

REPORTS
ON THE
CRAB AND LOBSTER FISHERIES

OF
ENGLAND AND WALES,

BY
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OF
SCOTLAND,

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REPORT
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REPORT ON THE CRAB AND LOBSTER FISHERIES OF ENGLAND AND WALES.

Home Office, Whitehall,
1st March 1877.

SIR,

IN obedience to your instructions of the 13th September 1876, we have the honour to inform you that we have held a careful and protracted inquiry into the condition of the Crab and Lobster Fisheries of England and Wales. Proceedings of Commissioners.

In company with Mr. Young, one of the Commissioners of Scotch Salmon Fisheries, we have also held an inquiry into the condition of the Crab and Lobster Fisheries on the coasts of Scotland. The results of our inquiry in Scotland are communicated by us to the Secretary of State in a separate report. We believe, however, that it will be found that the two reports are consistent with each other.

The chief fisheries for crabs and lobsters in England and Wales are in Northumberland, Yorkshire, Norfolk, Sussex, Hampshire, Dorsetshire, Devonshire, and Cornwall. The chief market for all fish is at Billingsgate, though there are of course other large provincial markets. The Norfolk fisheries formed the subject of a separate report presented to Parliament during the Session of 1875. We have held sittings at North Sunderland and Cullercoats in Northumberland; at Whitby, Scarborough, Robin Hood's Bay, Flamborough, and Bridlington in Yorkshire; at Cromer, in Norfolk; at Looe, Polruan, Polperro, Mevagissey, Falmouth, St. Mawes, Durgan, Cadgwith, Penzance, and Sennen in Cornwall; at Plymouth, Wembury, Hope, Prawle, Hall Sands, and Budleigh Salterton in Devonshire; at Hamble in Hampshire; at Bognor in Sussex; at Birmingham; and at the Hall of the Fishmongers' Company in London. Enumeration of principal fisheries.

Among the numerous places on the coast which it has been our duty to visit, there has not been one where we have not been welcomed by the fishermen; among the many witnesses whom it has been our duty to examine, there has hardly been one opposed to all legislative interference. Laws for the government of the

fishery were asked for, both in those places where it was admitted that the fishery was falling off, as well as in those where no failure could be traced.

The evidence which we thus obtained was of such importance that we have printed our notes of it in an appendix to this Report. As we had not the advantage of the services of a shorthand writer, the evidence, of course, appears in less detail than is usual in similar documents.

We are now in a position to make the following report :—

English
markets, how
supplied with
shell fish.

The English markets are mainly supplied with lobsters from Cornwall and the south coast of England; from the Orkneys and Hebrides in Scotland; and from the west coast of Ireland. Lobsters are also imported from Norway, France, and Sweden. The first of these countries sends annually about 600,000, the second of them 200,000, lobsters to Billingsgate.

Crabs are caught on the south and east coasts of England, in nearly every part of Scotland, and in Ireland. We exclude from this report all reference to Scotland and Ireland, which form the subjects of separate reports.

Billingsgate used formerly to be the great centre of the supply to all inland towns. Since the construction of railways the great towns, which used to be supplied from London, are supplied direct from the coast. Crabs and lobsters used in former years to be brought to London in welled smacks. The welled smacks were long ago superseded by steamers; the steamers have since been superseded by the railways.

Crabs and lobsters are sold in different ways in different parts of the country. In Billingsgate crabs are sold by the barrel or the "kit;" lobsters by the "turn." A turn of lobsters consists of different sized fish. The smallest fish are called "Worst Nancy," the slightly larger fish "Best Nancy;"* these are small lobsters $9\frac{3}{4}$ and 8 inches in length respectively. 80 fish—40 Best Nancies, and 40 Worst Nancies—make a turn. A turn may also consist of "Best Doubles;" these lobsters are larger than the best nancy; 40 of them make a turn. A score and a half of large lobsters also make a turn, which in this case consists of 20 large and 10 still larger lobsters. A fishmonger, however, who requires 10 of the largest lobsters is obliged to take (according to the custom of the trade) a turn of "Nancies," and "Best Doubles" as well. In another sense, therefore, a turn may be said to consist of 40 Best Nancies, 40 Worst Nancies, 40 Best Doubles, and a score and a half of large lobsters.

On the coast, crabs and lobsters are usually sold by number or by the "dozen." All fish under a certain gauge (the gauge varying in different localities, and being fixed by the local merchants,) go 2 for 1. In some parts of Cornwall a "dozen" consists of 26 fish over the gauge, or 52 fish under the gauge. In Bognor, how-

* We are unable to ascertain the origin of the word "nancy;" but small lobsters are known as "nintycocks" on the north-east coast of England, and the name is evidently a corruption of the same word.

ever, crabs and lobsters are both sold by weight; and the small crabs on the north-east coast are also sold by weight.

Crabs and lobsters form the most important species of the stalk-eyed crustacea. The principal crab eaten in this country is the *Cancer Pagurus*. Only one species of lobster—the *Homarus Vulgaris*—is found off the coasts of Great Britain. In using the word “crab,” then, we shall always in this report refer to the *Cancer Pagurus*. The word “lobster,” in the following pages, similarly refers to the *Homarus Vulgaris* alone.

Natural history
of crabs and
lobsters.

Till a comparatively very recent period, little was known of the natural history of the numerous crustacea. No naturalist had made it his special business to observe the metamorphoses to which these creatures are liable. Various opinions were entertained by the highest authorities on the subject; and the minute *Zoea*, which have since been proved to be the young of the different kinds of crustacea, were commonly classed as distinct forms of life. About the year 1770, a Dutch naturalist, Slabber, discovered that one of these *Zoea*, which he kept in captivity for the purpose of observation, entirely changed its appearance on the third and fourth days of its detention. The metamorphosis was so complete that some of Slabber's critics doubted whether, in renewing the salt water, he had not accidentally released his original captive, and imprisoned a new one. Subsequent inquiries leave little room, however, for disputing the accuracy of Slabber's observations. In 1823 Mr. Vaughan Thompson “established the remarkable fact that those “anomalous forms which constituted the genus *Zoea* of Bosc are “nothing more than the early or larvæ condition of the higher “crustacea.” Mr. Thompson succeeded in keeping one of the larger *Zoea*, and in watching the same metamorphosis which Slabber had observed. He succeeded in hatching the ova of the common crab, and in establishing the fact that the produce “were “true *Zoeas*.” The late Mr. Couch (whose elaborate researches into the history of almost every form of ocean life have made his name a household word among ichthyologists) repeated Mr. Thompson's experiments. He also succeeded in hatching out the ova of the *Cancer Pagurus*, and in watching the young through two distinct metamorphoses.

The reader, who may wish to pursue the subject further, will find illustrations of the earlier stages both of the lobster and the crab in the interesting introduction to Bell's History of the British Stalk-eyed Crustacea,* and in Mr. Spence Bate's paper in the Philosophical Transactions. We may take this opportunity of saying that we are much indebted to these works for the information with which we have been enabled to preface this report. In a public report of this description, however, it would be impossible to follow out the subject more minutely; but one of us, Mr. Buckland, has, in an appendix,† given detailed results

* London, Van Voorst & Co.

† Joint Appendix No. II.

of his observations and experiments undertaken, during the period of this inquiry, with a view to elucidate the subject.

In the earlier stages of their development, these crustacea, like all others, assume forms which are totally dissimilar from their subsequent appearance. But, when all their metamorphoses are complete, their subsequent growth is still marvellous. The crab measuring an inch across its back, the lobster measuring an inch in the barrel, are as perfect in form and structure as the largest crabs and lobsters. Both the crab and the lobster in their minutest forms are surrounded with a hard calcareous armour-like tegument. The covering cannot by any possibility expand; and how is it possible for the animal to grow without increasing its shell? The problem is solved by the creature withdrawing itself entirely from its shell, having previously secreted a new and larger covering for its future use.

A most remarkable circumstance connected with this episode in the natural history of the higher crustacea is that the animal, when it withdraws itself from its shell, is always considerably larger than the shell from which it is withdrawn. Since the soft new shell, in which the creature is already encased, immediately commences to harden, its growth could be effected by no other arrangement. But the marvellous fact still remains, that the creature is enabled to withdraw itself from its cast shell, and that the shell from which it has withdrawn itself is as perfect and unbroken as ever.

The plates which accompany this report will show, more distinctly than mere words can express, the growth of the crab on casting its shell. (Plate No. 6.)

It would materially have facilitated our labours if we had any reliable data to show at what periods crabs and lobsters cast their shells. We reproduce, for this purpose, the observations of a French naturalist on the subject, which have already appeared in the Report on the Fisheries of Norfolk.* These observations

* According to some careful observations made at the Marine Laboratory, Concarneau, it appears that, the first year, the lobster sheds his shell six times, the second year six times, the third year four times, the fourth year three times.

The following table shows the rate of growth in a lobster after each shedding of its shell :—

Sheddings.	Length.	Weight.	
	inches.	ozs.	drachms.
8th	2	—	1½
9th	2½	—	2½
10th	2½	—	3½
11th	3	—	5½
12th	3½	—	9½
13th	4	—	10½
14th	4½	1	4½

(*Vide* Parliamentary Paper, No. 428, Session 1875.)

would seem to prove that, in the earlier phases of their existence, the lobster and the crab cast their shells repeatedly within the year. It is, we think, tolerably certain that adult female crabs only cast their shells once in each year. But the larger crabs either do not cast their shells at all, or cast them only at remote intervals. Oysters of considerable age are occasionally found attached to the back of a crab; and, as the oyster never attaches itself except immediately after its birth, it follows that the crab cannot have cast its shell during the whole lifetime of the oyster.

Crabs which have cast their shells are known by various names. They are called "casters," "light crabs," "white-footed crabs," "white-livered crabs," and "soft crabs." When the new shell commences to harden, but is still brittle, they receive in some places the expressive name of "glass crabs." In this report we have applied the ordinary term, "soft crabs," to all crabs in this condition.

When the she crab has shed her shell, she appears almost invariably to retire to some comparatively safe hole in a rock. In this position she is usually under the protection of a male. Mr. Couch conceived long ago that impregnation takes place at this period. Mr. Couch's opinion is shared by observant fishermen in every portion of the country, who had probably never heard of Mr. Couch's theory, but who, from their own observations, had arrived at the same conclusion. During the earlier stages of pregnancy the "coral," *i.e.*, ova, are carried inside the shell of the crab. During the later stages they are extruded, and attached to some delicate appendages placed beneath the crab's tail for the purpose. Crabs from which the berries or coral have been thus extruded are called "berried" crabs, "seed" crabs, "spawn" crabs, and "ran" crabs. They are spoken of in this report as "berried" crabs.

There are both positive and negative reasons for conceiving that the female crab, when the berries are extruded, migrates to some warm sandy plateau more suited for the development of the zoea than the rocky shores which form her usual habitat. The negative evidence, on which we found this inference, consists of the fact that, though Cornwall produces larger and finer crabs than any county in Great Britain, berried crabs are hardly ever taken on the coast. The positive evidence to the same effect is found in the circumstance that berried crabs are taken by the trawlers in the English Channel, and in the very remarkable fact, which we learned at Scarborough, that berried crabs are constantly taken in large numbers off the Texel, and no crabs except female crabs are ever found there.

So far as we can gather, the habits of the crab are nearly similar in every part of the United Kingdom. But the seasons for eating crabs vary in a very striking way, and for a very remarkable reason. In Scotland the crabs which are the most highly prized are the females, with red coral or ova inside their shells. A female crab in Scotland is more valuable than a male crab. In England, on the contrary, the female crab is

less appreciated. A very influential witness at Penzance went the extreme length of saying that they were "no good," and ought not to be caught at all. In Scotland, therefore, crabs are chiefly eaten in the summer and early autumn, when the females are in best condition. In England, on the contrary, crabs are considered at their best in the early spring, when the male is most full of meat.

The natural history of the lobster generally resembles the natural history of the crab. The lobster, like the crab, in the earliest stages of its growth, bears a form wholly different from that of its adult state. The lobster, like the crab, has the power of casting its hard shell and of forming a new shell. The lobster, like the crab, carries its ova during the earlier period of pregnancy inside its shell; like the crab, it has the power at a later period of extruding them and of fastening them to the delicate appendages which are placed for the purpose under its tail.

Manner of
conducting
fishery for
crabs and
lobsters.

The fishery for crabs and lobsters is conducted in every part of the Kingdom in the same manner. Traps made of wicker-work, or of a wicker frame covered with netting, and usually known as "pots" or "creels," are almost universally used. The pot is baited with some fish, fresh fish being preferred for crabs, and stinking fish for lobsters, and sunk in from 3 fathom to 45 fathom water. The crabs and lobsters enter the pot in search of the food through a hole or pipe $4\frac{1}{2}$ to 5 inches in diameter, and are found in it when the pots are examined. The pot or creel, therefore, acts on the principle of an ordinary mousetrap. The number of creels which a boat will carry varies in different localities. In some places as many as 100 creels, in others as few as 20, are carried by a single boat. But in every case the creels are left unattended by the fishermen, and only periodically examined (usually towards dawn) by the owners. A creel, therefore, is a fixed engine, perpetually fishing during the whole crab and lobster fishing season, and only requiring the occasional attendance of the fishermen.

Creels, however, simple engines though they be, have only recently been introduced into some places. The fishermen used to fish with a much more primitive and less efficacious engine. An iron ring had a small net attached to it in the shape of a purse. The net was baited and let down. The fisherman constantly examined the ring to see if there were any fish on it, and the pressure of the water on the ring while it was being drawn up for examination prevented any lobsters or crabs, which happened to have been attracted by the bait, from escaping. The ring therefore required the constant attention of the fisherman, and a boat could not use more rings than the fishermen connected with it could constantly examine. The substitution of creels for rings, therefore, enabled each fisherman to work more traps than he could before, and to work them with very much less labour to himself. It replaced a comparatively inefficient engine with a very much more efficient one.

Having disposed of these preliminary remarks, we proceed

to examine the condition of the crab and lobster fisheries in different parts of this country.

The principal fisheries for crabs and lobsters are on the coasts of Northumberland, Yorkshire, Norfolk, Sussex, Hampshire, Dorsetshire, Devonshire, and Cornwall. We have therefore mainly directed our inquiries to these coasts. In Northumberland we sat at North Sunderland and Cullercoats. We had the advantage at these places of meeting also the fishermen from Beednell, Craster, Hawxley, and Newbiggin; so we practically obtained representative evidence from every portion of the coast of Northumberland. We had witnesses before us at North Sunderland who recollected the time when the lobsters caught on that coast were sent away in welled smacks to London, and when crabs did not pay the cost of carriage to market. The construction of the North-Eastern railway altered the conditions on which the fishery had previously been carried on. Crabs became profitable, and rose in price to 4s. 6d. a score. The increase of price induced more fishermen to follow the trade. The number of boats increased, and each boat carried more gear and more efficient gear. The old "trunks," or iron rings, were discarded, and creels were introduced. Increased fishing led indubitably to a decrease in the number of the fish. The average take of lobsters per boat has been reduced from about 12 to about 3 per day. A witness told us that "when he was a lad he could with his present tackle have got 50 score crabs in a night. The most they ever got last year was 22 score." The failure at Craster and North Sunderland "began to be perceptible about 25 years ago." Some of this decrease is no doubt accounted for by the altered conditions of the fishery. If the number of boats fishing a given space of ground is doubled, each boat has no right to expect to obtain as many fish as it would have done with only half the number of competitors. The whole take has to be divided into more shares, and each share is of course diminished. We have, however, very little doubt that both crabs and lobsters are decreasing in quantity at North Sunderland, and that the decrease is likely to continue if no means are taken to check it.

Condition of fisheries :—

1. Northumberland.

There are, indeed, reasons for fearing that this decrease will in future years become more marked. Up to the last few years the fishing season for crabs and lobsters commenced in December and ended in May or June. During the last few years the fishermen of Beednell, a fishing village near Craster, have commenced fishing in October. The fish which they then caught were crabs, and the crabs thus caught were soft and almost worthless. Some of the Beednell fishermen themselves confessed that the October fishing is wasteful and ought to be stopped. They have the prudence to see that they are themselves destroying their future harvests, and they would welcome legislation which would save them from the consequences of their own acts.

The evidence, which we received at Cullercoats corresponds with that which was offered us at North Sunderland. The fishermen have no doubt whatever that the crabs and lobsters

are decreasing. The decrease has, in fact, been so marked that it has actually, in some cases, led to diminished fishing. It was suggested to us that the decrease was attributable to the very considerable operations which are in progress for improving the navigation of the Tyne. The Tyne Navigation Commissioners have dredged annually some 500,000 tons of clay and other stuff from the bed of the river, have placed it in barges called "hoppers," and carried it out to sea. The alkali manufacturers have, concurrently, disposed of their refuse in the same way. The fishermen allege that this refuse has in some cases settled on the rocky ground near the mouth of the river; that it has had the effect of covering up the holes in which the crabs and lobsters live; that the character of the sea bottom has been gradually altered; and that it has been made less and less suitable for crabs and lobsters; and that the crabs especially have fallen off in consequence. We are far from saying that no attention should be paid to this allegation; we think it probable that these operations may have had a very pernicious effect on the crab and lobster fisheries at the mouth of the Tyne; but we cannot believe that they form the only or even the chief cause of the decrease of these fisheries. The failure which we found at Cullercoats is almost as marked at North Sunderland, and the fisheries off North Sunderland are not injured by any operations such as those which have been conducted at the mouth of the Tyne for the last 20 years. It is a fair inference that the cause which is affecting crabs and lobsters at North Sunderland is also affecting the fisheries at Cullercoats, and that we therefore ought to search for a cause common to both places, and not for a reason singular to only one of them.

We are disposed, then, to conclude that Cullercoats, like North Sunderland, is suffering from over-fishing, and this conclusion is assisted by reviewing the state of things which exists at an intermediate village, Hawxley. We are assured that there is no decrease either of crabs or of lobsters at Hawxley. "There are as many crabs and lobsters as there were 15 years ago," said the first of the three Hawxley witnesses whom we had before us. "The lobsters are just as thick as they were the first day he went to sea," said the second of them. "There is no decrease at Hawxley," said the third. But the Hawxley men have been in the habit of keeping a close season from June to October, and of returning all undersized crabs and lobsters. The success which has attended these self-imposed rules at Hawxley points to their extension to other places; and, as a matter of fact, the fishermen throughout Northumberland are in favour of some such rules as these. "The universal opinion at Craster," said one fisherman to us, "is that the close season should commence on the 1st June and end on the 30th November." The Craster, North Sunderland, and Beednell fishermen are unanimous in thinking that no crab under $4\frac{1}{2}$ inches across the back, and no lobster under 4 inches in the barrel, should be taken. Much the same recommendations were made to us at Cullercoats. No crab, it was suggested, should be

taken under 4 inches across the back, no lobster under 4 inches in the barrel, and a close season during June, July, and August, or during June, July, August, and September, should be observed. We shall consider, in a later portion of this report, the possibility of giving effect to these recommendations; we thought it our duty to note them here.

The fisheries for crabs and lobsters off the coast of Yorkshire 2. Yorkshire. are at least as important as those off the coast of Northumberland. We held sittings at Whitby, Robin Hood's Bay, Scarborough, Flamborough, and Bridlington. At Whitby we had the advantage of obtaining witnesses from the important fishing town of Staithes, and the fishermen whom we had before us were acquainted with the whole Yorkshire Coast. "Crabs have undoubtedly decreased both in size and number," said the first witness whom we examined at Whitby. "The crabs are not so numerous as they were 11 years ago," the "lobsters are also decreasing," said the second witness. "Lobsters have been falling off gradually for the last 50 years"; "the crabs have fallen off in numbers," were the conclusions of the witnesses from Staithes. "The crabs are not so plentiful as they used to be; they have been diminishing in number every year for the last 20 years." "There were twice as many crabs in the sea in 1837 as there are now." Such were the opinions of all the fishermen at Robin Hood's Bay. "There are fewer crabs in the sea than there were—a good deal fewer. The lobsters are also fewer." This was the declaration of an experienced fisherman at Scarborough, which was strikingly confirmed by subsequent witnesses. It may therefore be taken for granted that from the North of Yorkshire to Filey Brigg, the southernmost boundary of the Scarborough fishery, there has been a gradual and serious decrease in the yield of both crabs and lobsters.

Nor are the fishermen unanimous only in pointing to the fact of a decrease. They are equally agreed in attributing the decrease to over-fishing. At Whitby, at Scarborough, and at Robin Hood's Bay the fishermen desire to prohibit the capture of all lobsters under 4 inches in the barrel. At the two former places they are anxious that all crabs under $4\frac{1}{2}$ inches across the back should be spared, while at Robin Hood's Bay they desire to kill all over 4 inches. At Flamborough and at Bridlington, indeed, we heard a somewhat different story. Some of the fishermen thought that there was no decrease; others of them were of opinion that there was no decrease in number, but that the fish were smaller in size. It was proved to us at Bridlington that 30 years ago few small crabs were caught at all. The fishermen avoided the submarine plateau of sand near the quay, where the small crabs are known to congregate, and which is probably a great nursery for them. Of late years, however, this submarine plateau has been the chief fishing place. The railways have created an enormous trade in small crabs which are taken to the great manufacturing towns of Yorkshire, Lancashire, and the midland counties. One witness told us that many a night he has caught 300 of these little

crabs, which are usually sold for 2*d.* or 3*d.* a score. Some of the fishermen insisted that if this trade were stopped they would be unable to earn a livelihood, and would be thrown with their families on the parish. It was satisfactory, however, to find that a minority among them were conscious of the waste which they were occasioning, and anxious to put an end to it. An old fisherman, with 48 years' experience, told us that he and two other men had a 4½-inch gauge made last year, and actually agreed to take no crab below this gauge. He urged us strongly to assent to no gauge of a smaller size. We shall consider, in its proper place, the practicability of these recommendations. We need only remark here that all the fishermen at Flamborough and Bridlington are ready to accept a 4-inch barrel gauge for lobsters and that they are unanimously in favour of a gauge for crabs, some of them desiring to fix this gauge at 4, other at 4½ inches.

3. Cornwall.

The fisheries of Cornwall and Devonshire are in a somewhat different position from those of Northumberland and Yorkshire. If reference be made to a map of Cornwall, it will be seen that two promontories, known respectively as the Lizard and the Land's End, stretch into the English Channel and the Atlantic Ocean. Both these promontories are exposed to heavy seas. Storms constantly interfere with the calling of the fishermen, and the weather itself imposes a natural close season without the intervention of Parliament. At both these places we can trace little or no falling off in the fisheries. "Crabs and lobsters are no scarcer than they were." "There are more crabs and lobsters than ever." Such was the story which we heard at Sennen Cove, near the Land's End. "There is nothing the matter with the fishery." "Lobsters are in about the same quantity they were 20 years ago." "The crabs are more plentiful than they were." Such was the opinion of experienced fishermen at Cadgwith, a fishing village near the Lizard. In both these places, therefore,—one of which, the Land's End, is chiefly celebrated for its lobsters, the other, the Lizard, for its crabs,—there is no trace of any decrease. But in other parts of Cornwall a very different story was told to us. "The fishery is now quite different from what it used to be. Formerly fish were more plentiful and the price was less; now the price is greater and fish are scarcer. Forty years ago a fisherman could catch as many crabs in a day as he would now catch in a week . . . Lobsters are also getting scarcer every year." Such was the evidence at St. Mawes. "There are fewer crabs than there were 20 years ago; lobsters also are scarcer." "Crabs and lobsters are decreasing; they are overfished." This was the story at Durgan. A fisherman at Penberth was "sure the fish are falling off." "The fish are not a quarter so thick as they were formerly" in Prussia Cove, "unless you go a long way off." "The grounds inshore have been fished out, and the men have to go to deeper water." Such was the evidence at Penzance. The same story may be gathered from the evidence in other places. Where the ground is small and sheltered the

fishery is decaying. Where it is exposed to the sea, as at the Lizard and the Land's End, or at some distance from the shore, as at Gorran, near Mevagissey, there is no clear proof of any decrease whatever. The whole of the Cornish evidence may, in fact, be summed up in the sentence that the fisheries in bays require protection, but that the large fisheries off headlands or in the deep water need no protection from the Legislature.

The conditions of Devonshire in some respects resemble those 4. Devonshire. of Cornwall. The finest crabs in the world are caught off the Start Point, and we had the opportunity of examining witnesses belonging to Beeson Sands, Hall Sands, Prawle, Hope, Wembury, and Plymouth, whose evidence discloses the condition of the fishery all round this headland. "There is no lack of fish" at Hall Sands. "The crabs have not fallen off" at Beeson Sands. "There are as many crabs now as there were 35 years ago" at Hope. "The fishery is in good condition" at Wembury. The only contradiction to this universal testimony was given at Prawle and Plymouth. At Prawle there appears to be an undoubted decrease in the number of crabs; but the fishery at Prawle, though on the extreme end of the promontory, is a very small one, extending only half a mile to the east and half a mile to the west of the point. It appears, again, from the evidence at Plymouth, that the crabs immediately outside the breakwater are diminishing in numbers. But this evidence does not militate against our conclusion that exposed fisheries of large areas require little or no protection. The fishermen who gave us this evidence spoke of the ground within three miles of Plymouth breakwater, and this ground is only so exposed in certain winds. There has been a greater increase of fishing upon it than almost in any other place we have visited. The fishermen, moreover, complain that it is partially destroyed by the refuse from the Vitriol Works at Plymouth which is carried in barges out to sea and tipped into the water outside the breakwater. This evidence, of course, resembles that which we received at Cullercoats, and it tallies with it in one respect in a very remarkable way. The fishermen at Cullercoats declared that the lobsters had not suffered from the pollution so much as the crabs, and they professed themselves unable to account for the different effects of the refuse on the two fish. The fishermen at Plymouth also noticed that the pollution had had a less prejudicial effect on the lobster than on the crab fishery, and they accounted for the circumstance by stating that the lobster, being quicker than the crab, got out of the way of the pollution. Whether this explanation be correct or not, it is at least remarkable that, at the two places at which our attention was drawn to the consequences of pollution, the effects should have been observed on the crabs and not on the lobsters.

The conclusion which we formed in Cornwall and in the neighbourhood of the Start agrees also with the evidence which we received in the extreme East of Devonshire at Budleigh Sal-

5. Sussex.

terton. The fishermen there have two grounds at their disposal: one off some rocks, known as the Exeters, out at sea; the other inshore. There is little or no decrease off the Exeters, but there is "a greater decrease in the inshore ground." Bognor, on the coast of Sussex, in some respects resembles Budleigh Salterton. There are some rocks called the Owers 12 miles out to sea, where there is a considerable fishery, and there are no indications of any failure on these rocks. But the inshore fishery is in a different condition. The bottom of the sea is a warm plateau of mud and sand covered with weed, which is apparently a nursery for small crustacea. The smallest lobsters in England are caught on this plateau, and very small crabs are also taken in the immediate neighbourhood off Selsea. The fishermen consider that the lobsters come here from other places for the purpose of reproduction, and they assert that there are no indications of any diminution in the number of these crustacea. It is universally admitted, however, that the crab fishery at Selsea is declining in importance, and that there are not one third so many crabs as there used to be. It ought to be added that Bognor is more dependent on its prawn fishery than on either lobsters or crabs, and that the little lobsters are taken with the prawns in the prawn pots.

We have thus endeavoured to relate some of the salient points in the natural history of the lobster and of the crab; to describe the manner in which the crab and lobster fisheries are conducted; and to review the condition of the principal fisheries on the coasts of this country. It remains for us, in conclusion, to sum up the facts which we have thus related, and to enumerate the rules which, in our judgment, should be adopted for the regulation of these fisheries.

Are the crab
and lobster
fisheries
increasing or
decreasing.

In a great many cases it is not very easy to conclude whether the fishery is falling off or not. The increase in price is certainly in almost every case greater than the decrease in the supply. The take in many cases is not so large as it used to be, but in nearly every place it is more valuable. The increased price, and the greater facilities which railways have afforded for bringing the fish to market, have attracted more fishermen to the pursuit, and have induced them to follow the crabs and lobsters into much deeper water than formerly. It is no very easy matter, therefore, to compare the results of the fishing now with those which were experienced 50 or 25 years ago. The take now is divided among a greater number of fishermen. The area of the fishery has been largely extended. On the whole, however, we believe that we are in the right in concluding that in small fisheries, or fisheries in confined areas, there has been in every case a marked decrease of fish; while in large and exposed fisheries there has been no decrease whatever. Take, for example, the fisheries off the Land's End, the Lizard, and the Start. All these fisheries comprise large areas of sea-bottom, all of them are in exposed situations, and the powers of man have been hitherto incapable of exhausting them. But there are other

fisheries in an exactly opposite position. A description will be found, for instance, in the evidence which we received at Wembury, relating to a small fishery off the Eddystone Rocks. The fishery is contained in a few acres, and, though the situation is exposed, the area is so small that the fishermen have been able to exhaust it. The same conclusion is true of the fisheries which are situated in confined bays, such, for instance, as that at Falmouth. The fishermen there, exposed to no bad weather, are able to pursue the fishery at every season of the year. High prices have induced them to increase the efficiency of their gear, and the gradual decay of the fishery, which over-fishing has occasioned, has compelled them to fish harder and harder to earn a livelihood. The fishermen in these cases are themselves conscious of the loss which they are themselves producing. But without the aid of Parliament they are unable to enforce the regulations which in their judgment would restore the fishery.

As regards the lobster fishery, three suggestions have been made to us for its improvement, viz., the institution of a gauge; the enactment of a close season; and the prohibition of the sale of berried lobsters; but the suggestion which has found most universal favour is the institution of a gauge. In Cornwall and Devonshire, in Yorkshire and Northumberland, the fishermen have almost without exception suggested that no lobster should be sold under a length of about 8 inches. The same recommendation was made to us by the great fish merchants who are established at Hamble, and by the great salesmen in Billingsgate Market. The lobster, it must be stated, is not measured in the same way in all parts of the country. On the north-east coast it is usual to measure it from the tip of the beak to the end of the body or "barrel." At Billingsgate, at Hamble, and on the whole of the coasts of Devonshire and Cornwall, the lobster is measured from the tip of the beak to the end of the tail. On the north-east coast of England it was suggested to us that no lobster should be taken under 4 inches in the barrel. In the rest of England the almost unanimous recommendation was that no lobster should be taken under 8 inches in length. These two recommendations are practically very similar. A lobster 4 inches long in the barrel is usually rather more than 8 inches in length; but, as it is always undesirable to interfere with local customs, we see no reason why both gauges should not be inserted in any Act of Parliament that may be passed. It would then be illegal to sell any lobster which did not measure either 8 inches in length or 4 inches in the barrel.

Suggestions
for improving
the fishery:—

Gauge for
lobsters.

If the gauge be adopted, it is in our judgment essential that it should apply to all the fish markets. The only practicable means of enforcing a gauge is to enforce it in the markets, and the gauge must therefore apply to all lobsters sold in those markets, wherever they may be taken. The only practical difficulty in enforcing the gauge arises from the large importation of Norwegian lobsters, and we think it would be unwise to attempt

any legislation without considering the effect which it might have on this trade.

Norwegian
lobster trade.

It is stated in Vice-Consul Crowe's report on the Norwegian fisheries for the year 1874, presented to Parliament in June 1875,* that "of lobsters there were exported during the year from—

Christiansand	-	-	-	201,980
Mandal	-	-	-	50,000
Farsund	-	-	-	113,518
				365,518†

"The average price is stated to be $5\frac{1}{2}d$.

"Comparing the results of the last three years, it will be seen that in 1874 they were double those of the two preceding.
"Thus:—

		Number of Lobsters.	Value.
1874	-	-	365,518
1873	-	-	294,099
1872	-	-	207,299
			£8,122
			4,356
			3,111"

Mr. Crowe's figures are confirmed by the very important report from Consul-General Jones, which is published in an Appendix,‡ and for which we are indebted to the courtesy of the Foreign Office. "The annual take of lobsters in Norway," says Mr. Jones, "may be estimated at about 1,000,000, representing a value of about 22,500*l*. They are exported chiefly to the United Kingdom, and this trade is rapidly increasing in importance, according to the following returns:—

Year.		Number.	Value.
1876	-	-	No returns.
1875	-	-	400,000
1874	-	-	365,518
1873	-	-	294,099
1872	-	-	207,299
			£8,889
			8,122
			4,356
			3,111"

It is obvious, however, that Mr. Crowe's figures entirely refer to the trade of three particular ports, Christiansand, Mandal, and Farsund. Mr. Jones apparently reproduces, and continues to a later date, the same statistics. But the figures which are thus given cannot represent the whole export trade of Norway in lobsters.§ We had the advantage, at our sitting in the Fish-mongers' Hall, of examining Mr. Fisher, a fish salesman of

* Parliamentary Paper, "Commercial No. 11 (1875), Part IV. [C. - 1238]."

† Sic in report (p. 814), but there is apparently a misprint in the return from Farsund, which should probably be 113,538, instead of 113,518.

‡ Joint Appendix, No. I.

§ The author of "Sport in Norway," writing to *Land and Water*, May 25th, 1867, gives the following particulars concerning the trade in Norwegian lobsters:—"In 1855 there were exported 814,187 lobsters; in 1856, 960,388; in 1857, 717,383; in 1858, 553,238; in 1859, 881,261; in 1860, 1,333,137; in 1861, 1,450,699; in 1862, 1,217,244."

Billingsgate, extensively engaged in the Norwegian lobster trade. "The supply," Mr. Fisher told us, "has fallen off during the last seven years. 10 or 12 years ago he used to have about 600,000 lobsters a year from Norway, from three districts only. Is now working six districts (double the amount of coast), and the six districts only produced last year from 400,000 to 500,000 lobsters." The purport of Captain Harnden's evidence, given to us at Hamble, is very similar, and leaves little room for doubting that there has been a very serious falling off in lobsters in Norway. The matter, in fact, has been before the Norwegian Parliament for three years running. "During the late session of the Storting," Mr. Jones writes, "a Royal Proposition was laid before it," that it should "be unlawful at any time to possess, sell, buy, or receive lobsters under 8 inches in length, as well as lobsters in spawn. The rejection of this amendment was, however, recommended by the Committee appointed to report upon it, on the ground that those best acquainted with the subject failed to recognise its necessity, and, further, that the enforcement of the provisions of the proposed amendment would be attended with much difficulty; that from the statistical facts before the committee there was no evidence of a diminution in the supply of lobsters of late, and that consequently the circumstances did not warrant the adoption of the extraordinary regulations proposed, which would be justifiable only when there was a prospect that without such restrictions the fishery in question would materially suffer."

The rejection of this regulation has virtually left the Norwegian law in the position in which it has remained since 1848. By the law of 1848 a close season for lobsters is instituted, commencing on the 15th July and ending at the close of September. The close season may be varied by the King's authority, but the whole month of August must always be closed. It is, of course, no portion of our duty in this report to pronounce an opinion on the policy of this law, or on the recent rejection of the proposal for its amendment; but the English are so dependent on Norwegian lobsters that it would be folly for us to recommend the institution of any regulations which would be either inconsistent with the Norwegian laws, or have the effect of destroying the Norwegian trade. We concluded, therefore, that we could not do better than state the conditions under which the Norwegian fishing for lobsters has hitherto been conducted.

It will be seen from the foregoing remarks that an 8-inch gauge has already been proposed in Norway. Of the two merchants engaged in the Norway trade, whom we had the advantage of examining, Mr. Fisher, of Billingsgate, was of opinion that an 8-inch gauge would interfere with the Norwegian fishery, but that a 7½-inch gauge would be desirable. Capt. Harnden, of Hamble, on the contrary, concluded that an 8-inch gauge would ultimately be beneficial to it. With Capt. Harnden's evidence before us, we think that Parlia-

ment may fairly enact that, with one exception, no lobster shall in future be sold in this country under 8 inches in length.

Bognor
lobsters.

The exception which, we fear, must be made to this rule, applies to Bognor. Lobsters of a very small size are taken in large numbers off Bognor, and the application of an 8-inch gauge to Bognor would destroy the fishery for lobsters at that place. The fishermen at Bognor desire the institution of a 6½-inch gauge; we have, ourselves, little doubt that a 7-inch gauge would be large enough for the Bognor fishery. If, however, the Bognor fishermen are allowed to take 7-inch lobsters, their sale should be confined within the limits of the county of Sussex. In that case it should be illegal to sell, in Sussex, any lobsters of less than 7 inches in length. Outside the county of Sussex it should be illegal to sell any lobster less than either 8 inches long or 4 inches in the barrel.

Close season
for lobsters.

Two other recommendations have in some places been made to us for the improvement of the lobster fishery. It has been suggested to us that a close season should be instituted, and it has also been suggested that the sale of berried lobsters should be prohibited. A universal close season is impracticable, because the season which would suit one part of the coast would be quite inapplicable to other parts. In a great many places the storms of winter afford by themselves a sufficient close season. On the coast of Cornwall, again, the pilchard fishery practically entails a close season. The drift nets of the pilchard fishermen become entangled with the gear of the crabbers, and the latter have to remove their pots to save their property. On the east coast of England, again, the herring season affords a natural close time. The crabbers leave their pots to follow the herrings, which afford a more profitable industry. A close season is, then, for all intents and purposes, already established in some places. In others, no close season is necessary, on account of the extent and situation of the fishery. No universal close season need therefore be imposed by Act of Parliament. But we are inclined to think that the Secretary of State should have power to institute local close seasons in certain districts; this power, however, should only be exercised after careful inquiry and with very great caution.

Berried
lobsters.

We are also unable to endorse the other recommendation which has been made to us, viz., that the sale of berried lobsters should be prohibited. In the first place, if it were illegal to take berried lobsters, it would not pay the fishermen in many cases to pursue the lobster fishery. In the next place, the lobster when berried is in the very best possible condition for food, and it would be as illogical, therefore, to prohibit its capture as to prohibit the taking of full herrings. In the third place, if its capture were illegal, Mr. Scovell's evidence at Hamble shows that the fishermen would probably remove the berries. The berries would no longer be seen in the market, but berried lobsters would be killed as much as ever. Berried lobsters are, it must

be remembered, especially valuable. The berries are in great demand for sauce and for garnish for fish and salad. We do not for one moment think that the views of professed cooks ought to influence legislation, or that our recommendations ought to be affected by the supposed requirements of the dinner table; but it seems impracticable to make any legislation on the subject, first, because it is not desirable to deprive the public of a large amount of valuable food, and the fisherman of a considerable portion of his profits; and, second, because the prohibition of the sale of berried lobsters would lead to the removal of the berries. We recommend, therefore, the institution of a gauge as the only remedy universally applicable for the improvement of our lobster fisheries.

We are also of opinion that a gauge should be adopted for crabs. But, on this point, we are met with a preliminary difficulty. In the west of England the crabs are all large, and a 5-inch gauge, or in some cases a 6-inch gauge, is required.* On the east coast, on the contrary, the crabs are very small, and a gauge of 4 inches, $4\frac{1}{4}$, or $4\frac{1}{2}$ inches is recommended to us. The east coast fishermen conceive that the whole of England should be open to the sale of these small crabs. But this recommendation we are unable to adopt. In our judgment the proper solution of the difficulty is to enact that in the six eastern counties, Northumberland, Durham, Yorkshire, Lincoln, Norfolk, and Suffolk, no crab should be sold less than four and a quarter inches across the back, and that in the whole of the rest of the country no crab should be sold under five inches. The only danger from the institution of two gauges lies in the circumstance that the small crabs might be sent from Devonshire and sold in Yorkshire. But there is in reality no very great fear of this result; the small crabs do not pay to carry long distances, and it will not pay therefore, as a general rule, to send them from the south to the east coast of England. The only place outside the eastern counties where the five-inch gauge will, so far as we know, be objected to is Selsea, and it is of course possible to get over the difficulty by sanctioning the sale of small crabs as well as small lobsters within the county of Sussex. There is a good deal to be said, from the Selsea point of view, for this arrangement. We are unable to endorse it ourselves, because we believe the Selsea crabs to be the young of a large crab, and not a small kind of crab like those on the east coast of England. The crab fishery at Selsea is moreover admittedly declining, and it requires therefore strong measures to ensure its recovery. We therefore recommend that the 5-inch gauge shall apply to Selsea.

There are two other methods by which the crab fishery may be improved. Though the berried lobster is the most valuable of

Gauge for crabs.

Berried crabs.

* The gauge of course applies from side to side of the crab, and not from head to tail.

Soft crabs.

lobsters, a berried crab is almost valueless. While it would be impolitic to enact that no berried lobster should be sold, there would be no difficulty in enacting that berried crabs should not be sold. It is also most advisable that the sale of "soft" crabs should be prohibited. These fish are watery, have little or no meat in them, and are almost valueless as food. They ought to be returned to the sea to be permitted to recover and grow into marketable crabs.

Enforcement
of law in
markets.

It will be observed, in the foregoing recommendations, that we have uniformly proposed to prohibit the sale, not the capture, of certain kinds of crabs and lobsters. We have done so for two reasons. In the first place "soft" crabs and undersized crabs are occasionally used by fishermen as bait for fish, and we are satisfied that the last thing which legislation should do is to interfere with the bait which fishermen may deem it requisite to employ. Bait is of more importance to the fisherman than anything else. A fisherman told us at Penzance that he would cut up a turbot worth a sovereign rather than be without bait; and it is much better that crabs should be broken up for bait than that hundreds of men should be without employment for want of bait. When bait is scarce it is absolutely necessary to break up the small crabs as bait for wrasse, the wrasse being used, in their turn, as bait for crabs and lobsters.

We believe, moreover, that the only practical way of carrying out any law is to enforce it in the markets. It would require an army of bailiffs to enforce it on the coast. But the sale of small crabs, soft crabs, and berried crabs can easily be prevented, because it is the interest of the trade not to sell them. The small crabs do not pay the tradesman; the soft crabs and berried crabs injure his business by giving it a bad name. We conceive, therefore, that there is no very serious difficulty in carrying out the law in the markets, though there is no possibility of enforcing it on the coasts. So far as London is concerned, the Second Warden of the Fishmongers' Company expressed to us the willingness of the Company to direct their officers to enforce the gauge in the Billingsgate Market.* We recommend, therefore, that these officers should receive express authority from Parliament for the purpose. We have very little doubt that the civic authorities in the other large markets will assist in the same way. The law, therefore, should, for the above reasons, be a law of sale and not a law of capture.

In expressing this conclusion, we have not overlooked the very important evidence which we received towards the close of our inquiry at Birmingham. Birmingham is the great fish market of central England. Fish of all kinds are sent to Birmingham from every part of the United Kingdom, and are distributed from Birmingham, not merely in the Black Country and its immediate neighbourhood, but in Hereford, Aberystwith, and

* Appendix to Report, Evidence, page 30.

other far distant places. The salesmen at Birmingham are unanimously in favour of a law for the protection of undersized crabs and lobsters, and for the prevention of the sale of soft crabs and berried crabs; though they are also unanimously of opinion that such a law ought to be enforced, not in the markets, but on the coasts. Inspectors, in their judgment, ought to be appointed by the Government, who would receive information that undersized fish were being sent from some particular fishing station, who could then go down and inspect the fishermen's barrels, and prosecute the fishermen in whose barrels any illegal fish were found. But the conclusive answer to this recommendation appears to be, that, if Inspectors were stationed round the coast, their cost would be great. The game, in short, would not be worth the candle. If, on the other hand, one or two Inspectors were appointed to supervise the whole country, they would be powerless. The law might possibly be enforced on the spot where they happened to be; it would be openly disregarded in all other places.

We think, therefore, that, if the law which we have recommended is to be enforced at all, it must be enforced in the markets; and we do not think that the evidence of the Birmingham salesmen ought to affect the conclusion. The Birmingham salesmen assert that they receive a barrel of crabs to sell on commission from some part of the coast; that they sell it without opening it or "breaking bulk;" that the retail dealer buys it without examining it; that neither the salesman nor the retail dealer can possibly tell whether any undersized crabs or lobsters are in it or not; and that it would be impracticable for either the salesmen or fishmongers to examine the contents of each barrel which they sell or buy. But we do not think that much difficulty would arise from the circumstance. We asked a retail fishmonger, in Birmingham, what he would do if, on buying such a barrel of crabs, he found certain undersized crabs or lobsters among them, and his reply seems to us to settle the question. He told us that he would then return the fish to the salesman. In exactly the same way the salesman would return the fish to the fisherman; and the fishermen, therefore, would find that they received no money for the fish which they thus illegally consigned, and consequently would cease to consign them.

We are, however, far from saying that the law should in no case be enforced against the fishermen on the coasts; on the contrary, every fisherman who transmits undersized fish to a salesman offers them for sale, and ought to be liable to prosecution for his offence. We have no doubt that, in many cases, it will be possible to prosecute him. But we mainly rely, for carrying out the law, on the prohibition of the sale; and we believe that no other means can be suggested for enforcing it so efficiently and economically.

The only exception to this rule should be in those cases where the Secretary of State may be advised, after an inquiry, to institute a local close season. A local law, so instituted, must neces-

sarily be carried out locally. But, though it may be difficult to enforce on the coast a law of gauge, there is no difficulty in enforcing on the coast a law of close season. It would require an officer in every boat to see that no crab under a certain size was taken; but it would not require an officer in every village to see that no creels were being used. The coastguard could easily enforce a local close season; and, should local close seasons be in any case hereafter instituted, the coastguard might be instructed to enforce them.

Dogs at Hall
Sands.

There are two other matters to which we must shortly refer:—
1st. The fishermen at Hall Sands keep four or five Newfoundland dogs for the purpose of carrying lines from the shore to the boats in rough weather. The surf is so heavy in certain winds, that the only possible way of landing is for the boat to be drawn through the surf by the friends of the fishermen on shore, by means of the lines which the dogs take out to them. The fishermen think it a very great hardship that these dogs should be taxed. We promised to draw the attention of Her Majesty's Government to this matter, and we have accordingly noticed it here.

Trawling.

2nd. On almost every part of the coast we heard complaints from crab fishermen against the trawlers. The crabbers assert that the trawlers injure them in two ways: 1st, by destroying a great many berried crabs and soft crabs; 2nd, by sweeping away their tackle. The first complaint we hope we have sufficiently met by our previous recommendations that no berried crabs and no soft crabs should be sold. The second we do not feel ourselves authorised to enter into in any detail. We think it, however, our duty to say that the complaints against the inshore trawlers, for injuring both the crab and lobster and other fisheries, are so loud and so universal that, in our judgment, it is most desirable that they should be investigated. If they are just, they ought to be redressed; if they are unjust, the trawlers ought to have the opportunity of explaining their injustice.

The Norfolk
Act of 1876.

The recommendations which we have made in the preceding pages in many cases supplement the law which was passed for the control of the Norfolk crab and lobster fisheries in the Session of 1876.* In other respects they are inconsistent with that law. The Norfolk Act instituted a 7-inch gauge for lobsters. We have recommended an 8-inch gauge. We thought it our duty, therefore, to go down to Norfolk and confer with the fishermen on the subject. We held a meeting, for the purpose, at Cromer, which

* The following is a short analysis of the Norfolk Crab and Lobster Fisheries Act:—

I. It is illegal to take or have in possession or offer for sale, under a penalty of 5s. for each offence,—

1. Lobsters from 25th June to 25th July inclusive.
2. Lobsters under 7 inches in length, excluding the horns.
3. Lobsters carrying spawn or ova at any time.
4. Crabs under $4\frac{1}{2}$ inches across the back.
5. Crabs carrying spawn or ova at any time.

II. The Act applies only to the sea coast of Norfolk, from Salthouse to Mundesley and for a distance of 3 miles from the shore.

was largely and influentially attended, and at which it was unanimously resolved to substitute the 8-inch for the 7-inch gauge for lobsters. The Norfolk Act must, therefore, under any circumstances, be amended in this respect. It is, however, evidently desirable that the whole country should be placed under one law; and we therefore recommend that the Norfolk Act should be repealed, and that any of its provisions (such as the institution of a local close season for lobsters) which it may be desirable to retain, should be re-enacted in the new Act.

It is satisfactory to us to be able to state that the local Norfolk Act of last Session has given considerable satisfaction both to the fishermen and generally in the neighbourhood. The gauge of $4\frac{1}{4}$ inches for crabs appears to be well adapted to the coast of Norfolk, and the fishermen wish no alteration to be made in it.

The purport of the whole is as follows:—

Recapitulation.

