants upon the sea-shore.

The supply was always fully equal to the demand. When, however, railroads began to provide easier and quicker means of transportation, when ice came to be used to prevent or retard decomposition, and when the fishes came into more general use as one of the ingredients of fertilizing compounds, wholesale methods of catching them, more or less ingenious, were devised to supply the demand thus artificially created. Then traps, pounds, and weirs were brought into use, and have increased in numbers and efficiency from year to year, and, as they did, the hook-and-line fishermen caught fewer and fewer of fish, during a shorter portion of the season, and these smaller and smaller in size, until within two or three years hardly any of the fishes of the varieties named could be caught by the common practice of hook-and-line fishing.

As a consequence, men who had followed it heretofore for a livelihood gave it up and became trappers themselves, and those who had occasionally pursued it to supply themselves and their families with food, or for recreation and amusement, have been obliged to abandon it altogether, or be content to spend weary and toilsome hours to capture the few stragglers that have escaped the toils of the more crafty and ingenious fishermen.

So well convinced did the people become that the multiplication of traps and pounds and the growing scarcity of fish stood to each other in the relation of cause and effect, that in 1870, simultaneously in Massachusetts and Rhode Island, legislative investigation was demanded, and, to a certain extent, obtained, with a view to such action as should check the evil and prevent the much-feared destruction of these valuable and important fishes.

In what I shall have further to say on the subject, I shall confine my remarks as to those investigations to the "Report of the committee on fisheries, to the legislature of Massachusetts," the "Majority and minority reports of the committee on fisheries in Rhode Island, January session, 1870," to the "Report of the joint special committee of the general assembly of Rhode Island, appointed to examine into the fisheries of Narragansett Bay," to the speech of Mr. Atwood, of the Cape district, chairman of the Massachusetts committee, in support of his report, and to a general review of the facts elicited by those investigations, and to the reasoning upon them.

I shall refer to those several matters, to the evidence brought before both these committees, to opinions stated and conclusions drawn, in such order and connection as shall best serve my purpose, and without more particular reference thereto.

From very similar testimony, the committees in Massachusetts and Rhode Island came to directly opposite conclusions.

The Massachusetts committee reported "leave to withdraw." The Rhode Island committee recommended the passage of "An act to prohibit trap and heart-seining of fish in the waters of Narragansett Bay."

In the Fifth Annual Report of the Commissioners on Inland Fisheries, (Boston, 1871,) those gentlemen, in concluding their remarks "on the possible exhaustion of sea-fisheries," say, "The petition for abolishing weirs, &c., ought to have brought out much valuable testimony, but it proved quite otherwise." This was true, and the criticism that followed it just.

Early in that investigation, and in order to bring out all the valuable testimony possible, the managers for the petitioners represented to the committee the difficulty of procuring the attendance of witnesses; that most of those who were interested to protect the fisheries were poor or of limited means, and that those who were rich, not being pecuniarily interested, had contributed but little to carry on the investigation; that the question was one of great public concern, and asked the committee to obtain from the legislature authority to send for persons and papers, which they, although expressing a determination to give the subject a full and impartial hearing, refused to do. The managers therefore were limited to such witnesses as would willingly attend and the means in their hands enabled them to produce.

On the side of the remonstrants it was not so. These two investigations became so general and looked for such stringent legislation, that the opposition was aroused, and all those who were engaged in the profitable business of trapping and seining fish contributed liberally to defeat, and did defeat, any action on the subject.

One witness in Rhode Island, William Spooner, testified that they went so far as to threaten all those fishermen who should go before the committee to testify anything against trapping.

It is more than probable, however, that limited and unsatisfactory as those examinations proved, they together furnished more evidence than had hitherto been procured, and brought out as many facts as are likely to be obtained by anything short of congressional action on the subject.

It is a matter of surprise, therefore, that so much information was gained, and not that so little that was valuable was in evidence, and although the "very interesting contemporaneous investigation in Rhode Island" went more carefully, thoroughly, and understandingly into the matter, yet we find, on comparing the testimony, that what was proved in the one case was, for the most part, confirmed in the other.

The English commission, the Massachusetts commissioners, and Mr. Atwood may all agree "that fishermen, as a class, are exceedingly unobservant of anything about fish which is not absolutely forced upon them by their daily avocations;" "that these witnesses do not know one-half of what they ought to know;" nevertheless this is all the testimony we can have upon a question of vital consequence until the Government devises some better means of ascertaining the truth. Meantime the evil, if it is an evil, goes on, to the prejudice of the fishermen and to the possible destruction of the fisheries.

Perchance this is one of those cases where the stopping the practices complained of is the only means of accurately knowing what the ultimate effect of their continuance will be.

Should the trapping and pounding of these fishes be suspended for a time, and the fish should thereafter steadily increase in numbers, the question would be settled.

The matter is of consequence enough. Would it not be worth while to try the experiment?

In this view of the case, all we have to show is, that these novel, and what we claim are improper, methods of catching fish, are a probable cause of the scarcity complained of, having first shown that the scarcity exists. The burden of proof is then logically shifted, and it is for the trappers to show that their methods do not consume these fishes faster than their natural increase.