I. It should be illegal to buy, sell, or offer or expose for sale, or have in possession for sale—

1. Lobsters under, either, 8 inches in length or under 4 inches in the barrel, except in the county of Sussex.
2. Lobsters under 7 inches in length, in the county of Sussex.
3. Crabs under 5 inches across the back, except in the counties of Northumberland, Durham, York, Lincoln, Norfolk, and Suffolk.
4. Crabs under $4\frac{1}{4}$ inches across the back in those six counties.
5. Crabs with berries under the apron.
6. Soft crabs.

II. The officers of the Fishmongers' Company should be expressly empowered to carry out the legislation in Billingsgate.

III. The Secretary of State should have power to institute, after inquiry, local close seasons for crabs and lobsters in any counties or parts of counties.

All of which we submit for the consideration and approval of the Secretary of State.

We have the honour to be, Sir,
Your obedient servants,

FRANK BUCKLAND.
S. WALPOLE.

The Right Hon. the Secretary of State,
Home Office.

REPORT
ON THE
CRAB AND LOBSTER FISHERIES
OF
SCOTLAND.

BY
FRANK BUCKLAND AND SPENCER WALPOLE, ESQRS.,
INSPECTORS OF SALMON FISHERIES FOR ENGLAND AND WALES;
AND
ARCHIBALD YOUNG, ESQ.,
ADVOCATE,
COMMISSIONER OF SCOTCH SALMON FISHERIES.

CRAB AND LOBSTER FISHERIES.

REPORT ON THE CRAB AND LOBSTER FISHERIES OF SCOTLAND.

SIR,

1st March, 1877.

IN obedience to your instructions of the 13th September 1876, desiring us to hold an inquiry into the state of the crab and lobster fisheries of Scotland, we have the honour to inform you that we visited the following places during the months of October and November last, and examined upwards of 150 witnesses, consisting principally of fish salesmen and practical fishermen, with the view of ascertaining the condition and requirements of the said fisheries:—On the east coast, Edinburgh, Newhaven, North Berwick, Dunbar, Cockburnspath, Coldingham Shore, Montrose, Stonehaven, Muchalls, Cove, Aberdeen, Peterhead, St. Combs, Inverallochy, Fraserburgh, Banff, Burghead, Inverness, Wick, Ackergill, and Thrumster; on the north coast and in the Orkney islands, Huna, Thurso, Kirkwall, and Stromness; and on the west coast and in the Hebrides, Stornoway, Tarbert in Harris, Portree, Tobermory, Salen, Oban, and Glasgow.

Extent of inquiry.

The crab fisheries of Scotland are almost entirely confined to the east coast, and to the north coast from Duncansby Head to Loch Erribol. The most productive lobster fisheries are to be found in the Orkney Islands, in the inner and outer Hebrides, and in the sea lochs of the western coast.* A good many crabs, indeed, are caught in the lobster creels on the west coast; but they are not appreciated and scarcely used for local consumption, while they are so far from a market where they would meet with a ready sale that they do not stand the journey, and it does not therefore pay to send them.† On the east coast,

Position of the Scotch crab and lobster fisheries.

* The Scotch lobster fisheries produce altogether about 300,000 lobsters annually, most of which are forwarded to the English markets.

† It is possible that increased facilities of transit may yet develop the crab fisheries of the west coast and islands of Scotland.

on the other hand, crabs are a favourite article of food among all classes, and are largely exported to London and other markets to which there is ready and rapid access.

Evidence of
decrease—

1. In crabs.

There was a general agreement among the witnesses examined that both the crab and lobster fisheries have considerably fallen off, and that neither in numbers nor in size are the fish equal to what they were 40, 30, 20, or even 10 years ago.

First, as to the crab fisheries :—Mr. John Anderson, one of the principal fishmongers in Edinburgh, who has been 44 years in business, says :—“Crabs have decreased very much. The decrease began fully 10 years ago, and is both in size and numbers. “They have decreased more than half.” Mr. Joseph Johnson, of Montrose, the head of the greatest firm of fish merchants in Scotland, who has been acquainted with the crab and lobster fisheries from Cape Wrath to Montrose for more than 50 years, considers that “the crabs have diminished 50 per cent. in number.” James Walker, fisherman, Gourdon :—“The crabs are getting very scarce. They are less than one half of what they were 36 years ago. During the last 20 years they have been falling off gradually.” George Buchan, fisherman, Buchanhaven, “thinks they” (the crabs) “are falling off. . . . They have diminished about one half.” Mr. Stevens, fish curer, Bodham, “used to go about as a boy with his father 25 years ago. Caught many crabs then. Caught 72 crabs, full-grown, in one creel. There were plenty of crabs at that time. They are much scarcer now. Nobody at Bodham now fishes for crabs; it does not pay.” James Brodie, of Cratown, “has been fishing for crabs for 30 years. There were 9 boats at Cratown 30 years ago; there are 8 now. Thirty years ago boats used to carry 5 to 10 creels for each man; now they have 40 to 50 betwixt two men. They caught a good deal more with 10 to 12 creels than they do now with more than double that number.” William Ritchie, fisherman, Whitehills, thinks “there are fewer crabs than when he began fishing.” Mr. Adam Macdonald, Inverness, “used to deal largely in crabs. Since 1842 he has been purchasing them for the purpose of sale. They are not nearly so plentiful now as they were in 1842.” William Thomson, Thurso, “has been a crab and lobster fisherman for about 35 years. There are a good many crabs all about the coast, from Loch Erribol to Duncansby Head; but not a fourth of the number are now taken that were got 35 years ago. There has been a decrease also in size.” Robert Miller, fisherman, North Berwick, “has fished for 20 years. . . . When he first began he used to get a creel full of crabs; now he only gets 9 to 12 crabs in a creel. Has seen as many as 35 crabs in a creel.” Alexander Combie, Dunbar, “has fished for crabs for the last 50 years. When he was a boy there were three for every one now, and they were also larger. They have gradually degenerated.”

2. In lobsters.

Next, as to the lobster fisheries :—Mr. Anderson, Edinburgh, says :—“They” (the lobsters) “have diminished both in size

“and number. The decrease began 20 to 25 years ago. They have decreased one half in the last 20 years.” Mr. James Muirhead, Edinburgh :—“Lobsters have decreased a great deal in size, not so much in numbers.” Mr. John Jamieson, Edinburgh :—“The lobsters have diminished both in size and quantity.” Mr. Joseph Johnson, fish merchant, Montrose, also speaks to a falling off in lobsters. Walter Noble, fisherman, Fraserburgh :—“Lobsters have fallen off very much. . . . Twenty to thirty years ago they used to catch 100, 70, or 80 in the 24 hours. They now get a dozen to half a score in the 24 hours.” William Dunbar, Brawl Castle, Thurso :—“Lochs Laxford and Erribol and the Kyles of Tongue are almost fished out. They would not now yield anything like half of what they used to yield.” William Thomson, fisherman, Thurso :—“Lobsters are getting scarce. Four times as many were taken 35 years ago as are taken now, yet there are now four times as many boats fishing. Thirty-five years ago 2½d. and 3d. was the price of a marketable lobster; now 1s. 6d. is paid.” David Gunn, fish merchant, Wick :—“From about 1860 there has been a decrease in the supply” of lobsters. Alexander Mitchell, chief constable, Caithness-shire :—“There is no doubt that the supply of lobsters has been falling off.” Robert Brough, fish merchant, Kirkwall, “thinks that lobsters are scarcer. . . . Two men 20 or 30 years ago would take 1,200 to 1,400 lobsters in a fishing season. Now they would not get above 200 lobsters.” Donald Macdonald, steamboat agent, Portree, 12 years supercargo in the steamer “Clydesdale” :—“The lobsters now have fallen off so much in size that twice the number are put in a box that there used to be.” John Robertson, fish merchant, Portree :—“The lobsters are not so plentiful as they were in 1862, but there is more difference in the size than in the number. The lobsters are measured by the barrel gauge, and lobsters below 4½ inches, or wanting a claw, count two for one. There are a larger proportion of lobsters under gauge than there used to be. About 20 per cent. of the lobsters were under gauge in 1862, and about 50 per cent. are so now.” Kenneth Smith, fish merchant, Stornoway :—“There are more boats fishing than there were, and each boat has more creels. The boats ought therefore to get more than they used to do; and as they do not, lobsters cannot be so plentiful as they were.” Norman McLeod, junior, general dealer and fisherman, Tarbert, Harris :—“Mr. Maclachlan, of Glasgow, was the first man who started the fishing for lobsters in East Loch Tarbert. He sent a smack down about 22 years ago. The men fished for him in the winter season and spring. The fishery was very successful. There were not so many boats—not a fourth part so many—as there are now. They fished with creels. The few boats started at that time caught as many lobsters as the 44 boats catch now. Thinks, therefore, indeed is sure, that the lobsters are falling off in numbers in East Loch Tarbert. The lobsters are also falling

" off in size. They have not time to come to maturity. Thinks
 " the fishing gets worse every year. The proof of this is that
 " the fishermen have to leave the Harris coast for the Lews,
 " Skye, and North and South Uist." William Macqueed, agent
 at Tarbert for Mr. MacIachlan :—" One dozen lobsters 20 years
 " ago would weigh as heavy as two or three dozen now." Roderick
 McKay, a lobster fisherman of Tarbert of 40 years' experience :
 —" There are not so many lobsters in any place as there were
 " 40 years ago. . . . The lobsters are also smaller." Mr.
 Maclean, general merchant, Tobermory :—" The lobsters have de-
 " creased in average size. The two-for-one lobsters form nearly
 " half the whole take now." David Campbell, fish merchant,
 Salen, " has been acquainted with the lobster fisheries of Mull
 " and the immediately adjacent lochs and islands for more than
 " 30 years, since 1844. Lobsters have diminished both in number
 " and size since he began business." William Sproat, Procurator
 " Fiscal, Tobermory, " has been 30 years resident in Tobermory,
 " during which time he has paid considerable attention to the
 " lobster fisheries around Mull and the neighbouring islands.
 " Lobsters are not nearly as plentiful as formerly, and on an
 " average not above half the size. Places that were productive
 fishing grounds when he first came to Mull are now almost
 exhausted." Captain Swinburne, R.N., " is proprietor of
 Eilean Shona and of the island of Muck, in the county of
 " Inverness. Has paid much attention to the subject of the
 " lobster fisheries and prosecuted them for three years (from
 " 1856 to 1859) in the neighbourhood of Eilean Shona and
 " Ardnamurchan. Thinks that lobsters have fallen off both
 " in number and size." Mr. Hugh MacIachlan, fish merchant,
 Glasgow, one of the chief fish salesmen in Scotland, who has
 been 30 years engaged in the lobster trade, says :—" Lobsters
 " have decreased greatly in size as well as in number. If there
 " were as many lobsters in the sea as there used to be, the
 " increased number of boats and creels should catch four times
 " as many as they do."

Contrary
evidence.

It is then clear that a very large majority of the witnesses,
 with special means of arriving at a just conclusion on the
 subject, are satisfied that the crab and lobster fisheries of
 Scotland are in a state of gradual decay. In a few cases,
 indeed, we have heard a different story. At Muchalls, for
 instance, a fishing village on the coast of Aberdeenshire, the
 fishermen considered that crabs were not scarce. We were told
 by Donald Mowat, a fisherman with 35 years' experience, that
 " There are plenty of crabs in the neighbourhood " of Duncansby
 Head, in the extreme north of Scotland. " There is no differ-
 " ence in their size or number as compared with former years."
 Alexander Greg, manager at Arbroath for Joseph Johnson and
 Sons, thought that " crabs and lobsters are just as plentiful
 " as they were seven years ago ; lobsters, if anything, more
 " plentiful." George Wood, a fisherman of Johns Haven assured

us that "there has been no falling off" since 1827. George Bruce, a fisherman at Peterhead, thought that "crabs have not diminished either in size or number." Peter Sinclair, a fisherman of Stromness, believes that the ground on which he fishes produces as many lobsters as it did 30 years ago. Murdo Morrison, of Bernera, similarly "believes that there are as many lobsters caught now" on the Atlantic coast of the Hebrides "as there were 30 years ago." Kenneth Smith, a fish merchant in Stornoway, "obtains as many lobsters as formerly." James McSween, a fisherman of Stornoway, "has fished for lobsters for 15 years; gets as many now as he got 15 years ago." There is, therefore, a minority among the witnesses who disbelieve in the alleged decay of the fisheries. We are ourselves of opinion that the crab fisheries on the east coast of Scotland are almost universally deteriorating. We are also of opinion that the lobster fisheries, as a whole, are falling off both in the size and number of fish caught. But a distinction must be drawn between the lobster fisheries in sheltered places and the lobster fisheries farther from the shore or exposed to the Atlantic. We have no doubt whatever that the patches of lobster ground, which are sheltered or partly sheltered by the adjacent coast, and where almost continuous fishing is possible, are being rapidly fished out; but there are large tracts of almost illimitable extent on the Atlantic shores of the Orkneys and the Hebrides where the evidence of deterioration is much less distinct. The fishermen in these places, prevented by storms from continuous fishing, are compelled to observe a storm-imposed close season. Nature, in fact, makes a close time of her own.*

In those places where it was acknowledged that the fishery was falling off the decline was almost unanimously attributed to one of the three following causes, viz., over fishing, catching immature fish, and fishing at inappropriate periods of the year. For instance, Mr. Joseph Johnson, of Montrose, attributes the falling off to over fishing and the want of a close season. Mr. William Ritchie, of Whitehills, compares catching crabs in June, July, and August to cutting green corn. William Thomson, of Thurso, states that lobsters are fished all the year round, and thinks that over-fishing is the cause of the diminution. Mr. John Jamieson, of Edinburgh, attributes the decrease in lobsters to over-fishing and fishing all the year round. Walter Noble, fisherman, Fraserburgh, thinks that lobsters are too much fished in summer and winter. David Gunn, fishmerchant, Wick, attributes the decrease to over-fishing. Alexander Mitchell, chief constable of Caithness, Robert Brough, fish merchant, Kirkwall, John Robertson, fish merchant, Portree, and Mr. MacLachlan, of Glasgow, are all of the same opinion.

Decrease due
to over-fishing.

* It is, perhaps, worth observing that, when the herring season commences, the more active men leave the crabs and lobsters, and go to the herring fishing.

Effect of creels.

Over-fishing has, indeed, been stimulated during the last few years by the invention of a much more efficacious mode of catching crabs and lobsters. 30 years ago, the fishermen in many places were accustomed to fish with "rings" alone. They now almost universally use "creels." The ring was an iron ring with a small net attached to it in the shape of a purse. The ring was baited and let down to the bottom of the sea. The fisherman constantly examined the ring to see if there were any fish on it, and the pressure of the water on the ring, while it was being drawn up for examination, prevented any lobsters or crabs which happened to have been attracted by the bait, from escaping. The ring, therefore, required the constant attention of the fishermen, and a boat could not use more rings than the fishermen connected with it could constantly examine. A creel, on the contrary, is a pot made of wickerwork or of a wicker frame covered with netting. The crabs and lobsters enter it through a hole or pipe $4\frac{1}{2}$ to 5 inches in diameter and are found in it when the pots are examined. The creel, therefore, is a fixed engine, unattended by the fishermen and only periodically examined, usually towards dawn, by its owner. The substitution, therefore, of creels for rings enabled each fisherman to work more traps than he could before, with very much less labour to himself, and also to work them in much deeper water. It replaced a comparatively inefficient engine with a much more efficient one.

The increase of fishing, which we have thus noticed, and which has led to the introduction of more efficient means of capture, has been of course stimulated by the increased facilities of transit, which railways and steamboats have of late years afforded.

We have thus summarised the evidence which we have received relative to the increase or decrease of the crab and lobster fisheries of Scotland; and we have stated the causes to which the witnesses were agreed in attributing the decrease. The remedies which they suggested were the institution of a close season and the fixing of a gauge.

Close season
and gauge.

In the case of crabs, nearly 30 witnesses advocate the combination of a close season and a gauge, whilst only seven are opposed to a close time, and only four to a gauge. 45 witnesses are in favour of the union of a close time and gauge for lobsters, and only five object to a close time.*

A close time alone would prevent the capture of the fish when they are out of condition, but it would do nothing to prevent the

* The reason that so many more witnesses are found supporting the combination of a close time and a gauge in the case of lobsters than in the case of crabs is, that, all around the coasts and among the islands, evidence was given about lobsters, whereas the lobster fishermen in the western islands only take crabs by accident; there is no market for them and scarcely any local consumption, except at Oban during the tourist season; so that many of these witnesses declined to give evidence respecting the crab fisheries because they had no special interest in or knowledge of them.

taking of too small crabs and lobsters during the fishing season. A gauge alone would put a stop to the taking of immature and undersized fish, but it would be no test of the condition of the fish caught.

But when we consult the evidence with the view of ascertaining over what period of the year the close time shall extend, and what shall be the size of the gauge, we find a great diversity of opinion. Taking crabs in the first place, we find nine different gauges suggested, varying from 6 to 3 inches measured across the longer diameter of the shell,* while no fewer than 27 different periods of close time are proposed. The most popular gauge is the 5-inch which has 20 supporters; and next to it are the $4\frac{1}{2}$ -inch which has 10, and the $5\frac{1}{2}$ -inch which has five. The close time during June, July, and August has eight advocates; that during November, December, and January, has five; and that from 1st August to 1st April has four. At least as great a diversity of opinion exists as to the most appropriate close time, and the most suitable gauge, for lobsters. But with respect to the gauge, there are two sizes which have far more supporters than any of the others—in the first place, the 8-inch gauge, which has 30 supporters, and in the second place the 9-inch gauge, which has 25. As many as 23 different periods of close time for lobsters were brought under our notice in the course of our inquiry, some witnesses suggesting only one month, while others wished the period prolonged to seven months. But among all the different periods suggested, one had decidedly a strong majority of witnesses in its favour—the period, namely, from 1st June to 1st September, which had 12 supporters; whilst the next most popular period, from 1st May to 1st September, had only six. It will be observed, that both these periods of close time include the summer months and the first month of autumn. But some witnesses objected to both these periods on the ground that the fishing in the stormy seas around the Orkney Islands, and in the still more valuable and as yet imperfectly developed lobster fisheries on the Atlantic shores of the Lews, Harris, and the long stretch of islands extending from the Sound of Harris to Barra Head, can only be successfully prosecuted in the summer months, and that, if these months were closed the fisheries would be practically stopped altogether. It is, perhaps, a sufficient answer to this objection that an overwhelming majority of the witnesses who speak of the lobster fisheries in these stormy seas are in favour of a close time during the summer months. For example, five out of the seven witnesses examined at Wick, who gave evidence with regard to the lobster fisheries about the exposed coast near Wick, and in the rapid and tempestuous Pentland Firth, supported such a close time. Donald Thomson, a fisherman of 35 years' experience of the fisheries between the Ord of Caithness and Cape Wrath, is in favour of a close time from 15th June to

* The gauges suggested are as follows:—6-ins., $5\frac{1}{2}$ -ins., 5-ins., $4\frac{3}{4}$ -ins., $4\frac{1}{2}$ ins., $4\frac{1}{4}$ -ins., 4-ins., $3\frac{1}{2}$ -ins., and 3-ins.

1st March ; John Bain, another fisherman, supports a close season from 15th June to 31st January ; Finlay McLean, a third fisherman of 40 years' experience on both sides of the Moray Firth, and at the Land's End, proposes to close June, July, August, and September ; David Gunn, fish merchant, Wick, would shut June, July, and August ; and John Mackie, editor of the "Northern Ensign," is in favour of the same close time as Donald Thomson, —from 15th June to 1st March.

We found a similar preponderance of evidence in favour of a close time during the summer and autumn months at Kirkwall and Stromness, the chief towns of the Orkney Isles. At Kirkwall, five witnesses were examined, four of whom support a summer and autumn close time, and the fifth advocates a close time, without saying what it should be. Robert Brough, fish merchant, Kirkwall, would close July, August, September, and October ; Donald Neil, fisherman, Kirkwall, "thinks the close season should commence on 1st July, and "should last two or three months" ; Joseph Murrell, fish-curer and fish salesman, Stromness, would have the close season commence on 16th July and close on 1st December ; Robert Hercus, fisherman, Kirkwall, "thinks July, August, September, "and October, would be a sufficient close season" ; and John Hercus would have the close season "commence in July, and end "in October." At Stromness, Samuel Flett, fisherman, is in favour of a close time from 1st August to 1st January ; and Peter Sinclair and William Stanger, both fishermen, and the only other witnesses examined, would have a close season during June, July, August, and September.

Even in Stornoway, the capital of the Lews, the largest and most populous of the Hebrides, whose western coasts are exposed to the full fury of the Atlantic gales, the great majority of the witnesses are of the same opinion. Murdo Morrison, Island of Bernera, "is in favour of a close season in June and July." George Macaulay, Island of Bernera, says : "The fishing season "now commences on the 1st August, and ends in the following "June. The lobsters are not fished in June and July, because the "men cannot get enough for them to make it worth their while, "and the buyers won't buy because the lobsters won't stand the "carriage. . . . Never fishes in June or July now. These months "are practically a close season. The coast is very stormy, and "the fishermen would be stopped eight to nine days a month "throughout the year." Kenneth Smith, fish merchant, Stornoway, "is in favour of a close season in May, June, July, and "August." Archibald Munro, manager at Stornoway for Mr. Mac-lachlan, of Glasgow, "is in favour of a close time for lobsters. It "should commence on 1st May and terminate on 30th September." John McSween, fisherman, Stornoway, "would have a close season "commencing 1st May and ending 30th September." John Macdonald, fisherman, Stornoway, "is in favour of a close season, com-mencing 1st April and ending 30th September," and so is Angus

Macleod, another Stornoway fisherman. Then, at Tarbert, in the island of Harris, we find the Scarpa fishermen voluntarily instituting and observing a close time from May to December with the best effects; and if we look at the evidence given at Tarbert, we find that it corroborates that previously cited in favour of the propriety of closing the summer and part of the autumn months. Norman Macleod, jun., general dealer and fisherman, Tarbert, "is in favour of a six months' close season. Would commence fishing at the end of November and end at the beginning of May." William McQueed, for 25 years buyer for Mr. MacLachlan, of Glasgow, "is in favour of a close season in May, June, July, and August." Robert McKay, fisherman and fish salesman, Tarbert: "There are only a few fishermen fishing lobsters in the summer time. Sends lobsters away himself in summer time. Sends them to London and Manchester. Many die; sometimes they all die. This is a great waste, and ought to be stopped. Would like to see it stopped. . . . Is in favour of a close season, commencing on the 12th May, and would resume fishing on the 1st September." David Macdonald, fisherman:—"The Scarpa men begin fishing in November and stop at the beginning of May. . . . The Scarpa men are all against fishing in summer and harvest time, and he agrees with them." Malcolm Kare, fisherman, West Loch Tarbert:—"There were 30 times more lobsters when he began fishing 46 years ago than there were when he left off 12 years ago. Attributes decrease to summer fishing." Ewen Macdonald and Donald Munro, fishermen, Tarbert, are both "in favour of a close season, commencing 1st May and ending 31st October."

Coming now to Mull, a very important member of the Hebridean group of islands, from which at least 40,000 lobsters are annually exported, we find additional evidence in favour of a close time for lobsters, including the summer months. Duncan Campbell, fish merchant, Salen, Mull, says:—"The close time should be from 1st June to 1st September." Archibald Maclean, general merchant, Tobermory, "is in favour of a close time for lobsters from May to September, inclusive." David Campbell, fish merchant, Salen, "would restrict the close time to July and August." David Sproat, Procurator Fiscal, Tobermory:—"The close time should be that of the old Act of George II., from 1st June to 1st September. Neil Macquarrie, fish merchant, Tobermory:—"If there is to be a close time would restrict it to the months of July and August." Lastly, Mr. Hugh MacLachlan, fish merchant, Glasgow, who has probably had the longest experience in the lobster trade of any man in Scotland, "Would have the fishing season to extend from 1st October to 1st May, and would have the rest of the year close time. . . . Is of opinion that the close time suggested would not interfere with the productiveness of the fishings on the west coast of the Long Island, and of the other Outer Hebrides, because the lobsters caught in these places during the warm

" months won't carry to market, the localities are so remote. They won't keep. There is a great loss, even in the case of the lobsters caught on the Atlantic seaboard of these islands during the latter half of May, in their transit to the English markets."

Close time
under Act of
Geo. II.

It is worth observing that the three months of June, July, and August, which the majority of witnesses thus indicate as the best close time for both crabs and lobsters, are precisely the months which the Act 9 Geo. II. c. 33. sec. 4, enacts as the close time for lobsters.

But there seems to be a general impression that the statutory close time for Scotch lobsters provided by the 4th section of this Act, though never expressly repealed, has fallen into desuetude and is no longer binding owing to the long period of contrary usage. It may be worth while examining whether this is really the case or no. The greater portion of this Act was expressly repealed by the Statute Law Revision Act, 1867, but the 4th section was not repealed.

This section, which applies to Scotland alone, is interesting as showing that the habits and natural history of the lobster had been carefully considered by the promoters of the Act:—"And whereas the destroying the fry or spawn of any fish is highly prejudicial, especially such fish as do not wander, but keep about the coasts; and whereas the principal time for the spawning of lobsters is from the beginning of June to the 1st of September, in which three months the lobsters crawl close to the shore to leave their spawn in the chinks of the rocks, and as much under the influence of the sun as possible: Be it therefore enacted, by the authority aforesaid, that from and after the 1st day of June 1736, no fisherman, or other person or persons whatever, shall, with trunks, hoop nets, or any other way, take, kill, or destroy any lobsters on the sea coast of that part of Great Britain called Scotland, from the 1st day of June to the 1st day of September yearly, under the penalty of 5*l.* sterling for each offence, to be recovered by any person who shall inform and sue for the same upon a summary complaint before any two or more of his Majesty's justices of the peace of the shire on the coast where any such offence shall happen to be committed."

According to the law of Scotland, a Scots Act, that is an Act passed by the Parliament of Scotland previously to the Union of England and Scotland, may cease to be binding by a long course of contrary usage. No statute, however, can be abrogated by mere non-usage or neglect of its provisions for any length of time. There must be distinct and positive contrary usage. But the statute in question is in no respects a Scots Act. It was passed nearly 30 years after the Union, and only one of its sections applies to Scotland exclusively. It seems doubtful, therefore, whether it can be held to have fallen into desuetude. Neither Mr. Stewart nor Mr. Paterson gives the least hint that it has done

so. The former, in his treatise on the Law of Scotland, relating to Rights of Fishing, says (pp. 70, 71), "The Act 9 Geo. II. c. 33. sec. 4, imposes a close time for lobster fishing from 1st June to 1st September. An infringement of the regulation subjects the offender to a penalty not exceeding 5*l.* for each offence;" and Mr. Paterson, in his "Fishery Laws of the United Kingdom," says in a note (p. 167), "There seems to be a close season for lobsters from 1st June to 1st September, 9 Geo. II. c. 33. sec. 4."

But even assuming that the statutory close time applicable to Scotch lobsters might be abrogated by a long course of contrary usage, there is scarcely adequate proof in the evidence laid before us that there has been a sufficient course of such contrary usage. It is true that the great majority of witnesses examined had never observed, had never even heard of, the statute; and the contrary usage of fishing all the year round, instead of observing the close time seemed almost universal. But, on the other hand, there was clear evidence of the Act having been observed and enforced. Joseph Johnson, fish-merchant, Montrose, "recollects 30 years ago that the Act 9 Geo. II. c. 33. sec. 4, providing a close season, was strictly enforced. Has heard men say it was close season and you could get no lobsters." John Robertson, fish-merchant, Portree, "is aware of 9 Geo. II. c. 33. sec. 4, instituting a close season for lobsters. Most of the fishermen are aware of it. It was once enforced or threatened to be enforced in the Lews." Captain Swinburne, of Eilean Shona, states that "while engaged in lobster fishing, he himself always observed the close time . . . provided by the Act." There is, therefore, evidence that within the memory of living men the Act has been observed and enforced; and in the face of this, it can scarcely be maintained that there has been sufficient contrary usage to abrogate it.

But, if it is doubtful whether the Act belongs to the class of Acts which may be abrogated by a long course of contrary usage, and if, even assuming it to belong to that class, there is good evidence that there has not been a sufficient course of such contrary usage, it naturally follows that, before our recommendation of a gauge alone for lobsters could be given effect to, with a power to the Secretary of State to institute, after inquiry, local close seasons, it would be expedient to repeal section 4 of 9 Geo. II., c. 33.; as otherwise persons might possibly, for the sake of recovering the penalty, turn informers against those fishing during the close time prescribed in the Act, especially after attention has been prominently directed to it during the course of the present inquiry.

The evidence, then, which we had the advantage of receiving in Scotland, pointed decisively, 1st, to the fixing of a gauge both for crabs and lobsters; and, 2nd, to the institution of a close season for lobsters, embracing the summer months. It pointed also, though less distinctly, to the institution of some close

General results
of evidence.

Machinery for
enforcing the
law.

season for crabs. But the witnesses were much less unanimous as to the best and most effectual means of enforcing the legislation, which they were agreed in recommending. Some witnesses suggested that the close time and gauge might be enforced by the officers of the White Herring Fishery Board, or the officers of the Coast Guard or Customs, and a few advocated the appointment of special fishery officers for the purpose. The officers of the White Herring Fishery Board, of the Coast Guard, and of the Customs have, however, other duties to perform; and besides, at some of the most important fishing stations, none of them are to be found. In the 56 islands, for example, constituting the Orkney group, there are three policemen and one fishery officer; yet the annual export of lobsters from Orkney is not much under 80,000. The same remark would apply to the island of Lews and Harris, which annually sends away a similar number of lobsters, and to Benbecula, North Uist, and Barra, which are likewise most productive lobster grounds.

Nor is the suggestion that special fishery officers should be appointed for the purpose of enforcing the close time and gauge more practicable. The question at once arises, Who is to pay them? There is no right of private property in crabs and lobsters as in salmon fisheries, and, therefore, there is no owner whose interest it is to watch them and pay for their protection. It is certain also that the fish merchants and fishermen would object to pay for what some of them might consider an undue interference with their rights, and it would be inexpedient to charge the public revenue with the cost of protecting fisheries which contribute nothing to its support. It is very difficult therefore, to devise effectual machinery for enforcing locally any regulations which may be made. It would not indeed be very difficult to enforce a close season on the coasts. A fisherman cannot go out fishing for crabs and lobsters without attracting the attention of his neighbours. The machinery which he uses is cumbrous. He sets his creels in places where any fisherman can see the corks or bladders, and he therefore subjects himself to a prosecution by any one who may be anxious to enforce the law. But it would be almost impossible to enforce a gauge locally. The fisherman who took any under-sized crabs or lobsters would naturally place them in the bottom of his basket, and as it would be the duty of no one to search the basket the offence would not be detected. But, though there is a difficulty in enforcing a gauge on the coasts, there can be no difficulty in enforcing it in the markets. It is the interest of the fishmonger to refuse under-sized fish, as the smaller fish do not pay him; and there can be very little doubt that, if it were made illegal to sell small crabs and lobsters, the chief fishmongers in the country would decline to receive them, and the main inducement for the fishermen to take them would be removed.

It is obvious, however, that neither a close season nor a gauge can be enforced in the markets, unless the same close season and the same gauge are universally, or nearly universally applicable. If it

be made illegal to sell small crabs and lobsters in London and Edinburgh, or to sell them in June, July, and August, it must be illegal to sell them from whatever source they may be obtained. There is, we believe no difficulty whatever in enacting that no crab under five inches in greatest length, and no lobster under either eight inches in length, or four inches in the barrel, shall be sold. That law will suit the whole of Scotland, and we understand that it will also suit, with exceptions which have been discussed by two of us elsewhere, the whole of England. But there is much more difficulty in enforcing a close season in the markets. There is no doubt whatever that a close season for lobsters from 1st June to 1st September would be quite suitable to Scotland. But the great supply of lobsters for the markets arrives not only from Scotland, but from Norway, France, Ireland, and the south-west of England. The close season which would suit Scotland would certainly not suit England, Norway, and France, and therefore, if a close season be enforced at all, it must be enforced on the coasts and not in the markets. The difficulty with crabs is even greater. It is by no means certain that the same close season for crabs is desirable throughout Scotland, or that any close season at all is necessary on the north-west coasts. In lieu, therefore, of suggesting any general close season for either crabs or lobsters we think it better that the Secretary of State should have power to prescribe, after inquiry by some competent person, local close seasons adapted to the requirements of each district. Such a course will, we believe, prove more beneficial to the fisheries than the enactment of a uniform close season for the entire country.

There is another matter which we believe requires attention. The fishermen who fish in the autumn months are in the habit of destroying large numbers of "soft" or "light" crabs. These crabs, which have only recently cast their shells, are worthless as food. We propose that it should be illegal to expose these crabs for sale. We should have been very glad to have been able to recommend that they should not be taken, and we exceedingly regret that we cannot do so, for two reasons. First, because, as we have already stated, there is no available machinery for enforcing a law of this nature on the coast, and we are unable to see how any efficient machinery for the purpose can be provided except at very great cost; and, Second, because these crabs are used as bait. The only other practicable remedy we believe to consist in the institution of local close seasons applicable to those places where, and times when, soft or light crabs are wantonly destroyed.

It is alleged that, where mussels are scarce and dear, crabs form the best bait for cod, haddocks, and other fish captured by means of the long 'lines; and that it would, therefore, be a great hardship to enact any statutory provision preventing the use of the small and soft crabs which it is at present the custom to break up and use for bait. A glance at the evidence will show the nature of this objection as well as the extent to which

the crabs unfit for human food are broken up and used as bait. The matter was first prominently brought under our notice at Aberdeen, by Mr. William Paul, who stated that he "has often in November himself seen great baskets full of crabs, all of which were unfit for human food. These crabs are used as bait. The breast is pulled off and the back is used. The crab is the best bait, far better than mussels. A line of 40 score hooks is baited, one half with crabs (if they can be got) and one half with mussels or bullock's liver." George Bruce, fisherman, Peterhead:—"Uses small crabs for bait in May and June. They are put on hooks to catch cod. During these months small crabs are valuable for bait. . . . Few partans" (*i.e.* large crabs) "are used as bait. If it were made illegal to take these small crabs as bait it would be a little inconvenience to the fishermen." Alexander Leper, fisherman, Muchalls:—"In the winter crabs are used as bait. . . . Every third hook on the long lines is baited with crabs, while two-thirds of the hooks are baited with mussels and bullock's liver." James Watt, fisherman, Gardenstown—"Would never consent to a law that would prevent fishermen taking crabs for bait." Andrew Wilson, fisherman, Macduff:—"They require a good many crabs for bait. The very smallest are a useful bait. . . . Would have no gauge for crabs, because it would prevent the small ones being used as bait." William Davidson, fisherman:—"He must have crabs of all sizes for bait for taking cod; mussels are no good. The cod come in seeking the crabs when they are shelling their shells. The bait he uses at that time is soft crabs." John Strachan, fisherman, Inverallochy:—"It would be unjust to deprive the fishermen of the use of them" (the crabs) "as bait. . . . Would greatly object to any law about crabs if the law proposed made it illegal to use crabs for bait during the months of July, August, and September, because the crabs then are the best bait for cod. If a law were made for prohibiting the use of crabs for bait it would be broken, especially in the case of old people, who then would be obliged to break the law in order to get a living." Finlay McLean, fisherman, Wick:—"A great many crabs are broken up for bait in the course of the year. It would be a great hardship to prevent the crabs being used for bait. There are six families in one village in Sinclair's Bay who live entirely by using crabs for bait."

The above affords sufficient proof of the use of soft and under-sized crabs for bait in certain parts of Scotland, and also shows that there are a good many persons who think that the destruction of those immature crabs and lobsters, which admittedly takes place in certain localities on the east coast, is not only excusable, but right and necessary, because it supplies a portion of the bait required for the long lines.

On the other hand, several witnesses were of a different opinion. George Wood, Johns Haven, says he "has broken up

" crabs for bait when bait was scarce. If it were made illegal to take small crabs, wouldn't break them up for bait." Mr. Paul, Aberdeen :—"Thinks that the wanton destruction of crabs unfit for food is the cause of scarcity. . . . Thinks that a continuance of this improvident mode of fishing will lead to further evil. . . . The great object of the fishermen is to get crabs for bait. Crabs are the most successful bait. . . . Other bait is always available. The provision of other bait would be more expensive, but the evil would not be comparable with the evil done to the crab fisheries. . . . Taking crabs out of season is almost entirely due to taking crabs for bait. . . . Does not think that the fish caught with crabs as bait compensate the consumer for the crabs that are destroyed." Alex. Leper, fisherman, Muchalls :—"If crabs were prohibited as bait, could get other bait for the long lines." Walter Noble, fisherman, Fraserburgh :—"Partans are very good bait. . . . There is plenty of bait at this time of the year (October). Crabs are easiest managed ; they should not be used for bait." William Buchan, fisherman, Fraserburgh :—"Crabs should not be allowed to be used for bait. The fishermen could get other bait." Robert Miller, fisherman, North Berwick :—"The cause of the falling off is the use of small crabs as bait for the lines. All the fishers use lines from April to June." James Gullan, fisherman, North Berwick :—"A great many partans are used for bait for haddock and whiting. . . . Crabs are only used on every tenth hook. If a law affecting all alike were made that no small partans should be used for bait, he would not object to it, and he should think the other fishermen would agree to it."

There is, then, much diversity of opinion among the fishermen of Scotland as to the expediency or in expediency of using crabs for bait. Without expressing any opinion on the propriety of the practice, we may repeat that we cannot recommend any legislative interference with its continuance, because we are satisfied that if such a law were made it would be impossible to enforce it. The soft crab would be broken up out at sea, and no one would be able to ascertain whether it was broken up or not. The only possible method of interfering with the practice is for the Secretary of State to institute a local close season, in which no creels or other engines whatever may be used, and in which, therefore, scarcely any crabs would be caught. It would perhaps be justifiable to institute such a close season during the months of October and November, when the soft crabs are chiefly used for bait on the Aberdeenshire coast, where the loudest complaints were made against the practice, and on the coasts of Haddingtonshire, where soft or light crabs are wantonly destroyed in these months.

One other recommendation which has been made to us requires to be noticed. It has been suggested to us that the sale of berried lobsters and berried crabs should be prohibited. So far

Berried crabs
and lobsters.

as berried lobsters are concerned, we are unable to endorse this proposal. In the first place, if it were made illegal to take berried lobsters, it would not in many cases pay the fishermen to pursue the lobster fishery. In the next place, the lobster when berried is in the very best possible condition as food, and it would be as illogical, therefore, to prohibit its capture as to prohibit the taking of herrings with roe in them. But the case of berried crabs is different. The berried lobster is the most valuable of lobsters; a berried crab is almost worthless. It would be impolitic to enact that no berried lobster should be sold, but there would be no difficulty in enacting that no berried crab should be sold or exposed for sale.

Recapitulation.

In terminating this Report we desire to state the conclusions at which we have arrived with regard to the crab and lobster fisheries in Scotland. These are:—

First. That the said fisheries have on the whole fallen off during the last 30 years, and that there is every probability that they will continue to decrease unless some steps are taken to restore them.

Second. That the causes of this decrease are twofold, first, over-fishing; and, second, taking undersized crabs and lobsters.

Third. We therefore recommend:—

I. It should be illegal to buy, sell, or offer or expose for sale, or have in possession for sale:—

- (1.) Lobsters under either 8 inches in total length or 4 inches in the barrel.
- (2.) Crabs under 5 inches across the greatest length of the back.
- (3.) Soft crabs.
- (4.) Crabs with berries under the apron.

II. The Secretary of State should have power to institute, after inquiry, local close seasons for crabs and lobsters in any counties or parts of counties.

All of which we submit for the consideration of the Secretary of State.

We have the honour to be,

Sir,

Your obedient servants,

FRANK BUCKLAND.

S. WALPOLE.

ARCHIBALD YOUNG.

The Right Hon. the Secretary of State,
Home Office.

REPORT
ON THE
CRAB AND LOBSTER FISHERIES
OF
IRELAND.

BY,
J. ALOYSIUS BLAKE, Esq., MAJOR JOSEPH HAYES, and
THOMAS F. BRADY, Esq.,
INSPECTORS OF IRISH FISHERIES.

REPORT
ON THE
CRAB AND LOBSTER FISHERIES
OF
IRELAND.

Office of Irish Fisheries,
SIR, 12, Ely Place, Dublin, 31st January 1877.

WE have now the honour to submit for the information of His Grace the Lord Lieutenant our report upon the Crab and Lobster Fisheries of this country, having just concluded the inquiries made around the coast in accordance with the instructions of His Grace as conveyed in your letter of the 23rd August last.

Our investigations were confined to the following points, being the same as ruled the gentlemen appointed to conduct similar inquiries in England and Scotland, viz. :—

1st. "Whether the Crab and Lobster Fisheries are increasing or decreasing."

2nd. "If they have decreased, the cause of such decrease."

3rd. The measures which it may be expedient to propose for the purpose of arresting any further decrease.

Appended will be found a list of the places where we held official inquiries, and the tenor of the evidence received at each, besides which we investigated the question at various other places when travelling from one point to another.

Generally we found that in most places there had been no diminution in the supply of lobsters.

In the localities where it was reported that a decrease had taken place in the supply, we found it had arisen from the following causes :—

1st. Along the north and east coasts, because great facilities exist for ready transit to the English and Scotch markets by steamers plying across Channel, leading to over-fishing.

2nd. That in other places, from some of the fishermen having obtained different employment, they had abandoned fishing altogether.

3rd. From the fishermen capturing everything in the shape of a lobster that they could take, down even to 3 or 4 inches in length.

It would appear that the demand for lobsters is likely to increase as greater facilities arise from time to time, by railway and steam extension, of getting them to markets where they were formerly almost unknown, and that consequently increased inducements will be held out for capturing them of every size, as it appears that even the smallest meets with ready sale. We are strongly of opinion that in order to maintain those fisheries where no diminution has taken place in their present productiveness, and to restore those where production is said to have diminished from over-fishing, that certain restrictions should be made respecting the smallest size that should be permitted to be captured.

As regards close season: legislation on this point does not appear to be of importance, as during the winter months the fishing ceases altogether; practically it may be said that the lobster fishing season in Ireland is between 1st May and 30th September, although in a few places the fishing begins somewhat earlier and continues later.

With regard to the pea, or berried lobster, the evidence tended to show that they are to be had at all times of the year, although perhaps in greater abundance in the months of July and August.

We consider that it is not necessary to interfere with the summer fishing by imposing any close time during that period, as, from the great uncertainty of the weather and the nature of the coasts, although the fishermen would appear to have six months for this fishing, yet in reality they often are unable to fish during half that time.

The fishermen almost without exception, and the buyers as a body, are in favour of legislation to prevent lobsters under 9 inches in length, measuring from the end of the tail to the tip of the beak, from being taken; the very few who are opposed to this restriction are unimportant in number and intelligence.

We are quite of this view, as really a lobster under that size is of little value, and we strongly recommend that it be made illegal under a penalty for any person in any part of the United Kingdom to capture, fish for, or aid or assist in taking or fishing for, or to buy, sell, or expose to sale, or have in his custody or possession, any lobster under the size above mentioned.

To secure such a law being carried out, it would be necessary that certain persons should be authorised and enjoined to seize any lobsters found in the possession of any person under the specified size, and to proceed against them for the penalties.

It would appear to us that the proper persons in Ireland should be the Inspectors of Irish fisheries, or any persons acting under their authority, the coast guards, the constabulary and police, and market officers in the various towns.

As regards crabs, with but few exceptions, all around the coast there appears to be an abundant supply, but from the difficulty of conveying them alive to the principal markets, and there being little local demand for them, they are not worth fishing

for, as they seldom produce for the captors more than 10*d.* to 1*s.* per dozen.

At the present time no legislation would appear to be necessary as regards crabs; but in view of additional means of quick transit springing up, and markets opening for the sale of this fish, *it might be well to enact that no crab should be permitted to be taken of less than 5 inches in length across the back at its greatest measurement.*

We have, &c.

(Signed) JOHN A. BLAKE.
 „ JOS. HAYES.
 „ THOMAS F. BRADY.

The Chief Secretary for Ireland,
 &c. &c. &c.
 Dublin Castle.

APPENDIX

TO

REPORT ON THE CRAB AND LOBSTER FISHERIES

OF

ENGLAND AND WALES.

EVIDENCE.

Independent School Room, Mevagissey, Friday,
15th September 1876.

PRESENT :

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

MATTHIAS DUNN (*examined by Mr. Buckland*). Is a fish buyer. Has lived 45 years in Mevagissey, and has bought the produce of seven boats since 1874. The season for crabs began in February and ended in August. He agreed to pay 26s. per "dozen" for crabs not less than 8 inches along the back; a dozen is 26; paid the same price (26s.) for two "dozen" (52) crabs under 8 inches, but not less than 5½ inches. Crabs of less size than 5½ inches to be sold as humps, pouchers, or shes at 2s. per short dozen (12). When humps are small three are counted as two. A small hump would be about 4 inches across the back, but they are never measured. The question of size is left to the conscience of buyer and seller. Three small male crabs could therefore be sold occasionally for 4d., and each of these would sometimes in a clear season, i.e., say from February to the summer of the following year, or 18 months, grow into crabs worth 1s. each. Believes that they might grow even more quickly than this, if they happened to fall in with good feeding ground. Crabs are exceedingly full of meat before casting their shell, and he believes that young crabs will cast their shells as often as they can fill up. Never saw more than three she crabs carrying ova during the season. The ova is carried in a flap or pouch under the belly. On an average in 1874 there were three females to one male. The humps (small male crabs) were thrown in and sold with the females (she crabs), and the small male crabs would be sometimes one sixth of the whole. As the season advanced the male crabs would be even more numerous. The average catch per day during the season for the seven boats was about three large crabs, worth 1s. each.

These seven boats fish within 7 miles of Rame Head. The crab fishery extends along the coast to a distance of 3 or 3½ miles seawards. The Gorran Haven fishermen fish eastwards of Fowey, and the Port Looe fishermen fish

CRABS.

Season for.

Mode of counting.

Casting their shell.

Spawning.

CRAY-FISH.

CRABS.

*Habitat.**Bait for.**Migration.**Breeding.**Pots.**Casting their shell.**Growth.**Gauge.**Berried.**Used for bait.*

LOBSTERS.

Price.

of Cornwall. He cannot speak as to beyond St. Ives, but the fishery is not prosecuted with so much avidity on the north coast as on the south. Cannot mention any cove on the south coast where crabs are not caught more or less. In the Scilly Islands there are many cray-fish and lobsters, but no crabs. There is very little weed for the large crabs. The large crabs live on rocky bottom, the small ones on stony and sandy bottom. The trawlers by night find the bed of the sea covered with small crabs, which feed by night and retire into the sand by day. The depth of water where the large crabs are caught varies from 8 to 30 fathoms. He prefers the crabs from the deepest water. The largest crabs are caught farthest out. Thinks that crabs pick up small rocklings. The best bait for crabs are wrasse, shark, gurnet, &c. cut up. The strongest smelling bait and the highest coloured has the preference. Stinking bait is no good. The white hound is preferred by fishermen because of its smell.

Crabs migrate to and from the shore. In the spring, the deepest boats have the most fish. In the summer the crabs are nearer the land but more scattered. In autumn they return back to the deep water, and are lost sight of from about the middle of September to the following spring. In December he was at Plymouth, and saw humps with well-developed spawn, which had been brought in by trawlers from the sea 18 miles out. Saw three humps himself in April and May with well-developed spawn; they were nearly ready to hatch their ova. The smallest humps are half an inch, and are to be seen at all times of the year; they are found in the greatest numbers in the spring, above low water spring tides, close to the land. Thinks the spawn is deposited out at sea and carried in-shore by some arrangement of nature, such as the tides. They breed in the winter, and the young ones appear in the spring. The smallest crabs seen are as small as small can be. The fishermen use ordinary crab pots, the ribs of which are not more than 2 inches apart. These pots will take crabs about 2½ inches across, and would catch a 2-inch crab, but not many as small as that. The fishermen do not catch crabs as small as the Norfolk "toggs;" if caught they would be thrown back.

Thinks crabs shoot their shells at least once a year, and as often as they fill up. They must cast their shell more than once in 16 months to grow from 4 inches to 8 inches across.

The average catch of boats is only three crabs a boat per day; but they also catch lobsters, and a cray-fish or two, and perhaps two dozen humps. One boat could set a hundred pots. This, however, is an extreme case.