They have then one further point to make—that by their wholesale modes of fishing they do not interfere with the rights of others, for nothing is clearer settled in the law than that all men have the right to catch fish in the bays, inlets, and arms of the sea, and that no man has the right to catch fish to the injury of others in their rights. Then we inquire—

Firstly, have the fishes under consideration become scarce?

Secondly, are the methods of catching them, by pounds, weirs, and traps, a probable cause of such scarcity?

In answer to the first, we claim that they have.

Both in Massachusetts and Rhode Island it was at first stoutly denied that there was any scarcity of the fishes named, yet it was testified to, by most of the witnesses in both States, and Mr. Atwood finds himself at last compelled to admit it, and then goes on to try to account for it.

The interrogatories put by the joint special committee of the general assembly of Rhode Island were in writing, and were eighty-two in number. They were answered in so far as they severally knew, by thirty-nine witnesses, under oath.

Twenty-eight of these interrogatories bear directly upon the question of scarcity, and thirty-seven of the witnesses swore that they had grown perceptibly scarcer year after year, except during two years, when the traps had been broken up by storms.

The testimony of the Massachusetts witnesses is not in print that I am aware of, but from my notes I find that every hook-and-line fisherman among them, except one, agreed with the Rhode Island witnesses upon this point.

Add to this the testimony of every amateur fisherman with whom I have conversed, many of whom are men of superior knowledge, accustomed to observe everything with regard to the fish they catch, some of whom have made their opinions public in works of standard merit, and we have evidence sufficient to establish the fact of the increasing scarcity of these fishes, beyond a reasonable doubt.

Again, and more conclusive than the testimony of all these witnesses, the scarcity of these fishes has become notorious. All along the shore, from Point Judith to Monomoy, it has been and is now a general cause of complaint. Everywhere you go, in any seaport town, the fishermen will tell you what they used to do, and all the inhabitants are lamenting the time when they could go out and catch a "mess of fish at any time." But now it is not so.

If there remained any doubt as to whether it was proved that these fishes have become scarce, the Massachusetts committee, in their report

say that "it appeared in the evidence that the scup, tautog, sea-bass, and striped bass, in Buzzard's Bay, have diminished during the last few years, comparatively few having been caught in that locality;" and the joint special committee of Rhode Island, in their report, after a careful review of the whole subject, and in view of its "profound intricacy," say that "the oral and written testimony laid before the committee establishes the fact that, whereas scup were formerly abundant in the waters of Narragansett Bay, and constituted a cheap and nutritious article of food to the inhabitants, readily found and easily caught, they have gradually left these waters, until they are quite abandoned by this species of fish, and partially so by other species."

Then, from the testimony of all the witnesses in Massachusetts, except the trappers, and one Bearse, from Hyannis, who was not surpassed by any one on the stand in the exhibition of ignorance and prejudice, that these fishes had diminished in Vineyard Sound, and we have three very considerable and important fishing waters, in which these fish had formerly been abundant, where now they have become scarce.

The fact of the scarcity having been so entirely proved, the report of the "minority of the committee on fishes" in Rhode Island finds it necessary to say, "and if these fish do not come into the bay as plenty as formerly, we can only suppose that there are some conditions necessarily wanting;" and the committee in Massachusetts accounts for it in these four ways:

1. That they have merely disappeared.
2. By reason of the scarcity of food.
3. From impurities in the water.
4. The blue-fish have destroyed or driven them.

Let us review the evidence going to sustain these several positions in their order.

1. That they have merely disappeared.

The Massachusetts committee, in their report, say that it does not necessarily follow that when fish leave a locality they have been driven away by over-fishing; nor has any such thing been claimed. What is claimed is, that in these waters, and with reference to these particular fishes, they have been destroyed or taken in such large quantities just before or at the time of spawning that any increase is impossible. The significant fact is, that they have disappeared from these several waters at the same time, and have steadily, not suddenly, decreased.

If they have not been exhausted, but have only left the locality, is it not a little remarkable that these four different species of fish should not only have agreed to leave these several localities at one time, but that they should not have appeared in great numbers anywhere else?

Mr. Atwood says that "all agreed that the scup, tautog, sea-bass, and striped bass had, within a few years, diminished in Buzzard's Bay, but failed to show that over-fishing was the cause of the diminution." They were not bound to show any such thing. Having proved that the fish had become scarce, and that they had done so since the setting of the pounds and traps, it was the duty of the committee not to take sides with the trappers, but, acting under their oaths, on behalf of the people of the commonwealth, to force the trappers to show, as logically they were bound to do, that their novel and wholesale methods were not the cause of it.

There was not a particle of evidence before either of these committees going to show that these fishes had disappeared—that is, changed their ground—nor any evidence that they were of the kind of fishes that appear here in one place at one time, and then in another place at another

time. On the contrary, all the evidence there was proved that they returned annually to the same grounds to spawn.

All there is upon this point comes from Mr. Atwood himself, after the evidence is closed, when he, "laying aside the evidence," becomes a witness before the senate of Massachusetts, and gives a very interesting account of what he had "noticed during a long life of practical experience in the fisheries."

This covers a period of fifty-one years, and is very important in this investigation, because it is the testimony of Hon. N. E. Atwood, of whom the Rhode Island commission says, he is a "practical fisherman of Provincetown, and a distinguished ichthyologist;" because, say the commissioners on inland fisheries in Massachusetts, it is the opinion "of a man who probably knows more of the habits of our cold temperate sea-fishes than any one in the country."

We have no longer ignorant and prejudiced fishermen on the stand, who "possess only a local knowledge of the fish with which they come in contact; who do not make the habits of fish a special study; who do not know one-half of what they ought to know;" but the great ichthyologist and the intelligent fisherman of fifty years' practical experience.

Let us see what "changes he has noticed" going to show that *these* fishes—the fishes under consideration; not other fishes, but the scup, tautog, sea-bass, and striped bass—have, or may have, merely left the localities they once frequented.

He first alludes to the scup, of which he is "informed that in examining the old shell-heaps that have been deposited by the aborigines, many years ago, the bones of this species have been found, showing that they were here before this country was settled by the Europeans."

If they were here then, it is quite as probable that they have remained here ever since, as that the "tradition" is true that they appeared in Buzzard's Bay in 1793.

The witnesses who stated that they had such tradition were the same witnesses of whose testimony on other points Mr. Atwood thought so little; and the tradition itself may, for aught we know, have had reference to some other species; but what is a great deal more probable is, that they then first began to be considerably fished for.

At all events, this is very feeble evidence to support a theory that this species of fish has appeared and then disappeared, driven away by none other than the "Indians, with their rude implements of fishing."

Since 1793 Mr. Atwood gives us no information that every year, for a period of more than seventy years, they have not, until recently, been abundant. And there was no evidence before the Rhode Island committee that they had not existed in the waters of Narragansett Bay since the settlement of the country, which, if they had not, would certainly have appeared, since the people of that State have always been interested in the subject of the fisheries, from the "earliest authentic history of the colony." As early as 1719 the general assembly passed an enabling act empowering each town council "to take care for the preservation of the fishery within their respective jurisdiction, and to remove all obstructions made in any rivers that may prejudice the inhabitants by stopping of fish from going up the stream."

The only other fish of the species under consideration of which Mr. Atwood gives us any information, is the striped bass, of which he says, that they have diminished in the vicinity of Cape Cod, as the blue-fish have destroyed the bait upon which they feed. This is only admitting the fact of the scarcity of these fish, and begging the question as to the cause of it.

This is all the information we have from Mr. Atwood upon the subject. What he says more has reference to fish of other *genera* and different habits, without the least connection to show that what has been true of them is also true of the species now being considered.

In order that nothing having any bearing upon this subject should be left out of the reckoning, let us see what Mr. Atwood says of the other fishes included in his list of "changes," and inquire what are the natural inferences to be drawn.

After his remarks upon the scup, he states that the chub mackerel, *Scomber dekayi*, disappeared long before a weir-trap or pound was used in our Massachusetts waters. The common mackerel, too, "come to us some years in great abundance; in other years they are comparatively scarce." In 1840, shad appeared, and, not long after 1842, "they then disappeared."

Precisely the same line of reasoning is to be followed here that was taken by Rimbaud in his Review of the Report of the English Commissioners. Mr. Atwood has fallen into the error of "compounding under the common name 'fish' of all the vertebrate class taken by fishermen." Rimbaud shows that a classification is necessary, a "classification founded not on anatomical characters, but on habits and localities."

Rimbaud makes four divisions. For the purposes of this discussion only two are necessary:

1. Wandering fishes, the most of which are surface-fishes.
2. Bottom fishes.

The difference chiefly to be borne in mind is this: That whereas the wandering fishes appear on our coasts only when migrating, and then in vast but uncertain troops, the "latter are especially domestic, and dwell and multiply on particular localities along the coast."

According to such classification, the chub mackerel, the common mackerel, and the shad, belong to the first division, of which there is no doubt they appear and disappear for no assignable cause. They come, they are gone, is all that can be said about them.

Not only do they change their ground one season after another, but in a single week or day in a locality where they have abounded not one can be found.

Not so with the bottom fishes. They return to the same places year after year, deposit their spawn, seek their feeding-grounds, and remain during their seasons. The fishermen all understand this, and have their bearings so that when once they have found a locality where they are feeding, they may and they do return to the same place again, as confident of finding the fish at any subsequent time as they are that they shall find the rocks near which they had been anchored. Did anybody ever hear of a fisherman's fixing his bearings for a school of mackerel; or, if any ever did, did he do it more than once?

With regard to what Mr. Atwood says of the haddock, there seems to be better ground for his analogy, but yet we are not sufficiently informed of their habits, nor so advised of the real facts in the case as to determine how far it may logically be used in support of his views of the subject. The fact, as he states it, is, that fishing with the trawl-line has been in use since 1850, and that this species of fish has been increasing year after year notwithstanding, until "they have increased in vast numbers; so much so that they are too plenty for the fishermen or dealers:" 621,953 pounds of cod and haddock were sold in Boston in a single day. Mr. Atwood does not infer that the trawl-lines are the cause of the increase, but says: "The present mode of fishing catches vast quantities of a species of flat-fish, (*Platessa dentata*,) which no doubt fed

upon the spawn of haddock when the hand-line only was in use. Whether the flat-fish did feed upon the spawn of haddock we do not know as a matter of fact; but if they did, we shall see with what probable effect when we come to consider Mr. Atwood's remarks on the fecundity of fishes.