(By Mr. Walpole.) Considers the present want of a law on the subject unsatisfactory, and desires to prohibit the capture of small male and small female crabs, and would prohibit the capture of all crabs under 5½ inches. The Norfolk gauge of 4½ inches would be too small. This gauge, 5½ inches, would be sufficient. There would be no practical difficulty in enforcing a gauge, as all the fishermen carry an 8-inch gauge for selling purposes. Would compel the fishermen to carry a gauge. Never heard any objection to this, and the fishermen would like it. If a gauge were in force locally, it would not pay to carry undersized crabs away to any distance; but it would be better to prohibit the possession and sale of small crabs. Would also compel the return to the sea of crabs carrying berries. Has only seen three crabs carrying berries. This regulation would be of no consequence to in-shore fishermen, and would only be important to the deep-sea fishermen. The latter take crabs 18 miles away from the shore. As the law prohibiting capture would not apply to such a case as this, there must be a law against the possession of small crabs, and if legislation is to be effective it must affect the possession even more than the capture.

Crabs are not broken up for bait on the coast near Mevagissey, only soft crabs. Thinks if it were made illegal to catch or possess small crabs that a few would be broken up for bait, but not a great many. It is cheaper to buy bait than to catch it. They would be broken up when the bait was scarce. Fishermen, however, would use spider crabs and not edible crabs. Crabs go out to the deep sea from August to February, and make a close time for themselves. The great point is the capture of small crabs.

In 1874 witness agreed to buy lobsters of 11 inch at 1s. each, under 11 inches at 6d. each. There was no other restriction as to east of Falmouth. This embraces 17 or 18 miles of coast. There are crabs in every cove from Mevagissey to the Land's End; in fact all along the coast

size. Had only 150 lobsters from seven boats in six months. Thinks the ground is over-fished because his neighbours found some new ground out at sea, three or four miles to the eastward, and caught from 100 to 150 lobsters a week per boat. Cannot say whether lobsters migrate. About half the lobsters were above, and half under, 11 inches in length. Has seen lobsters 18 inches long, and others only 4 or 5 inches long. These small ones also fetch 6d. each. The heaviest he ever saw was 11 lbs. in weight. Has no suggestions to make as to legislation for lobsters.

LOBSTERS.

ROBERT POMEROY (*examined by Mr. Walpole*). Is a fisherman. Lives at Gorran Haven. Has been fishing for 10 years. Goes crab and lobster fishing. There are 24 boats fishing from Gorran. Sells crabs in the neighbourhood and to smacks from Southampton and other places. Sells crabs above 8 inches long at 1s. 3d. each; below 8 inches and not less than 5½ inches, for half price. Crabs below 5½ inches are sent away as "shes," reckoned at two for one, or three for two. The Gorran boats go as far as Deadman Point, and from the shore to three miles out. The boats go out about three miles a day. The highest number of pots carried by a boat is 84; the numbers vary from that number down to 60. They sometimes take small crabs. Seven or eight large crabs is the average take per day. From May to June the she crabs come in and the men get small crabs. They never see she crabs much before May, the small crabs come in with them. Has seen a few she crabs with berries—one or two in a season. They are always thrown overboard. Thinks the crabs spawn out at sea and migrate with the young ones afterwards. Thinks they spawn in deep water in the early part of the year. Crabs are found on rocks and sand. Rocks are best for lobsters and sand is best for crabs. Would like to see an Act of Parliament making it compulsory to throw small crabs back into the water. Thinks females under 5 inches should be thrown overboard, and all males under 5½ inches. There would be no difficulty in having two gauges, one for males and one for females. There are a great many females above 5 inches and under 5½ inches. The outside size for she crabs is 8 or 9 inches. An "outside" male crab would be 12 or 13 inches.

CRABS.

*Mode of counting.**Migration.**Spawning.**Habitat.**Gauge.*

Thinks it is not necessary to have a law about females carrying berries, but considers that the trawlers bringing in berried hens do a great injury to the crab fishers, and this should be prevented. But the trawlers could cut away the berries, and the crabs could be afterwards sold. Never saw a crab with the berries cut out or removed, and could not say whether it could be detected.

*Berried.**Trawlers.*

Nature makes a close season, and no legal close time is necessary. The only regulation necessary is the prohibition of the capture of small crabs. Crabs are not decreasing in numbers. Thinks there are more crabs caught than ever. But fishermen go further out to sea for them. There are a great many more fishermen than there were. Some seasons crabs are more plentiful than they are at others. Crabs are dearer than they were, but this is due rather to an increased demand than to diminished supply. They are sent to all the large towns in England. Thinks if small crabs were thrown away there would be an increase of big ones. There is no want of food, and the supply might be increased. There is plenty of food for double the number of crabs.

*Close time.**Increase.*

Thinks crabs migrate from place to place. Cannot tell the age of crabs nor the rate of growth. A crab of 4 inches would cast his shell three times before he reached 8 inches. Has marked a soft crab with his initials in July or August, and in the following spring has caught a hard crab with the same initials. It was about 8½ inches across when marked. Does not know whether the crab grew much after it was marked, but thinks not.

Casting their shell.

There are 24 boats at Gorran Haven, five or six at Mevagissey, and 26 at Port Looe.

The lobster season begins on January 1st and ends at the end of September. Lobsters are fished for in deep water till August, and inshore after then. The boats come inshore in August to get out of the way of the drift nets, or they would keep in deep water. The average take per boat per day is one or two lobsters. A lobster of 11 inches sells for 1s. 3d., under that size for half price. About half the catch are 11 inches long. Berried hens are very scarce; they are found chiefly in the spring. Thinks lobsters spawn off-shore, in deep water.

LOBSTERS.

*Migration.**Spawning.**Decrease.*

Lobsters are not increasing in number, indeed they are not so plentiful as they were. Perhaps they are over-fished in the deep water where most of the

LOBSTERS. berried hens are caught. The only way to make them more plentiful is to prohibit their capture in deep water, but this would be beyond territorial limits and could not be enforced. There are so few berried hens caught that it is not worth while putting them back. No berried hens are under 10½ inches, and that is very rare, they are usually above 11 inches. Very few undersized lobsters are taken. Calls small lobsters those under 6 inches. Lobsters do not breed when they are small. Does not think it would do to have a gauge for lobsters. Crab and lobster pots are identical, and crabs and lobsters are sometimes taken in the same pot. The same bait does for both. Fresh fish is the best bait, and neither crabs nor lobsters will go in unless there is some smell in the fish.

Spawning.

Pots.

Bait.

CRABS. The fishermen break up crabs as bait for wrasse, &c., but not for crabs. Thinks the fishermen would not generally break up the small crabs for bait. The spider crabs are generally used for this purpose, and are as good a bait as the common crabs.

Used for bait.

JAMES BILLING, of Gorran Haven (*examined by Mr. Buckland*). Has been crab fishing for 40 years. The crabs are not less numerous than they were 40 years ago. They vary in certain seasons. There are now more fishermen in search of them, and so they may not catch so much per boat. 40 years ago there were five or six boats; there are now 24 boats, and yet there are as many crabs as ever. The sizes are the same now as formerly. There are as many large crabs as there used to be. Does not think a close season for crabs necessary, as there is a natural close season. Thinks little crabs should be put back into the water. Would keep all crabs 5½ inches across, and throw overboard those of 5 inches and under. Agrees with Mr. Pomeroy as to a gauge of 5 inches for females and 5½ inches for males. Never sees any "seeding crabs" (berried hens) except in spring, and then only a very few. He throws overboard "seeding crabs." This is generally done.

No decrease.

Gauge.

Spawning.

(*By Mr. Walpole.*) Thinks there is no decrease in the number of crabs, but wants legislation because little crabs could grow into big ones. There are now 24 boats where there used formerly to be only six, and the 24 boats catch more than the six. More little crabs, as well as big ones, are taken. There are more crabs caught now than there were 40 years ago. Does not think there were more big crabs in the sea 40 years ago than there are now.

Increase.

LOBSTERS. The fishermen catch as many lobsters now as they did 40 years ago. As they get more money per lobster, each boat earns more money. There is no decrease in the number of lobsters; in fact, though there are 24 boats instead of six, his boat catches more lobsters than it did 40 years ago. He used to go out about the 14th January. Now he goes out close on Christmas. Does not think it necessary to have any legislation for lobsters. Agrees with Mr. Pomeroy's evidence as to the price of lobsters. 40 years ago lobsters were sold at 7s. a dozen above 11 inches in length. Below that size two lobsters counted as one.

Increase.

Price.

CRABS. **THOMAS LEY.** Is 73 years of age. Lives at Mevagissey. Has been crabbing for 12 or 14 years. This was 50 years ago; but recollects crab fishing for 63 years past. In the interim has been seining. There are not so many large crabs as there used to be, but there are more small crabs. When he was a boy he caught 20, 30, or 40 large crabs, measuring 8 inches across, a day. This was with 40 pots; now with 40 pots he would not catch more than three or four. Thinks the large crabs have got scarcer because there are so many boats after them. 55 years ago there were five boats, now there is not one from Mevagissey, but the Gorran men fish there. Does not himself go crabbing now, and cannot tell what Gorran men catch. When he said they caught three or four crabs a day, it was from hearsay. The crabs brought to market now are not so large as they used to be. The crabs come to the ground from deep water. The fishermen cannot fish out of the ground. There is very little trawling off Mevagissey because the ground is rough—rocky and stony. Rough ground is favourable for breeding crabs. Would prohibit the capture of all crabs under 5 inches.

Decreased size.

Gauge.

(*By Mr. Walpole.*) His evidence relates to 50 years ago. His evidence as to crabs now is hearsay evidence. There was no law about crabs when he was a lad. Crabs when he was a boy were 8s. a "long dozen" of 26, from March to May; after May they were 6s. a dozen of 26. This was 50 years ago.

Price.

Has seen lobsters all sizes. They are just the same in size and numbers as they used to be. Has no other recommendation to make.

LOBSTERS.

No decrease.

JAMES PAWLYN (*examined by Mr. Walpole*). Is a fish merchant at Mevagissey. Has been 10 or 12 years in business. Deals in crabs and lobsters with the Gorran men, and along the coast. There are six boats at Fowey. One at Polkeris, one at Par, three at Charlestown, two at Porthpean; two principal crabbers and three others at Mevagissey. 24 at Gorran, 24 at Port Looe, one at Port Holland, about five or six at Porthscatho.

Boats.

Ten years ago the highest price for crabs of 8 inches and over was 9d. Under 8 inches two counted for one. Those under 6 inches went for "shes" and the price was 1½d. each.

CRABS.

Price.

Lobsters under 11 inches sold for 9d., below that size two went for one. Now the highest price for crabs of 8 inches is 1s. 3d. Under 8 inches two count for one. Under 6 inches they go for "shes," and sell at 2½d. each. The Gorran crabs fetch the highest price. The ground there is more rocky and better than elsewhere in the neighbourhood. The best fish are caught from January to May. The price has increased about one half.

LOBSTERS.

Price.

He gets fewer big crabs than he did 10 years ago and fewer lobsters. The size of the lobsters remains about the same. Has the whole take of some men whose take he had 10 years ago. These men do not fish less, but fish harder than they did. They have more craft and positively take fewer fish. The seasons vary, but the produce is falling off. Attributes the falling off to the small crabs being taken. The small crabs are as numerous as ever; but the price of small crabs has risen through the increased demand and the deficient supply of large crabs. People now buy small crabs where they used to buy a big one. Sends his crabs and lobsters everywhere, to Birmingham, Bristol, Gloucester, &c. Proposes to prohibit the capture of all he crabs under 6½ inches, and of all "shes" under 5½ inches. She crabs are good when smaller than he crabs. He crabs grow larger. Has not seen many seeding crabs in all his experience. They spawn far out to sea. Prefers his gauge to that of the Gorran men. Has no other recommendation to make as to crabs.

Decrease.

CRABS.

Gauge.

Spawning.

The supply of lobsters is falling off as much as that of crabs, especially at Fowey. Eight or ten years ago he used to get double the number he gets now. All the take comes to him.

LOBSTERS.

Berried.

The remedy is not to take the berried hens, but they are the best fish, and very numerous in the early part of the year. There is a demand for them in the London market, and they fetch a high price. If the capture of berried hens were prohibited there would not be enough lobsters to supply the demand. Does not think, if the capture of berried hens were prohibited, that the fishermen would remove the berries. They might remove them when they were very ripe. Would not personally consent, for the sake of future benefit, to sacrifice the present advantage of selling berried hens. Would prohibit the capture of all lobsters under 8 inches long. About 1 in 6 or 1 in 10 are under 8 inches. Thinks this would help to arrest decrease, but would not be sufficient. Is not, however, prepared to recommend the prohibition of the capture of berried hens, which would entail a serious loss on fishermen and salesmen. Undersized fish pay the fisherman better than the salesman, as they do not pay for the cost of carriage.

Gauge.

(*Examined by Mr. Buckland*.) Never saw many seeding crabs. Thinks crabs spawn far out to sea. Crabs and lobsters are sent away alive. He does not plug the crabs, but cuts them, so that they may not bite one another. The crabs that are boiled are boiled alive. Lobsters go up by ordinary train. Few are boiled here. They reach London in 24 hours.

Plugging and nicking.

PETER BILLING, nephew to James Billing. Has heard Mr. Pawlyn's evidence. Thinks Mr. Pawlyn is wrong in thinking that crabs are decreasing. Mr. Pawlyn gets as many fish from the fishermen as he used to do 10 years ago, if not more. He himself catches as many crabs as he used to do, and he has fished for nearly 20 years. There are as many crabs and as many lobsters, but there are more boats to divide them between. Each boat takes less, but the fish are on the whole as plentiful as ever. Thinks that no legislation is necessary, but agrees with Mr. Pomeroy's, and Mr. James Billing's evidence as to a 5-inch gauge for females, and a 5½-inch gauge for males; but he would himself recommend no law, as crabs are not decreasing.

CRABS.

No decrease.

Gauge.

Fishes in the same place as he used to do, and does not fish more in-

- LOBSTERS.**
—
shore. Can catch small crabs in and out. Small crabs are very numerous now.
- Norwegian.*
Mr. Pawlyn's proposed 8-inch gauge for lobsters would take in all the lobsters from Norway and Shetland, and stop all the trade with those countries. Cannot get himself enough large lobsters to get a living, and is obliged to catch small ones. A few lobsters may come within shore to spawn. If the capture of berried hens were stopped the fishermen would not get a living by lobster fishing. The little crabs get out of the pots. He throws overboard all small crabs under 5 inches across. As the fishermen do throw overboard all the small crabs now, a law to compel them to do so would make no practical difference.
- Spawning.*
Norway lobsters are under 8 inches, or about that size. They are a very small lobster. Thinks big crabs are as plentiful as ever.
- CRABS.**
—
No decrease.
DAVID PATON. Lives at Gorran, and has been crabbing for 12 years. Thinks he has taken as many crabs this year as ever, and there are more now than any other year. The end of the season has been the best for 12 years. Sells his crabs to Mr. Pawlyn. There is no decrease in the number. Has sold more in previous years, but has sold them to other people this year. Mr. Pawlyn took his fish up to the end of June or July, and after that they were sold to other people. Hence Mr. Pawlyn knew nothing about it. Agrees with Mr. Pomeroy and Mr. Billing that all "shes" under 5 inches, and all "hes" under 5½ inches should be thrown away. Thinks this would make crabs more plentiful. These small crabs are sold now as two for one. Lobsters are just as plentiful as ever. Would like to turn away all lobsters under 6 inches long. These small lobsters are sold now, but not often taken. There are so few lobsters under 6 inches caught that it would not be worth while to make a law to affect them.
- Gauge.*
LOBSTERS.
—
Gauge.
(By Mr. Buckland.) Small she crabs breed. Throwing back the small crabs would increase the breeding stock. When he sees crabs with seed they are generally small ones. Large he crabs are 13 inches. Large females are 9 inches. Living is bad now, and must not be made worse.
- CRABS.**
—
Breeding.
RICHARD CLIMO. Lives at Gorran Haven. Thinks lobster seasons vary. There are more boats now than there used to be, and they catch more fish altogether, but less per boat. Used to go lobstering 40 or 50 years ago at Polruan. There was then only one boat, to work five or six miles of ground, now there are 10 or 12 boats on the same ground. In the old times there were good years and bad years, and there are good years and bad years now. The finer the weather the better the lobsters.
- Weather.*
Norwegian.
Was in Norway during the Russian war 20 years ago. The people brought lobsters on board for sale. They were all small, 9 inches and under. Never saw a lobster of 11 inches in Norway. Thinks the Norway lobsters are generally a smaller kind than ours. They are the bright blue lobsters. Has seen lobster the length of his finger; they have been thrown away as too small. The small lobsters generally go through the pots. The small ones are generally caught in bait pots, the ribs of which are much closer together. All lobsters caught in a lobster pot are marketable.
- CRAY-FISH.**
—
Decrease.
There used to be cray-fish at Fowey, and they were very plentiful. They are very scarce now. Thinks they go in shoals.
- CRABS.**
—
Decrease.
JOHN HUNKIN. Lives at Mevagissey. Is 73 years old. Is a fisherman. Has been a mariner, and has not been crab fishing since he was 18 years old. There were three boats at Mevagissey then. Used to go to the ground where the Gorran men now go, but never fished in deep water or above a mile from shore. Crabs were very plentiful. Used to fish with 100 pots and sometimes had 50, 20, 12, or 10 large crabs a day. These were crabs upwards of 8 inches across. Used to throw away all she crabs. There was no sale for the she crabs. Does not know whether it would be possible to catch as many crabs now; but thinks they are decreasing. Large crabs are scarcer. There are more than double the number of boats. Crabs used to be 8s. a dozen of 26, and the price fell in May to 6s. per dozen. The railway has opened up a larger market, and the increased price recently may be due to it. A large crab which sold when he was a boy for 6d. or 4d. would be worth 2s. 6d. Agrees with proposal to throw back small crabs. Has caught berried lobsters in May and June, ready to spawn. Has also caught she crabs.
- Price.*
Spawning.
THOMAS POLLARD. Has been in the crab and lobster trade three years.

This is the best year he ever knew. Does not know whether this is due to the hot weather. It may be so. Warm rainy weather with westerly winds are good for crab catching. Agrees with the recommendation already given, to throw back the crabs under 5 inches, and the ones under 5½ inches, and has no other suggestion to make. CRABS.
Weather.
Gauge.

JOSEPH CLIMO, of Polruan. The Gorran men are unanimously of opinion that there should be a law to prevent the capture of the crabs under 5 inches, and of the crabs under 5½ inches. There need be no law for lobsters.

Town Hall, Falmouth, Saturday, 16th September 1876.

PRESENT :

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

JOHN TREMAYNE, M.P. for East Cornwall. Took a considerable interest in the Crab and Lobster Fisheries (Norfolk) Bill when it was before Parliament last session. Knowing the importance of the crab and lobster fisheries of Cornwall, he placed himself in communication with all the fishing ports from Brighton to St. Ives. Has also been in communication with Messrs. Poland, of Billingsgate Market, and Messrs. Sheppard, of the Haymarket, London. From the evidence there collected he has come to the conclusion that crabs and lobsters are diminishing in quantity, size, and quality. Decrease.

At BOGNOR, J. Wraggles, a fisherman, told him that the fishery will die out in a few years. A few years ago he could catch 60 lbs. of lobsters in a day, now he can only catch 24 lbs. He thinks the saleable size for lobsters should be a quarter of a pound weight. Gauge.

At SELSEA, William Legge, a pilot and fisherman for 40 years, told him the fishery has deteriorated quite one half. He thinks cray-fish should be protected under any Act for the protection of crabs and lobsters. Crabs and lobsters spawn twice a year. Hence fishing early and late has been the cause of the decrease. No crabs or lobsters should be caught before 1st March, nor after the 31st October. The minimum size should be half a pound. No difference need be made between male and female crabs. Crabs in spawn, and berried lobsters should be returned to sea at all times of the year. Breeding.
Close time.
Berried.

At SIDMOUTH, according to the testimony of the leading fishermen, the fishery has fallen off both in the quantity and size of the fish, particularly when compared with 50 years ago. It has not fallen off so much lately, still to a certain extent it has diminished. The fishermen doubt whether legislation would be willingly received, but without legislation the fishery must become extinct in a short time. Lobsters spawn first in April and May, and for a second time in October and November. Lobster pots should not be used from September to January. The fishermen are unanimously of opinion that berried hens (both crabs and lobsters) should be returned to the water. There are few caught on that coast. Decrease.

At BUDLEIGH SALTERN, Mr. Bird says the well-to-do fishermen are in favour of a protection Act; those who live from hand to mouth oppose it. Crabs have not decreased there in number but in size. Crabs in spawn are rarely caught owing to rough weather preventing fishing. The fishermen would approve of a standard of size for fish. Lobsters spawn from March to September; a close time would therefore be impossible. Berried hens should be returned to the sea. The penalty should be enforced on the salesman. As many as 40 spawning lobsters are sometimes brought ashore in a morning. LOBSTERS.
Spawning.
Close time.
Berried.

At EAST LOOE he saw the fishermen, and had a memorial from them. They are in favour of protective legislation, and would agree to a close time for six months in the year. There is a practical close time, owing to the pilchard season, which commences in July. Crabs should be returned to the sea of less than 4¾ inches. Female crabs and lobsters are supposed to watch their young. In the early part of the year shell fish are full of meat and of delicious flavour. In May and June there are only a few she lobsters, and they are very small. After then the lobsters are rich. Lobsters of 1 lb. weight, or 10 inches long, should CRABS.
Decreased size.
LOBSTERS.
Spawning.
Close time.
Pilchard fishing.
Gauge.

CRABS.	be sizeable fish. The small crabbers would object to any close time. They cannot fish during the hard weather.
Gauge.	
LOBSTERS.	At POLPERRO, Mr. Laughrin, a coastguard officer, who was out with the "Challenger," said the fishery had much degenerated, and that a protection Act should be passed. The crab fishermen there are in favour of protection. No crab less than 5 inches across should be taken, and there should be no distinction between males and females. There is no regular time for lobsters spawning; berried hens are caught all the year round. No lobsters should be taken less than 7 inches long. August would be the best close time for lobsters. Cray-fish should be protected.
Berried.	
Gauge.	
Close time.	
	At POLRUAN, Joseph Climo, fish salesman, averred that there was a great decrease in the number of crabs and lobsters on the Cornish coast. They are much scarcer, and very small, owing to the pots being out all the year round in some places. The fishermen would not object to a close season, if it were in accordance with the natural law. The close time should commence on the 1st October and terminate on the 1st March. It would be a great advantage to the fishermen to return all berried hens to the sea; but legislation on this point would do no good, because the berries could be removed. Lobsters under 6 inches, male crabs under 5 inches, and female crabs under 4 inches, should be returned to the sea. Cray-fish require the same protection as crabs.
CRAY-FISH	
LOBSTERS.	At PENZANCE, Mr. John Bolitho said there should be a close time from May to September, when lobsters are in spawn. Thousands of small crabs are sent to London to make lobster sauce. The fishermen would not object to a limit of 4½ inches for crabs. Lobsters are rarely found under 8 inches. He disapproves of all legislation for berried hens. Two fifths of all lobsters caught are berried hens.
Spawning.	
	At ST. IVES, Mr. Rosewall says, the fishermen admit that fish have diminished in quantity rather than in size. The fishing commences at Midsummer and ends in September. A close season would be of no importance. Berried hens are in great demand. No lobster less than 7 inches should be taken.
Gauge.	
	(By Mr. Buckland.) Thinks it would be impossible to have legislation about berried hens; any law on the subject would be evaded. The only thing to do is to regulate the minimum size for lobsters and crabs; it is essential that there should be one size, which must apply to Billingsgate. Does not apprehend that small crabs would be broken up for bait. It is the practice on the East and French coasts to use crabs for bait; but not in Cornwall, unless there is a deficiency of bait. Thinks, on the authority of Mr. T. Cornish, that every fish should have one year of spawning maturity before it is saleable. Six inches for lobsters would be equivalent to no size at all. Mr. Cornish says the meat in a crab of 4½ inches weighs 1½ oz. A crab of 7 inches in average condition would contain 5 oz. of meat; these weights are exclusive of the cream.
CRABS.	
Meat in.	
	JOHN CHARD (examined by Mr. Walpole). Is a fishmonger in Falmouth. Has been in business 16 years; deals largely in shell fish, and has sent away from 30 to 40 tons this season. Purchases them from fishermen on the coast between Coverack and Gerran. Gets the whole take of these fishermen, and has had men fishing for him for 16 years, and for his father 10 years previously. The take of these men in crabs, lobsters, and every fish, is decreasing in quantity. The size of the fish is not diminishing. Crabs are as large as ever. There are not so many fishermen at the local fishing stations as there used to be. There is a great decrease in the number of boats. At Porthscatho there are four boats now, while there used to be eight ten years ago. This decline is due to scarcity of fish. He used to pay 14s. per dozen of 26; now pays 26s. to 30s. Two small crabs under 5½ inches go for one. He used to pay 10d. or 1s. for the crabs; now pays 2s. to 2s. 6d. The railway is partly the cause of this. Sells fish on commission. Attributes the scarcity to the destruction of small crabs and lobsters in pots and trammel nets. The watery crabs, not fit for market, are crushed up and used for bait. What the fishermen cannot sell they destroy. Sees no remedy short of appointing men to watch the pots for white soft crabs. Trammels should be stopped during the first nine months of the year. The Coastguard force might be employed to carry out the law. No male crabs under 6½, or female crabs under 6 inches, or lobsters under 8½ inches should be in anyone's possession. Crab pots with fine bars are made to catch
Decrease.	
Boats.	
Price.	
Used for bait.	
Gauge.	

wrasse; small crabs are one of the best bait for wrasse. Spider crabs are also used. Unless the Coastguard were directed to carry out the law, small fish would infallibly be broken up for bait. The efficacy of the law must depend on the Admiralty giving permission to the Coastguard to enforce it. A close season should be made for female lobsters, from 1st March to 30th April, when they are full of berries. This law should apply to Cornwall, but it would be difficult to have a merely local law. Since he saw an advertisement of this inquiry, a month ago, he has had 400 lobsters, and only 18 berried hens. Infers from this that the breeding season is from March to April. Male lobsters would be sufficient to supply the trade. Thinks female lobsters would not be broken up for bait.

(By Mr. Buckland.) There are as many large crabs as ever, but the fishermen go for them to deeper water. They go further in pursuit of crabs than they used to do. The railway has had a great tendency to take crabs, &c., away from Falmouth. Trammels vary from 30 to 60 fathoms in length. They are used in deep water. The majority of the fishermen would welcome a protection Act, but the minority, say, 2 out of 7, would break up small crabs. Fishmongers are very anxious to have berried hens. He thinks lobsters only spawn once a year. Considers a lobster 9 inches long to be three years old; a lobster of 5 inches was the smallest he ever had. Has seen lobsters cast their berries against the boards of tanks in which they are kept. Never saw small lobsters. Thinks lobsters shed their shells every year. Thinks crabs of a certain age never shed their shells. When they have done growing they do not require new coats. A white crab is the ordinary crab in a delicate state, having shed its shell; it is semi-transparent. The shell is so soft as to be easily broken, like fine glass. Thinks crabs in this state are just getting a new shell. White, thin crabs never have any barnacles stuck to them.

Crabs are sent away alive, and are boiled alive, being put into cold water, and gradually heated. If they were put into boiling water, 10 crabs out of every 12 would shoot their claw or claws, and the cream would boil out. If they are killed first, by being stuck in the centre of the body, they bleed, and the flavour is gone. Knows this of his own knowledge. He never plugs lobsters. This is done at Durgan, but at Falmouth the claws are nicked. This is done to prevent them fighting, and does not have the effect of bleeding them.

(By Mr. Walpole.) The boats at Porthscatho are reduced from 8 to 4; consequently the number of crab catchers is reduced, and the smaller number cannot catch as many crabs as the larger number. The four boats carry as many pots as the eight boats used to. The number of catchers is diminished, but the catching machinery is greater.

RICHARD COLLINS. Lives at St. Mawes. Has been acquainted with the crab and lobster fisheries for 14 years. There are 13 boats now at St. Mawes—more than ever was known. They carry on an average 45 pots, or 500 to 600 pots in the aggregate. The fishermen fish from the shore to 5 miles out. They go further out now than formerly. He thinks crabs and lobsters are not so plentiful as they used to be, though there are more men engaged. There are fewer fish now than there used to be. Attributes this to the destruction of small fish; the fishermen sell more small fish than they used to. He would be glad to see the destruction of small fish prevented; viz., female crabs under 6 inches; male crabs under 8 inches; and lobsters under 9 inches; and cray-fish under 11 inches.

Small crabs are not much used as bait; a few sickly crabs are broken up, but the fishermen are plentifully supplied with bait. The ribs of the pots are less than 3 inches apart now. Cannot say whether this should be altered. Recommends a close season, so as not to allow fishing before the 1st March. Drift-net fishing interferes with the crab fishing in July, August, and September. Crabs have a close season in those months when the pilchard nets are out, so a legal close season is not necessary. Five out of seven fishermen would be glad of a gauge for crabs; but there might be a difference of opinion as to the size of the gauge.

Is a fisherman, and entirely dependent on fishing for his living; chiefly seining, crab fishing only occasionally. There are men at St. Mawes who are entirely dependent on crab and lobster fishing. Some of them would object to legislation, but they ought to be in favour of it.

CRABS.
Bait for.
LOBSTERS.
Close time.
Berried.
Railways.
LOBSTERS.
Breeding.
CRABS.
Casting their shell.
Boiling.
Pots.
Decrease.
Gauge.
Used for bait.
Pilchard fishing.

CRABS.

There are more fishermen now at St. Mawes than there were ever before in his remembrance. Never knew so many. The men cannot get anything else to do, and so have to take to it. Thinks they are making a worse livelihood than their ancestors. They get better prices, but this is not equivalent to what they used to make at a lower price.

Decrease.

JOHN DOWNING. Is captain of Mr. Baccup's yacht. Has been acquainted with Falmouth, Durgan, and Helford rivers for 25 years. Has got his living by crab and lobster fishing. Was fishing last April two years—in April 1874—and had been doing so for 25 years previously. Crabs were more plentiful when he was a boy than they are now. A boat could take 18 to 20 large crabs when he was a boy, *i.e.*, crabs of 8 inches and upwards, and perhaps six or nine lobsters in a day. In 1874 a boat would have taken three or four large crabs, and about the same number of lobsters. It is a rare thing now to get over four large crabs. When he was a boy there were eight boats fishing on this ground. Now there are nine boats. They carry much the same number of pots as they used to do. Attributes this large decrease to the capture of small fish, and fish in spawn.

Gauge.

When he was a boy the fishermen used to return all small fish to the water: any male crabs under 6 inches, and females under 5 inches, would be then thrown back. The market was not good enough for the small crabs. The railway has caused the demand for small crabs. Nine out of ten crabs will be females. The females never bring so good a price as the males. Would recommend that all male crabs under 8 inches, and females under 6 inches should be thrown back. Does not think that if this were done the fishermen would break up the undersized crabs for bait. They have enough bait. There are not many wrasse pots at Durgan. Does not know what the fishermen do at the Lizard. Would recommend that no lobsters under 9 inches long should be taken. This law should apply to buyer, seller, and fisher. Thinks the 9-inch gauge would destroy the import trade in lobsters with Norway, and this trade is important. Thinks there should be a close season from October 1st to March 1st. This would stop crab fishing in January and February, and would save breeding lobsters.

Railways.

LOBSTERS.

Gauge.

Thinks lobsters breed all the year round, and that it is not more important to close June and July than January and February. Would prohibit the sale of berried hens; does not think fishermen would remove the berries. The offence could be detected; but it would require skill to detect it. All lobsters in spawn should be returned to the sea.

*Close time.**Spawning.**Berried.*

CRABS.

(By Mr. Buckland.) When he was a boy small crabs were returned to the sea, because there was no market for them.

Decrease.

HOWARD FOX, of Falmouth. Has conversed with crabbers at Mullion and other places near the Lizard; they all state that crabs and lobsters are much scarcer than they used to be. The fishermen have to use more pots and go further from home to get a living. These men would all like a law enforcing the return of small crabs to the sea. Crabs are too tender a bait for deep-sea fishing with hooks; the danger would be that small crabs would be used as bait for the wrasse pots. The majority of the fishermen would only be too happy to see a law on the subject. The law must be enforced on the possessor, not on the taker. Large cray-fish are occasionally caught. Crabs will travel great distances even with their claws tied. Some years ago a small trading craft was taking shell fish from Mullion to Plymouth and she sank off Fowey. Shortly afterwards a fisherman at Mullion caught some of the identical crabs in his pots at Mullion, a distance of over 40 miles. He knew the crabs were the same he had previously captured, because he tied their claws with a peculiar knot, and the knots were still on them. Other instances of the same kind have happened in this neighbourhood.

Travelling.

LOBSTERS.

J. C. KENNERLEY, of St. Mawes. Has received large lobsters, two within the last 15 months: one weighed 10 lbs., the other 9½ lbs. Thinks the St. Mawes fishermen would agree with Mr. Collins' evidence, and that they desire to be protected against themselves. Undersized lobsters should be returned to the sea. Thinks crabs and lobsters migrate to deep water. There are certain holes where a crab may always be found.

Migration.

THOMAS WEBBER, Mayor of Falmouth. Agrees with Mr. Kennerley's evidence. Knows many fishermen at St. Mawes, and thinks they would endorse Mr. Collins' evidence. The catch of crabs and lobsters at St. Mawes is decreasing. His knowledge of the fisheries is only hearsay knowledge. Think

Decrease.

it a pitiful sight to see small crabs and lobsters exposed for sale, and considers that a short Act should be passed to prevent their destruction.

ARTHUR CHARD. Is father of John Chard. Was in early life a trawler, and afterwards dealt in crabs and lobsters as a fishmonger. Crabs and lobsters are falling off in quantity, and have diminished more than one half. Thinks this is due to the destruction of small crabs and to trawl boats catching female crabs in the early part of the year, February and March. These are caught from 6 to 18 miles from shore, and any law could only be applied in such a case to the sale of these crabs. Any law on the subject must apply to every place in the country. Would prohibit the sale of crabs with spawn, but not of berried lobsters. Could not detect any difference between a lobster from which the spawn had been taken artificially, and one that had spawned naturally. The only practical legislation would be to prohibit the capture of small fish. No female crabs under $5\frac{1}{2}$ inches and no male crabs under 6 inches should be taken. It would be no use to make this law, unless the minimum of 6 inches were applicable to the whole country. A crab can run 18 miles in two days, as was found near the Dodman, in a case similar to that related by Mr. Howard Fox.

CRABS.
Decrease.

Berried.

Gauge.

Travelling.

St. Mawes, Saturday, 16th September 1876.

PRESENT:

SPENCER WALPOLE, Esquire.

WILLIAM GREEN. Has been crab and lobster fishing for 40 years, and has practised it every year. There are rather more than 13 boats employed. The fishery is now quite different from what it used to be. Formerly fish were more plentiful and the price was less; now the price is greater and fish are scarcer. Forty years ago he could catch as many crabs in a day as he would now catch in a week. A fisherman going out now will sometimes catch nothing, or he may catch two or three, or sometimes 10 or 12. There are more men engaged now, but there were as many boats 20 years ago as there are now, and they caught more crabs. Lobsters also are getting scarcer every year. The ground is over-worked, and too many small crabs are kept. There ought to be a minimum size, below which all crabs should be thrown overboard. Would like to see all crabs under 6 inches, thrown overboard. A lobster of 6 inches is very small; $8\frac{1}{2}$ or 9 inches should be the minimum size for lobsters, and all below that size should be thrown overboard. Berried hens are found all through the year, but chiefly in March and April. It would be a great loss to close the hen lobster fishery in the spring. You may put berried hens into lobster store-pots, and the other lobsters would eat out the berries. A law of size would be of very little use. In the spring of the year no large she crabs are seen, but in the summer they are caught.

Decrease.

LOBSTERS.
Decrease.
Gauge.

CHARLES HENRY CHAMBERS. Has fished for crabs and lobsters for 30 years. Crabs and lobsters are decreasing in number. Thinks small he crabs and small she crabs should be protected: he crabs under 6 inches, and she crabs under 5 inches. A he crab is half as large again as a she crab. All lobsters under 8 inches long should be thrown away, and there should be a penalty on buyer, seller, and taker. This would have a good effect; crabs would not be broken up for bait. There is a ground outside St. Mawes where lobsters do not grow large; out of 20 only five or six will measure 11 inches. Would object to any law about berried hens, which are much better to eat than "shotten" lobsters. There is as much difference between a berried hen and a shotten lobster, as there is between a herring full of roe and a shotten herring.

CRABS.
Gauge.
LOBSTERS.
Gauge.
Berried.

WILLIAM GREEN. Agrees that crabs and lobsters are decreasing in number. Many years ago he caught 100 crabs and cray-fish at one haul of a trammel, and now he cannot get 13 or 14 in a day. Has no doubt that they are decreasing; agrees with the proposal made by Mr. Green as to a restriction on the size. Trammels must be used or there would be no bait, and they must

CRABS.*Gauge.*

reach to the bottom of the sea, or they would catch nothing. All crabs, whether male or female, under 6 inches, and all lobsters under $8\frac{1}{2}$ inches, should be returned to the sea. If this is not done the fishing will soon be ruined.

RICHARD COLLINS (cousin to R. Collins, examined at Falmouth). Agrees that fish are becoming scarcer, and would have all crabs, male or female, under 6 inches, thrown back. The size proposed by the former fishermen, $5\frac{1}{2}$ inches for males, and 5 inches for females, is too small. Richard Collins, of Falmouth, is not a crabber.

N.B.—There were three other witnesses in the room, all of whom agreed with the above evidence.

School Room, Durgan, Saturday, 16th September 1876.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

*Decrease.***LOBSTERS.***Decrease.**Gauge.***CRABS.***Gauge.*

JOSEPH TRESIZE (*examined by Mr. Walpole*). Is 65 years of age. Has been fishing 30 years, and has fished for crabs all that time. Nine or ten boats go out crabbing together. This is about the same number as when he began. Crabs are not so thick now as they used to be. There are more boats after the crabs than there were 30 years ago, and he thinks there are too many boats fishing, and that crabs are over-fished. Lobsters are getting scarce also. Does not know what could be done unless the fishing were stopped altogether. It would be a good thing to put back all small lobsters. Messrs. Scovell, from Hamble, will not take any he crabs under 6 inches, nor females under 5 inches. He sends the small crabs to London. Thinks it would be right to stop the capture of the crabs under 5 inches, and he crabs under 6 inches. Would like this scale enforced. Merchants will take lobsters of any size. It would be a good plan to leave the small lobsters to grow. Cannot fix any size. Thinks it would be a good plan to throw back berried hens. It would be a loss, but he would consent to the loss if all others did the same. Believes all the Durgan fishermen throw back crabs in spawn, but many of them are taken.

(*By Mr. Buckland.*) Does not know when he sees most spawning crabs. Messrs. Scovell buy berried hens, and any other lobsters he can get. Has caught a lobster weighing 13 lbs. Could not send fish to London if it were not for the railway. Can sell as much as he can catch. Always throws away spawning crabs.

Spawning.

JAMES JAMES. Has lived at Durgan 21 or 22 years, and has fished for crabs all the time. There are fewer crabs than there were 20 years ago; lobsters also are scarcer. Fish are about the same size as formerly. Cannot say why crabs are scarcer. When he went fishing 20 years ago he caught three times as many as he can catch now. Thinks all male crabs under 6 inches, and female under 5 inches, should be put back into the sea. This should be done to enable them to grow. He crabs are large crabs, but there are not so many of them as there used to be. They are mostly caught outside the bay. The pots set first are taken in in July on account of the trawlers. Uses thornbacks, bibs, and other fish for bait. Never uses young crabs for bait, only spider crabs. Never smashes up edible crabs. Never returns any lobsters to the sea, and does not catch more than one or two lobsters under 5 inches. The average size is from 9 to 11 inches. Catches very few under 9 inches. It would be no hardship to put back lobsters under $8\frac{1}{2}$ inches. Catches about 100 lobsters in a season. One in ten might be under $8\frac{1}{2}$ inches. Does not see that anything can be done but to put back any "seed" crabs, which the fishermen do now.

*Gauge**Bait.***LOBSTERS.***Gauge.*

HENRY PASCOE. Has been fishing 20 years, and crabbing every summer during that time. Crabs and lobsters are decreasing: they are over-fished. Would agree to throw back all he crabs under 6 inches, and she crabs under

5½ inches, and lobsters under 8½ inches. This would be better for the fishermen in the long run. The drift nets prevent crab fishing in the busy parts of the season. Thinks this is very hard. Has heard old fishermen say that there was a law to keep pilchard drift nets off the land. One man lost 30 crab pots through the pilchard nets in one day. The fishermen go four miles further from shore for crabs than they used to. *Pilchard fishing.*

WILLIAM RETALLACK. Has been crabbing 30 years. There are not a quarter so many crabs as there were 30 years ago. He used to get 27 or 28 crabs a day, and now only gets three or four. In 1851 he got 26 a day. Four or five crabs a day now is a good catch with the same number of pots out as formerly. Believes the falling off is due to the capture of so many small he and she crabs under 5 inches. All under that size should be thrown back. *CRABS. Decrease. Gauge. Boats. Berried.* Male crabs are the largest; females do not run so large. Lobsters have not failed so much as the crabs. There are not more boats in Durgan than there used to be, but there are three times as many in Porthalla. There are eight or nine boats there now, and there used to be only three. The crabs are being fished out. About 30 to 40 pots go to each boat, and there are 300 pots from Durgan. If he had to make a law he would enforce the throwing back of all small crabs and all crabs in spawn; would throw away the berried hens at any time of the year. In a month's time they would cast their spawn, and might then be sold. The fishermen ought to consent to this. Thinks they would. They make as much of a "shotten" lobster as a berried one. Does not know the opinion of the fishermen at Porthalla.

Most lobsters are nicked, not plugged. If they are plugged the people will not buy them.

Guildhall, Penzance, Monday, 18th September 1876.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

THOMAS CORNISH, solicitor, Penzance. Has owned crab pots for more than 20 years. The crabbing stations about Mount's Bay are:—1. Mullion, 2. Porthleven. 3. Prussia Cove. 4. Penberth. 5. Porthgwarr. 6. Senneen Cove. All these are fisheries for crabs and lobsters. His experience is that the fish have not fallen off in numbers, but the grounds inshore have been fished out, and the men have had to go to deeper water. On the eastern side of Mount's Bay, he thinks, a limit should be placed on the size of a saleable crab, say 5 or 5½ inches. Would be glad to see a total prohibition of she crabs. They are no good; it is a waste to catch them. Lobsters and crayfish are seldom caught at Penzance under 9 inches. The crab pots would not catch them much smaller than that. There is an enforced close time in Mount's Bay in July and August, when the drift nets for pilchards drive in the crab fishers. Does not think a close season important at the Land's End because the fisheries are so deep and so extensive. Would like to see berried hens all thrown back into the sea. Has had very little experience of crabs in spawn. More females than males are caught. *Gauge. Pilchard fishing.*

(By Mr. Walpole.) It would be a serious loss to prohibit the capture of berried hens; but in the end it would replenish the fishery. This should be enforced throughout the year. Not a large proportion of lobsters in the spring are berried; but berried hens are caught all through the summer. Is aware of the large demand for berried hens in London. It would be extremely difficult for fishermen to remove the berries. It would be possible to distinguish between a lobster that had shed its berries naturally and one from which the berries had been removed artificially. *LOBSTERS. Berried.*

Crabs are fetched away by the trading smacks. The minimum size for crabs, under the Norfolk Crab and Lobster Fisheries Act, is 4½ inches. Proposes 5½ inches as a minimum gauge. Crabs under that size are not accepted by the trading smacks, and then they are taken as "quarter fish," four counting as one. The prohibition of unsaleable fish should be universal. It *CRABS. Gauge.*

- CRABS.**
Meat in. will be of no use to have such a law unless it is applicable to the great markets. Has tested the meat in a crab of $4\frac{1}{2}$ inches. In the claws and legs the meat, exclusive of the cream in the body, weighs $1\frac{1}{2}$ oz. Thinks the Norfolk Act should be repealed, and the sale of all crabs under $5\frac{1}{2}$ inches throughout the country should be prohibited. A crab of $5\frac{1}{2}$ inches would give $4\frac{1}{2}$ oz. of meat.
- LOBSTERS.**
Gauge. The Falmouth measure for lobsters might be taken, viz., $8\frac{1}{2}$ inches. A lobster of 8 inches would get through the pots, the bars of which are 2 inches apart.
- Migration.* (By Mr. Buckland.) The crab and lobster fishery ceases from the middle of August to the middle of March, when they are migrating. Crabs must be rock breeders. Thinks there are no data for testing the age of a crab of $5\frac{1}{2}$ inches, nor of lobsters of 8 inches. The crab pots are shot in rocky ground. Fresh bait is better than stinking bait. Crab pots are shot in strings. A practical fisherman would be able to say how far they are from each other. Spider crabs are used for bait. Little edible crabs are not used for bait. Has seen a crab weighing over 12 lbs. It is necessary to have legislation to enforce the return to the sea of all he crabs under $5\frac{1}{2}$ inches, of all berried hens, and of all hen crabs. The loss would be compensated in the end.
- Bait.* **CRABS.**
Gauge. JOHN SYMONS, Land's End. His observation leads him to recommend that small she crabs should be returned to the sea. They were used 30 years ago for bait. Now London fishmongers give 2d. or 3d. each for them. The fishery for crustacea is falling off. By careful preservation and a close season the fishermen may lose in one year and gain in ten years. Cray-fish come in shoals. Crabs return to the place where they are bred. Lobsters do the same. Thinks some portions of the ground from St. Levans to the Land's End have been over-fished. The result is that fishermen have not done so well for the last three years. The Sennen Cove fishermen go from home to Scilly and to Padstow to fish.
- Berried.* (By Mr. Walpole.) Proposes to prohibit the capture of all she crabs under 5 inches, but to allow the capture of he crabs of any size, just as a gentleman kills the cock pheasants and spares the hens. There is no machinery for enforcing the law among the fishermen. The best way is to enforce it against the salesmen. Does not know whether he could detect fishermen breaking up unsizable crabs for bait. Would propose a close time for crabs from the 1st September to 28th February. There are not many crabs now caught from September to December, and only a few from January to February.
- Price.* On the 9th May 1876 crabs and lobsters came in in good quantities. On the 16th they came in in nice quantities. On the 31st he had three dozen, very fine fish. On the 2nd June he had two dozen and four. On the 8th June one and a half dozen. On the 12th June two and a half dozen. On the 15th June one dozen and a score. A dozen lobsters is 13. 26 half crabs make a dozen.
- Migration.* **LOBSTERS.**
Gauge. This was the catch of a boat from Sennen Cove to Padstow. The gross produce of the boat was 81l. in 21 weeks. It would be a benefit to the fishermen to close from 1st September to 28th February.
- Close time.* Some fishermen say lobsters are continually spawning. Wishes to give no recommendation on the point.
- Migration.* (By Mr. Buckland.) The fish from the Land's End go to Birmingham, Leamington, and (principally) London. The railway has had the effect of increasing the demand. The crab fisheries are of considerable value, and might be increased in value. 22 boats are engaged here. The fishermen send crabs to London alive. The London salesmen will not receive crabs unless they are alive. The claws of lobsters are invariably plugged or cut, the rule being to cut them. Plugging them is quite superseded by cutting, which acts better.
- Spawning.* **CRABS.**
Plugging. STEPHEN HARVEY JAMES. Lives near Penberth. Has known the fisheries there for 20 years. Is sure the fish are falling off, especially in size. It is a difficult thing to get a good crab. The West Cornwall Railway was built in 1859. 20 years ago the fishermen commenced sending crabs to Hayle and Bristol by sea. The extra demand and the practice of killing the she crabs have been the cause of the decline. Many thousand she crabs are caught every year. The eggs do not come on till July or August, and then the she crabs are at their best. Has an impression that the fishery is over-worked.
- Berried.*

The fishermen catch so many small crabs that large ones are not allowed to grow. There is a ready demand for small crabs, which sell at 2d. each. The fishery at Penberth used to be very small.

HENRY BLACKWELL. Is proprietor of the Queen's Hotel. Sees very few crabs or lobsters; a few females and very few males are brought about. They are very small, and quite useless for use at the hotel. This has been the case ever since the railway was opened to London in 1859. Has only bought one crab for two years, and that was smuggled. Has often asked for crabs. Large crabs are not hawked about as they used to be. Has had lobsters of a certain size up to this year; but this year has not had them. They are very small, not larger than that (*pointing to an 8-inch lobster on the table*) and ought not to be taken. Railways.