Reasoning from analogy is, after all, only showing a probability, and cannot be regarded as a very safe method from one class of fishes to another.

Mr. Atwood admits, with respect to the halibut, that they seem to be decreasing on all the fishing-grounds, and leaves the senators, who of course are not expected to know much about it, to decide whether or not over-fishing is the cause of it. Whether the senators ever have decided I do not know, but the fair inference would be, in the absence of any explanation of the matter, that the fishery of them, prosecuted as extensively as Mr. Atwood says it is, had something to do with it.

Mr. Atwood says: "It appeared in evidence before the committee that the fish known as the squeteague is increasing in the vicinity of Buzzard's Bay, and along the south shore of Cape Cod. Some sixty years since it was vastly abundant in the southern part of Massachusetts Bay, and though absent for so many years, it seems to be returning to its former haunts."

From such knowledge as we have of its habits, it seems to be one of the wandering fishes, and likely, therefore, to appear or disappear at any time.

One other fish concludes the list referred to by Mr. Atwood, a species of flat-fish, the *Platessa oblonga*.

What he says of the blue-fish will be passed here, as it comes more properly under another head of my subject.

This species, (the flat-fish,) he says, was exceedingly abundant along our shores before the blue-fish came. "It is a bottom fish, and does not come so directly in contact with the blue-fish as top-water swimmers; still, it has almost wholly disappeared, owing to the blue-fish having destroyed its favorite bait, which is the common squid."

Here, again, the scarcity of the fish is admitted, and here, again, the question of the cause is begged. Mr. Atwood, it is true, states it as a fact that the squid is its favorite bait, and that the blue-fish has destroyed the squid. Could he think of nothing else which destroyed its "favorite bait," after all the testimony before the committee showing the vast quantity of squid taken in the pounds and traps?

This, then, is all there is going to prove that the decrease of the species of fishes now under consideration is absence and not scarcity. We may now consider the evidence as all in, for if there had been any more, Mr. Atwood, with his declared purpose of "trying to show the danger of exterminating the race of fish, if there is any," would have stated it. From it, what are we fairly to conclude?

First. That a certain class of fishes, called wandering fish, appear in and disappear from certain localities without our being able always to assign the cause; that their decrease is, or may be, *absence*, not *scarcity*.

Second. That a certain other class of fishes, called bottom fish, including the scup, tautog, sea-bass, and striped bass, are domestic in their character, coming annually into the same waters to breed and dwell, migratory, and not wandering, in their habits, concerning which, if they decrease, it must be *scarcity*, not *absence*.

2. The decrease of these species of fish is accounted for by reason of the scarcity of food.

In both Massachusetts and Rhode Island the attempt to prove that the food of these fishes had become scarce, was a complete failure.

The fifty-seventh interrogatory of the joint special committee of Rhode Island had special reference to this point.

Twenty-two of the witnesses answered directly that there was no scarcity of food, and of the rest, I think there was not one, not even Mr. Tallman, who testified that it was not as abundant as it had been years before. Mr. Johnson goes so far as to say, "I never knew as much food for fish as at present." Mr. Matthewson says, "Mussels are fully as abundant now as I ever knew them to be; new beds have formed right in front of my place." Mr. Place says, "No scarcity of food; plentier now than ever." Mr. Rice says, "For mussels, &c., are plentier than ever." So the committee in Rhode Island, in their report, well say that, "in the opinion of your committee, the preponderance of evidence is that there is an abundant supply."

In Massachusetts there was less testimony on this point, and what there was went only far enough to show that the food may have changed ground, and that if there was scarcity of one kind, there was plenty of another.

It was from the very slightest testimony, therefore, that the Massachusetts committee concluded that the cause of the diminution of fish in Buzzard's Bay "may be a scarcity of the bait on which they are accustomed to feed, as large beds of mussels on which some of these species feed have been killed by star-fishes, (five-finger, so called by the fishermen.)" Mr. Atwood does not assign this as a cause, except that the blue-fish devours the food of other fishes; he does not anywhere say, nor commit himself to the opinion, that the food of these fishes has become scarce.

During the past year new beds of mussels are being formed, as we should infer would be the case, from the growing scarcity of the fish which consume it.

It will be observed, too, that the traps catch large quantities of the food of these fishes, so that if it has become scarce, they are one of the causes of it.

We are forced to the conclusion, from all the testimony concerning the food for these fishes, except of those kinds taken by the traps themselves, that it never was so abundant, while the fishes were never so few to consume it.

3. Impurities in the water.

If the testimony to sustain the scarcity of food, as a cause of the scarcity of the fish, established the fact that there was no scarcity, but abundance, so the testimony upon this point showed nothing so much as the weakness of the cause of the trappers, and the shifts they were put to to defend their wretched work.

The destructive effects of deleterious substances thrown into the water was attempted to be proved in Rhode Island and in Massachusetts, and in both cases without success.

One trapper in Rhode Island resorted to the novel and ingenious theory that scup were more sensitive to such influences than any other fish, and one witness in Massachusetts had known a small bed of clams near New Bedford to be tainted, and this, from one petroleum factory, was the cause of the scarcity of fish in the tide-waters from Palmer's Island to Noman's Land, a distance of more than thirty miles.

The same interrogatory (57th) and the 78th to 81st, put by the Rhode Island committee, covered this point. Nineteen witnesses testified that of their own knowledge no impurities existed in the waters with which they were acquainted, or that if there were any, they had failed to ob-

serve any injurious effects upon the fishes swimming in it. Allen says, "Waters are not impure on fishing-grounds that I am used to; would know if it was." Bassett says, "Barrington River was always famous scup-ground; Kickamuit River the same. I cannot find a person who knows of any impurities in those waters that were not there fifty years ago;" and, again, "I think the water south of Stone bridge as pure as the ocean." No witness, in all the thirty-nine, save Mr. Benjamin K. Tallman, the inventor of the traps, and Mr. Munro, of Portsmouth, also a trapper, who, in July, 1868, once in a while could see a fish (menhaden) on Pawtucket River come up on the top of the water, gape, and turn on its side and die. He supposed the cause of this was impurity of the water. Had been there for several years before 1868, and was there in 1869, but never saw any other instance of fish dying in this way on that river.

So the committee reported that, "in certain localities, doubtless the waters are impure; but the pollution does not extend so far by any means as some persons in all honesty contend."

One witness from East Greenwich, a fisherman, says, "The water is as pure as ever. My fish will keep as long near where the print-works water comes into the cove as anywhere, and clams, quahogs, &c., are as plenty as they have been for forty years."

The known reputation of Providence River oysters in the market for excellence of quality and flavor is another significant fact in the way of those who would account for the scarcity of fish from the injurious effect of poisonous substances thrown into the water from large cities.

And in Massachusetts no impurities could get into Buzzard's Bay or Vineyard Sound, except from New Bedford, and nothing deleterious goes into the Acushnet River, except from one petroleum factory and a copper-works, which did not thirty years ago. The Prussian-blue works has sent its refuse into that river for more than thirty-five years, and yet more was said about that than of any other of the causes.

It is a little remarkable that we hear of no destruction of the fishes from impurities in the waters of the Hudson or East Rivers, nor in the waters of Long Island, nor in the Schuylkill or Delaware.

Only when traps are set in the bays and arms of the great sea are the fishes diminished by the impurity of the waters.

Even Mr. Atwood could not be made to consent to this, and closes all the avenues to such an argument when he says, "But in the great sea man cannot pollute its waters by anything he can do."

Besides, if the pollution of the waters was, and is, a sufficient cause for the scarcity of fish, we should naturally expect to find the fish to become most scarce in the waters most affected, while the fact is that they have diminished just as rapidly in localities where there are not known to be any impurities which did not exist fifty years ago, and from that time ever since.

Lastly, the blue-fish as a cause of the scarcity. "But," says the Massachusetts committee, "the great cause that has driven many species of fish from our waters is the blue-fish;" and in support of this Mr. Atwood, in his speech, says: "But the great change that has taken place in our fisheries has been caused by the return of the blue-fish."

In his very interesting account of this fish, we are told that they frequented our waters in 1763 and 1764, in which latter year, coincident with a great pestilence which visited the island of Nantucket, the blue-fish disappeared, and Mr. Atwood has no knowledge of a specimen having been seen here for more than seventy years. "About 1832 they reappeared along the south shores of Cape Cod, but did not appear on the

north side of the cape until 1847, when they drove away from our bay nearly all other species."

The bones of the scup found show that that fish was here when the country was first settled. So far as we know, they have always existed in the waters of Rhode Island; and we have also the tradition that they appeared in Buzzard's Bay in 1793, and no evidence that they have not frequented these waters ever since. They must then have been here when the blue-fish arrived in 1832. In 1847 they (the blue-fish) so affected the fishery, that that year was the last of the catch of mackerel, in which Mr. Atwood was then engaged in fishing with nets. Why then did not scup and tautog begin to grow scarce if the blue-fish is the cause? How happens it that the blue-fish which, in one year, drove all the mackerel out of Cape Cod Bay, did not trouble the scup and tautog on the south side of the cape for nearly twenty years? From 1832, when the blue-fish came, until 1848, when these fishes began to be very considerably diminished, the blue-fish, which had appeared in such abundance as to depopulate the waters of nearly all other fish, and depopulated Mr. Atwood's village and home, made no perceptible difference to the tautog and scup. Nor was any difference apparent until after the traps began to be set, which was in 1844.

The truth is, the blue-fish do not drive nor destroy the bottom fish to any considerable extent, and would not at all, but that the traps catch up their food and force them to attack every species that swims. The fishes which Mr. Atwood was catching were mackerel, surface fish. These the blue-fish would pursue, and these they could both destroy and drive.