WILLIAM HENRY RODD. Is Mayor of Penzance. The crab and lobster fishermen complain that they are not sufficiently protected from the drift nets, and that therefore they have not sufficient opportunity for taking crabs and lobsters. He is speaking of the ground 9 miles out to sea. Agrees with the evidence already given as to a minimum size and close season for crabs and lobsters. Pilchard fishing.

STEPHEN HARVEY JAMES (*recalled*). Has trouble to get crabs and lobsters from his own cottagers. The wholesale fishermen take all or none.

STEPHEN BOND. Lives at Sennen. Has been a crab and lobster fisher for 50 years. 50 years ago there were five to eight boats at Sennen. 40 years ago there were no boats. They were all given up, because the price was low and fish were scarce. The steamer for taking the fish to Bristol was started more than 30 years ago. Before that, Mr. Scovell was the only buyer. Boats.

In Mr. Scovell's time he used to sell him fish at 8s. a dozen of 13. Two crayfish counted as one lobster. Lobsters under 11 inches long counted two fish. Crabs under 7 inches counted four for one. Crabs above 7 inches and under 11 counted two for one. These measurements are retained now. The steamer caused the price to rise to 10s. a dozen, and now they have risen to 20s. a dozen for cray fish, to 15s. a dozen for lobsters and crabs; and hen crabs are sold at 2d. each. There are now 22 boats fishing at Sennen. The number of pots was quite as great 50 years ago as at the present time. 50 years ago the average catch was one fish to every two pots; and the average now is much the same. There always was and still is a difference in the seasons; some being good, others bad. The average take per boat is not much worse now than it was 50 years ago. Fishermen are earning better wages than they were 50 years ago. He has not much to complain of. They sell no crabs under 5 inches. If they are in want of bait, they use crabs; if not, they throw the small ones overboard. They mostly want crabs as bait. They use crabs as bait for wrasse, and wrasse as bait for crabs. Even if a law were made restricting the capture of unsizeable crabs, small crabs would be broken up for bait. Sometimes the fishermen are short of bait and are obliged to use small crabs. They use trammels to catch bait. Not many crabs are caught in the trammels. They break them up before they are taken out of the net, if they are caught, and use them for bait. Does not think a close time for crabs necessary. Mode of counting.

Could remove the berries from a berried lobster. Could keep the lobster till she got rid of the berries herself. Has put lobsters in a store pot without berries, and found them full of berries in three weeks. Does not think much of a law which would prohibit the capture of berried lobsters. Cannot catch lobsters under 8½ inches long. Does not want any law, and is in favour of free trade in fishing. Is ready to supply Mr. Blackwell if he will give him his price and take all his catch. Cannot sell him one or two picked fish. CRABS.
—
No decrease.

(*By Mr. Buckland.*) If he wants bait he must have it, whether it is small crabs or not. If a law were made to throw back berried hens, many fishermen would not go to sea fishing for lobsters. Could not keep berried hens in pots in bad weather. The sea would dash the pots to pieces. Crabs and lobsters, some years ago, came to a certain ground near the Longships, and were as thick as possible, even when the fishermen left off fishing in September. When the fishermen went back in March and April to look for them they were all gone. Used for bait.

THOMAS JACKSON, of Porthgwarra. Is a fisherman. Has fished for crabs, lobsters, and cray-fish for 35 years. The fishery has decreased during the last two years, so far as good fish are concerned. She crabs are as plentiful as ever. LOBSTERS.
—
Store pots.

- CRABS.**
Enemies. A little insect, of the shrimp tribe, appeared near the Logan Rock 12 years ago. Thinks this insect ate all the bait from the pots, and drove the crabs away. Does not know the name of the insect. He crabs were never thicker than they were in the month of April, 1873—three years ago. A heavy storm came on and all the he crabs disappeared. Has never caught large crabs in any quantity since. During the easterly winds crabs are always inferior, and no big crabs are to be caught. Lobsters are not affected. Does not believe in the fish having been fished out. Has been to the Wolf Rock, nine miles south, where the ground is seldom fished. Has been there sometimes, and left lots of fish, and found none on returning the next year. Went there again this year, and shot 24 pots, but only got two cray-fish and one lobster. Where the ground is most fished there are generally as good fish to be had as anywhere.
- Migration.* In some parts of the sea, from Runnel Stone to Scilly, good lobsters and cray-fish are to be caught, larger than elsewhere. The cray-fish are sometimes plentiful, and sometimes scarce. This year there are very few. Has seen old fishermen who say they come in shoals. Crabs at his station are more than 5½ inches across the back. None are sent to market smaller than this. It is very rare to get so small a crab on the Irish and Scotch coasts as on the East coast of England. A law prohibiting the capture of 5½ inch crabs would destroy the fishery on the East coast. Lobsters on this coast are also large, 13 inches and upwards. The tide runs at Porthgwarra at the rate of six miles an hour. The bottom is rocky. Thinks crabs and lobsters live chiefly on shells, whelks, &c. The feeding ground is very good.
- Food.* (By Mr. Walpole.) When he first began fishing he fished at Penberth. The Porthgwarra boats have increased, and there are six boats now while there were only one or two that he can recollect formerly. The average take per boat has been as good as ever, up to the last three seasons, and that notwithstanding the increased number of boats. The price has risen two thirds, and the Porthgwarra men are making better wages. They go further off the land to seek after fish. Their forefathers did not go so far out. The insects referred to did not appear before 12 years ago. Wherever they were found they drove away the fish. They are now decreasing again. The storm which occurred in 1873 was very bad for that time of year, and crabs have disappeared ever since. The pots were in 35 fathoms of water. Crabs will not move when a storm is coming on. Crabs under 5½ inches are not used. A few may be caught. The larger ones are used for bait, the smaller ones are not good enough for this purpose. Old she crabs are used for bait.
- Boats.* **CRABS.**
Weather. RICHARD ROWE, Porthgwarra. Has been a fisherman for 24 years. Has fished at Porthgwarra all that time. When he began he was with his father, and had the only boat in the place. Has spoken to a man 70 years old who said that more fish are caught now than when he was a boy. He used to put the week's take in store pots from Monday to Thursday. Used to catch 500 or 600 he and she crabs, and 10 or 12 lobsters in a week, and send them to Bristol. This was an average take. An average week's take now is 1,200 crabs, male and female, and perhaps 20 lobsters. There are now six boats. 24 years ago there were from 40 to 50 pots in his father's boat. Between 50 and 60 pots are carried in a boat now. Works harder than he did 24 years ago, and goes further out to sea. Believes one boat working same number of hours as they worked 24 years ago, and confined to the same ground could catch more crabs than his father's boat did then.
- Increase.* Begins fishing in March, looking for cock crabs. The cold in the spring keeps back the hen crabs. When the warm weather comes he looks for hen crabs and catches fewer cocks. After the hen crabs get scarcer in August and September, he looks out for cray-fish.
- Boats.* **LOBSTERS.**
Season for. Catches spawning lobsters from one end of the season to the other. Pots are kept out all the year round.
- Migration.* A law making crabs under 5½ inches unsizeable might deprive the fishermen of a few hen crabs. White crabs are not fit to eat. The Billingsgate salesmen return them. They are so thick it is not necessary to have a law to prevent their capture. Other fish eat the soft crabs. Cannot afford to break up edible crabs for bait. They are all sent to market.
- Spawning.* If it were illegal to kill berried hens, gentlemen would suffer and fishermen too. Thinks the natural destruction of young shell fish by skate and cod is ten times greater than that caused by fishermen. Skate and cod are some-
- Berried.*
- Enemies.*

times full of small crabs. The Porthgwarra fishery is very flourishing and it is not possible to improve it by legislation.

CRABS.

(By Mr. Buckland.) The minimum size of 5½ inches might deprive the fishermen of some hen crabs which are good to eat. White crabs are those that have shot their shells. There are not many octopus here. Cannot say how often a crab sheds its shell. Has seen oysters on the shell of a crab. The southern limit of the Porthgwarra fishery is 9 miles south.

Growth.

HENRY JONES, Penberth. Commenced crabbing 40 years back. Cannot say whether crabs and lobsters have increased. Does not catch so many as he did 10 or 5 years ago, or last year. There are more to be caught this year than there were 40 years ago. At that time there were five or six boats at Penberth, and they used to go every Monday to Mousehole for bait. The fishermen used to buy skate from the Mousehole people. He went on for a year or two like this and then went to sea. Returned to fishing 14 or 15 years ago, and found the system of buying bait at Mousehole had been done away with, and that the fishermen depended on spider crabs, and that they baited wrasse pots and lines with them and so got their own bait, which was much better. Would not object to a 5½-inch gauge for crabs. Merchants cannot keep the trade with smaller crabs. It does not pay to send away smaller crabs. He had 1s. for a hundred little crabs.

Bait.

Lobsters are not so thick as they used to be, nor are they so large. Does not think this is due to over-fishing. Crabs this year are thicker than ever. Does not want any legislation at all. The fishery depends on the weather and the supply of bait. Hot weather is necessary for good crab fishing. Crabs will foretell the weather 24 hours beforehand. Small crabs are very often broken up for bait, and the practice cannot be stopped unless a policeman goes out in every boat. It takes longer to catch bait than to haul all the pots up. He catches his own bait in a trammel net. Is obliged to stop fishing in the autumn (September) through stress of weather. This year his craft was cut off by the Mount's Bay fishing boats. This happened two months ago. Fishes in 30 to 35 fathoms of water. Catches most crabs at night. Thinks cray-fish are falling off.

LOBSTERS.

Decrease.

CRABS.

Weather.

Pilchard fishing.

CRAY-FISH.

Decrease.

CRABS.

Migration.

(By Mr. Walpole.) The crabs are not so thick as they were ten years ago, but the she crabs are as thick, or thicker. Cannot account for this, unless the cock crabs resort to different ground. It is a question whether trawlers do not catch crabs outside. Thinks cock crabs come in earlier than she crabs.

CAPTAIN HENRY RICHARDS, Prussia Cove. Has been a fisherman for 50 years, generally at Prussia Cove, but has fished all round the North Channel. 50 years ago there were two boats from Porthleven, which used to come every year to Prussia Cove; and three boats at Prussia Cove. There are now nine boats. They fish with three strings of pots, and 15 pots in a string. The pots are put in a string about 40 fathoms apart. The method is just the same now at Prussia Cove. At the Land's End the pots are 15 fathoms apart. Fishes the same ground as he used to fish. The fish are not a quarter so thick as they were formerly, unless you go a long way off. Thinks crabs and lobsters are over-fished. Cray-fish have not come in in such numbers as they used to. When he began fishing 50 years ago he could take a dozen fish a day, i.e., a dozen of 13, and the usual description of fish. Only had eight pots to a string then. Now an average catch would not be half-a-dozen a day. For three or four weeks he went out 8 or 10 miles, and found the fish as thick as ever. Thinks in a few years the fish outside will all be caught too. The Porthleven boats, when he was a boy, were only 16 feet long. Now they are 22 feet long because they have to go further out to sea. Many a time, when a boy, he caught 3s. worth of crabs in an hour, and nowadays boys cannot catch 3d. worth a day.

Boats.

Decrease.

CRAY-FISH.

Decrease.

Boats.

LOBSTERS.

Spawning.

Smacks.

Store pots.

Recommends that all spawning fish should be returned to the water. Has known them to spawn in his store pots and in the wells of the smacks. Three years ago the smacks did not come for 10 weeks, and the crabs were stored for that length of time. When they were taken out they were found to be full of spawn, though they were not in spawn when they were put in. All spawn crabs and all berried hens should be kept until the spawn is shot, or else returned to the water. Thinks they should not be sold when in spawn. The fish might be kept in floating cruives. The young lobsters could have no difficulty in getting out of the cruives. Buyers prefer berried hens. A

LOBSTERS. shotten lobster is not so good as a berried one, and if the shotten lobsters only were eaten they would not be so good.

CRABS. Would rather have small she crabs than big ones. Always throws overboard small she crabs. Uses trammel nets for bait; catches crabs in the trammels, and sometimes takes them out and sometimes kills them.

Store pots.

Spawning.

(*Examined by Mr. Buckland.*) Lobsters and crabs are all put into cruives. The cruives are 9 feet long by 3 feet wide by 18 inches high, and divided into three compartments to separate the fish and prevent them from fighting. A crab is the king of the sea. A she crab will spawn in November. Has found them, after being in a cruive 10 weeks, full of spawn. A lobster after she has shot her spawn is not in good condition.

STEPHEN BOND (*recalled*). The crabs are in spawn in February and March, and not in November.

JOHN KELYNACK. Lives at Newlyn. Is about 80 years old. Never in his life caught crabs and lobsters. Has heard old men talk of the fishing, and agrees with the evidence offered by Captain Richards. There are very few crab pots at Newlyn.

Sennen, Monday, 18th September 1876.

PRESENT :

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

No decrease.

RICHARD NICHOLAS. Has been a crab fisher for 40 years. Crabs and lobsters are no scarcer than they were. Fish are no scarcer. The price is better, and the fishermen get more money. She-crabs have been thicker the last two years than ever. Fishes from the Longships to 3 miles eastwards. Catches crabs of 4 and 5 inches. Merchants will not buy crabs under 5 inches. Uses 10 or 20 crabs under 5 inches in a day for bait, and those that are not used for bait are thrown overboard. There are 22 boats here now. 40 years ago there were just as many. Would be very sorry to hear of anything to be done to interfere with the fishery. They want to be left alone.

Used for bait.

No decrease.

Casting their shell.

JOHN GEORGE. Has been here 20 years. Crabs and lobsters are just the same as ever. They fetch a better price, and the fishermen make more money. They are sent away by rail from Penzance. Merchants will not take crabs under 5 inches. Thinks crabs shoot their shells once a year. Has found them every year in a certain hole with their shells off in March and April. The fishing ground extends from off the Land's End to Cape Cornwall, 4 miles eastwards, and 3 miles seawards. Two lobsters under 11 inches go for one. The largest lobster he ever saw was 13 lbs. The men do not fish here till April, and leave off in August. Does not want any interference with the fishery, but desires to be left alone.

LOBSTERS.

Season for.

Increase.

WILLIAM GEORGE. Agrees with his brother (the last witness). There are more crabs and lobsters than ever. The railway has done good for the fishermen. The fishermen continually shift their ground. It would make no difference to put back berried hens.

N.B.—There are between 60 and 70 fishermen at Sennen; about 30 were present at the meeting, and agreed with the above evidence.

Cadgwith, Tuesday, 19th September 1876.

PRESENT :

SPENCER WALPOLE, Esquire.

Boats.

EDWARD RUTTER. Is coxwain of the lifeboat. Has been crabbing 20 years. When he began there were about five boats, now there are 10 boats. The fishermen fish on much the same ground as they used to, but go a little further out. The ground extends on both sides of the Lizard, 4 miles west,

and 4 miles east, and 4 miles south. The fishermen go beyond Kynance Cove on the west and Innis Head on the east. 20 years ago the average take per boat was 20 fish. The method of counting was, lobsters over 11 inches counted as one; two crabs over 8 inches counted as one; two lobsters under 11 inches counted as one; four crabs under 8 inches counted as one. A fair average now-a-days would be about 14 fish, counting lobsters over 11 inches as one fish, two lobsters under 11 inches as one; crabs under 8 inches as one fish; and two crabs under 8 inches as one fish. Fewer fish are caught in each boat now, but the whole number of boats catch more in the aggregate. The price now is 1s. a fish, and it has been 1s. 2d. Sells his fish to Mr. Locke, of Southampton. The price when he began was 10s. a dozen of 26. Some seasons the crabs are very scarce, and sometimes they are very plentiful. There have been some years when even spider crabs were scarce, and hardly one could be caught in a day. Now they are very plentiful again. There are hardly so many fish in the ground now as there were 20 years ago. Thinks the scarcity is due to over-fishing. Lobsters are in about the same quantity as they were 20 years ago. Thinks spawn crabs ought to be thrown back to the sea. If spawn crabs are caught, it is in March and April. There are very few of them, and to throw them back would make very little difference. Would have no objection to throw back all small crabs. The gauge proposed by the fishermen of St. Mawes, viz., 6 inches, would be too large. In Falmouth Bay the crabs are less plentiful than at the Lizard, but they are larger. 5 inches would be quite large enough for he crabs, and 4 inches for she crabs, at the Lizard. Thinks there is no falling off in she crabs. Does not think it necessary to have any gauge for lobsters.

The fishing begins in the middle of March or April, and ends about 20th September. The rest of the year is a natural close season. The fishermen break up crabs for bait from Midsummer to the end of the season. Very black ones and soft ones are broken up when bait is scarce. Uses trammel nets for catching bait, and catches crabs in them, but the crabs are not smashed up. Small crabs would not be broken up for bait. Gets a third of his living with his trammel net, and one third of the shell fish are taken in the trammel. A good many cray-fish are caught on the coast. They come and go.

ANTHONY JANE. Has been fishing 43 years. There were six or seven boats at Cadgwith and five at the Lizard 43 years ago. There are ten boats here now, and two at the Lizard. Thinks the crabs are more plentiful than they were. This last year has been a decent year. A little rough weather is good for the crabs; smooth water and warmth is good for the cray-fish. Thinks each boat gets as much as they did 43 years ago. The price is better and the earnings are greater. Lobsters are just as thick as ever. Is very well satisfied with the fishery. Has heard Mr. Rutter's evidence about a minimum size for crabs, and thinks it would be a good thing to have a law to save he crabs of 5 inches and she crabs of 4 inches. Cannot say whether a she crab of 4 inches has spawned. Has only seen one or two spawn crabs, and thinks a crab of 4 inches may have spawned. Does not think it necessary to have a minimum size for lobsters. Rarely catches lobsters under 8 inches, and does not keep them when he does. A law of size for crabs would not hurt the fishermen and might do them good in the end. If he could not use trammels it would be of no use to go on with the business. Has broken up as many as 20 or 30 crabs for bait in a day; but does not now break up so many in a season. There are 40 to 50 trammels in Cadgwith.

FREDERICK STEPHENS. Has been fishing 28 years at Cadgwith. Thinks there is very little difference in the number of crabs. They vary in different seasons. He fishes on the same ground as formerly. Lobsters are the same as crabs. Seasons vary. There is nothing the matter with the fishery. The average number of pots to a boat is about 40. Six strings to a boat, and six or seven pots in a string. The pots are set about 10 or 15 fathoms apart. Would like to have unsizeable crabs returned to the water. Thinks the size should be about 5 inches for he crabs and about 4 inches for she crabs. Thinks, however, that a law prohibiting the capture of any crabs under 5 inches, male or female, would do no harm. The law must apply to buyer, seller, and catcher. If people did not purchase small crabs no one would sell them. Lobsters are not decreasing. Does not catch so many small

LOBSTERS.

*Mode of counting.**Price.**No decrease.*

CRABS.

*Spawning.**Gauge.**Used for bait.*

CRAY-FISH.

*Migration.**Boats.*

LOBSTERS.

No decrease.

CRABS.

*Gauge.**Spawning.**No decrease.**Boats.**Gauge.*

LOBSTERS.
No decrease.
Store Pots. lobsters, and scarcely ever sees one so small as 6 or 7 inches. It is not necessary to have a gauge for lobsters. Very few berried hens are caught; but they are found all through the year. Cannot say whether it would be a loss to throw back all berried hens. Keeps his fish in store pots, not in cruives, and keeps them there a week or nine days. The smack ought to come every nine days. All the fish go away by sea.

CRAY-FISH.
Migration. The cray-fish are migratory and vary in number from season to season. Has caught 50 or 60 a day, in some years, and in others not more than 12. Gets the same price for cray-fish as for crabs. Is very well satisfied with the state of the fishery.

CRABS.
Gauge. JAMES MITCHELL. Has been fishing about 10 years. Agrees with what has been said by previous witnesses. Thinks that it would do no harm if she crabs under $4\frac{1}{2}$ inches, and lobsters under 7 inches were thrown back to the sea. Does not catch on an average one 7-inch lobster in the season. Fancies fish were more plentiful than they are now. Goes further out to sea now, and gets as much money, but does not get quite so many fish. If prices had remained the same as they used to be it would not pay to follow the fishery. When he was a buyer he gave 13s. a dozen of 26, now the price is on an average 30s. per dozen. Thinks $8\frac{1}{2}$ inches would be too large a gauge for lobsters; but catches very few so small as that. The pots are made hollow, and are 2 inches from rib to rib; they fish better this size than when made closer. The fishermen make the pots themselves, and they cost about 24s. a dozen. The best quality of crabs are those which are caught in trammel nets.

Price.
Pots.
Price. ANTHONY JANE (*recalled*). When he fished first he sold his fish for 8s. a dozen. The rise in price has done good. The lobsters from the Lizard ground are one-third heavier than those in Falmouth Bay, but crabs are smaller.

EDWARD RUTTER (*recalled*). The Coverack fishermen come down here to the Cadgwith ground. But there is a ground from Coverack to the Manacles. This ground is better than the Cadgwith ground. The crabs there are better but scarcer than at Cadgwith. The Mullion men have been doing less fishing. The weather has been bad. The Cadgwith ground joins the Mullion ground. The crabs from the Manacles are best, the Lizard crabs come next, and the Mount's Bay crabs come last. There are four boats fishing at Mullion; they are more exposed to the weather than the Cadgwith boats.

The Ship Hotel, East Looe, Wednesday,

20th September 1876.

PRESENT :

FRANK BUCKLAND, Esquire.

Decrease.
Close time. RICHARD LITTLE. Is 50 years of age. Has been fishing for crabs and lobsters for 20 years. Crabs and lobsters have diminished considerably. 20 years ago there were six or eight crabbers, and now there are 20. Recommends that all crabs under 5 inches should be thrown back, in order to preserve the fishery. Fishing goes on all the year round, and the season should be shortened. The fishing time should be from 1st March to the end of August. This would allow time for crabs to breed and for the little ones to grow. Lobsters would also be increased in numbers. Lobsters are caught full of spawn in March, April, and May. After this they disappear. About June they fall off. They are caught again in August, when they are "hollow," and looking for food, and go into the crab pots in search of food.

LOBSTERS.
Spawning.
Migration.

CRAY-FISH.

Decrease.

The smallest lobster he ever saw was 5 inches long. Catches hundreds of prawns but no small lobsters. The cray-fish are all gone. The smallest cray-fish are $7\frac{1}{2}$ inches long.

10 years ago the pots used to catch in one morning more cray-fish than they do now in the whole season.

The 5-inch gauge should be applied equally to he and she crabs. The smallest lobsters are 5 inches long, but not many are caught now. The average size is 8 inches. All lobsters under 6 inches in length should be put back. If all the berried hens were put back the fishery would not be worth attending to. There are 40 men using 20 boats. The average number of pots carried is three dozen to a boat, or 720 pots in all. The fishing ground is about nine miles long and three miles wide. The depth of water from 1 to 22 fathoms.

LOBSTERS.
Gauge.

The fishing begins in March and the fishermen fish as long as they can.

JOHN LITTLE. Has been crabbing 20 years. Crabs and lobsters are not so plentiful as they used to be. Crabs crawl according to the season. In spring the fishermen go further out to sea and catch lobsters. The ground at Looe has not been so much fished because of the driving boats, which begin fishing in July and go on till September. Lobsters are then in deep water and are protected by the drift nets.

Migration.

"Buns" or "queens" or "she" crabs should be put back to the water if under 5 inches long. Many crabs run as small as 4 inches. "Sheer" or sick crabs should always be returned to the sea. The fishermen very often break up small crabs for bait. If the weather is hot in May no lobsters can be caught; if it is cool three or four dozen may be caught in a day.

CRABS.
Gauge.
Soft.

In a month or two the hollow hens come. Little lobsters would go through the bars of the pots, just like shrimps.

LOBSTERS.

Always tries to keep a stock of bait. Generally keeps gurnards pickled in brine. It is necessary to keep the colours bright because lobsters seem to be attracted by colour. The lobster ground is very rocky. Pots are set in the "pills," i.e. hollows in the rocks. They are worth 20s. per dozen; the lines are worth 1s. each. Crabs live longer than the lobsters in stony ground.

Bait.

EDWARD PENGELLY. Has been crabbing for many years. Where there was one crab formerly there are ten now. The men who owned the smacks used to get the profit, now the fishermen send away the crabs and lobsters direct. Formerly they sold them for 8s. per dozen of 26, now they get 14s. per real dozen of 12.

CRABS.
Increase.

Crabs are fished for harder than they used to be on account of the increased price. The season begins in March and ends in July. Would propose that cock crabs of 5 inches and hen crabs of 4 or 4½ inches should be returned to the water.

Gauge.

JOHN MEDLAND. Has been 30 years crabbing. Begins fishing in February and keeps on as long as he can, sometimes to the end of September. The number of boats has increased from 5 to 20. Cannot say if crabs have diminished in number.

Boats.

Cock crabs under 5 inches and hens under 4 inches should be returned to the water. Would not think such a law oppressive. If berried hens were returned to the sea they would be caught again as "hollows." Berried hens might be kept in pots and allowed to spawn there. Would like to have April and May a close time; during those months crabs and lobsters would cast their spawn. Few small lobsters are caught. Seldom sees crabs in spawn; if any are seen it is in May. They bury themselves in the sand.

Gauge.

Close Time

Spawning.

Lobsters are not plugged here, their claws are cut or tied.

WILLIAM PRYNNE. Thinks the increased price paid for crabs and lobsters is the cause of their falling off. All males and females under 5 inches should be returned to the water. Many small crabs are broken up and used as bait. They are used as bait to catch crabs. When the "hookers" knock off, bait is scarce, and then crabs are used. From July onwards bait is scarce because the fishermen are all gone pilchard fishing. Young crabs are valuable as bait at certain times of the year.

Used for bait.

The natural close time for crabs and lobsters begins on 1st August. Young crabs are the best bait for wrasse, and wrasse are an excellent bait for lobsters.

Common sense leads the fishermen to spare the small crabs at all times except when they are required as bait. The fishermen agree with him that when the hookers have done fishing bait is very scarce, and that under these circumstances it is absolutely necessary to break up small crabs to catch wrasse, which are used to catch lobsters. The Looe men have sufficient sense to return the small crabs at all other times of the year.

Ship Inn, Polperro, Wednesday, 20th September 1876.

PRESENT :

FRANK BUCKLAND, Esquire.

LOBSTERS.*Decrease.**Enemies.**Pots.**Berried.***CRABS.***Increase.**Gauge.**Berried.**Gauge.**Trawlers.**Bait.**Decrease.**Gauge.**Spawning.**Casting their shell.***LOBSTERS.***Spawning.**Berried.***CRABS.***Migration.**Trawlers.*

EDWIN BUCKLEY. Has fished for crabs and lobsters for 30 years. There are seven boats now; 30 years ago there were four boats. Each boat carries on an average 100 pots. Crabs have not decreased so much as lobsters. Conger eels destroy the lobsters when they are small. The fishermen do not catch so many lobsters now as they did 20 years ago. There are more pots out than there were 20 years ago. At that time the usual thing was to have 8 strings, 8 pots to a string. Now there are 12 to 14 strings, and 8 pots to a string. The smallest lobster he ever saw was 3 inches long. The average length is from 10 to 12 inches. Hundreds of lobsters have been caught during the last five years under 5 inches in length. All the fishermen agree that lobsters under 6 inches long should be returned to the water. The fishermen would gladly do this. They might be allowed to get through the bars of the pots. The fishermen could not afford to put back the berried hens. Crabs have increased during the last 10 years. Has always thrown overboard spawning crabs. Would like to have a law to enforce this. "Buns" or hens under $4\frac{1}{2}$ inches should be thrown overboard, and cocks under 5 inches should be thrown back.

RICHARD OLIVER. Has been a fisherman for 20 years, and has fished for crabs and lobsters, though not much. The ground begins at Looe Island, and is 6 miles long and 3 miles broad. There are 700 pots fishing there. Keeps out fishing as long as he can. Would not object to put back cock crabs under 5 inches, and hens under $4\frac{1}{2}$ inches, and lobsters under 6 inches. This is the smallest lobster.

Berried lobsters should be sent to market; but berried crabs should be returned to the water. Sells his fish in Bath, Bristol, London, &c., and sends them away himself. When the smacks came here he used to get 12s. per dozen of 26, now he sells them by the barrel. The largest are 10 or 12 inches; the smallest are very small.

WILLIAM BUCKLEY. Agrees to a gauge of 5 inches for male crabs, $4\frac{1}{2}$ inches for females, and 6 inches for lobsters. Fishes further out at sea, in deeper water than he did formerly. Goes where the drift net fishermen do not go, out by a single rock, where there are any quantity of hen crabs. Trawlers injure the crab and lobster fishery. The trawls drag over the clear ground and catches both crabs and lobsters. They destroy the spawning ground.

Skates and rays are used as bait. It is not customary to break up small crabs for bait, but "skerries" or spider crabs are used to catch wrasse. The fishermen would not break up small crabs for bait unless driven hard, as it is against their interest to do so.

CHARLES JOLIFFE. Has bought crabs for the last five or six years, except last year. Since the well boats left off coming, the price has more than doubled. Large crabs are not so plentiful as they used to be. Twice as many small crabs are caught here as used to be caught. Has bought scores under 4 inches long. Agrees to the proposed gauge of $4\frac{1}{2}$ inches for female crabs, and 5 inches for male crabs, and 6 inches for lobsters. As a merchant he would like to have the ideas of the fisherman carried out.

E. LAUGHERIN. Coastguard officer. Crabs spawn when 3 inches across the back; they are then 6 months old. If you take away the male from the female another will come. Has seen edible crabs the size of a pin's head. They spawn in the spring and fall of the year. Large crabs shed their shell twice a year; small ones every four or five months. The largest crabs weigh up to 14 and 16 $\frac{1}{2}$ lbs.

Lobsters spawn all the year round. The smaller lobsters of 3 or 4 inches in length go out through the pots. Young ones are found in the wells of carrying ships. Suggests that berried hens should be kept in pots till the berries are hatched out.

Crabs go from place to place, and sometimes travel 10, 12, or 14 miles. Some crabs got out of a store pot, and he found them again over 7 miles out at sea in a few days. They like to get in shore to cast their shells. The trawlers have torn up the feeding grounds of the crabs and lobsters, which are the sand plains between the rocks.

Polruan, Wednesday, 20th September 1876.

PRESENT :

FRANK BUCKLAND, Esquire.

JOSEPH CLIMO. Has fished for crabs and lobsters for 20 years. Fish are very scarce now; this year's take has been very bad. There has been a falling off for the last 10 years. During that time the number of boats has increased. *Boats.* Some boats fish for 10 months out of the 12. There are no more fish caught, though more men fishing. Little time is left to the fish to grow or breed. Has purchased and sent to market thousands that ought not to have been caught. Some fishermen have returned the small male crabs to the sea. Trawling is very injurious, especially inshore. Thousands of the crabs are taken by trawlers. Has seen very large females, weighing $5\frac{1}{2}$ lbs., brought into Plymouth Barbican. Crabs spawn in January and February. Once he had been fishing in October, and had left some crabs in a store pot till after Christmas. In January every one was full of spawn. There were nine or ten crabs. Has never seen more than 10 crabs with spawn in the summer months. Crabs are very particular as to diet. They will not eat stale fish. The best bait are cod, gurnards, ray, wrasse, plaice, and soles. The head of fish is generally put in the pots; the eye of a dead fish attracts the crabs. Eight pots go to a "string." These pots are fished in from 7 to 25 fathoms water. *Trawling. CRABS. Spawning. Food. Bait.*

In winter crabs bury themselves in the sand. In March and April many are caught with sand on their shells. As the summer advances they begin to crawl, and will nip one's fingers. In the winter they seem dead. Crabs have been marked and found in a week or more two miles east of the harbour after being "nicked." When they are not nicked they can pinch with their claws. When they have been nicked they cannot pinch. There should be no distinction in the measure for males and females. The crabs do not grow so long in the shell as the males. Males under 5 inches and females under $4\frac{1}{2}$ inches should be returned to the water. There are 20 females to one male. Females do not grow so large as the males. The close season should commence on 1st October and leave off on 1st March. Hundreds of boats go out on the 1st January and kill many spawning fish. The fishermen do not break up small crabs for bait, they can get 2d. each for small crabs. It is a rare thing for them to break up the small ones for bait. He gives 2d. apiece for them; if they are very small three count as two. Watery crabs are broken up, when they are getting hard after casting their shell. Lobsters may be seen in spawn every month in the year, at least from March or April to the present time. Cannot determine the exact time for the spawning of lobsters. Lobsters will eat any kind of bait, dried skate, stock fish, &c. They will take stinking bait. Crabs are quite the reverse. To catch them spider crabs or "corwichs" are used. If he gets a lobster with the berries ripe he takes them from the tail and throws them overboard. Berried hens are not selected; they go together whether spawned or not. Thinks if the fishermen were compelled to return berried hens to the water they would take out all the spawn in such a manner that the operation would never be detected. This would be a very easy thing to do. Such a law would deprive the public of the lobsters, and the eggs would be lost. Some years ago the lobster smacks came for lobsters and one of them had four or five dozen in a cabbage net, and there were thousands of little lobsters an inch long in the well of the vessel. The mothers had not been there more than a week. The little lobsters might have come from a previous cargo. They were from half an inch to three quarters of an inch long. The fishermen say there are 40,320 eggs in a lobster. No lobsters should be taken under 7 inches long; they are seldom caught under 9 inches. He throws overboard any he may catch below that size. *Bury themselves Gauge. Close time. LOBSTERS. Spawning. Bait. Berried. Eggs of. Gauge.*

1s. per lb. is the right price for lobsters. The fishery begins to the west of Udder Rock; it does not extend east of that point. The western limit is one mile west of Gribbin Head. The total area is seven or eight miles in length, and three miles out to sea. The Gorran boats fish outside the Fowey ground. They have larger boats. Crabs and lobsters come towards the shore in warm weather, and bury themselves in the winter. There is sand off Fowey,

with rocks and patches of sand to the east. Sometimes the pots get into pits among the rocks and are lost.

There are six or seven boats at Fowey. No boats have more than seven or eight strings of pots; say 64 pots each, or 354 pots in all. The close season should extend from October 1st to March 1st.

Close time.

Fishmongers' Hall, London, Wednesday, 1st November 1876.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

CRABS.

Decrease.

CHARLES POLAND (*examined by Mr. Buckland*). Deals in crabs and lobsters among other things; has been in business 20 years. Crabs have fallen off to a slight extent in number. The falling off commenced about 10 years ago; but during the last 10 years the number has remained stationary. The crabs are as large as ever; the decrease is in number. Gets a great many small crabs from Craster, Boulmer, Newbiggin, Chat Hill, Bilton, and other places in Northumberland. Obtains lobsters from all over Scotland, especially from the Hebrides and the Orkneys; they are being caught all along the Ayrshire coast. Lobsters come from Cullercoats, and some small ones from Dunbar. The size of crabs remains about the same; the price remains the same. Gets very fine lobsters from Ireland, but very few crabs. Plenty of lobsters come from Skye.

Gauge.

Is in favour of a gauge both for lobsters and crabs. Doesn't buy crabs two for one in London. A gauge of $5\frac{1}{2}$ inches would seriously interfere with the crab fishery in Scotland. The Scotch crabs are a smaller race than the west coast crabs. The 5-inch crabs might be returned to the water. It would be an advantage to have these crabs returned all over England. Rarely gets crabs in spawn. It would be an advantage to have these spawn crabs returned. The fishermen might, however, have little compunction in taking off the spawn. There are not many soft crabs sent to the London market. Has seen lobsters 10 lbs. in weight. The smallest lobsters come from Ayrshire. A lobster $2\frac{1}{8}$ inches in the barrel (*produced*) is too small for the market, and ought to be put back. The small lobsters from Bognor are caught in the prawn pots more from accident than design. Is of opinion that no lobster should be taken under 4 inches in the barrel. Gets a fair quantity of berried lobsters in the course of the year. They come from some districts in the spring, from others in the summer, and from others in the autumn. They are more rare in the winter. It would be an advantage to put back the berried hens; but thinks the fishermen would take out the berries. Berried hens are sought for at times in the London market, and at other times are a drug. The berries are used for colouring sauce and decorating fish. The cooks are anxious to have the berries. It would be difficult to obtain a substitute if the sale of berried hens were prohibited. Irish lobsters come plugged to Billingsgate; but it is very rare to have them plugged from other districts. Plugging has the effect of causing great anguish, and of ultimately killing the lobster. Never heard (except from report) of crabs being put into cold water and gradually boiled. Gets a large supply of lobsters from Norway from and after midsummer. They come over invariably alive in welled vessels. Has seen lobsters packed in charcoal. It is very easy to distinguish a Norwegian lobster from an English and Scotch lobster. The English lobsters are speckled; the Norway lobsters are very brilliant in colour without any speckles. Does not know what gives the colour to a Norway lobster when it is boiled. Is not in favour of a close season, because the seasons in Scotland and England are so very varied. Only recommends a 5-inch gauge for crabs, and a 4-inch gauge in the barrel for lobsters. It would be perfectly easy, if the sale of berried hens were made illegal, for the fishermen to remove the berries at sea. It would be possible for these berries, if placed in certain places, to prove prolific. They distinguish the sex of crabs in Billingsgate by calling them king and queen crabs. There is a close season for lobsters in Norway; but it is not strictly observed.

Berried.

LOBSTERS.

Gauge.
Berried.

Plugging.

Boiling.

Norwegian.

Gauge.

LOBSTERS.

WILLIAM BENJAMIN FISHER (*examined by Mr. Walpole*). Fish-salesman at Billingsgate. Over 20 years in business, and has been dealing in crabs and lobsters, chiefly in Norway lobsters. Has been dealing in Norway lobsters during the whole period. The Norway close season commences on the 15th July as far north as Bergen, and north of Bergen on the 1st August. The close season terminates at the end of August for the whole country. He commences sending for the lobsters to Norway very early in the spring. Has sent in the autumn months, but considered it such an injury to the fisheries that he gave it up. Tried for three seasons, but it destroyed the spring fishery, and gave it up. Thinks the Norwegian fisheries ought to be closed throughout the autumn. There are very few lobsters caught in Norway in the autumn. At this time of the year 6,000 to 8,000 lobsters a week are received at Billingsgate from Norway. Only one part of the Norwegian coast is fished.

Norwegian.

Close time.

Begins to send for the Norwegian lobsters in March and April. The season is later as you get further north. Sends over welled smacks, and contracts for the whole take. The Norwegian lobsters are caught in coops. The supply has fallen off during the last seven years, and he attributes this to the autumn fishing. 10 or 12 years ago used to have about 600,000 lobsters a year from Norway, from three districts only. Is now working six districts (double the amount of coast), and the six districts only produced last year from 400,000 to 500,000 lobsters. There has been therefore a very serious falling off in Norway. The matter has been before the Norwegian Parliament now for three years running. A 7-inch lobster in Norway is full price. Under that size half price. Believes that there is no gauge for lobsters in Norway. Out of 100 Norwegian lobsters not 20 per cent. are under the 7 inches. Heard Mr. Poland's recommendation of a 4-inch gauge in the barrel. This would be about 8 inches in length. There would be thousands of Norwegian lobsters under this gauge. Would not object to the institution of this gauge, but it would be a serious thing to the Norwegian fishermen. In his judgment the Norwegian lobster is smaller than the Scotch. Does not get 10 per cent. of large lobsters. A two to three pound fish is a fair Norway lobster. Thinks a 8-inch gauge would be too large for Norway; 7½ inches would be quite sufficient. Would agree to a 7½ inch gauge.

Decrease.

Gauge.

Lobsters in a favourable passage reach Billingsgate from Norway in four days. In hot weather there is great mortality, and consequent waste.

Gets very few berried lobsters from Norway. Doesn't know the reason of this.

Berried.

There are a great many lobsters come from France. They come from the Cherbourg coast and south of it. Thinks that perhaps 200,000 lobsters come to London from France. The quality of the French lobster is not good; these come by boat to Southampton, and thence by train to London. The lobster fishery in France is principally in the autumn—June, July, August, September. In August the French allow no berried hens to be taken, and the fishermen during that month scrape out the berries. The French lobsters are in season at the very time when the Norwegian lobsters are out of season. A French lobster in October would be a good fish, a Norwegian lobster watery. It is utterly impossible, therefore, to institute any close season in the London market applicable to all places and all localities.

French.

Spawning.

A few lobsters also come from Sweden. The Sweden season is rather earlier than the Norwegian season; and the Sweden fishery is being extinguished through the autumn fishing.

Swedish.

The proper remedy for Norway is to close the Norwegian fishery in the autumn, and this therefore is probably the right course in the Hebrides, where the fishermen wish to close the autumn fishing.

Close time.

It would be very difficult to enforce local seasons.

(*By Mr. Buckland.*) A 3 lb. Norway lobster is a fair size.

GEORGE STEVENSON (*examined by Mr. Buckland*). Fish merchant at Billingsgate. Has been established on his own account for 40 years. The crabs come chiefly from the West of England, and a very few small ones from Scotland. The crabs have fallen off very much both in size and in number. The falling off began 20 years ago, and has been progressive. Used to buy large crabs from 7s. to 9s. a turn; they are now 15s. Cannot tell the cause of the falling off, but thinks it is due to over-fishing. By over-fishing, means

CRABS.

Decrease.

Railways. taking everything and throwing nothing back, all the year round. The introduction of railways has increased the consumption and the supply. Fish now come from every part of Scotland, whence they never came before. Railways have, however, not only increased the supply, but have also dispersed it. The great towns, which used to be supplied from London, are now supplied direct from the coast. Believes that Birmingham, Manchester, Liverpool, Leeds, and Bradford are well supplied. Is not in favour of a close season, but thinks that no crab should be taken under 5 inches. The London fish merchants would all be glad of this. Had three barrels of light crabs from Portree this morning. They are valueless, because there is little in them; but they are quite wholesome. It would be impossible to carry out a law making it illegal to sell light crabs. There are such a few of them that it would not be worth while to do so. It would be impracticable to have a law for putting back the berried crabs.

CRABS.

Gauge.

Sof

Berried.

LOBSTERS.

Price.
Mode of
counting.

Can't say whether lobsters have been falling off on our own coasts. Used to get a great many Scotch lobsters in London which are now sent to other large towns. When the railway was first opened up, they had a large supply of Scotch lobsters; now they are distributed over the whole of the United Kingdom. The market for lobsters is liable to extreme fluctuation. A box worth 8*l.* one day, with 60 to 80 lobsters, may next day be worth only 4*s.*

A turn of lobsters may consist of different sized fish. The smallest fish are called worst Nancy; the slightly larger fish, best Nancy. 80 fish: 40 best Nancy, and 40 worst Nancy, make a turn.

The best and worst Nancy are small lobsters, respectively 9 $\frac{3}{4}$ inches in length, and 4 $\frac{1}{2}$ inches in the barrel, or 8 inches in length, and 3 $\frac{3}{4}$ in barrel.

A turn may also consist of best doubles. These lobsters are bigger than the best Nancy; 40 of these make a turn.

A score and a half of large lobsters also make a turn, which in this case contains 20 good-sized lobsters and 10 bigger still. Forty to fifty years ago he has bought lobsters for from 1*l.* to 3*l.* a turn. At that time the turns of lobsters were considerably bigger than they are now. A fish put into a score now would have been a "best double" 40 years ago. The baskets are made smaller, tending to deceive the purchasers. Sees no remedy for this. The cause of the cheapness of lobsters then was the great supply from Norway, Sweden, and Heligoland. The Heligoland fishing is now extinct. The Swedish fishing is rapidly becoming so; and the Norwegian fishing is also falling off; they are destroying the fishery. Does not believe that the Scotch fishing is becoming extinct. Lobsters which used to be 6*d.* are now 1*s.* and 1*s.* 6*d.* Very few lobsters are exported from London to France. But lobsters are imported from France to London. Thinks that no lobster should be sold under 8 inches in the body, and 3 $\frac{1}{2}$ inches in the barrel. Doesn't see, however, how this is to be carried out. The fishermen would find means for selling them. It would be possible to legislate for Billingsgate and the large markets, as the salesmen would assist to carry out the law; and if the fishermen found that they were unable to sell them, they would put back the small lobsters. The Norway merchants, however, sell very small lobsters; doubts whether their sale can be prohibited here. If they were permitted to sell small lobsters, they would handicap our own countrymen. The Fishmongers' Company appoint three very practical men to seize unwholesome fish, and these men could properly check the sale of undersized lobsters and crabs.

There is a difficulty in throwing back the berried hens. They are generally worth twice as much as any other lobsters. The spawn is bruised and put into sauce, and makes better sauce than the lobster itself. In salads it is boiled and sprinkled over the salad. It is a capital article of food. The spawning hens are of value to the cooks, who won't have lobsters without spawn. The sale of berried hens must not be prohibited, as it would be preventing the fishermen taking the most valuable fish. The production of the lobsters is so enormous that, if a gauge were fixed, the taking a few berried hens would make no appreciable difference. Berried hens are in the best possible condition as food. They form fresh spawn immediately after they have cast their spawn. If they have no spawn outside, they are full of the red coral inside.

Cannot tell how often a crab sheds its shell.

If the sale of berried hens were prohibited the fishermen would remove the berries.

Heligoland.
Sweden.
Norway.
Scotland.

France.

Gauge.

Enforcement
of law.

Berried.

Spawning.

Some of the Irish lobsters are now plugged, but very few lobsters are plugged now. It has fallen out of use, since Sir Peter Laurie took the matter up. The practice is very cruel, and deteriorates the fish. None but a fool would boil crabs in cold water. Many of them are stabbed before they are boiled. It is impossible to legislate on this subject.

(By Mr. Walpole.) Doesn't recommend a close season for lobsters. Does not think it necessary. The lobsters are equally good all through the year. Receives good crabs in the London markets during the autumn. There are good crabs all the year round. Is not aware of the 9 Geo. II. c. 33, fixing a close season for Scotch lobsters. There is no difficulty in bringing the crabs alive from Scotland, but they don't pay the cost of carriage. The Portree crabs are of an inferior sort. It is impossible to get any statistics of the value of the lobster and crab trade.

The turn of lobsters used to be from 1*l.* to 3*l.*; it would be now 5*l.* to 8*l.* The increase of price has not been so marked with crabs; a 1*s.* crab now fetches 1*s.* 6*d.* or 1*s.* 9*d.* The increase in the price of lobsters is due to the falling off in the supply of foreign lobsters. It is not due to the increased population. The take of our own coasts has not fallen off; but the lobsters are more distributed over the country. As over fishing has led to a decrease of foreign lobsters, it may lead to a decrease of our own supply, but this has not come yet, and the gauge is a sufficient remedy.

JAMES HARVEY (examined by Mr. Walpole). Shell fish merchant, of Fleet Street. Deals largely in crabs and lobsters. Is a retailer. Prefers Norwegian lobsters to all others. Scotch the next. English (British) third, and won't take the Jersey and French lobsters if he can help it, they are always watery. The Irish lobsters are very good. The Norwegian lobsters stop in August and don't come in again till Christmas. The English, Scotch, and other lobsters arrive all the year round. There are always some lobsters very light, but there is no particular period of the year when the lobster is in bad condition. There are berried hens all the year round. The Skye saying, "that lobsters are not good unless there is an R in the month," is not true here. There are about 15 boxes of Scotch lobsters to a couple of shiploads of Norwegians. The Cornish are the worst lobsters; but the finest crabs. The Cornish lobsters are not good at any time of the year. They waste in the boiling, and are full of water. All along the English Channel the lobsters are delicious. Thinks that no lobster ought to be sold under 10 inches in length ($4\frac{3}{4}$ in barrel), and is not apprehensive of this or the Norwegian trade. The Norfolk gauge of 7 inches would be considered in London "worst Nancy." A turn consists of 40 best Nancy's, 40 worst Nancy's, 40 best doubles, and a score and a half of large lobsters. If he wants the turn of the large lobsters, he must also get the turn of small ones. The merchants won't sell the big without the little.

Does not think that crabs are decreasing generally; has 400 a week, big and little. The price is rising, but this is due to the increased demand, and not to the decreased supply. Sells nearly as many crabs in the winter as in the summer, but most are sold in the summer in the hot weather. A cock crab fetches double the price of a hen crab in the London market. Even among crabs of the same size, the cock fetches most. The hen crab is not such good quality as the cock. In London people don't like the red meat, *i.e.*, undeveloped spawn, which is so liked in Scotland. The West of England crabs are the best. Is in favour of a 6-inch gauge for crabs. This, however, would be a serious injury to the Scotch fishermen. He, however, never buys Scotch crabs if he can help it. Cock crabs are the best in the spring. Hen crabs then are as light as a feather. The hen crabs would have the berries under their tail in the beginning of December; they then get under the rocks and cannot be caught. This applies chiefly to English crabs. There is no time of the year when both cock and hen crabs are both out of condition.