I have no doubt the blue fish has done much to drive other species of wandering fishes from one place to another. Undoubtedly they consume and destroy large numbers of other fish; they may indeed occasionally attack scup and tautog, and possibly consume the food which is eaten by the fishes of which we are now speaking, but there is no evidence that they do so to any considerable extent. Let us look at the testimony and see when this savage, this scapegrace for the trappers, this *Temnodon saltator*, does his work, and upon what.

It is not probable that he troubled the scup much in Mr. Atwood's bay, since he says that only a few straggling specimens venture into the colder waters north of Cape Cod; and we do not find that he disturbed them on the south side of the cape and in Narragansett Bay until they had lived peaceably together in the same waters for nearly a quarter of a century.

The forty-eighth printed interrogatory of the Rhode Island commissioners is as follows: "Please state, for the benefit of the committee, how a hook-and-line fisherman is employed during the season, what fish he takes at the beginning of the season, with time of commencing, and in order mention the different fish as they are caught, with the usual date of arrival and disappearance."

See also questions 4, and 68 to 71.

In answer to these questions, the witnesses agreed that flat-fish appeared the earliest, then the scup, then tautog, and after them the menhaden, which were soon followed by the blue-fish. It also appeared that scup and tautog were not taken with hook and line until after they had spawned, so that they must have spawned before the blue-fish arrived; consequently the blue-fish do not drive nor destroy these fish until after spawning. Unfortunately, therefore, if the blue-fish drive these fish to any considerable extent, which we have already shown they do not, or did not prior to 1844, they come altogether too late in the

season to depopulate the waters south of Cape Cod, or lay waste any homes there; for when they come the scup and tautog have spawned, and they have gone to their feeding-grounds in deeper waters. Mr. Atwood himself conclusively shows the complete improbability of their being destroyed after that in what he says of the fecundity of fishes.

I repeat what he says on this subject: How vast is the number of eggs produced by a single fish; hundreds of thousands, which, if any considerable percentage should come to maturity, the waters would be filled to overflowing.

How vast, then, I submit, is that destruction which prevents the spawning of fish!

In order of time it also appeared from the testimony in both States that the traps, pounds, and weirs are set before the arrival of either of the fishes under consideration, and to catch them as they arrived, when they are coming with the shoaler and better ærated waters to spawn.

If, therefore, it was a matter of surprise to the senator that men professing to be acquainted with fish should come before the committee and say they did not know blue-fish ate any other fish but menhaden, it is more a matter of surprise that Mr. Atwood, the man who did know all about it, did not tell the senators when these food-fishes appear, in what order they come, when they spawn, and whether they did not go immediately into shoal water for that purpose. He could have told, too, when the blue-fish appear, and what fish they are pursuing when they come, and whether the traps were not set before the arrival of any of these fishes, and to catch them when they came near the shore to deposit their spawn. And, in my judgment, he would not have failed to do this if he had not seen the obvious effect of it upon the cause of the trappers, whom he was placed in his position to protect.

Whatever may be said about it by Mr. Atwood, scup, nor tautog, nor sea-bass, nor yet the food of any of the food-fishes of the New England coast are the natural or chief food of the blue-fish. Menhaden and herring are the fish which they mostly pursue, and upon these they chiefly feed. This all the witnesses testified to, and this everybody on the sea-coast knows, and, what is a significant fact about it, these fishes on the whole do not greatly diminish.

Again, as to this blue-fish, horse-mackerel snapper, or by whatever other name he may be called, Long Island Sound is full of them, and yet we do not learn that he has depopulated those waters of scup, tautog, sea-bass, or striped bass, nor laid waste any considerable towns or villages there. So we conclude that, bad as the blue-fish is, too much blame is laid upon his shoulders; and I am not sure that he does not furnish food enough, and that which is good enough, to pay for all he eats.

It is more than doubtful whether, in the arrangements of Divine Providence, any species of fish can be destroyed by any other agency than man, and not by him, unless he prevents their increase. He who gave the law to increase and multiply abundantly on the face of the earth, knew how to make its operation certain, and gave dominion to man alone to control it. It cannot be shown that any species of fish has been exterminated by any other cause than by preventing their increase. Salmon and trout feed upon their own spawn and upon their own young, and yet how did they abound, until prevented from spawning by improper modes and times of fishing?

Secondly. Are the modes of catching fish by pounds, weirs, traps, &c., a probable cause of the scarcity of any or all the fishes now under consideration?

It is evident that something has occurred during the past seventeen years to cause the food-fishes of the waters of Massachusetts and Rhode Island to become scarce. It has not been satisfactorily accounted for in either of the four ways above considered. During those years, but one other cause can be found which has existed in both States at the same time which did not exist before, and that cause is the unrestrained catching of these fishes by traps, pounds, weirs, heart-seines, and the like.

It is certainly very remarkable that these four fishes should all agree to become scarce in both States upon the setting up of the traps and to grow scarcer and scarcer, year after year, as the traps increased, if either of the above causes assigned for such scarcity was the true cause.