(By Mr. Buckland.) Is aware that very small lobsters are sent from Norway. The smallest are now about 7 inches. Small lobsters are also taken in the prawn pots at Bognor and Selsea Bill. It would be very advisable to stop these small lobsters being taken.

Knows Hamble. The crabs and lobsters are kept there in boxes for the London market, and taken out as they are wanted.

The hen crabs are not good in the spring, but cocks are then at the best. Prefers cock crabs in the summer, but in August and September the hen crab

LOBSTERS.

Plugging.

Boiling.

Season for.

CRABS.

Scotch.

LOBSTERS.

Price.

Norwegian.

Season for.

Cornish.

Gauge.

Mode of counting.

CRABS.

Price.

Gauge.

LOBSTERS.

Gauge.

Store pots.

- CRABS.**
Soft. is at its best. The cock crab is good all through the year. Often gets baskets of crabs from Scotland. There are a large number of white crabs among them. They are very small, and some of them are watery. Is in favour of these white crabs being returned to the water. Gets most of these white crabs in the spring of the year. A berried hen is worth double as much as any other lobster. Some men get a good living by buying spawn from retailers, and retailing it to pastry-cooks. Has had 1s. for 2 ozs. of spawn.
- Berried.* A crab under 6 inches hardly pays to brush, i.e., clean. A hen crab has to have all the spawn, and the "feathers" to which the spawn is attached, brushed out from under its tail before it is sold. Would have no crabs sold under 6 inches. Thinks that the retailers generally would approve this gauge, but the small retailers buy the small crabs and lobsters cheap.
- Gauge.* HENRY BURLAND (*examined by Mr. Walpole*). One of the fishmers at Billingsgate. Is appointed by the Fishmongers' Company. It is his duty to inspect all fish brought into the market, and judge whether it is fit for human food: if it is unfit, to condemn it and seize it. This applies to shell fish as well as all other kinds. There are three officers in this position. Theoretically all the fish brought into the market pass under the cognisance of himself or one of his colleagues. Has no instructions to ascertain whether the fish sold can be legally sold: only looks to its condition. If a gauge were fixed for crabs, there would be a difficulty in carrying it out. Hardly sees one out of every 50 crabs sold. Only sees that they are alive. The size of the crab in most cases could not be ascertained till the fish was exposed for sale by the retailer. Sometimes 120 packages of crabs arrive by the same line of railway; they are scattered over the market, and if there were 20 fishmers they would be unable to see every package. The sellers even now try and set the fishmers at defiance, with respect to the sale of unsound fish, and they would do so with live fish. If it were illegal to buy, sell, or take unsizable crabs, it would act as a great deterrent to their capture; and this result would be increased by the knowledge that the fishmers would seize unsizable fish. But the only way to stop the traffic would be to make it illegal for anyone to have an unsizable fish in his possession for sale. In this case it would be possible to stop the traffic in unsizable crabs and lobsters. Thinks that a lobster over 8 inches might be sold. Under that length should not be sold. Thinks a barrel gauge easier than a gauge of the entire length. Is in favour of a 5-inch gauge for crabs. Smaller crabs should not be sold.
- LOBSTERS.**
Gauge. (By Mr. Buckland.) The crabs come to Billingsgate in baskets and in barrels, both dead and alive. Never heard of crabs and lobsters being packed in coal.
- CRABS.**
Gauge. EDWARD WINDER (*examined by Mr. Buckland*). Succeeded to Mr. Scott's business in the Haymarket 12 months ago. Has a very large demand for crabs and lobsters, especially in the summer months, July for preference. This is because oysters are out of season. His experience does not extend beyond 12 months. He doesn't care for lobsters under 9 inches, prefers 12-inch lobsters. There is no great demand in his business for berried hens. Doesn't care to have crabs under 6 inches. Wouldn't object to gauge of 6 inches for crabs and 9 inches for lobsters. If it were made penal to sell them anywhere, it would stop the catch on the sea coast. The mere fact of a law would stop the sale. Tradesmen do not like to see articles which it is illegal to sell exposed in their shops.
- LOBSTERS.**
Berried. (By Mr. Walpole.) In his opinion 5 inches is too small for a crab, and would prefer a 6-inch gauge. Thinks this might have a prejudicial effect on the smaller tradesmen in the poorer districts of London. This, however, ought not to influence Parliament in considering the object in view.
- Gauge.* Prefers a 9-inch gauge for lobsters, and does not think that it would be a serious injury to the trade eventually. It would be ludicrous to go below the 8 inches.
- CRABS.**
Gauge. HENRY BARBER (*examined by Mr. Walpole*). A fish salesman in Billingsgate, established 40 years. His own experience extends for 29 years. Deals largely in shell fish. Obtains his lobsters chiefly from Scotland, Cornwall, Devonshire, Jersey, and the Channel Islands. The Scotch lobsters come principally in the colder months, the English lobsters from the spring to the autumn. The Scotch and English lobster seasons are perfectly different. Thinks the difference is due to the difficulty of carrying the lobsters from
- LOBSTERS.**
Gauge. Season for.

Scotland in the hot weather. Gets lobsters from all round the Scotch coast, especially from the Hebrides and the Orkneys. A good many from the mainland from Thurso to Skye, and from Stornoway, Tarbert, Lochmaddy, Ben Becula, and South Uist. Some of the Hebrides lobsters always die. These are those out of season. The mortality arises chiefly among the lobsters which are stored in ponds, both in Stornoway and Tarbert. Has never refused to receive store lobsters. But the pond lobsters are half starved and lighter than the others. Has a pond at Herne Bay himself. Has 2,000 lobsters there, has kept them there two months. They don't deteriorate enough to make it desirable to prohibit the ponds. The lobsters are stored to supply London in stormy weather.

LOBSTERS.

Kept in ponds.

Thinks legislation for lobsters is very greatly required. A gauge is very necessary. No lobster under 8 inches should be sold. Is in favour of preserving the berried hens. The berried hen is the most valuable of all lobsters, but not for the market, except during the London season. If the sale of berried hens were prohibited, fishermen would be tempted to remove the berries. But a practical man could always detect whether the berries had been removed. It would, however, be impossible to distinguish between a berried hen which had just shot her berries, and a berried hen whose berries had been removed artificially. Under all circumstances is, however, in favour of prohibiting the sale of berried lobsters.

*Gauge.**Berried.*

Thinks the berried lobster more valuable than the lobster with coral in her. The cooks, if they can't get the berries, will have to take the coral.

Lobsters are very thin in June, July, and August. This applies to West of England lobsters; but it is impossible to make a close season. There are always good lobsters among the bad ones.

Crabs come from all round the coast except Wales. The supply is falling off, especially in the West of England. There are two species of edible crabs; the West of England crab is a large crab; the east coast crab is a small crab. A gauge that would suit the West of England would not suit the East coast. Thinks that no crab under 5 inches should be taken or sold. It should be illegal also to sell crabs with spawn under the tail. Many crabs in spawn come to the London market.

CRABS.

*Decrease.**Gauge.**Berried.*

(*By Mr. Buckland.*) The small lobsters come from Bognor and Skye. Their sale should be prohibited. The crabs live better when they are packed close together. It would be very difficult to enforce the return of berried hens. Cray-fish are dying out; they come from the Cornish coast and Scilly. They frequently have them full of spawn, and these he thinks ought not to be sold. The cray-fish trade is quite as important as the lobster trade. Cray-fish are dearer than lobsters. They are 2s. to 2s. 6d. each when the average size. Never heard that the cray-fish are a migrating fish; they can always be caught in Scilly. Thinks that no cray-fish under 10 inches should be taken. Has bought 150 cray-fish at 9d.; they are now 2s. and 2s. 6d. each.

CRAY-FISH.

*Decrease.**Price.**Gauge.*

Crabs shoot their shells in the spring time. The soft crabs ought not to be sent to London, but returned to the water uninjured. This is very important to the crabs and to the London tradesmen. There are a large number of them come in the spring of the year from Cornwall. The Scotch crabs come the same way, but they are not so important.

CRABS.

Soft.

JOHN SAMUEL, Second Warden of the Fishmongers' Company. The powers of the Company are derived from the Charter 2 James I., 30th August 1604. Will read the portion of the Charter conferring the powers of seizure of unwholesome fish:—

Enforcement of law.

"And moreover we will, and by these presents for us, our heirs and successors, we grant, to the same Wardens and Commonalty of the mistery of Fishmongers of the city of London, and to their successors. That the same Wardens and the Assistants of the mistery of Fishmongers of the city of London aforesaid, and their successors which for the time shall be, from time to time hereafter for ever shall have, make, and use within the city of London and within the liberties and suburbs of the same, and within our borough of Southwark aforesaid, at all convenient times, the full and entire survey, search, government, and correction of all and singular persons, denizens, and strangers, and of all others whatsoever, of whatsoever art or mistery they shall be selling, or having, possessing, or keeping to sell, any salted fish, salted herrings, fresh fish of the sea, salmons, stock fish, or any other fishes whatsoever, within the

*Enforcement
of law.*

same city of London, liberties or suburbs of the same city, or within the same borough of Southwark, and the liberties and precincts of the same borough. And that it shall be lawful to the Wardens of the same mistery for the time being, and to every of them, from time to time and at all times convenient, whensoever it shall seem good unto them or any of them, to enter into any house, shop, ship, cellar, wharf, and other places and places whatsoever within the city and borough aforesaid, or either of them, or within the suburbs, liberties, or precincts of the same city and borough, or either of them, where any such salted fish, salted herrings, fresh fish of the sea, salmons, stock fish, or other fish whatsoever shall be laid or housed, whether the same be in cask or without cask, and to view, search, and survey whether the same be wholesome for man's body and fit to be sold or no. And if the same fish, either fresh or salt, herrings, salmons, stock fish, or other fish whatsoever by them or any of them within the city, borough, suburbs, liberties, or precincts aforesaid, in such search shall be found to be unwholesome or corrupt, or unfit to be sold, that then it shall be lawful to the same Wardens of the Mistery of Fishmongers aforesaid, or to any of them, the same bad, unwholesome, and corrupt fish from the owners and possessors thereof as forfeit to take and seize, and thereof to dispose and do according to our laws of England, and the usages and customs of the said city of London and borough aforesaid from time to time used and frequented."

It would not be possible for the officers of the company to carry out a law of gauge under the powers contained in their Charter. But the company would be willing to undertake the duty if Parliament would confer on them the powers for doing so, for the purpose of protecting the fishery, and for the better provision of food for the London market; and would be willing to incur a reasonable expense with this object.

Board Room, Aquarium, Southport, Friday, 27th October
1876.

PRESENT:

FRANK BUCKLAND, Esquire.

CRABS.

Decrease.

Price.

Gauge.

JAMES CROOK, fish dealer, Chapel Street, Southport. Has been in the trade for the last 25 years—first in Manchester and latterly in Southport. Has dealt in crabs and lobsters during that period. Considers the supply of crabs has fallen off considerably during the last 16 years. During that period there has been a gradual diminution both in size and number. The principal supply for the Southport market comes from Scotland in spring and from the Isle of Man in the middle of summer. In winter very few are received, and they are Irish crabs. Purchases from the Manchester and Liverpool markets through salesmen. The price of crabs has doubled in the last ten years, and the size diminished one half. Calls a fair-sized crab one from 8 to 10 inches; the smallest are from $2\frac{1}{2}$ to 3 inches. In a barrel of crabs ten years ago all were a fair size through; at the present time there are only about a dozen really good crabs in a barrel, and they are put on the top. It is a great disadvantage to have the small crabs, as the majority of customers will not buy them. Considers a crab weighing 1 lb. to $1\frac{1}{2}$ lb., and from 6 to 10 inches in length, a fair sized one. Customers like crabs about $\frac{1}{2}$ lb. or 1 lb. in weight, or 6 to 10 inches in length, and will not purchase the small crabs, which are sold cheap to children. It is a perfect waste to send small crabs to the Southport market at all. Business would not be injured if the small crabs were kept entirely out of the market; is desirous they should be. A "full" crab is 6 to 10 inches lengthways, and crabs below 6 inches sell two for one. A man, used to counting crabs, would count out say 30 crabs, and call them two dozen. Some of these would be full, but the majority small. No crab should be sold under 6 inches across the back; 5 inches is too small. A man who was used to sorting crabs could distinguish the sizes without difficulty if he had the will to do so. Receives a good many "spent," "wasted," or "white-footed" crabs

amongst the others. They are very light, full of water, and perfectly useless for the table. These white-footed crabs come from July to October. They are a loss to his business, as he cannot sell them, and if his shopman send one out by accident it is returned. Sending out such crabs injures the business of the fishmonger. It is very desirable that the sale of these white crabs should be prohibited. Would welcome an Act of Parliament prohibiting the sale of them, and it would benefit the public at large. The "spent" crabs are those which have recently shed their shells, and upon which the new shell has not hardened. Crab fishermen are in the habit of killing these white crabs. Such crabs should be returned into the water in order to grow into hard crabs.

CRABS.

Soft.

Is also a dealer in lobsters. Lobsters have not fallen off in the same manner as crabs, but are very much dearer than formerly. Prices fluctuate according to Billingsgate prices, which vary with the supply from Norway and elsewhere. They have lately decreased in size very greatly. No lobsters should be sold under 9 inches, measured from the head to the end of the tail. Lobsters that size and larger could be sold better than smaller. Small lobsters should be returned to the water. Has received them as small as 4 or 5 inches, but such small ones should not be allowed to be sold. Often receives spawn lobsters. Is now receiving great quantities of spawning lobsters from the Orkneys. Orkney lobsters are the best and very large. The spawn is used by cooks to colour the sauce. It is a very great waste. If the public knew that the sauce in an ordinary sauce boat represented 1,000 lobsters they would not continue to use the eggs, which only please the eye, and in no way improve the flavour of the sauce. Has known the spawn when scarce to be sold at 6d. an ounce. There should be a close time for berried lobsters and small lobsters from 1st July to middle of August. It would be better if they were both put back into the sea at all times. All lobsters under 9 inches should be put back. Lobsters are not good for table just after spawning. When they have just spawned they are black under the tail, instead of being bright coloured. The Isle of Man crab fishery is nothing like what it used to be either in the size or quality of the fish. If the foregoing gauge and close time were enacted, it would benefit the trade of Southport, and increase the general supply of crabs and lobsters. If berried hens were put back into the water lobsters would be more plentiful and cheaper.

LOBSTERS.

*Price.**Gauge.**Berried.**Close time.*

WILLIAM HOWARD. Has been for five years a fishmonger in Southport. Is in the habit of dealing in crabs and lobsters. The best season for crabs is in the summer. Those sold in Southport are from the Isle of Man, Ireland and Scotland. In the summer most of them come from the Isle of Man, and they are the best. Crabs are small this season, and a great deal dearer and scarcer than last season. They generally run from 5 to 8 or 9 inches. (*Produced two crabs, one 4½ inches, the other 4¼ inches.*) Often has them smaller than that in a barrel, many of them only 3 inches. Such small crabs are not profitable. Visitors and hotel-keepers will not buy them. Often has to throw them away. There should be a prohibition of the sale of all crabs under 5 inches at any time of the year. There ought to be a close time for crabs from August to April. Just now not one out of twenty in a barrel are fit for sale. Often finds "spent" crabs beginning about August and getting worse during the winter season. Cannot sell them, and often has to throw them away. If customers buy them they do not find them good, and bring them back again. There should be a law to prohibit entirely the sale of spent crabs; it would increase business, and make crabs cheaper. Does not often have crabs with eggs under the tail, they are very rarely caught. Lobsters were scarce last summer, but are more plentiful now, and weigh from one pound to three pounds. In a basket of lobsters there are always some small, even less than a quarter of a pound. The small ones are not saleable. A lobster should not be less than a pound, which would be about 9 to 10 inches long. Small lobsters should not be sold at all, and should be allowed to grow into big ones. The berried hens are valuable. The eggs are used for colouring sauce. Cooks always want spawn, and there is always a great demand for berried hens.

CRABS.

*Season.**Gauge.**Close time.**Soft.*

LOBSTERS.

Gauge.

WILLIAM WRIGHT. Has been a fish dealer for between three and four years and for seventeen years a trawl fisherman. Has heard Mr. Howard's evidence and agrees with it. Small crabs should not be sold. The minimum gauge

CRABS.
Gauge.

should be 5 inches. All under 5 inches should be an illegal catch. A full crab is 8 inches. No "spent" crabs should be sold, and all small lobsters should be put back. There are about 10 or 12 crab and lobster dealers in Southport. Thinks they would agree on all points given in the evidence.

Infant Schoolroom, North Sunderland, Tuesday, 14th November 1876.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

Boats.

ROBERT PATERSON (*examined by Mr. Walpole*). Of North Sunderland. Lived 47 years at Newton-by-the-Sea (6 miles south of North Sunderland), after that 33 years at Monk's House; has been 4½ years here. Has been a fisherman all his life, and has been in the habit of fishing for crabs and lobsters. When he was a lad there were only four or five boats out of Newton, three or four out of Beadnell. There are twenty times as many boats now. He began fishing at 13, and stopped 13 years ago. When he began, crabs were of no use; there was no sale for them. Never sold crabs for more than 1s. a score—they would fetch a good deal more now. Lobsters were the main thing when he began. There were more lobsters when he began than when he left off fishing. When he was a lad has got from 52 to 75 lobsters in a night. Used in those days to fish with trunks (iron rings, 21 inches in diameter). There were 2 men and 24 trunks in a boat. No trunks are used now. Nothing but creels are used. Can't tell how many creels a boat carries. Many more than 24. Three times that number. The lobster season used to commence on the 1st December, and lasted till the end of May. After then the fishermen knocked off, and went on to line fishing and herring fishing. Can't say when they begin now. When he was a lad his lobsters all went to London. Welled smacks came for them. Lobsters were then 9d. a piece—this was a lobster 4½ inches in the barrel; under that they counted two for one. The biggest lobster he ever saw was 7½ lbs. the smallest was about 2 oz. in weight.

Trunks.

LOBSTERS.
Close time.

CRABS.

Decrease.

Spawning.

Soft.

Railways.

Gauge.

LOBSTERS.

Berried.

WILLIAM ROBSON (*examined by Mr. Buckland*). Has been fishing for crabs and lobsters off North Sunderland for 45 years; 3 miles north, 1 mile south, 5 miles out to sea is the extent of the ground. There are 15 boats fishing the ground. Each boat, on an average, sets 70 creels. Rings have gone entirely out of fashion. The crabs have fallen off greatly, and especially the last year. The falling off began 10 years ago, it is both in size and number. The merchants won't take very small crabs. They won't take them below 4 inches. 8 inches he would call a large crab. Thinks the decrease in the crabs is due to the excessive fishing. The fishermen begin fishing in January, and fish till June. The crabs are full of spawn, outside the shell, in June. The light crabs come in about this time of year (November). Sometimes they are hove away; but sometimes they are so soft that they float, and cannot get to the bottom. Thinks it is a great waste to destroy the soft crabs. The price of crabs has increased to 4s. 6d. a score. This is since the railway started. Before the railway opened there was no sale for them. Thinks crab fishing ought to commence in December and end in May. There ought to be no fishing during the rest of the year. It would also be advisable to put back the small crabs. None should be taken under 3 inches across the back. The soft crabs should also be returned to the water. Lobsters are not so large as they used to be, and there are not so many as there used to be. In May and June he catches five berried hens for one cock lobster. Gets no more money for a berried hen than another lobster of the same size. Thinks the falling off of lobsters is due to taking the berried hens. A few lobsters are in spawn all the year round; but it is very rare to get a berried hen in December. Has thrown away many berried hens himself. Many fishermen, however, would not agree to a law to throw back berried hens. Has seen lobsters as small as 2 inches in the barrel; these are inshore in June. Thinks that very small lobsters should not be taken, and that

the merchants should not take them. The merchants only now take lobsters under $4\frac{1}{2}$ inches as two to one. Has known lobsters killed by storms in very heavy seas, but not many.

JAMES ARCHIBALD (*examined by Mr. Walpole*). A fisherman at Craster. Has been 41 years crab-catching. Craster is about 8 or 9 miles south of North Sunderland. The crab ground extends off Craster 4 miles south, 3 north, and 4 to 5 seawards. There are not above 15 boats from Craster, but they have had 18 or 19. They have had many losses of life at sea, which have diminished the number of boats. When he was a lad there were about a dozen boats out of Craster. When he was a lad began crab and lobster fishing before December and ended at the close of May. The Craster men still keep to this old custom; but at Boulmer, Newton, and Beadnell he believes that the creels have been shot already, *i.e.* November. Thinks this is an injury to the fishery. Thinks the lobsters migrate from one ground to the other, and that the unreasonable fishing at one place affects the fishery in other places. There is not one crab or lobster now for 20 when he was a lad. When he was a lad could, with his present tackle, have got 50 score crabs in a night. The most they ever got last year was 22 score in one day. Never caught 30 lobsters in a day in his life. 12 would have been the average catch 40 years ago. There is many a day now when the boats won't average three lobsters. Does not think the average for the season would be more than three.

The crabs were the first to fall off. This failure began about 25 years ago. The lobsters began to fall off about the same time. Thinks the decrease was due to excessive fishing. There was a great increase of fishermen about that time. The railways had been made a few years before. Thinks that there are not merely more fishermen to divide the take among, but that the crabs have decreased in number. Thinks the proper remedy is a close season for crabs and lobsters. The close season should commence on the 1st June and end on the 30th November. This is the universal opinion at Craster. The coast-guard could enforce the law.

Thinks also that the little crabs and lobsters should be put back. A 4-inch gauge might do. A 4-inch gauge in the barrel might also do for lobsters.

GEORGE DAWSON (*examined by Mr. Buckland*). A fisherman of Craster for 40 years. Has heard Mr. Archibald's evidence. Agrees with him that crabs and lobsters are falling off. When first he went fishing they had nothing but iron rings; they now use creels. Agrees with a close season commencing on 1st June and ending 30th November. Thinks the Scotch crabs are larger than the Northumberland crabs. Thinks that all crabs under 4 inches should be returned to the sea. Will agree to a 4-inch barrel gauge for lobsters if all the rest will do so. Crabs are capital bait for lobsters, but not for crabs. Has broken up crabs as bait for codling. It is a good bait. There are very few crabs, however, used as bait at Craster. The haddocks are caught with mussels, which they get from Stockton. In November more than half the crabs are soft. The close season, if it were enacted, would save all the soft crabs. The he crabs continue softer longer than the she. The "shes" cast their shells in the height of summer. Cannot say how far crabs will travel. They crawl most in thick water. The crab pots are baited with fish. The crabs are sent away alive. The lobsters have their claws tied, not plugged. Has store places for keeping lobsters. They are called "hullies," *i.e.*, boxes with holes. The bottom of the sea is rocky, very little sand. In January they begin to fish in 22 to 23 fathoms water, and draw closer in shore from lobsters as the year advances.

WILLIAM MASON (*examined by Mr. Walpole*). Has lived in North Sunderland for 13 years. Was bred and born at Craster. Has been a fisherman for seven years for crabs and lobsters. Fished off Craster. Thinks the crabs are increasing in number. Believes that there is a bigger tonnage of crabs sent away than ever by North-eastern Railway. The station-masters at Chat Hill and at Christon Bank so informed him. Thinks, also, lobsters are increasing. Thinks that the cod are an enemy to the crabs.

Does not think that any legislation is necessary, except that he is in favour of a close season. The fishing season should begin on the 1st February and end the last of May for lobsters, and last of June for crabs. The question of size should be left to merchants and fishermen of the crabs, but all lobsters under 4 inches in the barrel should be hove away. A 5-inch crab is a large crab.

LOBSTERS.

Boats.

Close time.

Migration.

Decrease.

CRABS.

Decrease.

Close time.

Gauge.

Decrease.

Gauge.

Used for bait.

Soft.

Casting shells.

Store pots.

Migration.

Increase.

Enemies.

Close time.

Gauge.

CRABS.

Decreased size.

Gauge.

LOBSTERS.

Close time.

Berrien.

CRABS.

Spawning.

Soft.

THOMAS HALL, of Beadnell (*examined by Mr. Buckland*). A fisherman for 30 years. Fishes about 3 miles north and 3 miles south of Beadnell, and about 4 miles seawards. The bottom is rocky. The crabs have not decreased in number, but they have decreased in size in-shore. The price of crabs has risen. The very small crabs (say 3 inches) are hove away. Has had crabs as large as 5 lbs. weight. Is in favour of returning small and soft crabs and of having no close season. Is in favour of a close season for lobsters after May. They should resume the lobster fishing after September. The object of the close season is to save the breeding fish. There was a time when berried hens, however small, counted as full lobsters. During the last few years small berried hens have counted two for one. Never collects the berries and sells them separately, but hears they are so sold. Thinks that the berried hen crabs should be spared. They are thicker in May and June than at any other time, but crabs are taken with berries all the year round. The crabs are thicker this year off Craster than they have been for nine years back. This is in deep water. In-shore the crabs are certainly decreasing. In November on some days one half, some days more, some days hardly any, of the crabs would be soft. The soft crabs are taken in 20 fathom water. They are unmarketable and unfit for food, and ought to be returned. Some of the soft crabs are sold, however. There are about 30 fishermen at Beadnell. There are three men to each boat, 36 creels to the three men. The creels are examined every day if the weather permits. Sometimes, however, they cannot get out for the weather for a week. Lobsters can get out of a creel, and he believes they go out claw foremost. There are no cray-fish about here.

Season for.

Soft.

Close time.

Creels.

ISAAC DICKSON (*examined by Mr. Walpole*). Lives at Beadnell. A fisherman for 28 years. Has been fishing occasionally for crabs and lobsters. When he first went out used to fish for crabs and lobsters all the year through except for three months during the herring season. During the last three years has been catching crabs from October till the end of June. Before these three years, used to begin in February. They commenced the October fishing because they found the crabs and lobsters paid better than the white fishing. They are mostly crabs in October, only a few lobsters. Gets a great many soft crabs. Thinks this a very great waste. It would be a good thing to stop the waste. Would, as a Beadnell man, be in favour of a close season for crabs from the 1st July to the 30th November. Believes that the Beadnell men are doing harm to the fishery of the autumn fishing. The lobster close season should begin 1st June, and go on to the 30th November. Crabs and lobsters are caught in the same creels. The fishermen fishing for crabs in June would have to put back any lobsters they caught. A good many of the Beadnell men would agree to this close season. Thinks the Coastguard might enforce the close season.

Gauge.
LOBSTERS.

Gauge.

Is in favour of returning all small crabs to the sea. Thinks that all under 4 inches should be returned. Is in favour of returning all lobsters under 4 inches in the barrel.

Crabs and lobsters are not increasing. More may be caught, but there is more machinery for catching them.

Boats.

CRABS.

Close time.

CHARLES DAWSON (*examined by Mr. Buckland*). Lives at North Sunderland. Has been fishing for crabs and lobsters for 40 years. Thinks that there are not much fewer caught, but there are more boats and men catching them. Forty years ago there were about six boats here; now there are 16 to 20. The aggregate take of the boats is as large as ever, but each boat gets fewer. Is in favour of a close season commencing on the 1st July, and ending on the 31st January. The crabs are not in season in these months. There are about 50 crab fishermen. The population of North Sunderland is 900 to 1,000. Most of the fishermen are in favour of the close season he has recommended. Is in favour of returning small crabs to the water. Is in favour of a close season for lobsters commencing on the 1st June, and ending on the 30th November. The gauge for lobsters is $4\frac{1}{2}$ inches in the barrel. It would not do to return all lobsters below this size. But small lobsters ought not to be taken. Cannot say exactly what the gauge should do.

LOBSTERS.

Close time.
Gauge.

JOHN STEPHENS (*examined by Mr. Walpole*). Lives at Beadnell. Has been a fisherman for about 20 years. Heard part of Mr. Dickson's evidence. Is in favour of a close season. Lobster fishing used, when he was a boy, to begin on 1st December and close at the end of May. Crab fishing went on till the

herring season began, *i.e.*, till the end of June or middle of July. Started this year early in October; thinks this a bad plan. In every day when he began there were 10 to 50 crabs in every net, and in some nets all the crabs were bad; the great majority were soft. Only got one barrel of crabs out of the whole take. This ought not to be allowed. CRABS.
—
Soft.

Has always flung small crabs away, and is in favour of returning all under $4\frac{1}{2}$ inches. The small lobsters escape through the mesh of the creel. Would toss away all under 4 inches in the barrel. Gauge.
LOBSTERS.
Gauge.

JOHN DAWSON (*examined by Mr. Buckland*). Of North Sunderland. Has been fishing 24 years. Has heard previous evidence. There are just as many crabs caught now as ever, but there are more fishermen and more gear to take them. Agrees that small crabs should be returned to the water, and also small lobsters. Agrees that there should be a close time. Fishing should commence in February, and end at the close of June. Thinks the fishermen would obey such a close season. Close time.

N.B.—Before the close of the inquiry some small crabs (the largest $4\frac{1}{2}$ inches) were produced. The fishermen were unanimous in thinking the largest of these too small to be taken, and were in favour of a $4\frac{1}{2}$ -inch gauge.

CRABS.
—
Gauge.

School Buildings, Cullercoats, Wednesday, 15th November 1876.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

ROBERT CARR (*examined by Mr. Walpole*). Lives at Cullercoats. A fisherman and fishdealer. Fourteen years in business, and about 32 years fishing for crabs and lobsters. The crab and lobster ground extends three miles north, one mile south, and two miles out to sea. There are about 30 boats at Cullercoats fishing for crabs and lobsters. Commences fishing for shell fish about the 1st April; continues till the beginning of July, when the herring season commences. Lobster fishing is resumed in October, lasts for about a month, and is not again resumed till the following April. The fishing is entirely with creels, which are here called pots. Pots have been in use ever since he can recollect. The shell fish go to London, Manchester, Birmingham, Newcastle, and Shields. Season.

Pots.

Crabs have fallen off since he has been engaged in the fishery. During the last 14 years the crabs have fallen off one half. The decrease is in number; there is not much difference in their size. Cannot say what the decrease is attributable to. It did not commence before 14 years ago. Cannot account for it. Crabs 14 years ago were 2s. 6d. a score; they are now 4s. Decrease.

Price.

There are not a great many lobsters taken on this coast. Thinks they are decreasing too. There are not so many landed per boat as there were. Cannot account for this, except that there are more boats fishing for them. Twenty-eight years ago there were only 21 boats, now there are 42. The boats carried 28 years ago, and carry now, three men and a boy each. They carry now 36 creels each, and used to carry about 24 creels 28 years ago. There are twice as many boats as there were 28 years ago, and each boat carries one third more tackle. The increase in the boats has been taking place gradually. Thinks that this increase in the number of fishermen may have some connexion with the decrease in the supply of fish. Thinks that the fish have been over-thinned by the increased fishing. Thinks that the fishermen take too small fish. It would be a good thing to require the return of all fish under a certain size to the sea. Thinks that any crab under 4 inches should be returned. A full-size lobster is $4\frac{1}{2}$ inches in the barrel. Under that size they go two for one. Would agree to return all lobsters under 4 inches in the barrel. Very few lobsters are caught in October. The soft crabs caught are put over alive. In October only the old men fish. Does not think the October fishing is an injury. LOBSTERS.
—
Decrease.
Boats.

Gauge.
LOBSTERS.
Gauge.

CRABS.

*Spawning.**Berried.**Soft.*

LOBSTERS.

*Spawning.**Close time.*

(By Mr. Buckland.) Crabs with spawn are never brought ashore. They are mostly caught with spawn in June. A 5-inch crab will carry spawn. Ever since he can remember, all spawning crabs have been returned to the sea. The male crabs are found in the roughest rocks. The bottom of the sea off Cullercoats is sand and rock alternately, and there is plenty of long tangle weed. The fishermen would not object to a law compelling them to return berried crabs. By a soft crab means a crab that has cast its hard shell, and has got a very tender shell. These are mostly caught in October, but they are never sold. Has never tried to eat a soft crab, there is nothing in them. Catches some big and some little crabs. Berried lobsters are mostly caught in June. Has had many less than 4½ inches in the barrel. Finds berried hens all the year round. Gets no more money for them than for other lobsters. Cannot say whether it would be advisable to put back berried hens to the sea, but would recommend a close season for lobsters in July, August, and September. Never saw a lobster shed its shell; but one did change its shell on his own premises. The crab pots in April are put into 16-fathom water, and gradually are brought in nearer the shore, till in June they are close to the rock side.

CRABS.

*Value as food.**Close time.*

LOBSTERS.

Gauge.

J. CAMERON REID, M.D. (examined by Mr. Buckland). In practice at Newbiggin. Went there 24 years ago; there were then only two or three boats going out for crabs and lobsters. Frequently saw small lobsters taken from pots, and pointed out to the men the unwisdom of this course. The men replied that others did it, and that it would be a better thing if there was a law to stop it. Thought that the men who bought these small fish were worse than those who took them, as encouraging this wasteful practice. With regard to crabs, the small crabs are in better condition than the large crabs, and are often heavier than the larger ones. The population of Newbiggin in 1871 was 1,135, and there are from 100 to 200 fishermen. The crab and lobster fishermen are usually old men. There are from 8 to 11 boats there. As a medical man he considers that crabs and lobsters are nutritious, and ought therefore to be increased; they contain a great deal of phosphorus, and are good for the brain. The Newbiggin people would be glad of a law. In his opinion July, August, and September ought to be closed both for crabs and lobsters. Every crab above 4 inches should be marketable, and 4 inches in the barrel should be the gauge for lobsters.

*Boats.**Decrease.**Close time.**Soft.**Gauge.*

ROBERT DENT (examined by Mr. Walpole). A fisherman of Newbiggin. Has been a fisherman 48 years. Forty-eight years ago there were only three or four boats at Newbiggin fishing for crabs and lobsters; there are eight now. The boats have more than double the amount of tackle they used to. Thinks that the crabs and lobsters are diminishing. They began to diminish 12 or 14 years ago. Forty-eight years ago a boat might have taken 10 or 12 lobsters a day. They can get as many now, but they must use double the amount of tackle to do so. Thinks the decrease is due to over-fishing. At Newbiggin the crabs and lobsters are fished all the year round. Does not think this is a good plan. This has gone on for six or eight years. The season used to commence in September and end in May. Is in favour of a close season for crabs and lobsters. It should be in June, July, and August. This should apply both to crabs and lobsters. Thinks there is no harm in the autumn fishing. The soft crabs are returned to the sea uninjured. Is also in favour of a gauge, 4 inches for crabs, and a 4-inch barrel-gauge for lobsters. Below this they go four for one, and are not worth taking.

CRABS.

*Decrease.**Price.**Soft.*

COLIN DOWNIE (examined by Mr. Buckland). A fish-dealer at Newbiggin. Has been in business 16 years. Buys crabs and lobsters from the fishermen. There are about four dealers at Newbiggin. There are eight boats at this time, and 12 in the summer season. The crabs have fallen off a little in his time; not a great deal. The falling off has been in number; there has not been much difference in size. The 4-inch crabs at Newbiggin go two for one. The merchants sometimes complain, especially in Manchester, that the size of crabs is small. In Manchester, as a rule, crabs fetch 16s. to 18s. a barrel, which contains three score. The little crabs come chiefly in May. Some of the small 4-inch crabs are very heavy crabs, and are good food. Thinks a 4-inch gauge for crabs would do. Knows what a soft crab, or, as it is here called, a caster, is, but his men do not take them. They do not bring them ashore. They get fewer lobsters than they did, but believes that as many lobsters are caught as ever. Owing, however, to the increased number of boats, each boat does

not get so many. The price of lobsters varies. A small 4-inch lobster will sometimes bring 6*d.*, sometimes 1*s.* 6*d.*; the average price will be about 10*d.* Thinks that all lobsters below 4 inches in the barrel should be put back. There is a greater demand for berried hens than for anything else. The berries are made into sauce. Is in favour of a close season in June, July, August, and September. Thinks that this is the principal breeding season. In September many of the lobsters are soft in the shell and body. These probably have lately shed their shells and are recovering. Lobsters have been thrown away 50 at a time in September, because they were so soft both in shell and body.

LOBSTERS.
*Gauge.**Close time.**Soft.*

JOSEPH BRUNTON (*examined by Mr. Waipole*). Lives at Cullercoats. Was fishing for six years before he went to sea. This was from 54 to 48 years ago. Recommenced fishing in 1839, and has done so ever since. Fifty-four years ago pots were not used. Nothing was used at that time but trunk nets (iron rings, 21 inches in diameter, with a net attached to them); these could only be fished in very shallow water. Used to carry 16 to 18 trunk nets per boat, and in a day would sometimes catch six or seven score crabs (30 to a score), and perhaps a score of lobsters (20 full-sized lobsters to the score). In those days never fished before May, and went on till July. Knocked off at that time, and went to the herring fishing. After the herring season was over, in September, resumed the lobster fishing and went on till Christmas. After Christmas went line-fishing till May. When he recommenced fishing, in 1839, the system was the same as when he stopped. Four or five years afterwards pots, or creels, were introduced. The fishing season now begins in the early part of April and goes on till July; is resumed sometimes in September, but there is very little autumn fishing. There is less fishing than there was then, but there are a great many more boats. When first he went fishing there were only 15 boats for all kinds of fishing out of Cullercoats; there are now 42. Crabs and lobsters are a great deal scarcer now than when he was a lad. Thinks that too many are caught. Agrees with previous witnesses. Is in favour of a close season, commencing on 1st July and ending 30th September. Is in favour of a 4-inch gauge for crabs, and a 4-inch barrel-gauge for lobsters. Thinks that the coast-guard might enforce the close season.

*Trunks.**Herring fishing.**Boats.**Decrease.**Close time.
Gauge.*

(*By Mr. Buckland.*) The crab pots are baited with small fish,—codlings, whiting, &c. Edible crabs are never used as bait for the lines, they are too valuable. A lobster prefers a stale bait, or even salted fish; a crab a fresh bait. The pots are not shifted much, they are placed in about the same places always. One fleet of pots would be 90 to 100 feet from another. There are 900 to 1,000 pots altogether in 12 square miles of ground. Crabs and lobsters will get out of the pots. After storms or after daylight the pots are generally empty. Most of them are caught in the first of the morning before the daylight comes. The guns at Tynemouth do not affect the lobsters.

CRABS.
Bait.

WILLIAM ARMSTRONG (*examined by Mr. Buckland*). A fisherman of Hawxley. Has been fishing 50 years. Fishes off Hawxley and five miles north and south, and two miles out to sea. The bottom is very rocky. There are many places where there is only 7 fathom water on one side, and 15 fathom on the other side of the boat. There is a great deal of weed there. In 6 or 7 fathom water there are weeds, but not in deeper water. The lobsters are among the weeds in some places, but not always. Thinks the lobsters feed on small fish, &c. among the weeds, and not on the weeds. There are 9 or 10 boats fishing for crabs and lobsters at Hawxley. In the winter each boat carries 30 creels, in the summer they use 60 each. Will sometimes get 30 or 40 lobsters in a day per boat. There are as many crabs and lobsters as there were 15 years ago. Does not think that they are diminishing in number on his ground. There is a great deal of ground; sometimes is able to shift the pots five or six miles north and south. A full-size lobster is 4½ inches in the barrel, below 4 inches in the barrel four lobsters go for one. Thinks it is impossible to over-fish the place in the present way. Out of nine boats on the ground, only two are fishing in the winter, the others are on the herring fishing. Is, however, in favour of a close season, and has consulted the fishermen on the point. The Hawxley fishermen would like a close season for crabs from 1st July to 31st January. The lobster close season should also commence on 1st July and end on 30th September. That is the time when lobsters are at their worst. Thinks such a close season will improve the winter fishing. Fishes crabs and

LOBSTERS.
*Food of.**No decrease.**Close time.*

CRABS.

Gauge. lobsters in from 1 to 15 fathom water. Has always been in the habit of returning small crabs. Is in favour of a 4-inch gauge. If the small crabs are taken off the ground they cannot be on it. They would grow if they were put back. Does not think that there is a breed of small crabs that does not grow. There are not many crabs bigger than 8 or 9 inches. Catches many soft crabs with very thin shells about this season of the year (November). Puts them back into the sea. In February gets no soft crabs. The soft crabs (he believes) bury themselves in sand in the winter. They go into very deep water in the winter, especially in the cold weather. The crab and lobster season depends very much on the weather. Crabs and lobsters will not crawl in hard frosty weather. His shell fish all go to Mr. Brown, of Newcastle. The price has increased.

LOBSTERS.

No decrease.

Pollutions.

Salmon fishing.

Trawling.

Gauge.
CRABS.

Gauge.

Casting shell.

Berried.

Breeding.
Enemies.

WILLIAM LISLE (*examined by Mr. Walpole*). A fisherman at Cullercoats. Has been so for 30 years. Has heard the evidence offered to-day. Agrees that the crabs are falling off in size and numbers. There has been no particular decrease in lobsters. Thinks that the hoppers carrying out the results of the dredging boats on the Tyne bring out a great deal of stuff which fills up the holes in which the crabs live. The hoppers are bound to go three miles out—to 18-fathom water. The crabs are caught from the shore to 18-fathom water. Thinks that the clay, &c. from the hoppers both settles when it is deposited and is also washed on to the ground. North and south of the bar used to be the rockiest part. When the haddock lines were shot, many were lost because of the rough rocks. Now none are lost, and this shows that the bottom is all smooth. This rocky place was seaward of the piers, and the current there is as strong as ever. In his judgment the holes in which the crabs live have been filled up, and consequently fewer crabs are bred. Lobsters, as a fact, live in holes quite as much as crabs, but the lobsters have not decreased. Many of these hoppers come from the alkali works, and he thinks it possible they may also poison the small fish on which the crabs and lobsters feed. Does not believe that the ground can be over-fished. Believes that it is useless to begin fishing before April, and that after April you can only fish three months, and that it is then impossible to clear the ground. Moreover the hang nets for salmon have interfered with the tackle of the crabber, and so has limited the fishing. In consequence the fishing for crabs and lobsters has decreased during the last few years. If the decrease had resulted from over-fishing, the fish ought therefore to have increased, and notwithstanding they have continued to decline. The salmon fishing does not interfere with the autumn fishing; but there is very little autumn fishing, and that only for lobsters. The portion of ground which has been silted up was both crab and lobster ground. The deep-sea trawlers trawl up large numbers of crabs. Many of them in September and October are casters, *i.e.* soft crabs. These are killed in large quantities, and many are also brought ashore. These trawlers are about six miles out. They go over a great extent of ground. Thinks it possible that they may be doing some mischief. In the autumn, while fishing for lobsters, the fishermen get any amount of soft crabs. They are tossed overboard,—in his opinion they live. Is not in favour of a statutory close season. Is in favour of returning to the sea all lobsters below 4 inches in the barrel, and all crabs below 4 inches across the back.

(*By Mr. Buckland.*) It is useless to set the pots before April; if they did, would catch nothing but whelks. The crabs are in the best condition for market in May. After June they go off in condition, they cast their shells in about August, and in October they draw off into deeper water. This is the time at which the trawlers catch them. It is the custom to put back all berried crabs. The fishing, however, has not increased through the berried hen crabs having been put back. Does not think that putting back the little crabs would increase the size of the crabs. Thinks that the crabs procreate when the females cast their shells. The male crab is always then guarding the female. Has himself seen this. All fish, especially cod, eat crabs.

GEORGE SIMPSON (*examined by Mr. Buckland*). Lives at Hawxley. Has fished for 36 years. Has heard Mr. Armstrong's evidence, and agrees with it. Uses 30 pots per boat at this time, and 60 in the summer. Begins fishing for lobsters in October and goes on till June. The pots are constantly down except in stormy weather. Thinks the lobsters are just as thick as they were the first

day he went to sea. A 4 lb. lobster is a good lobster. This would be about 8 inches in the barrel. The average are about 1 lb. in weight and about 4½ inches in the barrel. Lobsters below 4 inches in the barrel go four for one, and are very small then. Would be in favour of a law compelling the return of all these. The Hawxley fishermen generally are in favour of this. Crabs and lobsters both resort to rocky ground, the harder the rock the better for lobsters, and the best crabs also resort to hard rocks. Attributes the non-decrease of the Hawxley fishery to returning the small fish and keeping a close season. It has been the custom at Hawxley, all his time, to return all crabs under 4 inches, and, till the last five or six years, all lobsters under 4 inches. They stop fishing at Hawxley at the end of June, and resume at the beginning of October. They begin fishing at the end of October and go on till June. There are many more boats fishing the Cullercoats than the Hawxley ground.

LOBSTERS.

No decrease.

Gauge.

CRABS.

Gauge.

Close time.

THOMAS OLIVER (*examined by Mr. Walpole*). Lives at Hawxley. Has been fishing for 26 years. Heard Mr. Armstrong's and Mr. Brunton's evidence; agrees with it. Is in favour of a close season for crabs and lobsters, from the 1st June to the 30th September. Is in favour of returning small crabs and lobsters. Agrees that the gauge should be 4 inches in the barrel for lobsters, and 4 inches across the back for crabs. Has been in the habit of returning all fish under these sizes at Hawxley, and there is no decrease at Hawxley. Was three years at Cullercoats before he went to Hawxley. Did not return the small fish at Cullercoats; could get a market for them there. The Cullercoats ground is much harder fished than the Hawxley ground. The ground at Cullercoats is smaller, and there are many more fishermen upon it.

Close time.

Gauge.

LOBSTERS.

Gauge.

THOMAS BOLAM (*examined by Mr. Buckland*). Of Cullercoats. Has been fishing for 22 years. There were more crabs and lobsters 22 years ago than there are now. Agrees with Mr. Lisle that the ground has been much affected by the refuse tipped out from the hoppers, which has made rocky ground smooth ground. The area of the crab and lobster ground has been diminished by the operations of the hoppers. The hoppers, when first they started (about 1856), deposited the stuff close in shore. The Commissioners have since found it necessary to compel them to go further out. They have been at work about 20 years. The nature of the ground has been altered. The hoppers have had the effect of extending the smooth ground, where it used to be rocky, for four miles out to sea from Cullercoats to the southward. Is in favour of a close season in July, August, and September, when the fish are soft and in spawn. Is also in favour of a 4-inch gauge for crabs, and a 4-inch barrel gauge for lobsters. Thinks that the close season will be sufficient without a law enforcing the return of berried hens. A berried hen always counts as a full fish, whatever size she may be. It was predicted when creels were introduced, 34 years ago, that they would not leave a crab or lobster. They had, however, no effect for some years; but during the last eight years there has not been one sixth part of the crabs caught that used to be taken. Yet the last year there are fewer crabs than ever.

Decrease.

Pollutions.

Close time.

Gauge.

CRABS.

Gauge.

Decrease.

Increased fishing 34 years ago did not lead to any decrease of fish. Decreased fishing during the last eight years has not led to any increase of fish.

ANDREW TAYLOR (*examined by Mr. Walpole*). Of Cullercoats. Has been fishing 40 years. Agrees that crabs and lobsters have both decreased in numbers. Cannot say what the decrease is due to. A close time might be tried, and is in favour of trying it. Is also in favour of putting back all small fish, as recommended by previous witnesses. Thinks the hoppers may have a tendency to destroy the ground. The rule that the stuff is not to be tipped in less than 18-fathom water is strictly carried out. The refuse from the alkali hoppers, known as Blue Billy, kills the codling; has known it do so. Has known the water out at sea made offensive by the alkali refuse.

Pollutions.

GEORGE HARBOTTLE (*examined by Mr. Buckland*). Inspector of Police, Tyne Salmon Conservancy. Is well acquainted with the mouth of the Tyne. Has been over it for the last seven years, many times from Newbiggin to Souter Point, and three miles out. Has heard previous evidence about hoppers. They work night and day all the year round, except in extremely strong weather. They go out when nothing but the best pilot boats will go. Has seen 14 hoppers in view at the same time. The hoppers bring down a large quantity of dirt of all kinds from the bed of the river, and ship ballast; a great quantity

Pollutions.

of alkali refuse is also brought down by the private hoppers of the alkali owners. This is mostly Blue Billy, but there is a great deal of other refuse. The Tyne Navigation Commissioners alone have dredged 500,000 tons of rubbish a year. This has been going on for 20 years: 10,000,000 tons in all must therefore have been deposited in the sea outside the Tyne. Has no doubt that this deposit has filled up all the rocky ground at the mouth of the river, and made it smooth. The deposit is heavy, and is not carried far by the tide. Agrees with Mr. Lisle and Mr. Bolam that this deposit must spoil the habitat both for lobsters and crabs.

CRABS.

Decrease.

Reverend R. F. WHEELER, Vicar of Cullercoats. Has been at Cullercoats 15 years. Has taken a great interest in everything connected with the fisheries. *First* the white fishery, *second* the salmon fishery, *third* the crab and lobster fishery, are the chief industries at Cullercoats. Formerly the herring fishery was also important, but the herrings have ceased during the last four years. When he came to Cullercoats there were a great many more crabs taken than are now. The decrease has been both in size and number. Is doubtful as to cause of decrease, but is in favour of restrictions on taking immature fish, and of a legal close season. Attaches importance to the refuse from the hoppers, and especially to the polluted refuse.

Pollutions.

Justices' Room, Whitby, Friday, 17th November 1876.

PRESENT :

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

Decrease.

Mode of counting.

THOMAS SMALES (*examined by Mr. Buckland*). Has been a fish merchant at Whitby for over 20 years. Deals in crabs and lobsters and all other fish. Crabs have undoubtedly decreased both in size and number. It is an unusual thing to measure crabs in this neighbourhood. Above a certain size, however, crabs are considered "tale" crabs; below that size they would go two for one. A 5-inch crab would be a good "tale" crab. A 4-inch crab would go two for one. Very small crabs, however, are also brought into the harbour. Many of these are less than 3 inches. These very small crabs are sold among children for about a halfpenny or penny a piece. A 5-inch crab would be worth 6d. The small halfpenny crabs, he has no doubt, would grow into 5-inch crabs in time, but doesn't know how long this would take. As a dealer, would have nothing under 5-inch crabs, but this would be hard on the fishermen. The chief market is in London, but the crabs also go to Stockton, Darlington, Manchester, Liverpool, Leeds, &c., and are hawked about. Even the fishermen prefer the larger crabs. Crabs, however, are not usually sold now by count, but by kits. A kit is a wooden package, holding a score of good crabs. The women put the big crabs on the top of the kits. Small crabs and she crabs go two for one. Soft crabs, so far as he knows, are never brought ashore. There are more fishermen for crabs than there used to be, and the extra number of fishermen keeps up the aggregate take, though individual fishermen do not get so many. The fishermen here only fish for crabs in the spring of the year. At this time (November) they fish for a few lobsters, but not for crabs. In his opinion, thinks that there is no necessity for a close season, there being a natural close season.

Gauge.

Mode of counting.

LOBSTERS.

Decreased size.

Mode of counting.

Berried.

Gauge.

The lobsters have certainly fallen off, but the falling off is in size and not in number. A sizeable lobster is 4½ inches in the barrel. All below that size go two for one. The fishermen call the very small ones Nintycocks, or Nancies, and they go two for one. These Nintycocks would measure below three inches in the barrel. The very small lobsters are of very little use. Would rather not have them. Gets berried hens. There is a premium, he is sorry to say, for these, as they are much sought after, the berries being used for sauce for turbot. It would handicap the fishing to a very great extent to put back the berried hens. The berried hens are being taken all through the spring. Very few are taken in the back part of the season. It would be a good thing to return all lobsters under 4 inches in the barrel. A full-size lobster used to be

6d., 7d., or 8d. each. They now fetch about 9d. each. The small lobsters do not make more than 3d. or 4d. each. Has had soft lobsters. It is very rare to get any "light" lobsters. A few lobsters are caught at Christmas time, but there is very little fishing at that time. Has seen some very large lobsters here, some weighing 3lbs. A 3-lb. lobster is a very large lobster here. The method of catching crabs and lobsters is different from what it used to be. They used to be caught in trunks (rings with nets), they are now caught in pots or creels. The pots were introduced about 20 years ago. The trunks required the constant presence of a fisherman, and could only be fished at night. The pots can be fished without the attendance of man.

Crabs, 20 years ago, were 2s. 6d. a score. Has paid 5s. a score himself for them this season. The railway came to Whitby in 1847, but it was made to Pickering in 1835. Before even those days lobsters were carried by coach to York. The price of all fish went up after the railway was made.

WILLIAM READMAN (*examined by Mr. Walpole*). Lives at Whitby. A jet-worker by trade, but has been fishing for crabs and lobsters 11 years. Begins fishing towards the end of March, and generally ends fishing about the 6th July. Doesn't resume fishing till the following March. This is the usual practice of all the boats. Two old men only go out in October for a week or two to catch lobsters. There are about 20 boats at Whitby fishing for crabs and lobsters. They go about 4 miles north, $3\frac{1}{2}$ miles south, and a mile out to sea. The ground is all rocky. A mile out there is 12 to 13 fathoms water. Stops fishing in July because after that the crabs are soft. Doesn't fish before March because the weather is too uncertain. The crabs are not so numerous as they were 11 years ago. The fishermen get less than they used to do. Used, 11 years ago, to get regularly four or five score taleable crabs a day. Now it is a very good day's work to get four or five score. The average take is about three score. There are, however, more boats now than there were then. There were 14 or 15 boats 11 years ago. Thinks that there are fewer crabs in the sea than there were. Thinks the decrease is due to the Scarborough men, who come and fish the ground and take so many small crabs. The Scarborough men fish the same season as the Whitby men. The Whitby men would have taken no small crabs if the Scarborough men had not started it. Is in favour of stopping the taking of all small crabs. By a small crab means a crab measuring 3 inches across the back. A $3\frac{1}{2}$ -inch crab should be taken. If these couldn't be taken it would be very little use for the fishermen to go out crabbing. A $3\frac{1}{2}$ -inch crab could not grow into a 4-inch crab in one year. Is in favour of a gauge compelling the return of all crabs under $3\frac{1}{2}$ inches.

Thinks lobsters are also decreasing. There are not so many caught as used to be. Thinks the decrease in the lobster is due to taking the small ones. Thinks that no lobster under $3\frac{1}{2}$ inches in the barrel should be taken. A lobster above this is a good half-sized lobster. It is not necessary to have a close season as there is one naturally.

(*By Mr. Buckland.*) The 6th July is the customary date for stopping.

JAMES FELL (*examined by Mr. Buckland.*) Lives at Staithes, the largest fishing town in the North of England. The population of Staithes is about 2,000, and there are more than 150 fishermen there. Fishes for herring, cod, ling, halibut, &c., and shell fish. There is no trawling there. Has been fishing for crabs for 50 years. Used at that time sometimes very nearly to load the boat with crabs and lobsters. It wouldn't be possible to load the boat with them now. Would do well if they took a quarter of the number they took then. Their ground extends six miles north, and three miles south of Staithes, and one mile out to sea. The bottom of the ground is hard rock. There are some places where there is sand, but they don't fish there as they get soft crabs and dog crabs which they don't want. His crabs are sold at Staithes and also at Grosmont, 11 miles off, where they go all over England, especially to London. Has caught crabs 40 or 50 years ago, and sold them for 2s. a score. Gets now 5s. a score. There are 35 boats at Staithes (each with two men) fishing for crabs and lobsters. Most boats carry 60 creels or over 2,000 creels altogether. Has found 14 to 15 crabs in one creel. The creels are kept all night in one place; but are shifted from place to place during the day. There are creels all over the ground. The crabs come in from the deep water. They come some years in March, some in April, but this depends on the weather. They crawl best in April and May. The cock and hen crabs come together. A few

LOBSTERS.
Price.

Rings.

Railways.

Season.

CRABS.
Decrease.

Boats.

Gauge.

LOBSTERS.
Decrease.
Gauge.

CRABS.

Decrease.

Boats.

Migration.

CRABS.

Berried.

Gauge.

Boiling.

Close time.

Used for bait.

Rings.

Weather.

LOBSTERS.

Berried.

Gauge.

Decrease.

Gauge.

CRABS.

Gauge.

Decrease.

Gauge.

Berried.

Close time.

LOBSTERS.

Berried.

CRABS.

Gauge.

doup crabs or spawn crabs are caught at all times. They are boiled with the others. Is in favour of returning these to the sea; but this is not the habit at Staithes. The fishermen would agree, however, to do so. Is in favour of returning all crabs under $3\frac{1}{2}$ inches to the sea. Many crabs are taken great deal smaller than that, as small as $2\frac{1}{2}$ inches. The small crabs are given to the children, who eat them. The crabs are not boiled before they are sent to market. There is a natural close season, as the only fishing is from the middle of March to the 6th July. It doesn't pay to go crabbing in the winter. They get solitary crabs in winter on their lines and they are always big. At Staithes they do not use crabs for bait. But they do use them at Runswick as bait for cod which are again cut up as bait for the crab pots. Thinks the Runswick men would agree with the Staithes men. Lobsters have been falling off gradually for the last 50 years. Thinks that the decrease is due to over-fishing. Fifty years ago they used to fish with trunks, iron rings, 21 inches in diameter. The trunks were fished in 10 fathoms water, and each boat put down from 30 to 40 trunks. Thick water in day time and clear water at night was the best time for fishing. The moon makes very little difference. Fifty years ago there were from 15 to 20 boats fishing with rings. Is in favour of returning all small lobsters to the sea. Would return all lobsters under $3\frac{1}{2}$ inches in the barrel. It would be hard to the fishermen to return all berried hens, though their return would do good to the fishermen.

RICHARD THOMPSON (*examined by Mr. Walpole*). Lives at Staithes. Has been a fisherman for nearly 20 years. Has heard Mr. Fell's evidence. Agrees that the crabs have fallen off in numbers. When first he went crabbing got from 13 to 15 score a night. It would be good now to get three or four score. Thinks decrease is due to over-fishing. When he began there were 15 or 16 boats, and there are now 35. Agrees also that lobsters has decreased in the same way. This decrease is also due to over-fishing. Thinks it ought to be illegal to take either small crabs or small logsters. If this is not under law there will be none to take. No crab ought to be taken under 4 inches, and no lobster under 4 inches in the barrel. A full-sized lobster is $4\frac{1}{2}$ inches, a half-size lobster is 4 inches.

JAMESON COLLEY (*examined by Mr. Buckland*). Lives at Whitby. Fishes between Whitby and Robin Hood's Bay, about five miles distant. Has been fishing 10 or 12 years. The crabs are falling off a good bit, especially during the last two or three years. They are falling off both in size and number. The ordinary run of crabs are 4 or 5 inches across the back. The largest are 6 or 7 inches, this is an extra size. Is in favour of returning all the small crabs (under $3\frac{1}{2}$ inches) to the sea. A $3\frac{1}{2}$ -inch crab is worth a penny. They generally return berried crabs to the sea. They may catch four or five a week. The fishing begins in February, March, and April, and goes on to the middle of July. This is the custom, and the fishermen consider that the crabs then cast their shells and are soft. It is the practice here to heave back small crabs, and this should always be done. No close time is necessary here. There is practically a close season already. If he had his way, would heave all the berried lobsters overboard, so as to increase the stock. Knows that when he is heaving over berried hens he is heaving over hundreds and thousands of lobsters. But they are very tempting things, and, if such a law was made, the fish would be stripped of all berries. There are 40 or 50 crab and lobster fishermen at Whitby, and does not know how many would agree with him about this. Thinks no lobster under $3\frac{1}{2}$ inches in the barrel should be taken.

JOHN ANDREWS (*examined by Mr. Walpole*). Has heard Mr. Colley's evidence. Crabs and lobsters have both fallen off. The small crabs and lobsters should be returned to the sea. Thinks a $4\frac{1}{2}$ -inch crab ought to be returned to the sea. A $4\frac{1}{2}$ -inch crab should be kept.

(At this stage some sample crabs arrived, and Mr. Smales on comparing their sizes desired to add to his evidence and to recommend that nothing under $4\frac{1}{2}$ inches should be taken.)

RICHARD THOMPSON, fisherman at Whitby. Has been fishing nearly 50 years. Thinks that no crabs under 4 inches across the back or lobsters under 4 inches in the barrel should be taken.

The Inn, Robin Hood's Bay, Friday, 17th November 1876.

PRESENT :

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

CRABS.

ISAAC STORM (*examined by Mr. Buckland*). Has been a crab and lobster fisherman for nearly 40 years. Used formerly to use rings; left them off 26 years ago, and now uses lobster pots. Crabs are more numerous than lobsters here. There are 12 to 14 boats here, with from 2 to 3 men each using from 20 to 50 creels per boat. The ground extends three miles north, half way to Whitby; three miles south, and half a mile seawards. The ground is mostly rocky. The crabs are not so plentiful as they used to be. They have been diminishing in number every year for the last 20 years. Doesn't think that the crabs are smaller than they were. Most of the crabs are about 5 inches across the back. Is in favour of returning the smaller crabs to the sea. Anything under 4½ inches might be hove overboard. A 4½-inch crab is a marketable crab. Has always been in the habit of returning these. A 4-inch lobster is an ordinary sized lobster: 4 inches and 4½ inches are the two sizes for lobsters. Under 4½ inches in the barrel lobsters count two for one. Under 4 inches they ought to be returned to the sea. Has always been in the habit of returning berried crabs to the sea, but there are very few of them. Berried lobsters are found all the year round. It would not be possible to return them. The fishermen get no more money for a berried hen than for any other lobster. Has seen soft crabs here, but always gives up fishing before the soft crabs come in. The fishing commences in March, and ends at the end of July. No pots are set before February. The lobsters are not so numerous as they were. The Scarborough people come on to the ground and take the small crabs; thinks if it were made illegal to sell small crabs, the Scarborough men would catch the small crabs here, and heave them overboard at Scarborough instead of at Whitby. Unless this is prevented, any legislation will do no good to Robin Hood's Bay.

Decrease.

Gauge.

LOBSTERS.

Gauge.

Berried.

Decrease.

ISAAC STORM (*examined by Mr. Walpole*). Lives at Robin Hood's Bay. Is cousin to previous witness. Has been fishing ever since he was 14 years old; is now 52. Thirty-eight years ago only a few old men and young lads were fishing for crabs; now there are 12 to 14 boats here. Thirty-eight years ago the Scarborough boats never came here. Seven or eight boats were here from Scarborough last year, but he has known as many as 20 here. Thirty-eight years ago used with trunks to get 10 or 11 score of saleable crabs a night. Wouldn't be able now to get more than six or seven score a night. Now they fish night and day. With trunks they could only go into 10 fathoms water; now they fish in 20 fathoms water with pots. With the trunks used only to fish at night, unless the water was thick in the day. Thinks the fishery is over-fished. Has the same story to tell of the lobsters. They are over-fished. Is in favour, as a remedy, of returning the small lobsters and the small crabs; i.e., all lobsters under 4 inches in the barrel, and all crabs under 4 inches across the back. The small crabs are sweeter than the large crabs. Thinks that if this were done, the fishery would be improved. The trawling smacks come in about a mile from shore in the crab season and trawl up all the old breeders. This has the effect of destroying the old breeding crabs. Last summer they could catch 100 crabs in one night in the pots. The trawlers came on the rock's edge where the pots were set; and after that the fishermen could not catch a score of crabs a night, and had in consequence to shift their ground. The trawlers caught all the crabs on that ground. There were 14 or 15 smacks. Thinks that all in-shore trawling should be prohibited.

Boats.

Decrease.

Gauge.
CRABS.Gauge.
Trawlers.

MATTHEW COWPER (*examined by Mr. Buckland*). Has fished for crabs in Robin Hood's Bay for 20 years. Puts down 40 pots. Fishes from the middle of April to the end of July. After that the crabs are mostly soft. Agrees that the crabs have fallen off, and thinks that this is in consequence of there being more men catching them. But believes the trawlers to be the greatest injury they have to encounter. Has seen 16 trawlers in the summer, day after day trawling for soles, whiting, and other fish. These trawlers work in about 10 fathoms water. Thinks the trawlers destroy the food of the crabs; and injure the nets for getting the crabs. The trawlers prevent the fishermen getting bait.

Soft.
Decrease.

Trawlers.

Trawling. They have to go to Stockton-on-Tees to get mussels for bait. Would like to stop in-shore trawling during the crab season, *i.e.*, from April to July. Agrees that all crabs under 4 inches, and all lobsters under 4 inches in the barrel should be put back. The price of crabs is 3s. a score, and when he began was only 2s. 6d. A 6½-inch crab here is a big crab. Believes that the ground is over-fished.

CRABS.

Gauge.

HARRISON COWPER. Is previous witness's brother. Commenced crabbing in 1837. There were twice as many crabs in the sea then as there are now. Thinks they have been over-fished. The lobsters were also twice as numerous. They have also been over-fished. Agrees with previous witness to throw back all crabs under 4 inches, and all lobsters under 4 inches in the barrel. This would increase the breed. Thinks the trawlers do a good deal of injury. In-shore trawling should be prohibited, in his opinion. The trawlers could go further over. There are no trawlers in the winter months. Complains that the Scarborough men come and put their pots on the top of the Robin Hood's Bay men's pots.

LOBSTERS.

Gauge.

Trawling.

Close time. There would be a difficulty in carrying out a gauge on account of the hurry in packing for the train. Is in favour of a close season for crabs and lobsters during August and September.

Decrease.

CRABS.

Gauge.

Breeding.

Soft.

Trawling.

LOBSTERS.

Berried.

Council Chamber, Town Hall, Scarborough, Saturday, 18th November 1876.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

CRABS.

Decrease.

Gauge.

Berried.

Soft.

Boiling.

LOBSTERS.

Decrease.

they go four for one. These are called polks. Thinks that everything under 4 inches in the barrel should be put back into the water. The lobsters usually increase in price by about 1s. a piece in August and September. The prices for lobsters are much higher in January and February, than in the summer months. The best lobsters are got in January and February. Berried hens are chiefly caught in May, June, and July. Female hens with berries are called berried hens; without berries are called "open hens." Is in favour of returning berried hens to the sea, but they are more valuable than the others. Notwithstanding this, is in favour of returning them to the sea. Taking them has a tendency to spoil the breed.

LOBSTERS.

Gauge.
Price.

Berried.

(By Mr. Walpole.) Proposes a gauge for crabs of $4\frac{1}{2}$ inches. The North-east coast crabs are not so large as Torquay and Scotch crabs, and for this reason Torquay and Scotch fishermen desire a larger gauge. The crabs increase in size to the north of this place. The crabs are sold within the surrounding neighbourhood. It would interfere with his market if the sale of these crabs were localised in Yorkshire, as a considerable number of small crabs are sent to London, Liverpool, and Birmingham. Thinks it would be impossible to get a sale for all these small crabs in Yorkshire. The $4\frac{1}{2}$ -inch gauge would suit Leeds market. Sends four times as many crabs and lobsters to London as are sold in the local markets. Yorkshire is not large enough to take all the crabs caught under $4\frac{1}{2}$ inches.

CRABS.

Gauge.

JAMES DALTON (examined by Mr. Walpole). Has been a fisherman for 50 years. Has been fishing for crabs and lobsters all that time. Fifty years ago there were not half a dozen boats crabbing from Scarborough. There are 50 boats now. Fifty years ago used to take 30 trunks per boat. Now takes birdcages or creels, and carries 35 to 40 in his boat. Some boats, however, take 100 creels. Fifty years ago used to commence in March, and go on to October. The fishing season is the same now. Used to get more biggish crabs in a trunk than he has ever had in a creel. There are fewer crabs in the sea than there were—a good deal fewer. The lobsters are also fewer. Has had in the old time 100 of a night. It would take three or four nights to get half as many now. There is crab and lobster ground all the way from Filey Brigg to Whitby. Thinks the decrease of crabs and lobsters is due to taking the small ones. Has seen crabs taken as small as walnuts. (A $4\frac{1}{2}$ -inch crab was produced.) Considers it too small. A $4\frac{1}{2}$ -inch crab is a decent crab, and would do. Thinks that no lobster should be taken under 4 inches in the barrel. Has seen the trawlers bring ashore she crabs full of spawn. These she crabs are caught on the off ground. It should be made illegal for anyone to bring ashore a she crab with spawn. Is in favour of returning all the berried lobsters to the sea. Thinks that with such a law there might be a danger of the berries being stripped off the lobster. Doesn't see many light crabs in the market. Is in favour of prohibiting the sale of all light crabs. Is not in favour of a close season for crabs.

Boats.

Decrease.

LOBSTERS.

Gauge.

Berried.
CRABS.

Soft.

GEORGE NIGHTINGALE (examined by Mr. Buckland). Has been fishing for crabs and lobsters for 40 or 50 years. Fishes 7 miles to the south, and 14 to the north of Scarborough Light, from Filey Brigg to Runswick, and from 500 to 600 yards out to sea. Men go three or four miles out. The bottom is all rock with sands adjoining. Uses 60 to 70 pots, but believes that there are too many. The 70 pots will cover three quarters of a mile of ground. Fishing commences at the end of March, and goes on till Martinmas. Has caught some very large crabs here. Now they are caught Sundays and holidays. With the hoops or rings the fishermen were obliged to be present, and there was no Sunday fishing. The creels go down in March, and never come up any more, except to be baited and fished. Never breaks up crabs for bait. Believes that the crabs spawn out at sea. Has seen small crabs as small as an inch. The crabs have fallen off one third or more. If they went with hoops as they used to they would not catch so many. Would like to make a law that no boat should carry more than 40 or 45 pots. There were only three or four boats here when he was a young man. There are now at least 50. The pots are occasionally shifted, but very slightly. Thinks that a ground can be over-fished. The trawlers bring in the she crabs all through the year. The young crabs are very white, the old crabs yellow or black. The Scarborough men come and place their pots on the Robin Hood's Bay ground. No crabs should be caught under $4\frac{1}{2}$ inches; at that size they would be worth a

Pots.

Trawlers.

Gauge.

- LOBSTERS.**
 Gauge. penny. There is a trade for them at many places. No close season is wanted for either crabs or lobsters. They are never fished during the winter. Thinks that all lobsters under 4 inches in the barrel should be returned to the sea.
 Berried. The berried hens should also be returned to the sea. The fishermen, however, get more for the berried hens than for the other lobsters. There are a great many contrary people at Scarborough who would not agree to put back the berried hens unless there was a law compelling them to do so.
- Enemies.** Cod are the natural enemies of lobsters. Has seen lobsters as well as crabs inside the cod, especially at this time of the year (November). The crabs begin to sand up in the cold weather, and at that time the trawlers can't get them. The opening into the crab pots was only 4½ inches till last year; has now been reduced to 4 inches.
- Pots.** GEORGE MARSHALL (*examined by Mr. Walpole*). Has been a fisherman for 43 years. Fishes for crabs and lobsters and all kinds of fish. Agrees with previous witnesses that crabs and lobsters are decreasing very much. The last 20 years the decrease has been more than one half. Believes that the quantity of fishermen makes the crabs and lobsters much scarcer, and cannot say whether there are fewer shell fish in the sea. Is in favour of returning all small crabs and lobsters to the sea. Thinks that no crabs should be taken under 4½ inches, and that crabs under this size should be unsaleable everywhere. Lobsters over 4½ inches are full-sized lobsters. Agrees that a lobster under 4 inches in the barrel is too small to be taken, and should be returned to the water. Is in favour of prohibiting the sale of all soft crabs. Those now found in the shops are caught by trawlers, off the Dogger, 45 miles out in 33 to 37 fathom water. Is in favour of prohibiting the capture of berried crabs. Is also in favour of prohibiting capture and sale of berried lobsters. Thinks that no limit need be put on the amount of tackle each boat carries. Thinks that the in-shore trawling which the Robin Hood's Bay men complain of does harm to the fishery. Is a trawler himself. The in-shore trawling does destroy the small fish. In his opinion no crab should be taken under 4½ inches, no lobsters should be taken under 4 inches in the barrel, no berried lobsters should be taken, no berried crabs should be taken, and no soft crabs should be taken.
- CRABS.**
 Gauge. J. H. SELLERS (*recalled*). Produces old gauge for lobsters which one party has had in possession 60 years. Her father had it before her. It measures 4½ inches, with a nick at 4 inches for the half lobster. This gauge was abandoned when lobsters were sold by auction 23 or 24 years ago.
- CRABS.**
 Decrease. ROBERT HERITAGE (*examined by Mr. Buckland*). Has fished with crab pots for five years; with trawls for 20 years. Fishes with pots from Filey Brigg to Sunderland. The crabs are fewer than they were. The crabs here are a different species from the Devonshire and Scotch crabs, and would never grow to the same size. Can't say what the cause of this difference of size is. A 7-inch crab is a good crab on the Yorkshire coast. A crab will only eat fresh bait; a lobster will eat stinking bait. Catches thousands of she crabs and he crabs from the 1st April to the end of June in the trawls. This is in water from 3 to 20 fathoms deep. They are all carrying berries. This is on the ground from Texel to Heligoland. They are 4-inch to 5-inch crabs. In his opinion the crab always buries itself in the sand in winter. Is in favour of returning the small crabs under 4½ inches. But this must apply to all England. There are as many crabs sent away from the Yorkshire pots as from all the rest of England. The great fishing places are Staithes, Whitby, Robin Hood's Bay, Scarborough, Filey, Flamboro', Bridlington, Hornsea, and Withernsea. As to lobsters, all the ninety-cocks ought to be returned to the sea. Nothing under a half-lobster (4 inches in the barrel) ought to be brought to market. Thinks the in-shore trawling does as much good as harm. It kills the little fish which become food for the big ones. The haddock and cod are not falling off in the deep water. Catches soft crabs at all times of the year in the trawls. As a rule they are thrown overboard, but sometimes brought ashore to make up bulk or by mistake. It would not harm the trawlers if they were compelled to return the soft crabs.
- CRABS.**
 Gauge. Never catches he crabs on the Texel ground, but many hundred she crabs with the spawn under the apron. Thinks the she crabs migrate to the ground for breeding purposes. Thinks that the she crabs deposit their berries on the sand there. When the berries are ripe he has seen the berries fall
- CRABS.**
 Soft. *Breeding.*

from a crab with a touch. They are deposited in the water and hatched there. Knows of no other great breeding place for crabs in the North Sea nearer than Texel. Texel is 160 miles from Flamborough. If there had been another great breeding place nearer Yorkshire the trawlers would have been sure to have found it. In five years' experience never saw but one berried crab in the pots. Nevertheless, from April to June there more shes than hes in the pots. The crabs off the Dogger Bank are about 6 to 7 inches. They are chiefly she crabs.

CRABS.

Spawning.

JOHN W. WOODALL, Alderman. Owner of a small steam yacht. Is an Oxford man. Was first-class in Natural Sciences. Associated with Mr. Gwyn Jeffries in Shetland dredging operations. Believes that the minimum temperature of the sea on the Yorkshire coast in April and May is as low as any part of the North Sea. 44° may be taken as the temperature. The temperature in the summer is about 54°. Thinks that the temperature has the greatest influence on all sea animals. Does not believe that any legislation is necessary to stop in-shore trawling. There are many days when, owing to the wind, the smacks are unable to trawl. If it does any injury it is by destroying the small fry. Thinks it desirable to put back all small crabs and lobsters.

*Temperature.**Trawling.*

CAPTAIN HENRY MANN (*examined by Mr. Walpole*). Is acquainted with the ground off Texel. Has trawled on it between April and July. At that time there are a great many berried crabs. Never saw a he crab there. There are a great many crabs with shell spawn on them there. Off the westernmost part of the Texel there is a deal of ground. These breeding crabs are found also the whole way from the south of the Dogger Bank to the Dutch coast. They are not so plentiful to the north of the Dogger. Thinks that the crab deposits her berries in the water, and that it is immaterial whether it is on rocky ground or sandy ground. Has heard evidence about in-shore trawling. Does not think it does the Robin Hood's Bay men, nor any person, any harm. No legislation ought to be thought of on such a subject.

*Breeding.**Trawling.*

(*By Mr. Buckland.*) Does not think that the destruction of fish by trawlers in-shore does harm. There are 100 fish killed now for one 25 years ago. There are just as many fish in the sea as ever. The in-shore trawling does not kill so many small fish as the deep-sea trawling. The deep-sea fish do not draw in-shore to spawn, and the spawn chiefly floats.

WILLIAM WALKER. A fisherman for 16 years. Has heard previous evidence. Agrees with it and with the gauges recommended.

WILLIAM PURCELL. Agrees with the gauges recommended by previous witnesses, and asks for protection. By protection, means a law to prevent sale of unsizeable crabs and lobsters.

THOMAS THOMPSON. A fisherman. Has been crabbing for seven years in Scotland, at Anstruther. Has seen both he and she crabs caught there. The fishermen there made the rule to return small crabs, and did so, and the markets made the rule not to buy any crabs under 5 inches. This practice was carried out for 10 years. It proved beneficial, and there are more large crabs caught there than anywhere. It is 10 years since he left Anstruther, and the same thing has been going on since. This practice at Anstruther has increased the crabs in number. Mr. Gellatly, harbour-master, Anstruther, could give information. Thinks that the Anstruther precedent ought to be applied to Scarborough. With regard to in-shore trawling, the in-shore trawlers do not kill so much fry as the deep-sea trawlers outside.

Gauge observed.

Artillery Drill Shed, Flamborough, Monday, 20th November 1876.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

PANTON FELL (*examined by Mr. Walpole*). A fisherman for 40 years at Flamborough. Has been fishing for crabs and lobsters. Fishes from Speeton Cliffs on the north to Sewerby on the south, six miles north and two miles south, and about half a mile seawards. When he began there were about 30 boats at Flamborough; there are now about 70. All these boats go out crabbing in the season. The crab season commences at the beginning of April and

Season for.

- Herring fishery* continues till the middle of July, when the herring season commences. There is very little fishing in the back end of the year. Forty years ago the boats used to carry 24 trunks, in a boat; they use pots now—about 30 to 36 in a boat. The boats are small undecked boats. About 30 years ago the crabs fell off very much; they could scarcely get any, and the fishermen were compelled to go to Filey for them. Since then they increased, and they have increased a good deal of late years. There are as many crabs now as when he was a lad, but they are smaller. When he was a lad, the crabs were sold by a gauge. The crabs above 4 inches were sold by the score. Smaller crabs were sold by the lump. The small crabs are more numerous than they were. The biggest crabs are off Flamborough Head; there is more length of rock there. The crabs at Bridlington and Speeton are falling off. Of the two, the crabs at Speeton are larger than those at Bridlington. The east winds destroy a great many crabs in Bridlington Bay. Fish also destroy a great many; but taking the small ones, no doubt, increases the loss. All the fishermen admit that it is no use bringing the small crabs ashore. Is of opinion that it would be a good thing to return all crabs under 4 inches.
- Gauge.*
LOBSTERS.
Decrease.
CRABS.
Soft.
LOBSTERS.
Berried.
CRABS.
Season for.
Berried.
Gauge.
Soft.
Pots.
LOBSTERS.
Gauge.
CRABS.
Weather.
Gauge.
- LOBSTERS have been very scarce for many years. Some of the lobsters are large. They are larger than the Scarborough lobsters. Thinks a lobster-gauge would be a good thing. The smallest lobsters are no use. Doesn't want to say what the gauge should be.
- No soft crabs or lobsters are caught here. It would not hurt the fishermen here if no soft crabs were brought ashore. Berried crabs are not brought ashore here; but the smacks bring many ashore. Is in favour of stopping this. Berried lobsters are brought ashore. They, however, are the finest lobsters. Does not think this can be stopped. Berried lobsters come ashore at all times of the year.
- WILLIAM STEVENSON** (*examined by Mr. Buckland*). Lives at Flamborough. Has fished for crabs and lobsters for 20 years. Fishes where the preceding witness fishes. There are about 70 boats here, carrying 30 pots or thereabouts. The fishing ground embraces about 10 miles of coast. The bottom of the sea is rocky. The rocky ground is the best place for the crabs and lobsters. Can't say what the crabs feed on. Commences fishing about the beginning of April, and continues till about the middle of July. The crab-pots are down from one end of the season to the other, but are shifted occasionally from time to time. Thinks it would be possible to over-fish the ground, but doesn't think the fishery at present is in any danger. The fishermen return all the berried crabs, and think this is beneficial to the fishery. Has thrown four or five berried crabs back in a night. The berried crabs would be 5 inches and upwards. The largest are 7 inches. The berried crabs are mostly big crabs. Has no idea of the age of crabs. Thinks the crabs come in to spawn from the deep water. Is in favour of returning all crabs under 4 inches. Adheres to the opinion that everything ought to be kept above 4 inches. Soft crabs are always returned to the water; would not object to a law compelling the return of soft crabs. Is in favour of this law applying also to the trawlers. The pipes in the pots, which the crabs enter, are $4\frac{1}{2}$ to 5 inches wide. Soft crabs are caught here, but he does not catch them himself.
- There are a few lobsters here. A full-sized lobster here is $4\frac{1}{2}$ to 5 inches; 3 to 4 inches is the average size. Is in favour of returning the small lobsters to the water. No gauge has been used at Flamborough for lobsters for 20 years. No lobster should be taken under 4 inches in the barrel. The berried hens are reckoned more valuable than any other. The buyers would give 6d. more for a berried hen than for any other lobster. The crabs crawl best in a nice ground swell after a storm. They call this a "crab swell." Does not require a close season.
- WILLIAM CROWE** (*examined by Mr. Walpole*). A farmer at Flamborough. Sent half a dozen small crabs to the House of Commons when he saw the Norfolk Bill in the House. The buyers asked him to come and say that no crab ought to be sold under $4\frac{1}{2}$ inches. They buy crabs of any size in the town; they buy the fish in the season, and send them to all parts. There are about 10 or 12 of them at Flamborough, and they are unanimous in wishing no crab to be taken under $4\frac{1}{2}$ inches.
- SAMUEL CHADWICK** (*examined by Mr. Buckland*). A fishbuyer at Flamborough. Has been so for eight years. Buys crabs and lobsters. The crabs

have not fallen off during the eight years, either in size or quantity. Before he was a buyer he was a fisherman. It is 35 years since he commenced fishing. At that time very few small crabs were caught. The small crabs were given to the boys for pocket money, and they could get 2d. to 3d. of a morning. Now the boats get nearly 8s. for small crabs, 3½ to 4 inches long in a morning. Thinks that all crabs over 4 inches should be kept. The crabs which he buys are hawked in the country, and are not sent away to distant markets. The small crabs bought by the poor people. The population of Flamborough are two-thirds fishing and one-third agricultural. The crabs are hawked about among the agricultural class. Can always sell little crabs. A 3½-inch crab is worth a halfpenny in the beginning of the season; a 4-inch crab is worth a penny at any time. Does not agree in Mr. Crowe's recommendation that a 4½-inch gauge is advisable.

CRABS.

Price.

Gauge.

Sells lobsters sometimes. Has sold them as small as 3 inches in the barrel. Thinks these ought to be returned to the water. They are worth 3d. each, but there is very little in them. Everything over 4 inches might be taken. Is in favour of taking berried lobsters because they sell for so much money.

LOBSTERS.

Price.

Gauge.

Berried.

CRABS.

WILLIAM STORK (*examined by Mr. Walpole*). Is a fisherman. Has been so 40 years. Has heard previous evidence. The large crabs have decreased uncommonly, the small ones have not decreased. Is in favour of returning small crabs to the sea. A fisherman can only sell a 4-inch crab for three or four a penny. A 4½-inch crab is plenty small enough to be taken. When he was a boy he took nothing under 4½ inches. The smaller ones were given to the lads. But it would not be possible now to have a larger gauge than 4½ inches, as so many men are dependent on the crab fishing.

Gauge.

Very small lobsters are brought home, but all under 4 inches in the barrel should be returned.

LOBSTERS.

Gauge.

When he was a boy he could get 100 large crabs in a night, of 5 inches and upwards. There are not now 20 large crabs to be had in a night. There are more small crabs and fewer big ones. The holes of the pots are 4½ inches in diameter but stretch to 5½ inches.

Pots.

ROBERT EMERSON (*examined by Mr. Buckland*). Has been a fisherman for 40 years. Is in favour of a 4-inch gauge for crabs. Thinks if the gauge is larger than this there are many people in Flamborough who will be unable to get a living. There are about 70 boats crabbing at Flamborough. Thinks the crabs draw in from the deep water to the shore. The trawlers in Bridlington Bay come close in shore. They catch a good many crabs at times. Never in his life sold a soft crab. They are always returned to the sea. Is in favour of returning all berried crabs to the sea, but is not in favour of returning berried lobsters, as they are very valuable. The population of Flamborough is 1,573, two-thirds of whom are dependent on fishing.

CRABS.

Gauge.

Migration.

Berried.

Piers and Harbours Commissioners' Room, Bridlington Quay,

Monday, 20th November 1876.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

SPINK BIRDSALL (*examined by Mr. Buckland*). Fish merchant at Bridlington. Has been buying fish for nine years. Sends the fish to Hull, Nottingham, &c. The crabs are too small for London. Does not think that the crabs have fallen off. Crabs in this place run very small. They consider a 4-inch crab a very good crab here. Two-thirds of the crabs here are less than four inches. A great many crabs under 3½ inches are brought ashore here. The only markets for these crabs are at Hull and Nottingham. The Manchester, Liverpool, and London markets won't take these small crabs, and require a 5 or 6 inch crab. Is not in favour of killing crabs so small as 3½ inches. The crabs are sold by the barrel. The price per barrel has not increased. Is in favour of returning all crabs under 4 inches. If the gauge were larger than this it would not pay the fishermen to go to sea. Believes that the crabs here are brood from

No decrease.

Gauge.

CRABS.

Soft.

Flamborough Head. Very seldom sells berried crabs. There is a market for them, but the men won't bring them ashore. Casted, soft, or light crabs are not taken here as a rule, they are returned to the sea. There would be a difficulty in enforcing the return of the small soft crabs, as they are shot by the basketful into the barrel.

LOBSTERS.

Berried.

There are very few lobsters here. Some of the lobsters that do come are very large. Has had them weigh 5 or 6 lbs. The average size is 1 lb. or $1\frac{1}{2}$ lb. They are never gauged. A tale lobster is $4\frac{1}{2}$ inches in the barrel; below the tale they go two or three for one. They catch berried lobsters all through the year; they are most numerous in the summer. The berried lobsters are more valuable than the others. A berried lobster worth 1s. 6d. after it had cast its berries would be worth 1s. Does not think that a close season is necessary for crabs and lobsters. They both retire out to sea in the winter.

CRABS.

Decrease.

JOHN WARCOP (*examined by Mr. Walpole*). Has been a fisherman about 48 years. Fishes at Bridlington, from Quay Pier to Flamborough Dyke. The boats seldom go to the south. From Quay Pier to Flamborough Dyke is about 3 miles. The bottom is chiefly rocky. The fishermen fish from 3 feet water to 5 fathoms. The 5 fathoms water is a mile out. Last year there were 15 or 16 boats fishing for shell-fish at Bridlington. The number is increasing. There is a good deal of weed on the bottom and patches of sand. Crabs are undoubtedly decreasing in number. Forty-eight years ago there were great quantities of crabs got. There are not half so many now. The smallest crabs are towards the Quay, the largest towards Flamborough. Forty-eight years ago the boats very seldom came this side of Southsea landing place to catch crabs. Now they come there and catch the small crabs. There are two causes for the decrease of crabs; viz., 1. The increase of boats; 2. The capture of very small crabs. By the increase of boats means that the tale is divided among more men. The capture of very small crabs has resulted from fishing south of the Southsea landing place. Believes it would be beneficial to the public and the fishermen to have a limit of size for crabs. Three fishermen last year had a gauge made of $4\frac{1}{2}$ inches, and made an agreement to bring nothing under $4\frac{1}{2}$; they wanted to prevent the capture of all crabs under that size. Retains his opinion that an institution of such a gauge would be beneficial to the public and the fishermen. Thinks that by this limit some immediate suffering may occur, but that future benefit will arise.

*Gauge.**Spawning.*

The smallest crabs are towards the Quay. The water is shoal there, and the tide is easy, and this is a great nursery for crabs. Some years ago boats could go from here and get quantities of decent size crabs from $4\frac{1}{2}$ to 7 inches. They cannot do so now, and this is due to killing the small crabs and the seeded crabs. Some people throw away the seeded crabs here. Others take them. They are of very little value. It would be a great blessing to have a law saying that no one should catch a seeded crab. There are a few soft crabs killed here in August and September. They are full of water and good for nothing. There are not many catching them. The crab fishing commences in April and lasts eight weeks, and there is no crab fishing during the rest of the year.

LOBSTERS.

*Gauge.**Berried.*

There are very few lobsters here. There would be no objection here to have a gauge for lobsters. It would be reasonable to say that no lobsters should be killed under 4 inches in the barrel. Would not think it unreasonable to prohibit the capture of berried lobsters. The fishermen in some cases might strip off the berries but could not do so without detection. Is in favour of a law prohibiting the capture of berried lobsters.

*Pots.**Weather.**Enemies.**Boiling.*

(*By Mr Buckland.*) The number of pots carried by each boat varies from 30 to 50. There are 15 to 16 boats. The pots are put at the bottom of the sea and left there. Thinks that the crabs bury themselves in the sand in the winter, and draw into shore as the spring comes on. Has seen crabs smaller than a shilling. There are thousands sent to market from here under $2\frac{1}{2}$ inches and sold five and six for 1d. Crabs are not broken up for bait here. The pots here are usually baited with plaice. The bait cannot be too fresh for crabs. Crabs crawl mostly after a storm. The pipe for the crab pots is from $4\frac{1}{2}$ to 5 inches. If the fishermen were tied to the size of the crabs they would have to alter the mesh of the crab pots. Cod fish eat crabs, but do not do much harm to them. There are a great many crabs boiled here. They are put into cold water and gradually boiled, but are dead from drowning before the

water boils, but some are plunged at once into boiling water. The lobsters are tied not plugged.

CRABS.

JAMES SCOTTAR (*examined by Mr. Buckland*). Has been a fisherman eight years at Bridlington. Before that was at Filey. Has been four years catching crabs. Catches them chiefly towards Flamborough. Thinks the crabs were bigger this year than in the three previous years. Heard Mr. Warcop's evidence. Thinks that to return the small crabs to the sea, would, after two or three years, be a benefit. During the years when the crabs were growing some of the men would not be able to keep their families. As a crab catcher, would like to stick to present plan. Has been some days getting 1*l.* to 2*5s.* a day for small crabs and 7*s.* to 8*s.* for big ones when there were no small ones. Would for his part have no gauge at all. The male crabs are sold at 10*s.* a basket, and there are 10 or 12 score a basket. Has many a night caught 300 little crabs. It would be a great advantage, after two or three years, to let the little crabs grow, but it would be a serious present injury. A 4-inch gauge would be plenty small enough. A man might get a living with a 4-inch gauge. Stops fishing before the crabs are soft. Some of the men go on later. Cannot say what the men catch. It ought to be illegal to catch soft crabs. Only sees an odd seeded crab by chance. Thinks that it ought to be illegal to take them.

Price.

Gauge.

Berried.

There are very few lobsters here. Only caught three last season. They were 5 to 6 inches in the barrel. Agrees with previous witness that no lobster should be taken under 4 inches in the barrel. Thinks also that the berried lobsters ought to be tossed overboard.

LOBSTERS.

Berried.
Gauge.

(*By Mr. Buckland*). Cannot say why the crabs here are so small. An 8-inch crab is a very big crab here. Very few of these are taken. Knows the Cromer fishery. It is 7 miles from Flamborough to Bridlington. Believes that the small crabs here are a distinct species. Thinks that a crab grows an inch a year. They grow an inch when they cast their shell. Believes they shed their shell once a year. A 4-inch crab is worth 1*l.* A 5-inch crab is worth 2*d.* or 3*d.* The little 4-inch crabs are very sweet. The crabs are sold to the fish buyers. Sells the crabs also by hawking.

CRABS.

Growth.

RICHARD BEDLINGTON (*examined by Mr. Buckland*). Has been fishing for crabs for 20 years. Used to use trunks when he began. Twenty-four trunks made a fleet. They required constant attention. They were set about 8 fathoms from each other and in 3 fathoms water, and were lifted 15 times a night. The crabs then were quite as small as they are now. Would get 20 small 3½-inch crabs for one big one. The crabs on this coast are small. There were six or seven years (15 years ago) when the men knocked off because the crabs were so small. The railway was used in 1843. Never fished for crabs before the railway was made. Before that the crabs were sent in carts to Hull and York, 30 and 40 miles. The bottom is rocky, with clumps of clay. The crabs get into holes in the clay for the winter. Believes if the small crabs were spared, they would never grow into big ones. Can't say why the crabs are smaller here, but they are smaller. Thinks the gauge or crabs should not exceed 4 inches, but might do at 4½ inches. Thousands would have to be thrown away below this, and those would grow into 4½ inches. Believes that the majority of the fishermen are in favour of a 4-inch gauge. Would himself advise 4½. There are 40 fishermen.

Trunks.

Railways.

Gauge.

There are very few lobsters caught here. Has caught three this season, about 8 or 9 inches long. Is in favour of a gauge for lobsters, but can't say what the gauge should be. Thinks the ground here is too smooth for lobsters. The bottom of the sea here is levellish rock. Round Flamborough Head there is a good lobster ground. Berried hens should all be put back into the sea. The proper way to restore the lobster fisheries is to return the berried hens. There should be a fine of 1*l.* for taking them. There is no trawling on the rocky ground where the crabs are. Believes a crab sheds its shell every year. There are a good many dog crabs here. They come into the other crab pots. Everybody puts back soft crabs, which are of no use to anyone.

LOBSTERS.

Gauge.

Berried.

CRABS.

Soft.

JOHN GIBBON (*examined by Mr. Walpole*). Has been a crab catcher 28 years. The crabs were not so small in Bridlington Bay 28 years ago as they are now. They began to get small three or four years afterwards. There are more now on the ground than there were, but more little crabs are taken. Is in favour of stopping the capture of little crabs. Thinks a 4-inch gauge, however, is big enough. If there were a 4-inch gauge it would be no use

Decreased size.

Gauge.

CRABS.**Berried.**

going to catch them in April and May. Never took a berried crab in his life. Is in favour of a law compelling their return to the water. Very few people take soft crabs, and it ought to be illegal to take them.

Has caught very few lobsters. Thinks that seeded lobsters ought not to be taken, and that no lobster under 4 inches in the barrel should be taken.

Migration.

In April and May the crabs are small; later on the larger crabs come in.

Coastguard Station, Hall Sands, Tor Cross, Tuesday, 5th December 1876.

PRESENT :

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

Boats.

GEORGE WELLS (*examined by Mr. Walpole*). A fisherman at Hall Sands for 30 years. Has been fishing all the time for crabs and lobsters. The ground is off Hall Sands towards the Start, and off Prawle Point to the south of this place. This is about 10 or 12 miles long by 3 broad. There are about 30 boats at Hall Sands and Beeson Sands. The boats increase every year. There were not half so many boats 30 years ago. There is no lack of fish, but some seasons are better than others. The shell fish are sent to market, some by land to Dartmouth, and some by smacks. The price has increased very much. 30 years ago it was 9s. a dozen, 12 crabs, 8 inches across the back, a dozen. The price now is 18s. a dozen. Lobsters are the same price. They fish all the year round if the weather permits. Was always in the habit himself of fishing all the year round. Used crab pots 30 years ago, and does so now. The boats carry from 30 to 40 pots. There are a large quantity of crabs caught now, but there are more fishermen to divide the take among. The crabs are as large as they used to be. The crabs at this time of the year are a little pithy. May catch soft crabs all the year round. The soft crabs are all hove away. Sees a few berried crabs. Those that are berried are in December. The berried crabs are mostly thrown overboard. Catches very few crabs below 5 inches. Is in favour of a law prohibiting sale of all crabs under 6 inches. Is in favour of a law for return of all soft crabs, and of all berried crabs. The crabs are berried in December here, and the soft crabs are in the spring of the year.

Price.**Soft.****Berried.****Gauge.****LOBSTERS.****Decrease.****Berried.****Trawlers.**

This is not much of a lobster country, and the lobsters are not quite so plentiful as they were. Some seasons a good many are caught. The smallest lobsters taken here are 9 or 10 inches in length. A gauge would be no good here, because no small lobsters are caught. Takes some berried hens here in the spring and fall of the year. The fishermen can't spare the berried lobsters as most people are after them. It would not do to have a law of the return of berried lobsters.

The Brixham trawlers come here and scrape away the pots and sweep everything before them. Thinks they do a great injury. Some of the crab ground is on the Sand where the trawlers come. Is in favour of prohibiting trawlers coming within the headlands. Would keep them out of the bay altogether. Has himself lost scores of pots from the trawlers. Lost some this year. Lost four or five last year. Has seen trawlers shoot their nets right among the pots, so they couldn't help cutting them away.

Weather.

WILLIAM HUTCHINS, of Beeson Sands (*examined by Mr. Buckland*). Has been fishing 30 years. There are 16 boats at Beeson Sands, and about 16 here. They fish all the year round, but the weather stops them a good deal in the winter. The ground is about six miles long and three miles broad. The ground is all sandy.