Was not a temporary absence of these fishes likely to occur before Mr. Tallman invented a pound? Was never food for these fishes scarce till trapping commenced? Were not the substances sent into the waters from Providence, Fall River, and New Bedford, deleterious till then? Has the nature of the blue-fish changed since the traps were set? Could he live in the same waters peaceably with all these fishes and not *before* become voracious and destructive? If not, even then ought the traps to be abolished, if by reason of them, however indirectly, the fish absent themselves, or their food becomes scarce, or the waters become poisonous, or the blue-fish becomes savage.

Such extraordinary effects, threatening the entire destruction of the fisheries, depopulating our waters, depriving us of food, ought not to be continued if the removal of the traps and pounds will prevent it. One point further, going to show that the traps and pounds are a probable cause of the scarcity complained of: the thirty-third interrogatory of the Rhode Island commission is, "Do you know of your own knowledge, or did you hear whether the traps at Seconnet Point were broken up during the year 1862, and also in 1867 or 1868, for how long a time were they displaced, and by what wind, and about what date, and what was the fishing for scup those seasons compared with the previous and suceeding year?

Twelve of the witnesses gave full or partial answers, and proved that the traps were broken up in 1862 and again in 1867, and that the catch of scup, by the hand-line fishermen, during those years, was greater than during the preceding or following years. I grant that these facts are not conclusive upon the point, but they are significant, and have sufficient bearing to entitle them to consideration in the case, and go to strengthen the testimony of most of the witnesses when asked to give their opinion as to the true cause of the scarcity about which they had testified.

It is not necessary to review particularly the evidence given as to the cause of the scarcity of these fishes. It is enough that in both Rhode Island and Massachusetts almost the unanimous voice of the witnesses was, that it is the traps and nothing but the traps.

Whether the opinions of these men are of little or much worth, they are, as I have before said, the best evidence we can have until the Government collects the statistics, and all the facts are ascertained. We are glad that some steps in the right direction have been taken, and that a man so well qualified for the work as Professor Baird has undertaken the investigation. That there are many and great difficulties attending the subject there can be no doubt, but they are never likely to be less, and the longer the matter is delayed the greater proportions they will assume.

In Mr. Atwood's remarks to the senate, he says, "If this legislature

should pass an act to prohibit these modes of fishing that have been called novel and improper, what would be the practical workings?"

This, then, was the great point in the case—not what injury had been done and was still being done to the private rights of individuals, nor what the hazard to the fisheries, but what harm would the prohibition of the traps do to the monopolists—what was to be the effect on the Gloucester fishery, on the Wm. L. Bradley Manufacturing Company at Weymouth, on the Pacific Guano Company at Wood's Hole, on the Cape Cod Railroad Company, who had asserted, and who were defending what they called their right to all the fishes they could, by any means, catch.

Even supposing, for the sake of the argument, that these wholesale methods of taking fish do not, on the whole, injure the fisheries, by what right does any man, or set of men, take all the fishes of the sea which they can catch as his or theirs? Have the public no rights? Has not every individual some rights which these monopolists are bound to respect?

I wonder that the great injustice which is done to public and private rights by trapping did not move the legislatures of both Massachusetts and Rhode Island to prompt and immediate action to prevent it. No other so great public right could be trampled upon, no other private right would be so despised.

I wonder that the people have so long consented to be robbed, and for no better reason than that large moneys are invested in the business.

Are the fishermen to be driven from their fishing-grounds, are the people to be deprived of food, that a few men may be made rich out of the public treasury of the sea? And has he or they only the right to catch fish who can afford the extensive and costly apparatus of the trappers?

One would suppose it could hardly be necessary at this late day to discuss this question.

The right of every man to catch fish in the bays and arms of the sea has long since been settled. The denial of the right of any man to catch fish to the injury of the right of any other man has been maintained from the earliest history of the country.

I marvel at the presumption of those who, in derogation of every other man's right, stand boldly before the law-makers of the land, and ask to be protected in their unlawful business, or not hindered in pursuing it. Is it not a matter of surprise that these men should go before these legislative committees and parade the extent of their plunder as a justification of the robbery itself? See the hundreds of thousands of barrels of fish which they testified annually to have taken in their traps for market at home and abroad, for fertilizing phosphates, for bait for the mackerel and cod fisheries, the profits of which they pocketed, and to which they had no legal or moral right if their modes of fishing deprived the poorer fishermen of what was legally and morally theirs.

There can be little doubt remaining that these novel methods of fishing stop the fish from going into their accustomed waters to spawn; that they prevent their going, as was their wont, into the bays and rivers, and that they thus prevent those who live upon the banks of these waters from taking the fish as they formerly did, or compel them to longer voyages and to more expensive apparatus. What Mr. Atwood speaks of, therefore, as the practical working of any act to protect these fisheries or these fishermen, is, in fact, the practical wrong and in-

justice of the business, which he should have been the first and most active to punish.

But the people of the Atlantic shores, as a people, have some interest in the continuance of the fisheries themselves, and know and can know of no private or corporate interest so great as to be long permitted at the risk of their exhaustion. Enough has been proved to show that the traps and pounds are one great cause, if not the only cause of the scarcity of the food-fishes of the coast, and the people demand and have the right to demand that they be abolished altogether, or so regulated that the fish may pass along the shore to their accustomed places to spawn.