CRABS.**No decrease.****Berried.****Growth.****Bait.**

Does not think that the crabs have fallen off. Always returns the berried crabs. This has always been the custom. The largest crabs are 11 or 12 inches across the back, and weighs 11 or 12 lbs. The crabs are better quality here than at the Land's End. The smallest crabs here are 6 inches, and none less than that ought to be taken. Thinks that a crab grows very quickly after it has cast its shell. Sees small crabs about an inch long, in the spring of the year. The pots are baited with ray and gurnard. The price has not increased

of late years. He sells his crabs to Mr. Scovell. Is in favour of returning all crabs under 6 inches. The Beeson Sands men are all in favour of this.

CRABS.

Gauge.
Trawlers.

Breeding.

Would like to see some law prohibiting inshore trawling. They carry away the pots, and, in the fall of the year, they destroy a great many she crabs. Most of the soft crabs are in March, April, and May. The soft crabs here are called ripe crabs, and are caught all the year round. A male is always on the top of a ripe crab whenever she is caught.

Thinks the trawlers should be prohibited from coming within the Beeson Sands, or within 3 miles of the shore. The trawlers take away sometimes 30 or 40 pots a night.

The biggest lobsters here are 5 or 6 lbs. All lobsters over 11 inches are measured lobsters. Below this all go two for one. The smallest lobsters here run from 9 to 10 inches. The ribs of the pots are 2 inches apart. Is not in favour of returning berried lobsters. Is not in favour of any close season.

LOBSTERS.

JOHN ROPER (*examined by Mr. Walpole*). The fishermen here are obliged to keep dogs, because, when the wind is eastward, the dogs have to go from the shore to the boat with a line in their mouth to enable the boat to be hauled in through the surf, which is very heavy. There are three or four Newfoundland dogs kept in each village for this purpose. The dogs have to be trained for them. Thinks it a hardship that these dogs should be taxed, as they are really kept to save life. There are eight dogs altogether to attend to 30 boats.

Dogs.

N.B.—A large number of fishermen were present; all were unanimously of opinion that a law should be made compelling the return of:—

CRABS.

1. All crabs under 6 inches.
2. All berried crabs.
3. All soft crabs.

The Union Inn, Prawle, Tuesday, 5th December 1876.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

ROBERT PHILLIPS (*examined by Mr. Buckland*). Has been a fisherman for eight years. The ground extends about half a mile east of Prawle Point, and half a mile west of Prawle Point. Fishes for crabs and lobsters all the year round. There are five boats here, each boat carrying about 50 pots. The bottom is rocky and sandy. They fish in water from 20 fathoms deep. The crabs are scarcer than they used to be. Thinks the scarcity is due to catching the she crabs in the fall of the year. The she crabs are spawning from September to Christmas. Catches more he crabs than she crabs in the fall of the year. The she crabs are caught in the summer. Has seen crabs 8 inches across the shell. Below this they go two for one. There are more crabs above than below 8 inches. Thinks no crab ought to be taken below 6 inches. Would be in favour of a law to this effect. Would be in favour of returning all she crabs during the last three months of the year. But this would not do in the summer. Catches light crabs in the summer, but they are hove overboard. The he crabs are hove overboard. The females are used as bait. A great many crabs are used as bait for bream.

Decrease.
Spawning.

Gauge.

Used for bait.

The lobsters are not so thick as they were. Thinks the decrease is due to killing all the berried hens, and is in favour of returning all the berried hens in January, February, and March. Is in favour of returning all the smallest lobsters.

LOBSTERS.

Decrease.
Berried.

RICHARD PUTT (*examined by Mr. Walpole*). Has been a fisherman nearly 50 years. When he began there were three boats, they increased afterwards to six. There are now five boats; there have been as many as seven. Always fished with pots, as he does now. When he began used to begin in February or March, and knock off in September. There is seldom any fishing beyond September now. Cannot catch half so many crabs in the same quantity of

CRABS.*Decrease.
Close time.**Migration.**Berried.***LOBSTERS.***Decrease.
Berried.**Trawlers.*

pots as he could 50 years ago. The crabs are decreasing. This is due to over-fishing. Thinks no she crabs should be taken from Michaelmas to Lady-day. They draw into the shoal water to spawn. If this were done has no doubt it would improve the fishery. No crabs are taken here under 6 inches. The female crabs are taken between Michaelmas and Lady-day for bait. There would be no difficulty in getting other bait. About this time (December) the she crabs are berried; they are berried in December, January, and February. In the spring no berried hens are seen. After the spring they see a great many soft crabs.

There are not so many lobsters caught as there used to be. Since the French began catching lobsters in France 30 years ago they have fallen off. Sees most berried lobsters in January, February, and March, and is in favour of prohibiting the capture of berried hens in these months.

The trawlers destroy a great many she crabs in the winter months. The trawlers ought to be compelled to return these. Has no other complaint against the trawlers. No crabs now are sent from here to market under 6 inches. Thousands of crabs are destroyed for bait all the year round. They are broken up as bait for the hooks, and is in favour of prohibiting this. They use them as bait for connors or wrasse. There are 10 fishermen here. Believes they all agree with this evidence.

Hope and Anchor Inn, Hope, Tuesday, 5th December 1876.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

CRABS.*No decrease.***LOBSTERS.***No decrease.**Bait.***CRABS.***Food of.
Migration.*

JOSEPH HARGATE (*examined by Mr. Walpole*). Has been fishing 35 years for crabs and lobsters. There are 12 to 14 boats here. Fishes from Bolt Tail to Bolt Head, nearly up to Salcombe Harbour, five miles from east to west, and in some places six miles out to sea. Begins fishing in March, and goes on till the middle of August. In the autumn goes on to the pilchards. There are as many crabs now as there were 35 years ago. Some of the crabs are very large. All above 8 inches count as one, and 8 inches they go two for one. The smallest crab they take is about 6 inches. There are very few taken under that size. They take no soft crabs, if they do, they heave them away. They never take any berried crabs. The crabs are sold to Mr. Locke of Southampton, who sends smacks for them. There are as many lobsters now as there were 35 years ago. No law for lobsters is necessary. They never catch here any lobsters under 8 inches.

WILLIAM THORNTON (*examined by Mr. Buckland*). Has been fishing for 35 or 36 years for crabs and lobsters. They set about 50 pots per boat. Skate, ray, and connors (wrasse), are used for bait. The pots are set in March and taken up in the middle of August. The best time for catching crabs is after a ground swell. Thinks the crabs live by suction. After August there is not a crab to be caught, and he thinks that they go and bury themselves. The trawlers catch the crabs all times of the year. The steamers do a deal of injury by cutting the strings of the crab pots with their screws and paddles. This is done accidentally. The bottom here is rocky. There is very little sand. The trawlers cannot work here. The pots are set in water from 13 fathoms to 40 fathoms deep. After August, when they leave off crabbing, they go on to the other fish, and recommence crabbing in March. They never see a berried crab. They never catch any she crabs (Queens) until May. Is in favour of returning all crabs under 6 inches. Crabs here are never broken up for bait.

*Gauge.***LOBSTERS.***Berried.**Store pots.*

The lobsters have not much decreased. Catches the berried lobsters all through the season. From May to June they catch very few lobsters, but catch more in July and August. The smallest lobster they can see is about 4 to 6 inches. The gauge of the lobster is 11 inches. All below this go two for one. Those above 6 inches long are thrown overboard. The smacks would not take them. The lobsters and crabs are stored in crab pots. They are kept from a week to a fortnight. Doesn't think that they fall off in quality in that time. They keep best in the winter. They are nicked before they are

put in the store pots. They are not plugged now. Is in favour of retaining berried lobsters. Purchasers like them.

AMBROSE ASH. Has heard the above evidence and agrees with it.

N.B.—There were a considerable number of fisherman in the room who also expressed their concurrence in the foregoing evidence.

The Guildhall, Plymouth, Monday, 6th December 1876.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

JOHN ROACH (*examined by Mr. Walpole*). Has been a fisherman at Plymouth for 40 years. Has been fishing for crabs and lobsters. His ground in the summer is 3 miles beyond the breakwater. The ground is spotty. Rocks, sand, mud, and stones. The ground is extensive. There are 28 boats come there. They come from the Yealm, and are mostly in the crab way. They generally begin fishing in March, and go on till the pilchard season commences in August, when they are obliged to take up their pots to get them out of the way of the nets. There is very little fishing during the remainder of the year. It is too stormy to keep the baskets out.

CRABS.

Pilchard fishing.

There are not so many crabs and lobsters on the ground as there were 40 years ago. Twenty-six years ago, there were in his father's time only eight boats on the ground between the Plym and the Bolt Tail. Now there are nearly 100 boats on this ground. The boats could then catch 70 or 80 tale crabs a day. The boats now could only catch 7 or 8 or 10. There are more crabs caught now than there were then. But the boats go over three times the ground and three times as far out. Has no doubt that the crabs are diminishing in numbers. After June can catch no large male crabs, only she and small ones. 'I hey always throw away small crabs under (say) 5 inches. Does not see what regulations are applicable to this. Complains of the barges coming from the oil of vitriol stores tipping their refuse outside the breakwater. Has picked up scores of crabs burned by this refuse. Thinks the decrease in the crabs hereabouts is due to the refuse from these barges. This has been going on two or three years or more. Used to catch a good many crabs here. Since the practice began has caught nothing. There are tons and tons of stuff thrown away in fine weather; it is done mostly in summer when he is fishing. The refuse is white, like mud. It is refuse lime.

Decrease.

Berried.

Pollution.

Lobsters are not decreasing so much as the crabs. Thinks they are quicker in the water and get away from the stuff. The lobsters, however, are not so plentiful, as there are more fishermen after them.

LOBSTERS.

There could be no harm in a law making it illegal to kill all crabs under 5 inches. It ought to be adopted.

CRABS.

Nor would there be any harm in a law to make it illegal to kill a berried crab, or in a law to make it illegal to kill soft crabs.

Gauge. Berried.

There are more soft she crabs in June and July than at any other time of the year. The he crabs then have always a she crab with them. Never caught but four berried crabs; this was in the spring of the year. The soft crabs are generally in shallow water in sandy soil.

Soft.

There would be no harm in a law to throw away all lobsters under 8 inches. Catches many berried lobsters. Catches them all the year round. They cast their berries in May and June, and are berried again in September. They ought to be thrown away in May and June, but not during the rest of the year. There are no berried lobsters under $1\frac{1}{2}$ lbs. or 2 lbs. Once caught a berried crab of 4 inches; but they are generally much larger.

LOBSTERS.

Gauge.

Close time.

JOHN ROACH, junr. (*examined by Mr. Buckland*). Has been a fisherman for crabs and lobsters for 10 years. Fishes with pots. Rings were never used here. The entrance to the pots is 10 inches across the mouth. There is about 3 inches between the ribs of the pots. Fishes about the harbour inside and outside the breakwater. The crabs don't shift their ground much. They don't come to eat the refuse in the harbour. Does not know what they eat. Uses gurnet,

Pots.

CRABS.**Bait for.****Species of.****Colour.****Berried.****Soft.****Pollution.****Boats.****LOBSTERS.****No decrease.****Spawning.****Pollutions.****Berried.****CRABS.****No decrease.****Spawning.****Young.****Migration.****Breeding.**

rays, and wrasse for bait. Anything white attracts the crabs. Usually begins fishing in February, and goes on till November. Under $8\frac{1}{2}$ inches the crabs go two for one. Above $8\frac{1}{2}$ inches the crabs are tale crabs. Catches sometimes very small crabs, but returns all under 5 inches. Does not think that the crabs leave their beds in the autumn time. Most of the she crabs (locally known as "pouch crabs") are caught in June. Believes there are two distinct species of edible crabs; one which is large, the other which is small. Has been to a place near the breakwater every year, and caught small crabs and no large ones; therefore concludes that the small crabs are a distinct species. The colour of the crabs varies with the ground. Thinks this place, where the small crabs are caught, is a nursery for them. The largest crab he ever saw was about 10 lbs. Has seen oysters attached to crabs. Cannot tell their age. Has seen crabs about 1 inch across. This was in August. Thinks all berried crabs should be put back. Knows what a soft crab is. Thinks they ought to be put back into the water. Knows a light crab. Catches them at the same time as the soft ones, in July and August. Inside the breakwater, where the soil is muddy, the crabs remain soft all the year round. Complains of the refuse from the vitriol works, which burns up and destroys the crabs. Does not see this pollution washed on to the shore. It remains like cement when it is once down.

There are three boats at Plymouth now where there used to be one. Twenty-five and thirty pots a boat. The pots are set about 40 fathoms apart. Does not think that the lobsters have fallen off, as there used to be only 30 baskets fishing, and there are now 80. Does not think that the lobsters are being over-fished. The one boat caught 25 lobsters; the three catch about 36 lobsters a day. The smallest lobster he has seen here is about 5 inches, the largest lobster about 6 or 7 lbs. Thinks that an 8-inch lobster might be kept; but that all under $7\frac{1}{2}$ inches might be put back. Thinks the lobsters live by suction. Catches berried hens all the year round, mostly in June and July. He fishes inside the breakwater. His father—the previous witness—fishes outside the breakwater. The pollution does not come inside the harbour; but the fishermen complain that the pollution injures the pollards and other fish. Does not know whether it affects the salmon. Berried hens do not fetch more than any other lobster, but the fish merchants are very anxious to have them for sauce. Thinks that all berried hens under $1\frac{1}{2}$ lbs. should be returned to the sea. Cannot say what length a berried hen of this size would be. It would be impossible to throw back all the berried hens as 9 out of 10 lobsters are berried. The crabs are scarcer in the 28 fathoms water, which is only fished for six weeks in the year, than in any other part of the fishery. The bottom in the deep water is also rocky. No close season here is necessary. They can only fish in April, May, June, July, and August.

C. SPENCE BATE, F.R.S. Has been appointed by British Association to make inquiries into the crustacea. Finds from inquiries that though crabs are not increasing to meet the demand of an increased population, there is no general decrease in the sea. The female crabs are of little value, and are always given by the trawlers to boys, and sold in this neighbourhood by only four women who purchase them of the boys. There are five trawlers on this part who bring in four or five dozen she crabs daily; sometimes as many as 10 dozen are brought in. On the 11th November from 50 to 60 dozen crabs (nearly all females) were brought in, but on that day many Brixham boats were driven in by stress of weather. These were all taken inside the Eddystone in 30 fathoms water. The she crabs at this time have their ovaries well developed, and the internal shell is beginning to form. The berries will be exposed in January, and carried till May. Soon after that the berries are hatched out. The shell of the egg always remains attached to the mother's apron till her shell is cast. In May the water is tinged with the young *zoea* of the crab. Thinks the she crabs gradually work in towards shore about this time of the year. In May they hatch out, and afterwards they cast their shell. When they are free from their shell, impregnation takes place. The shell cannot be cast, except on hard ground, where they can catch hold of something. Has himself seen a crab cast its shell, and the same crab almost immediately afterwards in the act of copulation. This he saw with the shore crab. Thinks there is only one species of edible crab. Thinks that the small size of the crabs on the east coast is due to the temperature; and that Cornwall, where

the largest crabs are taken, is the central habitat of the species. There is only one edible crab caught in Cornwall or, as far as he knows, in Great Britain.

Is himself in favour of returning all the crabs from March to May. Found in one she crab 2,000,000 of ova. They are very abundant. A female crab now (December) is as good as a male crab. Crabs cast their shell much less constantly when they are old. In the *zoea* state they cast their shells very frequently. Has seen the crabs in a continuous line from the *zoea* upwards. Is in favour of a gauge to prevent the capture of the little ones. Does not think that the crabs, in deep water, hibernate in the mud. The crabs in shallow water do. The crabs, which the trawlers bring in now, have their coral inside them. Is in favour of protecting the females and the small fish.

The lobsters usually hatch out their eggs in June. In December the ova are carried. In June or July the young are hatched out. They carry the eggs during the whole of the intermediate period. Is in favour of protecting the female lobsters in May and June; thinks there would be no harm in this.

Thinks the crayfish are not made sufficient use of. Has no evidence to show whether they are migratory.

The lobster is an article of luxury, the crab is an article of food. If Norway sends berried lobsters into the market in the summer months, it is all the more reason why the native lobsters should be protected in those months.

Never heard of a Norwegian lobster being caught here. Thinks the sky blue lobster from North Wales is only a variation of colour.

JAMES CAVILL WILLCOX. Has taken great interest in the sea fisheries for 40 years, and has studied them both on the coast and in the Channel Islands. Eighteen years ago, when the Keyham works were commenced, all the filth from the excavation was thrown out into the sea. More or less, this has been going on ever since. The old fishermen at the time prophesied that it would be an injury. Thinks that this has injured the crab ground by filling up the holes and destroying their food. Thinks this injures the whiting ground and everything. It is a very difficult thing to make a close time for either crabs or lobsters. The trawlers take great quantities of crabs at this time of the year. The Admiralty has jurisdiction over the trawlers.

CRABS.
Species of.

Shedding shells.

Growth.

LOBSTERS.
Breeding.

CRAY-FISH.

Value of.
LOBSTERS.
Norwegian.

Pollutions.

Trawlers.

Wembury House, Wembury, Plymouth, 6th December 1876.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

JOHN FORSTER (*examined by Mr. Walpole*). Has been a fisherman at Noss for 45 years, fishing for crabs and lobsters. Some boats fish close to shore; but he goes 10 miles south of the river Yealm, off the Bolt Tail, five miles out to sea. This is locally called the West Ruts and the East Ruts. The bottom is mostly rocky, with patches of sand. The shoalest water on the East Ruts is 7 fathoms deep. The deepest water is 25 fathoms. Used to fish in the same place 45 years ago.

Forty-five years ago there were seven or eight boats on the ground; now there are 12 or 13. The boats used to carry 26 pots; they carry now 30 pots. Commences fishing about the middle of February if the weather permits, but the weather rarely permits till March. Continues fishing till August, and some boats continue later. The days get shorter then, the weather gets bad, and the year worn out. Thinks that there were rather more shell fish on the ground then than there are now. But there is very little decrease. The price has risen, but bait and gear have also risen in price, and the net profit is almost the same. Thinks the fishery is in good condition. Does not know that anything could be done to improve it. Thinks that he has not caught one berried crab in five years. In the beginning of October, the year before last, had 20 dozen crabs in the store pots; they were there for some weeks; and in the middle of October they had dozens with berries on them. Thinks from this that the crabs go to berry in October. That year had gone on crabbing to

Boats.

Weather.

CRABS.
Berried.

CRABS.

the middle of October. He was getting old, and had given up netting, and so had gone on longer than usual crabbing.

Soft.

Frequently catches soft crabs in February when he begins fishing. Throws them overboard. Finds the soft he crabs at the same time as the soft she crabs. By the soft crabs means crabs with brittle shells. Makes a market with the best of the fishery. All he can induce the captain of the smack to take, he sells. There is very little in the soft crabs but water. They are called here pale crabs. The highest price for he crabs is 15s. a dozen, the highest price for she crabs is 3s. a dozen, as a rule. The trawlers in the winter catch any number of berried crabs. Believes they throw away the berried crabs. It would be a good law to prevent the capture of all berried crabs. They return them now. It would be a good law to prevent the soft crabs being taken; and to prevent the sale of all crabs under 5 inches.

*Berried.**Gauge.*LOBSTERS.*Decrease.*

The lobsters are a great deal scarcer than they were. There are more persons after them. Catches berried lobsters all through the year. Thinks that there is no particular period at which they spawn. It is impossible to make a close season for lobsters. Never saw a lobster taken much under 7 or 8 inches. A sale fish is 11 inches. Under that length they go two for one. It would not be a good thing to put back all the berried lobsters. They are the best lobsters.

Berried.
CRAY-FISH.CRABS.*Price.**Season.*

There are very few cray-fish on this coast.

JOHN HOCKADAY. Has been fishing 44 or 45 years. Fishes on the same ground as preceding witness. Sells his crabs to the Southampton and Hamble smacks. The smacks come once a fortnight in the season. Catches most crabs after a swell. The price of crabs has risen from 12s. to 15s. a dozen for hes. Mr. Scovell gives 3s. a dozen for shes. The she crabs run smaller than the he crabs, and the claws are smaller. There is not so much fish in the shes as the hes. Catches she crabs chiefly in July and August. Some crabs are sold to the French. The French smacks come from Dieppe. He doesn't himself sell to the French unless his store pots are full and he has no room for more. The French give the same price as Mr. Scovell for he crabs, perhaps a trifle more for she crabs. For the last 30 years two vessels have been coming twice a fortnight. An 8-inch crab is a sale crab. Doesn't think he sells any crabs under 5 inches. The crabs are all sent away alive.

LOBSTERS.*No decrease.**Trawlers.**Berried.*

Sees very little difference in the lobsters. Has caught lobsters 10 lbs. in weight, but very rarely. A 11-inch lobster is a sale lobster, below this they go two for one. They never catch a lobster in a pot under 7 inches. Smaller lobsters go through the pots which have a space of 1½ inches between the ribs. Lobsters are never plugged. Thinks the trawlers do a great deal of harm to the crab fishery. The crabs go on to the sand, and the trawlers catch them. Finds berried lobsters all through the year, but has no personal experience of this. It wouldn't pay to have to put back berried lobsters.

*Decrease.**Close time.**Trawlers.*CRABS.*Gauge.*

MARTIN ROSS. A fisherman of Newton Ferrers. Was fishing off the Eddystone last summer, and for the two preceding years. Fine lobsters are caught on a portion of this ground. There were two boats from Yealm and three from Cawsand, fishing there last season. The lobsters were less plentiful last summer than three years previously. The old ground failed, but found a new piece of ground where they had good fishing. Thinks the old ground was exhausted. There had been three or four other boats besides himself. It is a very small patch of rocks, not above an acre. It was fished with pots. Is in favour of a close season both for crabs and lobsters. It should commence on the 1st September and end on the 31st January. There is no fishing in these months, but it would stop the trawlers. Thinks the trawlers do great damage by destroying female crabs. The trawlers come close to the Eddystone ground. Is in favour of returning all he crabs below 5 inches, and all she crabs under 4 inches. It wouldn't do to make one gauge for both. Is in favour of returning all small lobsters under, say, 7 inches. A gauge of 8 inches would be a sacrifice. An 8-inch lobster (*seeing a gauge*) is very small.

(*By Mr. Buckland.*) The patch of ground off the Eddystone was on the south-west side. His boat would put 30 pots on this acre of ground, and there were four other boats. There would be upwards of 100 pots on this one acre. The Cawsand men found the ground first and found very large lobsters there. Lobsters are always large on a new ground. The Eddystone lobsters are about 3 or 3½ lbs. Has seen lobsters without claws, probably from fighting. Lobsters are not plugged, and crabs are usually stabbed before they are boiled.

Boiling.

THOMAS LEONARD. Has been fishing for 30 and 40 years on the same ground as Mr. Forster. Thinks he catches about the same number of crabs as he used to, and that they are not smaller. Agrees with Mr. Forster that all crabs under 5 inches, all berried crabs, and all soft crabs should be thrown back. Thinks all lobsters under 8 inches should be thrown back. Thinks the trawlers are injurious, but is afraid of meddling with them, as they might cut away the pots. The pots with the lines and corks cost about 5s. each.

CRABS.
—
No decrease.
Gauge.
Soft.

JOHN ALLIS. Fishes along the shore from the Yealm to Mothecombe. There are just the same number of crabs as there used to be, and they are about the same size. The fishing season commences in February and ends in September. Very seldom catches the crabs till June and July. Agrees that lobsters under 8 inches and crabs under 5 inches should be returned to the sea. Thinks that there are as many fish caught as there were 30 years ago, but that the take is divided among more boats.

LOBSTERS.
—
Gauge.

HENRY KINGCUND. For two summers took the crabs for Mr. Scovell. Confirms the evidence of previous witnesses. Saw no berried crabs in the fishing season, but believes berried lobsters may be taken all through the year. Does not think legislation for crabs or for lobsters is necessary.

Berried.

Rolle Arms Hotel, Budleigh Salterton, Thursday, 7th December 1876.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

Reverend GEORGE DACE ADAMS (*examined by Mr. Walpole*). Has been 28 years vicar of Budleigh Salterton. The population of the village is about 1,600. There are about 30 fishermen; there is a considerable fishery for lobsters and crabs. The principal fishery is 10 miles out, off the Exeters; but there is also a fishery along shore. Thinks the fishery is about stationary, but that it might be made more productive. Thinks there ought to be a close season, and that the shell fish ought not to be taken and wasted. Will leave the fishermen to say when the close season should be. They are in the habit of bringing ashore very small crabs and lobsters. They bring ashore crabs 5 inches across. Thinks no crab ought to be taken under 5 inches. Hundreds of small lobsters are brought in in the shrimp nets, and these small lobsters ought to be put back. Thinks the institution of a close season, and the prohibition of the capture of very small fish would do a great deal of good to the fisheries.

CRABS.
—

GEORGE BENT (*examined by Mr. Walpole*). Is a fisherman. Has been acquainted with the fisheries for crabs and lobsters all his life, 74 years. Thinks the crabs are decreasing in number. The crabs were more plentiful 50 years ago than they are now; could catch double the number of crabs with half the number of pots. The gross take of all the boats is nearly as large now as ever. There are six boats fishing for crabs and lobsters at the Exeters; each boat carries 40 pots. There were four boats 40 years ago, and they used to carry about 30 pots each. There is 5 or 6 miles of ground at the Exeters. From the Exeters they never get crabs smaller than 5 inches, they run up to 8 or 10 lbs. The shell fish are sent to Exeter, being sold to dealers in the village in the first instance. Is in favour of a gauge, and thinks a 5-inch gauge for crabs, and an 8-inch gauge for lobsters would do. Thinks the trawlers do serious injury to the crab fishery, by catching the female crabs, especially in the fall. The females leave the rocks in the spawning season. Has seen many a dozen of the female crabs brought in at Brixham. The trawlers work on sandy ground. The trawlers should, in his opinion, be prevented from bringing in crabs. They destroy also a great quantity of small fish.

Gauge.

Decrease.

Gauge.

LOBSTERS.
—
Gauge.
Trawlers.

RICHARD PRATT (*examined by Mr. Walpole*). Has been a fisherman for 30 years, and fishing all the time for crab and lobsters. Fishes off the Exeters and along shore. Thinks there are 8 miles of off-ground, a mile or more broad, i.e., scattered ground, with patches of sand between the rocks. The in-shore

CRABS.*Season.**Migration.
Berried.**Soft.**Gauge.**Close time.*LOBSTERS.*Decrease.**Berried.**Close time.*CRABS.*Spawning.**Soft.**Weather.**Bait.*PRAWNS.CRABS.*Boiling.*

ground extends all the way to Sidmouth. The Exeter ground is fished by six boats from Budleigh Salterton. But boats also come from Teignmouth to Exmouth. They carry about 40 pots a boat. There are two boats from Exmouth, one from Teignmouth. Nine or ten boats altogether. The fishing season here always begins in February and ends at the end of October. Off the Exeters they begin at the end of March or beginning of April, and continue till the end of September. The inshore ground is fished for a longer period than the off-shore ground. There are not so many she crabs caught off the Exeters as there were, but there is not so much falling off among the hes. Thinks the decrease of the shes is due to their leaving the rocks to spawn in the trawling ground, to their being taken there, and carried in cartloads to Brixham. Thinks the she crabs leave the rocks in September; catches but few after that. The shes are in the best condition, full of red coral, before they leave the rocks. The she crabs that are caught by the trawlers, all through the fall, the winter, and the spring, have berries on them. In the spring the crabs are getting soft and brittle. They get hard as the summer comes on. The cock crabs are soft all through the year. There is even a greater decrease in the inshore ground than in the off ground. The crabs in shore are both larger and smaller than those in the off ground. Thinks that no person should be allowed to bring on shore or sell any small crabs. No crab under 5 inches should be taken. Thinks no close season is necessary for the off-shore ground, as the weather makes one. But on the in-shore ground is in favour of making a close season from 1st October to the 14th February. Thinks also a law should be made to prohibit the capture of all berried crabs, and also of soft or glass crabs; they are called here soft and white crabs.

The fishermen don't catch so many lobsters as they used to. Is in favour of prohibiting all lobsters under 8 inches in length. The small lobsters are chiefly taken in shrimp nets. Very small lobsters are taken in the shrimp nets. The shrimpers would have no difficulty in saving these, and it would be no interference with a shrimp fisherman to make him do so. Is in favour of a close season for lobsters. Catches berried lobsters all the year, especially in the spring, when they catch more lobsters. Is in favour of the same close season for lobsters as for crabs. Thinks it would be a very bad thing for the fishermen if they were not allowed to keep berried lobsters. The berried lobster is very valuable, and the berried crab is not valuable, and so it would be wrong to prohibit the capture of berried lobsters. Does not wish to interfere with the trawlers; but wants to compel them to return the berried crabs and the soft crabs.

(By Mr. Buckland.) The she crabs are in the best condition, with coral in them, in July and August. The trawl crabs in December would some have the coral inside, some the berries outside. The in-shore crabs are never so large as the off-shore crabs. Begins to catch white she crabs in February. Catches very few crabs in cold Februaries. The crabs will not crawl till the weather gets warmer. Doesn't see the male and female crabs together in the rocks. The trawlers fish all the year round. Thinks they catch the crabs which are buried in the sand in the fall of the year. Gets less money for she crabs than for he crabs. The she crabs are smaller than the hes. A she crab in July, August, and September has more meat in her than at any other time. They have coral in them then. They carry their berries in December. The crabs whose spawn has hatched out in the winter and spring, fill up by the following August. Skate, gurnet, and flounders are used for bait. Crabs are never broken up for bait here. The price has risen during the last 10 or 12 years. The prawns here are caught in hoops with nets. They are hauled as fast as they can haul them. Some nights they may catch 1,000 prawns. Other nights only a few. There are many more boats on the prawns than there used to be. There are seven or eight boats out of Salterton, and can recollect only two. There are 25 boats out of Sidmouth for prawns. Puts the crabs in cold water. The crab dies before the water boils. If he put the crab in hot water it would shoot its claws. If the crabs are stabbed they are not such good eating. The crabs, under his present plan, are dead before the water is too hot for him to bear his hand in. The crabs are dead before the water boils. They are dead in a quarter of an hour. The lobsters are neither plugged nor nicked nor tied, but put into hot water. Lobsters, after shooting their claws, will grow fresh ones. Finds many growing new claws.

THOMAS COOPER. Lives at Budleigh Salterton. Has been fishing for eight

years. Uses about 40 pots. The pots are set about 100 yards apart. The pots are set on the rocks in 14 or 15 fathoms water. Was trawling in a Brixham trawler for three years and a half—30 years ago. The trawl beam is 22 feet long and upwards. Heard Mr. Pratt's evidence about the trawlers. When he was trawling here he caught many crabs in the summer season from May to October. They mostly had red coral in them. Was not trawling in the winter months. Thinks the trawlers might be made to put back all berried crabs. It would not interfere with their business. Agrees with Mr. Pratt that all berried crabs, all crabs under 5 inches, and all lobsters under 8 inches should be put back.

Trawlers.

N.B.—The other fishermen at the meeting expressed concurrence in the evidence given by Mr. Pratt.

King and Queen Inn, Hamble, Friday, 8th December 1876.

PRESENT :

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

ROBERT SCOVELL. Has been a fish merchant at Hamble for 40 years. The business has been in his family for over a century. The business first began by his ancestors taking hoops for pilchard barrels from the New Forest to Cornwall, and bringing back a cargo of crabs. Is in the habit of obtaining crabs and lobsters from the Start to the Scilly Islands, including Sennen. Does not send to Scotland. Obtains them in Ireland from Cape Clear to Bantry. The shell-fish are sent all over the kingdom. Used formerly to supply London; but since the institution of railways sends them all over the kingdom, down even to Edinburgh. Has not found any falling off in the crabs either in size or in number. There are certain places where the fish are never large. Has had crabs 12 or 14 lbs. in weight. These crabs come from Gorran Haven, Start Bay, and other places. The average size is from 5 to 7 lbs. A sale crab or measured crab is 8 inches across the back. Below this size they go two for one. A crab from 5 to 6 inches is a small crab. The crabs are not smaller in size than they used to be. Is in favour of returning all crabs under 6 inches. At Portland, however, and Bognor not one crab in four would measure 6 inches. There would be a difficulty in having a gauge for Cornwall which would not apply to Portland and Bognor. The crabs in some places are larger than others. The largest crabs in Europe are in Start Bay. Along the north-east coast of England the crabs run small. The small crabs on the north-east coast will never grow into big ones. Would, as a fish merchant, prefer a 6-inch gauge, and this should apply to shes as well as hes. A 5-inch gauge, however, would do, and a 6-inch gauge would not do for Portland and Bognor. From February to April the she crabs run very small, but there are very few she crabs killed in those months. The female crabs come in in June, and go on till September. They begin to fall off in the latter part of October. Has a few females in December, but they then fall off. Finds the coral in the she crabs in November and December. Thinks the she crabs in January draw off into deep water to spawn. The berried crabs are in January. Thinks the berries hatch out in January, but has not seen a berried she crab for a year. Thinks that all berried crabs should be returned to the water. Gets more for his crabs from April to October. Thinks the crabs are in best condition in February and March. Never purchases soft crabs, but has had crabs cast their shells with him. Calls light crabs white berried crabs, and these and soft crabs should be all returned to the water. There is no sale for soft crabs. Boils the crabs here. Puts them into cold water on a very steady fire. Only boils them for his own use. They are sent away alive. The crabs are dead before the water is lukewarm. Putting crabs into cold water is the most merciful way of killing them; they are drowned. Knows that the trawlers interfere with the crabbers, but they do not do so very much. The Brixham trawlers catch a great many crabs. Is in favour of returning all berried

CRABS.

No decrease.

Gauge.

Spawning.

Soft.

Boiling.

CRABS. — <i>Price.</i> <i>Railways.</i> <i>Colour.</i> <i>Food of.</i>	crabs; all light crabs; and and all undersized crabs. Can give no idea of the rate of growth in a crab. The price of crabs has risen for the last 30 years. The price of crabs 30 years ago was 14s. to 15s. a dozen. The price now is about double, 25s. a dozen. The Start crabs are the dearest, as they are superior fish. The increase of price has been due to the increased demand. The railways have created a competition among other places; while before the railways the fish were sent by van only to London. Does not believe that there are fewer crabs in the sea than there were, but that in some places they are not so large. Is, therefore, in favour of preserving the small crabs. The crabs at Scilly are small, black, light, and not fit to take. You can catch good crabs where you get good lobsters and cray-fish. The good crabs are off the sand; the good lobsters are off the rocks. Cannot say what is the food of crabs, but believes they will eat shell fish. Lobsters will eat oysters. Has proved this.				
	LOBSTERS. — <i>Food of.</i> <i>Supply of.</i>				
	The principal supply of lobsters is from France and Ireland, as well as from the Start to the Scilly Islands. To the west of Mount's Bay there are large quantities of lobsters. The lobsters have not fallen off in size and number. The size differs according to the ground. Gets large lobsters from Brest, and thinks the Brest lobsters very good. A tale lobster is 11 inches. There are now 22 smacks at Hamble, and there used, 40 years ago, to be only six or seven. The smacks are from 45 to 80 tons. The smacks are all welled smacks, and collect the fish from the fishermen. Imagines from this fact that the trade is not falling off. Is in favour of returning the small lobsters to the sea. An 8-inch lobster is too small to sell. Gets berried lobsters every month of the year. Gets most in May and June, but there is very little difference. Has seen berried hens as small as 9 inches. Thinks that the berried hens should not be returned to the water, but sent to market. They are more valuable than other lobsters, especially during the salmon and turbot season, and when berried are in the very best condition for food. The berries are used for sauce. If a law was made enforcing the return of berried hens it would not be obeyed. The fishermen would strip off the berries, and after 12 hours an expert could not tell whether the berries had been removed. Is not in favour of a close season for lobsters. The greatest demand for lobsters is during the London season. Very few lobsters are caught in the winter season. A lobster in a welled smack will keep for a fortnight or a month. But an average passage is a week or ten days, except in very hot calm weather. In hot, calm weather they hang the lobsters overboard in nets. A welled smack in one voyage will carry 18,000 to 20,000 small lobsters. But an average voyage is 3,000 to 4,000. Has reservoirs for lobsters. They contain about a quarter of an acre of water, seven feet deep. There are sometimes 20,000 or 30,000 lobsters in these pits. They are not fed. They are sent away continually. A lobster is never fed, but never kept for any time in a reservoir. Some years ago he did feed them, but then the lobsters died. Thinks that lobsters would do very well in a pond for some months, if the soil suited them, and they had plenty of fresh sea water. If they die at all, they die in the first week in the pit. Thinks they live on any animalculæ that may come in. Once weighed a lobster when put into the pit, and found that it increased in weight in the two months it was in the pit. Plugging lobsters is a recent practice, and not practised. Lobsters and crabs should both be nicked.				
	<i>French.</i> <i>Berried.</i> <i>Store pots.</i> <i>Food of.</i>				
CRAY-FISH. — <i>Value of.</i>	Sees that it was stated at Fishmongers' Hall that cray-fish are extinct. The fact is that the cray fish are all sent to Paris. Londoners won't buy them. (By Mr. Walpole.) There are 22 smacks at Hamble; eight belong to him, eight to Captain John Harnden, and six to Messrs. Warner. His own smacks produced in 1875:—				
	Crabs and cray-fish	-	-	-	108,499
	Lobsters	-	-	-	88,296
	In 1876 to 31st October,				
	Crabs and cray-fish	-	-	-	98,545
	Lobsters	-	-	-	86,585
	Since the 31st October, 1876,				
	Crabs and cray-fish	-	-	-	6,054
	Lobsters	-	-	-	1,239
	All crabs and crayfish come from the English coast. The lobsters chiefly from France and Ireland.				

On reconsideration desires to say that a 6-inch gauge will not do for she crabs. With that gauge would have to throw away 80 per cent. Would prefer two gauges, one for males and one for female crabs. There should be a 6-inch gauge for males, and a 5-inch gauge for females. CRABS.
Gauge.

The crab fishery commences in January, if fine, or in February. When he said that crabs were in the best condition in February he meant male crabs. Many of the female crabs are then small and the large female crabs are light. The large female crabs in February have recently cast their shell. The female crab improves in condition as the year advances, and is in good condition from July to October when they are fullest. The red coral is not in the female crab before October. The coral is in the shell from October to January. They then go away to deposit their spawn and are seldom seen. Season for.

Captain JOHN HARNDEN (*examined by Mr. Walpole*). Has been 45 years engaged in the crab and lobster trade. Has eight smacks at the present time. His smacks go to Norway, France, Ireland, and the English coast. Has a large dépôt here and at Great Grimsby. Has two smacks trading to Norway. The Norway trade does not begin till May (to any extent) and ends in July. There is a close season in Norway, but it is not observed. There is no trade in crabs from Norway. The Norwegian lobster is a smaller lobster than the English lobster. An 8-inch gauge would, for the time being, be injurious to the Norwegian fishermen; but it would be an ultimate benefit to the Norwegian trade. Is aware that the Norwegian Legislature had a proposal before it to prohibit the capture of all lobsters under 8 inches, and thinks this ought to have been adopted. A Norwegian fisherman, speaking for others, told him that 8 inches ought to be the gauge. If an 8-inch gauge would do for this country, it would not injure the Norwegian fisheries ultimately. A hen lobster would breed twice before she arrived at the 8-inch gauge. An 8-inch gauge would injure the fishermen for a little time, but they would benefit hereafter. Has four or five smacks trading to France. The French fish are larger fish, and the 8-inch gauge will do no harm there. Would like in this country an 11-inch gauge, but we must take the Norwegian gauge for the highest markets. Thinks nothing is necessary for the Norwegian fisheries except the institution of a gauge. Thinks that there are lobsters in good condition in any month of the year. Thinks that lobsters are in berry all the year round; but that they hatch out chiefly in the summer. Has store chests at Grimsby, and store pits both here and in Norway. Thinks he can produce as good lobsters out of pits as anywhere. But they must be fed. Has had lobsters in pits for six years; both hens and cocks. Can't say what their growth has been. In France they say a lobster takes 10 years to come to his growth, *i.e.*, his extreme growth. Ponds ought to be encouraged, if properly conducted, and not put down. Has heard Mr. Kenneth Smith's (of Stornoway) evidence,* relative to the inadvisability of keeping lobsters in ponds. Totally differs from it. Spawning.
Trade in.
LOBSTERS.
Norwegian.
Gauge.
French.
Berried.
Store pots.
Growth.

Gets his crabs from the Start to the Land's End; is in favour of a 5-inch gauge for shes and a 6-inch for hes. This gauge must apply to Billingsgate and the other markets. Can't say whether this gauge will destroy the Portland and Bognor fishery. Believes that the crabs retire to spawn in deep water and holes. This is in January. After the female crab has cast her shell in February the male crab is found protecting her. Can't say whether impregnation is then effected. Is in favour of returning all soft and light crabs, and all berried crabs and all black crabs. The black crabs found in the lobster ground in Mount's Bay are never good and it is no use making a law for them. CRABS.
Gauge.
Migration.
Soft.
Black.

(*By Mr. Buckland.*) Does not know whether the Norwegian fishermen will be pleased with the 8-inch gauge. The Norwegian lobster merchants are in favour of this gauge. The lobsters take sometimes seven or eight days coming from Norway to Grimsby. His lobsters in Grimsby are stored in chests. They can be kept for a fortnight or three weeks in chests. The trade in tinned American lobsters is not interfering with his fisheries. Has come from Sweden to Hamble in five days, but takes generally a fortnight. Has come from Norway to Hull in 50 hours. Does not now get lobsters from Sweden. Does not think that the Norwegian fisheries have fallen off, except in size. Large quantities of Norwegian lobsters go to Belgium. LOBSTERS.
Norwegian.
Store pots.

* See Evidence, Scotland, page 48.

CRABS.*Trade in.**Gauge.*

JOHN SCOVELL, fish merchant at Hamble. Has taken an active part in the trade for 11 years. A member of the firm of Messrs. Warner and Scovell, and a brother of Mr. Robert Scovell. Messrs. Warner and Scovell have six smacks, trading from Start Bay to Scilly Islands, Padstow, and Lundy Island, Ireland, and France. His smacks go from Baltimore (Cape Clear) to Connemara. Doesn't think that the crabs are getting less numerous anywhere. Contracts to take the whole catch of the fishermen. Used to trade with the West Coast of Scotland; but never traded with the East Coast of Scotland and England. Is in favour of a 6-inch gauge for he crabs, and a 5-inch gauge for she crabs. All berried crabs should be put back. All the soft light crabs and black crabs should be put back. The black crabs take their colour from the ground.

LOBSTERS.*Gauge.**Store pots.*

Is also in favour of an 8-inch gauge for lobsters. Berried lobsters must be sent to market. The lobsters are in the country sold by weight. Has had pits, and has boxes for storing lobsters. Thinks that lobsters would be more likely to deteriorate in June and July than at any other time in the pits. They will, if properly attended to, do as well in the pits as anywhere else. It would be a great injury to the London trade if no pits were allowed. Thousands were lost before the pits were introduced. During the last two years has purchased—

In 1875.

Trade in.

Crabs	-	-	-	-	76,470
Cray-fish	-	-	-	-	11,000
Lobsters	-	-	-	-	27,460

In 1876.

Crabs	-	-	-	-	82,000
Cray-fish	-	-	-	-	9,500
Lobsters	-	-	-	-	27,500

CRABS.*Trade in.*

Thinks that about 10 per cent. of the crabs from Cornwall go by rail. Mr. Locke, another merchant in the trade, has also five smacks. The produce of Devonshire and Cornwall may be placed as follows:—

Messrs. Scovell, and Warner and Scovell	-	-	-	200,000 crabs
Capt. Harnden	-	-	-	50,000 "
Mr. Locke	-	-	-	60,000 "
Railway	-	-	-	50,000 to 100,000 "
Local trade	-	-	-	90,000 "

or about half a million of crabs for Cornwall and Devonshire.

The Assembly Rooms, Bognor, Saturday, 9th December 1876.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

LOBSTERS.*Small.**Decrease.*

Reverend **ALFRED CONDER**, Rector of Middleton. Has been requested by the fishermen to set an epitome of evidence before the Commissioners. The fishermen are unanimously of opinion that some legislation is necessary; that lobsters have hitherto been caught too small; that lobsters have been taken 14 to 20 to the pound. They think this state of things wrong; but, while one man does it, all will take the small lobsters, called chicken lobsters. There is no natural cause, so far as Bognor and Selsea are concerned, for the destruction of the fish; but there is a great diminution. There is a diversity of opinion among the Bognor and Selsea men as to the size of the lobster. The Bognor men propose that no lobster should be taken under a quarter pound weight. The fishery at Bognor is chiefly connected with the prawn trade, and the small lobsters are caught in the prawn pots. In the Selsea fishery ports larger pots are used, with ribs an inch apart. The mouth of the pots is 6½ inches; the mouth of the prawn pots is 4½ inches. The Selsea men also propose that no lobster should be taken under a quarter of a pound. The fishermen say

PRAWNS.*Pots.*

that they catch the lobsters both in deep and shallow water. The large lobsters are mainly caught in the early spring and in the late autumn. The Bognor fishermen say they catch berried lobsters all the year round. The Selsea men do not catch berried lobsters in midsummer. The Bognor men think that no close season is necessary, as they practically do not commence fishing till the early spring. The Selsea men recommend a close season from the middle of November to the middle of February. The best fish are caught in water from 10 to 14 fathoms deep. The Bognor men fish in shallow water.

JOHN RICHARDS, a fisherman of Bognor. Has been fishing for 30 years both inshore and deep water. Would not like a close season from November to February, must fish in November. The close season ought not to begin till December, and might go on till beginning of February. Has been catching lobsters and crabs for 30 years. Uses both the small pots and large pots. (*Examined by Mr. Buckland.*) For the first 20 years used nothing but the large pots. During the last 10 years used small pots as well. The pots are the same as they used to be.

(*By Mr. Walpole.*) Carries about 30 big pots off shore, and 200 little pots for the inshore fishing. The pots go out at the commencement of the season, and remain out throughout it. The most valuable fishery at Bognor is the prawn fishery. It is a good day's work to get 20 lbs. of lobster in a day. There would be 25 to 30 lobsters in the 20 lbs. Each lobster would average about two thirds of a pound. Considerably more than one half would be over 8 inches in length. Thinks that the little lobsters in time would grow into big ones. Could not agree to put back lobsters over 7 inches. Could only consent to put back all over a quarter of a pound. Thinks this an exceptional place for breeding lobsters; it is a great nursery for lobsters. Thinks the little lobster will grow into a big one; but that he will not stay at Bognor. Never caught a lobster over 8 lbs., and not many over 4 lbs. When he commences, about April, catches mostly berried hens. There are most berried hens in October. Sees little lobsters in the spring.

(*By Mr. Buckland.*) Fishes along the coast from Littlehampton to Selsea, and 12 miles out to sea. Fishes up to the shore where it is dry at low water. There are all sorts of bottoms between this and the Owers light, 12 miles out to sea. There is a large ridge of rocks at the Owers light, covered with weeds. Uses plaice for bait, if he can get it. Breaks up watery crabs for bait for prawns. There are about the same number of boats now at Bognor that there were when he was young, from 16 to 20 boats. There are not so many boats go outside from Bognor as there used to be; but there are more on the inshore ground. Trawlers cannot come here as the bottom is too rocky. Those who go prawning carry a few lobster pots. Crabs are caught in the prawn pots, and they injure the pots by pinching them, and get out of them. This is not a crab ground. There are a lot of small crabs here. Very few are sent to market. Takes no interest in the crab fishery. Brighton is the principal market for shell-fish. They are most valuable in April because they are scarcer. The price has not altered much during the last three or four years; but is better than it was 20 years ago. The railway, which was made 11 years ago, has done the fishermen good. Cannot say whether the lobsters have decreased or not. The seasons vary. The lobsters fish best in July, and at night, and in fine weather. Thick water is good for crabs, fine water for lobsters. Wouldn't like a law compelling the return of berried lobsters. The Brighton fishmongers will buy a parcel of lobsters weighing 20 lbs. for the sake of two or three berried hens in it. Thinks nothing should be done except to enforce the return of all lobsters under a $\frac{1}{4}$ lb. A $\frac{1}{4}$ lb. lobster will measure $6\frac{1}{2}$ inches. If an 8-inch gauge were made, the Bognor fishermen could not earn a livelihood. Some days they would scarcely bring anything home. The principal market is Brighton. The chicken lobsters are in great demand in Goodwood week. About the end of May they catch a great many little lobsters. Perhaps 10 or 12 under $6\frac{1}{2}$ inches in a day, from 1 oz. to 3 oz. At the bottom of the sea, close in to shore, there are grass banks with hoies like rat or rabbit holes, in which the lobsters live. These banks extend for 20 miles from Selsea to Shoreham in patches. The grass weed grows on mud banks. These mud banks form a breeding ground. The French coast is 80 miles off.