The trappers have had their way and filled their pockets during the past seventeen years, and the fishes have become scarce. Let the poorer hand-line fishermen have their way for a few years, and you will see that the fishes are as abundant as formerly. The proverb that "there are as good fish in the sea as have been caught," was only good until trapping began, and the theory that any scarcity of fish during one season will be made up by increased numbers from the great sea the next, is only a poor conjecture.

We admit that there is a great fishing interest involved in the trapping of fish, as the fishing business is now carried on, but we do not admit that sufficient bait for the mackerel and cod fishermen cannot be obtained in some other way not prejudicial to the other fisheries. A proper regulation of the traps with respect to the time of their being set and taken up would permit their use for catching menhaden, but were they prohibited altogether, there is no good reason to suppose that the Gloucester fishermen would suffer for want of bait. Let it be known when and where the bait was wanted, and thousands of our fishermen, with nothing now to do, with their shore-nets would supply it in the greatest abundance, at no higher cost, in better condition, and just where and when it was wanted.

Perhaps not so many fish would be cast upon the land or ground up into phosphates, but more would be for sale for food and as much for bait.

Nor will a law protecting the fisheries necessarily throw men out of employment, but, on the contrary, will make business for a much larger number. That great class of hardy fishermen so feelingly spoken of by the senator of the Cape district, will not only become more numerous, but be better rewarded by a proper regulation of the fisheries. How many hook-and-line fishermen equally as worthy as those who have lain down to rest in a Newfoundland fog, have been thrown out of employment by the greed of the trappers in their unconscionable, everlasting hunt after that "last dollar," and lain down to rest in as gloomy a solitude, in the fog of New England!

It is only necessary to prohibit the traps for awhile, and regulate the time and extent of such fishing hereafter, and it will result for the permanent good of the trappers themselves, for the good of these hardy fishermen on the whole, and for the benefit of the thousands who could once find a living on our shores, now so depopulated of the fishes the catching of which gave them employment and heretofore furnished them with food.

I am satisfied that further commissions and investigating committees will do no good. What availed the sixty-two thousand questions of the royal commission, or the eighty-two questions of the Rhode Island committee, or all the oral testimony of the Rhode Island and Massachusetts investigations? The trappers are always able to throw more

influence into the scale than the fishermen. "Leave to withdraw" is the stereotyped report of the Massachusetts "committees on the fisheries," and bills to protect are everywhere quietly voted down.

Mr. Atwood closes his remarks by alluding to the antiquity of nets, and recites the simple and beautiful narrative of the calling of Peter and Andrew, James and John, the fishermen of the sea of Galilee, to make them fishers of men.

It does, indeed, show that nets were in use at that remote period, but it does not show the justness or lawfulness of the practice, and commits not the Master to its approval. For he said unto them, "Follow me." "And they straightway left their nets and followed him."

Once, indeed, in the ship, which was Simon's, he performed the miracle of the great draught of fishes, but while he compensated the disciples in that they had toiled all night and taken nothing, he destroyed their nets.

There is another class of persons interested in the continuance of the fisheries, to which I have but slightly alluded. What little was said by them or in their behalf before the committee in Massachusetts was sneeringly received, and they themselves contemptuously referred to. I mean the amateur fishermen. These men also have some rights of which the trapping of fish is a violation. Though they are anglers rather than fishermen, and pursue their finny game for recreation and not money, they are entitled to no little consideration. As a class they are rapidly increasing in numbers and in influence. Driven during the heated months of the summer season from our more crowded and unhealthy cities, rod in hand, they flock to the mountain-streams and the sea-side. Generally men of means, of leisure, of cultivated tastes, they form themselves into clubs or associations, build comely houses, and beautify their grounds. Lands long since worn out and become comparatively useless, and well nigh abandoned, they increase in value; they add to the revenue of the towns and State they visit; men of intelligence and culture for the most part, they study the habits of the fish they catch, and add not a little to the stock of our knowledge of a subject of which the people know so little.

In the investigation of this interesting subject, while we hope to find out more about the habits of the fishes upon our sea-coast, and what are the proper modes and times of catching them, we shall not altogether have wasted our time if we find out that there are some things valuable which do not pay, and some things worth considering which do not result in dividends.

Whether a case has been made out showing that the traps and pounds are solely responsible for the growing scarcity of fish, the methods of otherwise accounting for it, resorted to by the trappers and their defenders, are proved to be insufficient and unsatisfactory. Enough has been shown to demonstrate that, by these means, the "exhaustion of the sea-fisheries" as to these particular species of food-fishes is possible.

This is enough to entitle the subject to serious consideration, and to warrant the Government in early legislation to prevent it.

It will be better that the trappers should submit to some inconvenience—be put to some loss, indeed, rather than that action should be too long delayed.

It is easier now to interpose to save, than it will be by and by to replenish, our depopulated waters.

GEO. H. PALMER.

NEW BEDFORD, *January* 1, 1872.