(*By Mr. Walpole.*) Will be satisfied with the local market in Sussex for all

LOBSTERS.
Berried.

Close time.

Pots.

Breeding.

Bait.

CRABS.

LOBSTERS.

Weather.

Berried.

- LOBSTERS.** small lobsters under $6\frac{1}{2}$ inches in length. No lobsters to be sold in Sussex under $6\frac{1}{2}$ inches.
- Gauge.* **JOHN MILLS.** Agrees with Mr. Richards' evidence. There are 25 boats engaged in the fishery here. Each boat carries 200 prawn pots, and about 30 lobster pots. The prawn pots extend about 3 miles along the coast, and 3 miles out, 9 or 10 square miles. They put back the very little lobsters of their own accord. Cannot tell the age of these little lobsters. Agrees with Mr. Richards' evidence. The crab fishery is not important here.
- LOBSTERS.** **WILLIAM LEGGE.** A fisherman of Selsea. Has been so for 43 years. Is in favour of a close season from the middle of November to the middle of February. The Selsea men have been in the habit of throwing away all female crabs over 2 lbs. in weight. There are a great many female crabs over 2 lbs. in weight. The fishery at Selsea extends in a triangle of which the base is formed by the shore from Bognor to Selsea. The sides are 8 and 12 miles long respectively. Fishes in 10 to 14 fathoms water. Brighton is the chief market.
- Close time.* The fishermen at Selsea have always been in the habit of putting back the big female crabs which are watery when that size. The female crabs are chiefly caught in July, August, and September, and the large female crabs are not good then. Thinks these crabs are a home fish and not foreigners. Catches light crabs in May and June, not often earlier. Cocks and hens are light at the same time. Is in favour of a law to return light crabs. The Selsea crabs run from 3 inches to 8 or 9 lbs. The average is 2 to 4 lbs. The Selsea fishermen all say that all crabs under a quarter of a lb. should be returned. This is about $4\frac{1}{8}$ inches. Many days the men would go home without wages if a $4\frac{1}{8}$ -inch crab were put back. There are about 20 boats at Selsea dependent on the crab fishery. A 5-inch gauge would be ruinous to the fishermen. The small crabs are sold at Brighton at about 4d. a pound. Catches a few berried crabs. They are always returned. Catches them now and then in the summer. Would not catch a berried crab at this time (December). Is certain the crabs hatch out in the summer. The 20 boats are solely dependent on crabbing, except in the winter, when they dredge for oysters. In the Outer rocks there are a bigger size of crabs, but the 20 boats cannot go there, because they are manned by older men. The younger men only can go to the Outer rocks.
- Season for.* **PRAWNS.** Prawns are not falling off at Selsea. April is the best season for them, and sometimes September.
- Soft.* **CRAWBS.** The crabs have diminished in number. There are one third less than there used to be. There are more boats than there used to be, but there are fewer crabs in the sea. Doubts whether the crabs are quite as large as they used to be. Thinks the decrease is due to killing the female crabs. Thinks that it would be a good thing to return all the small crabs under a quarter of a pound.
- Gauge.*
- Berried.*
- Decrease.*
- Gauge.*

School-room, Cromer, Thursday, 1st February 1877.

PRESENT :

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

- LOBSTERS.** N.B.—At a meeting attended by a large number of gentlemen and fishermen interested in the crab and lobster fisheries of Norfolk, a resolution was unanimously passed, recommending that the gauge for lobsters enacted by the Crab and Lobster Fisheries (Norfolk) Act should be repealed, and that the gauge for lobsters should in future be 8 inches, measured from the tip of the beak to the end of the tail.
- Gauge.*

Council Chamber, Birmingham, Friday, 16th February 1877.

PRESENT:

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

WILLIAM SMITH SCOTT. Has been a fishsalesman at Birmingham for 15 years. Deals in all kinds of fish. Sells crabs and lobsters. The supply of crabs depends on the season. Some days there are a hundred barrels, some days only 10 to 20 barrels. There are six to ten dozen crabs in a barrel, running from 4 to 10 inches across the back. The crabs come from Anstruther, St. Monance, Preston Pans, Dunbar, Coldingham, Cockburnspath, Eyemouth, Burnmouth, Berwick, Holy Island, Beadnell, Craster, Boulmer, Cullercoats; a few from Filey, Scarborough, and Robin Hood's Bay; and from Cornwall, Guernsey, and Jersey. The largest crabs are from Guernsey and Jersey. They run 12 to 14 or 16 inches across the back. A few crabs come from the Isle of Man, and Ireland. CRABS.
Supply of.

A few lobsters also come from the places mentioned. The quantity of crabs sent to the market has not been less, but for the last six or seven years the crabs have decreased in size. The fishermen, during the last six or seven years, have been sending shell-fish direct to the market on their own account, the merchants declining to take the little crabs and the white-footed crabs. The small crabs are bought two for one, and sometimes three for one. Decreased size.

Before he came to Birmingham he had large dealings in crabs in the south-east of Scotland, which was his native country.

Is in favour of a gauge for crabs. Produces a crab $4\frac{1}{2}$ inches in length, and thinks no crab much less than this should be sold. Suggests a gauge of $4\frac{1}{2}$ inches, to be applicable to England and Scotland. But the responsibility must rest upon the fishermen and not upon the salesmen. The crabs are boiled here. Gauge.

Knows a "light" crab. Produces some. Defines a light crab by the lightness of the shell. They are called here white crabs. The dealers get many white crabs sometimes, especially between September and January. They are crabs which have cast their shell in the summer, and the new shell is gradually hardening in the winter. The dealers sell the claws of these white crabs. It is a great pity that these white crabs are brought to market at all; it is a great loss to the country. They are of no use at all. They do not pay for their carriage. Has seen white crabs at Dunbar pinched, their shells broken, and thrown overboard. Knows a soft crab, which is like an egg without a shell. It does not take more than a fortnight or three weeks for a light crab to recover its condition. After a storm there are always a great many white crabs, but they fill up in a week, and then none are caught. Knows very little about trawling, and does not know whether the trawlers pick up many light crabs. Soft.

The crabs here are boiled. It is the habit here to kill them in lukewarm water. It does not answer to stab them. Does not know what temperature they will die at. Boiling.

At this time of year there is a very small supply of lobsters at Birmingham. The lobsters come from Stornoway, Ireland, west and north coasts of Scotland, and Norway. The lobsters are more plentiful in hot weather than in cold weather. There are many lobsters from Norway in hot weather. Does not get them from Sussex. The lobsters here are measured from the tip of the nose to the end of the barrel. Would make it illegal to take any lobster under 4 inches in the barrel. The berried hens should also be returned to the sea. The berried hens are valuable in the market. Thinks it would be possible to enforce a law compelling the return of berried hens. The berries might be removed, but an experienced fisherman would know that they had been removed. Does not think a close season would be advantageous. Gets no crayfish. Does not know why lobsters turn red when boiled. LOBSTERS.
Supply of.

(Examined by Mr. Walpole.) Recommends $4\frac{1}{2}$ -inch gauge for crabs. A 5-inch gauge would be too large. The 5-inch gauge would not be a very serious injury to the Birmingham market. It would perhaps be better for the salesman to have a 5-inch gauge. The poorer consumers now buy a 2d. or 3d. crab, and they would be deprived of these. On reconsideration the 5-inch gauge is a very fair size. Does not wish to throw the Gauge.

*Enforcement
of law.*

responsibility of the law on the salesman, who is not primarily liable. The fisherman has the opportunity of returning the crab to the water. Is in favour of inspectors on the coast, to stop the capture of these crabs. The market inspector might write to the inspector on the shore, and ask him to search barrels. An unclean salmon is analogous to a white crab. It is illegal for fishermen to take and for salesmen to sell unclean salmon. Thinks there is nothing unjust in the law. The difference between crabs and salmon is that the crabs are packed in a barrel, and that it is impossible to see their size. It is possible to inspect a box of salmon, but it is impossible to inspect a barrel of crabs. Adheres to his opinion that an inspector should be appointed on the coasts to enforce the law, and thinks that such an inspector should be paid by the Government.

(*Examined by Mr. Buckland.*) No crabs come here from Norfolk, and very few from Yorkshire. Some from Northumberland. There would be no difficulty in working the law on the coast. An inspector would get information that small crabs were being sold on the coast, and could go down and stop it. The fishermen also would possibly carry out the law among themselves.

CRABS.

*Gauge.
Soft.*

ROBERT EDWARD DEXTER (*examined by Mr. Walpole*). A commission agent in Birmingham, established 27 years in this town. All kinds of fish pass through his hands. His crabs come from the same places as Mr. Scott's. Agrees with Mr. Scott that the gauge for crabs should be no less than 5 inches. Agrees also that no light crabs should be sold.

No decrease.

Birmingham is a market of distribution, and supplies places 100 and 120 miles off. Sends bloaters down to the sea coast. The supply of crabs is not falling off, and the price has not on an average risen materially.

LOBSTERS.

No decrease.

Sometimes gets a good supply of lobsters in the winter time. The winter lobsters come from Scotland and Ireland. The Scotch lobsters are as good as any. The Norway lobster is good, but not so large. The lobsters come from all parts of Scotland, and are on an average much the same as formerly.

Gauge.

Does not agree with Mr. Scott that no lobster should be sold under 4 inches in the barrel. The lobsters here are all sold by weight. It would be an injury to the trade if all lobsters under 8 inches were prohibited, as many Norway lobsters are below this size. Is not acquainted with Norway. Was not aware that the Norwegians were contemplating prohibiting the capture of lobsters under 8 inches. If the Norwegians agreed to the 8-inch gauge, an 8-inch gauge for England would be beneficial to the public. Can make 1s. a pound with large lobsters, and only 6d. a pound with small lobsters.

Berried.

Knows a berried hen or spawn lobster. Thinks they ought not to be taken. The spawn is generally given away. A spawn lobster ought to be left in the sea at any time of the year. Could detect the removal of the spawn if it were removed; but could not tell whether the spawn were removed artificially or shot naturally. The prohibition of the sale of spawn lobsters would stop the practice to a great extent. Lobsters are brought from Norway in boxes. Does not know whether a lobster in transit might not extrude her berries from inside to outside.

*Enforcement
of law.*

Thinks that the law ought to be enforced on the coasts. Does not think it could be enforced in the markets. Notices should be posted up to warn the fishermen. The Adulteration Act is very similar to this, and is enforced against the retailer. But the general feeling in Birmingham is that the law should be enforced on the coasts. This is the feeling of the Fish Association. This is an association formed by salesmen, who meet together three or four times a year. The Association has discussed this subject, and arrived at this conclusion. They are all anxious to have the law enforced on the coasts. Does not think it would involve any very great expense. Thinks that it ought to be illegal either to take or sell any undersized crab. If Parliament make it illegal to take a 5-inch crab, it must be illegal to sell it.

CRABS.

Gauge.

(*Examined by Mr. Buckland.*) Thinks all berried crabs should be returned. Knows a hen from a cock crab by the tail. Often receives crabs with berries under the apron. Thinks berried crabs are unwholesome, and that they ought not to be sold. Thinks if the law were well posted up in every village, the fisherman would obey it, without the intervention of an inspector, and that the fishermen would carry out the law against themselves.

Berried.

THOMAS GLASSEY (*examined by Mr. Walpole*). A fishdealer and poulterer in Birmingham. Wishes to point out that the salesmen are not retailers, and

that they do a large business, and that they only have an hour or two hours to do it in the morning. It is absolutely impossible to examine every single fish that passes through their hands. The goods must be got away by a particular train, or they would lose the market, and the crabs would be left on their hands, and spoiled. Thinks too much stress has been laid on the expense of inspectors on the coasts, and that the National Exchequer might undertake the cost. There is a statute imposing a penalty on fraudulently packing goods. Considers a parcel of crabs large at top and small at bottom a fraudulent packing, and that an action would lie for such packing. It would be unfair to impose such a law on the trader.

(*Examined by Mr. Walpole.*) Agrees with Mr. Scott that no crab under 5 inches, or light crab, or berried crab should be taken; and that no lobster under 8 inches in total length, and no berried lobster should be taken; but thinks that the law should be enforced on the coast, or by salesmen giving proof of fraudulent package. It might be made illegal to sell undersized crabs and lobsters, provided that no salesman should be liable for selling a package of crabs which had been fraudulently packed, so that he was unable to see the small crabs at the bottom of the package. But the retailer should not sell the undersized crabs, and should only be liable for doing so if he failed to give notice to the duly constituted authorities of the receipt of such crabs, and the parties from whom he had received them. The prosecution should be on the first seller, and not on the subsequent salesman.

WILLIAM SMITH SCOTT (*recalled*). It would be perfectly impossible to carry out the law without inspectors on the coast. Posting notices would not have the effect of inducing the fishermen to carry out the law. The law could not be carried out without an inspector.

JOSEPH SMITH (*examined by Mr. Buckland*). A fish-salesman at Birmingham. Has been a fish-salesman for more than 30 years. Sells crabs and lobsters wholesale. They come from the same places as Mr. Scott's. They have fallen off a little. But this is owing to the railways opening markets in every little town in the country. Agrees to a 5-inch gauge for crabs, and an 8-inch gauge for lobsters. Is in favour of eating berried lobsters or berried crabs when they are in their prime and good. The law should be a law to prevent the sale of unseasonable lobsters, and not of berried lobsters. Lobsters are more or less in berry all the year round. Agrees to an 8-inch gauge for lobsters. If the law cannot be carried out on the coasts it cannot be carried out in the markets. The crabs are sold in the market by the barrel without opening it. The person who buys them sells them all, small and big, and it would be a hardship to prevent his doing so. The retailer would not buy the crabs of the salesmen unless they were turned out on the floor and measured, and this would stop the trade altogether. There is only one way of enforcing the law, viz., by an inspector on the coasts who can examine the crabs as they are caught.

WILLIAM HANMAN (*examined by Mr. Walpole*). A superintendent of markets, and inspector of game, fish, and meat in Birmingham. Has heard the evidence of previous witnesses. Thinks that the gauges suggested by the various salesmen are very proper. Parliament might make a law forbidding the consumption of undersized crabs and lobsters. The law must, to start with, be enforced at the waterside. It must be illegal for the fishermen to take, sell, or send away undersized, white, or berried fish. This law will not be sufficient. The retailer must also be held responsible. It must be illegal for the retailer to sell or expose for sale any of these prohibited fish. There would be no hardship in such a law. The fisherman takes undersized fish, he thereby commits an offence; he sends these away to the salesman; the salesman has no opportunity of examining that basket of fish, but transfers them to the retailer. The retailer has every opportunity of detecting undersized and improper fish, and should be held equally responsible with the fishermen. The retailer on finding undersized fish ought to give information to the authorities of his district, who in that case would take no proceedings against the retailer, because he has informed, and has not sold or exposed for sale. The retailer would probably arrange with the wholesaler that he would take no fish unless he could guarantee him against loss from undersized and illegal fish, and the fishermen on the coasts would then find that it was no longer worth their while to send any undersized fish.

It should be the object of the Act to make the law applicable to the fishermen

Enforcement of law.

CRABS.

Gauge.
Berried.
Soft.
Enforcement of law.

Gauge.
LOBSTERS.
Berried.

Gauge.

Enforcement of law.

*Enforcement
of law.*

and the retailer, but not to the wholesaler unless he broke bulk, or broke open the barrel. This could be met by inserting the word "knowingly." It should be illegal to take, to buy, or to knowingly sell or expose for sale any undersized crabs or illegal fish. It would be necessary, however, to insert a definition of the word "knowingly," and not to exempt the wholesaler unless he gave information as to the person from whom he received the package.

The packages sold here do not always come from the fishermen. They are packed sometimes by intermediate packers, who do not necessarily see all they sell.

There must be some one appointed at the waterside, or the Act would be useless. Cannot say who this person should be. This official would have to be advised who the persons were who broke the law.

DAVID SOUTHALL (*examined by Mr. Walpole*). A retail fishmonger in Birmingham. Has heard the evidence. Agrees with the gauges and with the provisions as to berried lobsters and crabs. Thinks the law could only be carried out by the prohibition of the sale of these illegal fish. There is no hardship in making the retailer liable if he boils and exposes for sale an illegal fish. If he found illegal fish he would throw them back on the wholesaler. The wholesaler would suffer, because the fishermen would send to some other salesman, the competition among the salesmen being to get the fish. This would work itself round in time. The salesmen would refuse to receive the undersized fish, and the fishermen would cease to send them. If it were made illegal to sell illegal fish, the retailers would return the fish to the salesmen, the salesmen to the fishermen, and the sale would be checked. The coastguard might assist in carrying out the law, but reliance must mainly be placed on the law of sale. Where no coastguard exist, some other persons might be empowered to act in their place. One barrel of good crabs is worth three barrels of bad crabs.

*Supply of fish
to Birmingham
market.*

WILLIAM HANMAN (*recalled*). Puts in following statement of average daily supply of fish to Birmingham market:—

- 2,000 boxes of mackerel, 2 cwt. each.
- 2,000 barrels of fresh herrings, $1\frac{1}{2}$ cwt. each.
- 400 boxes of salmon, $2\frac{1}{2}$ cwt. each.
- 50 to 60 barrels of crabs, 1 cwt. to $1\frac{1}{2}$ cwt. each.
- 20 barrels and baskets of lobsters, 1 cwt. each.
- 1,500 packages of plaice, 2 cwt. each.
- 200 packages of cod, 2 cwt. each.
- 20 packages of conger eels, 2 cwt. each.
- 10 to 20 packages of skate, 2 cwt. each.

The total supply of all kinds of fish in the Birmingham market varies from 50 to 200 tons per day.

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——— females, 3, 4, 11, 12, 14, 63, 64.

5½ inches, 2, 13.

——— for females, 11, 13.

——— males, 14.

6 inches, 11, 12, 27, 28, 30, 52, 53, 54, 61.

——— for females, 8, 9, 10.

——— males, 5, 11, 12, 63, 64.

Gauge—*cont.*

For Crabs, recommended :

8 inches for males, 3, 4, 5, 6, 7, 9, 10.
females, 5. $\frac{3}{4}$ lb. weight, 66. $\frac{1}{2}$ lb. weight, 7.

For Cray-fish, recommended :

10 inches, 29.

11 inches, 9.

For Lobsters, recommended :

6 inches, 6, 8, 21, 22.

 $6\frac{1}{2}$ inches, 65, 66.

7 inches, 8, 20, 58.

 $7\frac{1}{2}$ inches, 25, 56.

8 inches, 5, 11, 26, 28, 29, 55, 59, 60, 61, 62, 63, 64, 66, 68, 69.

 $8\frac{1}{2}$ inches, 8, 12, 13, 14.

9 inches, 9, 10, 11, 28, 31.

10 inches, 7.

11 inches, 63.

 $3\frac{1}{2}$ inches in the barrel, 26, 41, 42.4 inches in the barrel, 24, 33, 34, 35, 36, 37, 38, 39, 40, 42, 43, 44, 45
46, 47, 48, 49, 50, 51, 52. $4\frac{1}{2}$ inches in the barrel, 44. $\frac{1}{4}$ lb. weight, 7, 64, 65. $\frac{1}{2}$ lb. weight, 7.

1 lb. weight, 7, 31.

 $1\frac{1}{2}$ lbs. for berried hens, 56.

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Bridlington, 50.

Formerly used, 46.

Difficulty in enforcing, 26, 28, 30.

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Grainger, B., Evidence of, 44.

Green, William, Evidence of, 11.

HALL, Thomas, Evidence of, 34.

Hanman, Wm., Evidence of, 69, 70.

Harbottle, G., Evidence of, 39.

Hargate, J., Evidence of, 54.

Harnden, Capt. J., Evidence of, 63.

Harvey, James, Evidence of, 27.

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Howard, William, Evidence of, 31.

Hullies, 33.

Hunkin, J., Evidence of, 6.

Hutchins, William, Evidence of, 52.

INSECTS destroying crabs, 16.

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Isle of Man, crabs and lobsters from, 30, 31, 67.

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 James, James, Evidence of, 12.
 ——— S. H., Evidence of, 14, 15.
 Jane, Anthony, Evidence of, 19, 20.
 Joliffe, Charles, Evidence of, 22.
 Jones, Henry, Evidence of, 17.

KELYNACK, John, Evidence of, 18.
 Kennerley, J. C., Evidence of, 10.
 Kingcund, W., Evidence of, 59.

LAUGHRIN, E., Evidence of, 8, 22.
 Legge, William, Evidence of, 7, 66.
 Leonard, T., Evidence of, 59.
 Ley, Thomas, Evidence of, 4.
 Lisle, W., Evidence of, 38.
 Little, John, Evidence of, 21.
 ——— R., Evidence of, 20.

Lobsters :

Bait for, 4, 12, 14, 21, 22, 23, 33, 37, 46, 54, 65.

Berried (*see* "Berried lobsters").

Boiling of, 5, 60.

Breeding of, (*see* "Lobsters, spawning of").

Breed in weeds on mud, 65.

Casting their shell, 9, 37, 39.

Caught best at night, 37, 47, 65.

——— in fine weather, 6, 65, 67.

——— July, 65.

——— among weeds, 37.

——— on rocks, 3, 21, 39, 48, 62.

——— least in hot weather, 21.

——— frosty weather, 38.

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Decrease in numbers :—Gorran Haven, 3; Mevagissey, 5; Fowey, 5; Bognor, 7, 64; Selsea, 7, 64; Sidmouth, 7; East Looe, 7; Polperro, 8, 22; Polruan, 8, 23; St. Ives, 8; Falmouth, 8, 11; St. Mawes, 9, 10, 11; Durgan, 12, 13; Land's End, 14; Penzance, 15, (inshore), 13; Penberth, 14, 17; Porthgwarra, 15; Cadgwith, 19, 20; East Looe, 20, 21; N. Sunderland, 32; Craster, 33; Cullercoats, 35, 37, 39, 40; Newbiggin, 36; Whitby, 41; Staithes, 42; Robin Hood's Bay, 44; Scarborough, 44, 45; Plymouth, 55; Wembury, 58; Eddystone, 58.

——— in size :—Sidmouth, 7; Polruan, 8; Penberth, 14, 17; Penzance, 15; Southport, 31; N. Sunderland, 32; Whitby, 40; Scarborough, 44, 46; Hall Sands, 52; Prawle, 53, 54.

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Hawxley, 37, 38 ; Cullercoats, 38 ; Hope, 54 ;
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Richards, Captain Henry, Evidence of, 17.

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APPENDICES

TO

REPORT ON THE CRAB AND LOBSTER FISHERIES

OF

SCOTLAND.

APPENDIX No. I.

EVIDENCE.

Balmoral Hotel, Edinburgh, Thursday, 5th October 1876.

PRESENT :

FRANK BUCKLAND, SPENCER WALPOLE, and ARCHIBALD YOUNG,
Esquires.

<p>JOHN ANDERSON (<i>examined by Mr. Buckland</i>). Is a fishmonger at Edinburgh. Has been in business 44 years. Crabs have decreased very much. The decrease began fully ten years ago, and is both in size and numbers. They have decreased more than half. A large quantity of crabs come from Dunbar, Crail, Buckhaven, and North Berwick. At one time (20 years ago), North Berwick and Crail were the prominent places for crabs in the Firth. The crabs have fallen off in size. Has seen a crab 10 inches across the back. These large crabs are principally males, and are comparatively rare. The average size of crabs now brought into market is about six inches, though they are brought as low as four inches: a great many under 4½ inches. At North Berwick and Crail most of the crabs are males, and at Dunbar and Newhaven most of them are females. Thinks the crabs spawn about 1st August. Has seen them full of eggs at that time. These crabs are from 5 to 7 inches. Has seen crabs in the market of 2 inches, a great many of this size. The fishermen keep everything they get. They sell crabs by the kit. A kit contains from four to ten dozen crabs, according to the size. There are not many crabs exported from Edinburgh; but they are sent from Dunbar, Buckhaven, and Crail to all parts of England where there is a market for anything. The scarcity is due to the large demand for crabs in England. Before the railway was made the demand for England was small. The crab pots are put down day and night all the year round, but more especially in the summer. The bars of the pots are about two inches apart. The scarcity is also due to the crabs being taken of so small a size. Thinks that no crab less than 6 inches across the back should be taken. This should apply to both males and females. No crabs should be taken with roe at any time of the year; they should all be returned. The crabs are all boiled alive. They are generally put into boiling water; sometimes into cold water; but are never previously killed. Thinks if the legislation proposed were enforced, it would ultimately have a good effect. (<i>By Mr. Young.</i>) Has only spoken yet as to Firth of Forth. There is also a large supply from the Moray Firth and the north-west coast of Scotland. Crabs come from every part of the coast of Scotland. Is not in favour of the close time recommended in the Norfolk Report.* Sees most crabs in spawn in June,</p>	<p>CRABS.</p> <p>Decrease.</p> <p>Spawning.</p> <p>Mode of counting.</p> <p>Pots.</p> <p>Boiling.</p> <p>Close time.</p>
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* Report on Fisheries of Norfolk; Parliamentary Paper, No. 428, 1875.

CRABS.

Berried.
Gauge.

July, and August, and would propose a close time during those months. Is in favour of returning all berried crabs to the water. Would extend prohibition of unsizable crabs to 6 inches across the back. It should be illegal to buy, sell, or have in possession for sale, all unsizable crabs.

Decrease.

(*By Mr. Walpole.*) Has been in business for 44 years. Purchases from an agent who takes the whole take of particular fishermen. Is sure the decrease of crabs is due to a decreased supply of crabs and over fishing. The railway has diverted many of the crabs to other markets, but the decrease in the sea is absolute. There may perhaps be as many crabs in the sea, but they are smaller. The decrease, therefore, is not a decrease in number, but a decrease in size. In consequence of increased demand for crabs it pays fishermen to catch smaller crabs. When he commenced business in 1832 he could buy a dozen (12) crabs for 10*d*. A dozen crabs would be now 3*s*. This refers to medium sized crabs.

Price.

There is a considerable demand for crabs in June, July, and August. There would at first be a good deal of indignation among the crab eaters at these months being closed, but it is necessary to close them. The decrease in crabs in the sea is a decrease in size, and if the capture of all small crabs were prevented, it would enable them to grow up into large crabs, and so reduce the decrease. The close season, if introduced, must apply to the whole of England and Scotland; sees great difficulty in this. It would be useless to have a local law. If it were impossible to close the Cornish fisheries in June, July, and August, it would be useless to close the Scotch fisheries.

Close time.

Berried.

Proposes that all berried crabs should be returned to the water. Fishermen could not pick the berries clean off. The fishermen might be tempted to do so, but any skilled person could detect this at once. Sees a great many berried crabs, but only in the summer. Fishermen frequently cut crabs up for bait. Don't do it so much now as they used to do. The crabs are worth too much money. If it were made illegal to sell berried crabs they would not be broken up, because there is too little meat in them to make it worth while.

Used for bait.

Enforcement of law.

(*By Mr. Young.*) There are about 24 stations where the White Herring Board have fishery officers,* and they might possibly carry out the provisions of an Act of Parliament. They would be the proper persons to do so. The salmon watchers might also assist. There would be an officer of the White Herring Board at all the stations at which the crabs are taken. At the time the crabs are taken these officers have not much to do.

LOBSTERS.

Decrease.

Price.
Gauge.

(*By Mr. Buckland.*) The lobsters come from almost all quarters—Orkneys, Shetlands, West Highlands, and various stations in the Firth of Forth. They have diminished both in size and number. The decrease began 20 to 25 years ago. They have decreased one half in the last 20 years. About 20 years ago you could get lobsters for 1*s*. apiece which would now cost 2*s*. or 2*s*. 6*d*. Lobsters used to be gauged from the tip of the nose to the end of the barrel. 4½ inches used to be their gauge, and this would be equivalent to a lobster 8 to 9 inches long. Every lobster under this size used to be returned. This was in accordance with an agreement between the dealers and the fishermen. No lobster of less than 8 inches should be taken from the sea. The falling off of lobsters is due to taking lobsters too small, and to taking berried lobsters in the breeding season, and to the increased demand. The lobsters are chiefly in berry in June, July, and August, but you may get berried lobsters at any time of the year. The berried hens are good to eat, but there is not so much meat in them as in others. There is a great demand for berried hens. They are more valuable than any other lobsters. Thinks that all berried lobsters should be returned to the water, even though the cooks should suffer. It would not be possible to remove the berries so that a skilled man should not know that they had been removed. Very few lobsters are plugged now, they are mostly tied. Thinks that plugging injures the flesh. Has seen lobsters as small as 6 inches. An 8-inch lobster would be about two years old. There are no reservoirs in Scotland for keeping lobsters except at Canty Bay. The only legislation he recommends for lobsters is return of berried hens in June, July, and August, and return of unsizable lobsters.

Spawning.

Berried.

Plugging.

Close time.

(*By Mr. Young.*) Would prefer to have June, July, and August entirely closed for lobsters and crabs, and that the fishery officers under the White

* See Appendix, No. II., page 65.

Herring Fishery Board should carry out the law. Has never known of a prosecution under 9 Geo. II. c. 33, sec. 4, but approves of the close season fixed by that Act. The close season at present is systematically violated.

JAMES JOHNSON, Montrose (*examined by Mr. Young*). Has been a lessee of fishings and a fish salesman for 35 years, and has had great experience in crab and lobster fisheries. There are more crabs taken now from Anstruther on the coast of Fifeshire to Gourdon than there used to be, but they are smaller in size, they are closer netted. Attributes the falling off in size to additional demand and increased price. The price is threefold what it was 30 years ago. A fisherman now gets 1s. 6d. or 1s. 9d. where he used to get 6d. The crab season is a short season; he would have no close season. Thinks a 6-inch gauge would be rather large for some parts of the district. Thinks a 5½-inch gauge would be a better gauge for fishermen, but the 6-inch gauge would compensate them in the long run. If there is a close season it must be in June, this would be sufficient. In July and August the crab fishers are away on the herring fishery. There is a difficulty about the gauge because bait is scarce, and small crabs would be used for bait when the fishermen are far from the mussel beds. Is certain that in many districts, if there was a gauge, the crabs would be broken up for bait. He would increase the space between the bar of the crab pots and the mesh of the nets. Would have a larger mesh for the pots. The mesh ought to be about 4 inches from knot to knot.

There is a difficulty about the mesh because a lobster will go through a mesh which would keep a crab. Thinks it would be beneficial to close June altogether on the coast of Scotland, notwithstanding the case of the Cornish fisheries.

(*By Mr. Walpole.*) Proposes as an experiment to close the month of July. It must be made illegal to sell lobsters and crabs in close season, and the sale must be prohibited universally, or the sale must be authorised by a justice of the peace. The Cornish crabs and lobsters might be sold in June on a magistrate's order. The certificate might be given by the coastguard. Thinks the Cornish crabs and lobsters might easily be known from the others. There are only a few old fishermen fishing in July and August.

Cannot prevent the capture of berried hens. It would be just as wise to prohibit the capture of full herrings as to prohibit the capture of berried hens.

JAMES MUIRHEAD, fishmonger in Queen Street, Edinburgh. (*By Mr. Walpole.*) 20 years in business. Has been extensively engaged in dealing in crabs and lobsters, obtaining them from Dunbar, North Berwick, Crail, Buckhaven, Cookenzie, and Newhaven. Buys through an agent and is also in the wholesale way. There are more fishermen at these places than there were 20 years ago. There are nearly double the number fishing. The men make a very good trade, the price has increased much. 10 to 20 dozen crabs is a fair day's take per boat. 20 years ago it would have been four or five dozen larger. The gross take of all the boats is greater than it was, but the size of the fish is not so good. There are quite as many crabs in the sea as there used to be. There are not half so many large crabs taken as there used to be. This is due to taking unsizable crabs and everything that comes. Should therefore recommend a 6-inch gauge. This would to a great extent restore the fishing, but there should also be a close season in June, July, and August, the principal spawning months. This must be a close season for sale as well as taking. It must apply to the whole kingdom. There may be places where crabs could only be taken in June, July, and August, but does not think there are many. Unless the close season can be a universal close season, there must be no close season at all.

Lobsters have decreased a great deal in size, not so much in numbers. Proposes a gauge of 4½ inches for the head, equivalent to an 8-inch gauge at the very lowest. These gauges must be universal on seller, buyer, and taker.

June, July, and August should also be closed for lobsters. Would not be necessary to make any law about berried hens. The berried hens ought to be taken in the other nine months, as the berried hen is the most valuable form of lobster. The greatest demand for berried hens is in the winter and turbot months.

(*By Mr. Buckland.*) Gets soft crabs in June, July, and August, when they cast their shells. Thinks a crab of 4½ inches is about three years old.

(*By Mr. Young.*) Would enforce these restrictions through the officers of the White Herring Fishery Board.

CRABS.

Decreased size.

Price.

Gauge.

Close time.

Used for bait.

Pots.

Close time.

LOBSTERS.

Berried.

CRABS.

Boats.

Decrease.

Gauge.

Close time.

LOBSTERS.

Gauge.

Close time.

Berried.

CRABS.

Soft.

(*By Mr. Walpole.*) The proper way to enforce the law is through the buyer and seller at the chief markets. The Orkney lobsters keep up their size.

CRABS. **JOHN JAMIESON** (*examined by Mr. Buckland*). Has been a fishmonger for upwards of 40 years. There are more crabs now a great deal than there were 25 years ago, but the size is much smaller. There is double the number of fishermen, consequent on the increased facilities for market, and they take all sizes. The remedy is to have a gauge. Nothing under 6 inches would do. If the market were stopped the fishermen would obey the gauge. Possibly the small crabs would be broken up for bait where the fishermen could not obtain mussels. The mussels are more used than crabs. Would have a close season in the Frith of Forth in June, July, and August. In these months the fish won't carry any distance because of the heat.

LOBSTERS. The lobsters have diminished both in size and quantity. This is attributable to over-fishing. They fish for lobsters all through the year. When he first went to North Berwick 25 years ago, crabs were sold at 6d. a dozen, and small crabs counted two for one. The contract price now is 1s. 6d. to 2s. a dozen. Lobsters used to be 9d. each and are now 1s. 6d. to 2s. Two go for one under 4½ inches in head or barrel of lobster. About five years ago refused to take lobsters under 4½ inches. The fishermen rebelled and sent the small lobsters to London, and they (the salesmen) are now compelled to take small as well as large. It would be better to measure lobsters by barrel and not by the Norfolk measure of head and tail. The crabs are skewered before they are boiled alive. It spoils a lobster or crab to put it first into cold water. The meat sticks to the shell. It is impossible to stop the capture of berried hens. The lobster is most valuable when it is berried. There is a prejudice against crabs in warm weather in Edinburgh.

(*By Mr. Young.*) June, July, and August should also be closed for lobsters. They are found then with soft shells. Knows of his own knowledge that the lobster fisheries in Loch Erribol and in Tarbert in Harris are nearly fished out. There are not the same quantity of lobsters coming from any place now that used to come formerly. Every year the lobsters from Iona are getting smaller. Most of the lobsters come from the West Highlands, from Portree, Mull, and all the islands on the West Coast.

Queen's Hotel, Montrose, Friday, 6th October 1876.

PRESENT :

FRANK BUCKLAND, SPENCER WALPOLE, and ARCHIBALD YOUNG,
Esquires.

CRABS. **JOSEPH JOHNSON**, fish merchant, Montrose (*examined by Mr. Buckland*). Has been acquainted with crab and lobster fisheries from Cape Wrath to Montrose for 50 or 60 years. The crabs have diminished 50 per cent. in number ; they have not diminished in size. The average size of crabs is 5 to 6 inches. One third of the crabs are below 4½ inches. The falling off has taken place since the railway was opened nearly 30 years ago. Nearly 30 years ago witness had crab fishings at Auchmithie, this side of Arbroath ; they took immense quantities ; has had from that one place 140 baskets of a morning ; each basket would contain 6 dozen. Doesn't suppose now that so many crabs could be taken in a season. Attributes falling off to over-fishing. Believes the crabs to be local, and to stay on their own ground. Thinks this because the Auchmithie crabs are the worst quality on the coast, and the Arbroath crabs, only 4 miles off, are much better. The only remedy for the falling off is an annual close time. Cannot say positively what this close season should be. It would be no remedy to kill the large and spare the small crabs because the large crabs are the spawners. Has known small crabs of 4½ inches with roe in them. A gauge might protect the small ones ; but it wouldn't increase the breed if the larger ones, which contain the most spawn and are most numerous, were killed. Does not, therefore, approve of a gauge because it would not preserve the large crabs. The principal markets for crabs are London, Birmingham, Manchester, especially London.

The merchants there will take any sized crab, but they do not give a great deal for them. Before the railway crabs were 4d. a dozen, little and big. The price rose gradually after the railway was made and is now considerably higher. Crabs feed on animal food. The pots are baited with every kind of flesh, cod's heads, &c. Never heard of crabs being used as bait for crabs. The pots are made of wicker and net. 20 years ago the fishermen complained that if some law was not made to prevent continuous fishing, the fish would go out of existence. The great crab fishing in this district is from Troup Head to Fraserburgh. Has never seen the crabbers above 2 miles out to sea.

CRABS.

Price.
Food of.

In 1816 lobsters were sent to London in the wells of smacks which were sent for the purpose. One would come every week. The smacks for the last 30 years have ceased coming. The steamers first, and then the railway, cut out the smacks. Thinks that, as the steamers commenced running, the lobsters disappeared. Thinks that the falling off in lobsters is due to want of protection and of a close season. June, July, and August would be the proper close season for lobsters. The berried hens can be found at almost any period of the year, but the chief time is June and July; they come in spawn in May, but don't spawn till June.

LOBSTERS.

Railways.
Decrease.
Close time.
Spawning.

(By Mr. Young.) Recollects 30 years ago that the Act 9 Geo. II. c. 33, sec. 4, providing a close season, was strictly enforced. Has heard men say that it was close season and you could get no lobsters. The Act has fallen into desuetude for want of persons to enforce it. The officers of the White Herring Fishery Board would be competent to enforce the Act, and would have plenty of time to do so. (Mr. Young read the following passage from "White's History of British Crustacea.") "The older fishermen on the Moray Firth assured Mr. Bell that the lobsters on the Elginshire rocky coast had so diminished in number 50 years ago, owing to the vast numbers taken by parties who then supplied the London market, and they have ever since been comparatively rare." Considers from his experience that the statement made by these fishermen to Mr. Bell was perfectly correct.

Enforcement of law.

Decrease.

(By Mr. Buckland.) The close season suited the smacks because they could not carry crabs in hot weather, six days passage to London. The rapidity of steam made it possible to carry them. Does not think it worth while to return berried hens to the water out of close season. A berried hen is more valuable than any other lobster on account of her eggs. A berried hen worth 5s. would without the berries be worth only 4s. It would be impossible to carry out a law directing them to be put back. Has no idea of the rate of growth of a lobster. They measure the lobsters by the barrel. A lobster 4½ inches in the barrels counts as a whole lobster. Below that size they count two for one. Lobsters have increased very much in price. 30 years ago lobsters were 4s. 6d. a score; they are now 30s. a score in the spring, 25s. in the autumn, but the price varies. In London they are now 10d. each. The market is glutted. It is not necessary to have a gauge. Has seen a lobster of 6 or 7 lbs. weight. The largest lobsters do not average above 6½ inches in the barrel. Thinks that the lobster is local. There was a spot off John's Haven about a mile off, which there was no difficulty in fishing out. The ground was about 3 miles in circumference, generally a coal bottom. Lobsters on shore will live best in common coal.

Smacks.

Berried.

Price.

Gauge.

(By Mr. Young.) The people employed in crab and lobster fishing are generally old men and boys. Has known no grounds fished out, but so few lobsters are got that they may be said to be almost fished out.

(By Mr. Walpole.) The boats engaged at Auchmithie were chiefly employed in cod and ling fishing. Does not know how many were employed in crab fishing. In old days, when smacks took the take, could not get lobsters because they were taken by the contractors. Now they all go by rail. Does not know whether it would be possible to ascertain what number go by rail. There are 75 per cent. fewer go by rail now than used to go by the old smacks.

Railways.

Decrease.

ALEXANDER GREG, manager for Joseph Johnson and Sons, Arbroath (examined by Mr. Walpole). Has been manager for seven years at Arbroath. Before that was 16 years with Mr. Sutherland, a fish dealer at Montrose. Has had 23 years experience in crab and lobster trade. There has always been a railway since he was in business. Brings crabs and lobsters from Arbroath, and occasionally in July and August from Auchmithie. There were last year

Boats.	about 26 boats engaged at Arbroath in crab and lobster trade, chiefly in the spring; seven years ago there were about 20 engaged. The boats have increased during the last seven years. Seven years ago crabs were 1s. a dozen, small crabs below 5 inches counting two for one. The price now is 1s. 6d. a dozen.
LOBSTERS.	
Price.	Lobsters were 1s. each seven years ago, the price now is 1s. 6d. The price of crabs and lobsters has increased during the last seven years by 50 per cent. The fishermen are doing a good business. Thinks that the crabs and lobsters are just as plentiful as they were seven years ago, lobsters if anything more plentiful; is talking of an average of years. Though the number of boats has increased from 20 to 26, the take per boat is as large now as it was seven years ago. At Auchmithie there are now nine boats. The fishermen are leaving Auchmithie and coming to Arbroath. There is a better market at Arbroath. They are not leaving the Auchmithie ground because the crabs are fewer, but because there is a better market at Arbroath. The quality of crabs at Arbroath is better than at Auchmithie. The number of crabs at Auchmithie has not decreased in his time. They are taken close in shore and a mile out to sea. There are some crabs taken at East and West Haven. There are five boats between the two places. They fish the same ground as the Arbroath men, and there is no falling off either in quantity or size. The catch last year was at all these places as good as any he ever remembered. Last year was a very hot summer. Hot summers are always better than cold summers. Crab fishing depends on the weather. They take when water is muddy after breeze of wind. They see the traps in fine weather and won't take them. So far as he knows there is no falling off either in crabs or lobsters. Can catch the lobsters in very fine weather, they are not scared like the crabs by seeing the traps.
Increase.	
Boats.	
CRABS.	
No decrease.	
Weather.	
Price.	Crabs and lobsters are chiefly sent to the London market. Heard that lobsters last week were selling at 10d. apiece in London; kept his lobsters back in consequence. Has since sent them. The price of lobsters proves that a large supply of lobsters was in the market from Norway or elsewhere.
Close time.	Satisfied with the present condition of things. Lobsters and crabs are not much fished after the middle of July as the boats are on the herrings. The herring fishery makes a close season of its own for the lobsters, and it is not necessary to have a close season after that time. It is impossible to take many lobsters and crabs from the middle of July till September. After that a good many may be taken. The season finishes in November, the weather becoming too rough. Thinks it would be desirable to return all crabs under 4½ inches. Would return all lobsters under 4 inches in the barrel. The fishermen now return all small lobsters. It would be necessary to prohibit taking, buying, and selling.
Gauge.	
LOBSTERS.	
Gauge.	(By Mr. Buckland.) There is a natural close season in consequence of the fishermen going after the herrings, and there has been no diminution of lobsters. You can always get a lobster in spawn. Can't say when they spawn, nor whether the maintenance of stock is due to the natural close season.
Spawning.	(By Mr. Young.) Has heard of the 9 Geo. II. instituting a close season, but never heard that it was observed. It is never attended to. The Act, he is certain, has never been observed for 20 years.
	(By Mr. Buckland.) The 1.30 p.m. train reaches London 4 a.m. the following day. Many of the shell fish are sent to London by this train.
CRABS.	
	GEORGE WOOD, fisherman, Johns Haven (examined by Mr. Young). Has been engaged in crab and lobster fishing since 1827. The fishing depends on the state of the weather. Since 1827 sees very little difference in the yield, if the same exertions are used. A great deal depends on the state of the weather. If the sea is troubled the crabs take better. Thinks that all crabs under 3 inches should be returned to the sea. There would be no harm in keeping a 4½ inch crab. It is no benefit to anyone to keep them under 3 inches. Very few are caught below this size. The small ones under this size escape through the bars of the pot. Very few lobsters are caught under 4½ inches in the barrel. They escape through the creel. The close season should commence on the 1st October and end on the 1st March. It is then too stormy to fish. The crabs spawn at the end of October, but has seen lobsters in spawn every day of the year. Does not know when lobsters spawn. Is acquainted with the fisheries from Aberdeen to Johns Haven. There has been no falling off in these fisheries. Some years are more productive than others, but this depends on the weather.
Gauge.	
Close time.	
Spawning.	
No decrease.	

(By Mr. Buckland.) Baits pots with haddocks, young cod, and other fish. Has broken up crabs for bait when bait was scarce. Crabs are cannibals. If it were made illegal to take small crabs wouldn't break them up for bait. Lobsters like a little motion in the water, not much. Not one lobster in 12 or half a score is below $4\frac{1}{2}$ inches in the barrel. Never saw a lobster smaller than that on table (6 inches). The bottom on which he fishes is sandy and rocky. Below $4\frac{1}{2}$ inches the crabs count two for one, but sees no harm in catching them if above 3 inches. Thinks it is impossible to harry (i.e. fish out) the sea.

CRABS.
Bait for.
LOBSTERS.
Gauge.

JAMES WALKER, fisherman at Gourdon (examined by Mr. Buckland). Has been fishing for crabs and lobsters for 36 years. Commences off his own shore and goes northward to Stonehaven. Fishes from the shore to a mile and a half off. As the season advances comes inshore. Commences fishing on the 1st March and ends at the end of September. About 40 pots go to each boat. There is about 40 yards between each pot. The pots are down night and day. Has seen plenty of crabs, but they are getting scarce. The crabs are getting very scarce. They are less than one half of what they were 36 years ago. During the last 20 years they have been falling off gradually. 36 years ago there were three boats out of Gourdon, now there are 20. Each boat has three times as much material as they used to have. It is no use to have a close season, but the small crabs should be returned to the sea. All under $3\frac{1}{2}$ or 4 inches should be returned to the sea. Now everything is taken and sent to London, where there is a market for everything in the shape of a crab. Does not want a close season; at the time when crabs spawn there are no crabs taken. The crabs carry their berries for six months. Sends no ran crabs (crabs with spawn) to London. They ought to be put back into the water. This would increase the fishery.

CRABS.
Decrease.
Boats.
Gauge.
Berried.

There are no lobsters to be got at all. They are worse than the crabs. His ground is not lobster ground, but there were plenty there 36 years ago. Doesn't know the cause of falling off.

LOBSTERS.
Decrease.

Thinks all the berried hens should be thrown back to restore the fishery. There should be no lobster taken under $4\frac{1}{2}$ inches in the barrel. In olden times the smacks wouldn't take anything under that size. They tie the lobsters when they send them away and do not plug them. The crabs are all sent away alive.

Berried.
Gauge.

(By Mr. Walpole.) There are now 20 boats for three when he began fishing, and each boat carries three times as many pots. There are really therefore now 20 times as many pots as there were 36 years ago. When he fished first the price of crabs was $4\frac{1}{2}d.$ a dozen, and $6d.$ and $9d.$ for lobsters each. The price now is $1s. 6d.$ to $2s.$ a dozen for crabs, and $1s.$ for lobsters each. Some of the fishermen are better, some worse off, than they were 36 years ago. The fishermen are not wholly dependent on the crabs and lobsters. The additional number of creels catch as many fish as used to be caught 36 years ago. The whole take of the 20 boats is as large or larger than the take of the three 36 years ago, but each boat gets a smaller share. If 20 people were trying to catch an animal which one used to try and catch, the 20 could not expect to get so many, but the 20 boats have fished out the store, and the store is getting shorter every year. The crabs keep to their ground, and in certain places are being fished out.

Boats.
Price.

JAMES MOIR (examined by Mr. Young). Lives at Gourdon. Has been fishing for 20 years. Is acquainted with the coast for about five miles, between Tod Head and Gourdon. The fish have fallen off a good deal in number but not in size. There are too many fishermen catching them. It would be a good thing to return all crabs to the sea under 4 inches. Thinks there is no use in a close season for crabs. June, July, and August is the very time to catch them. Would return all lobsters under $4\frac{1}{2}$ inches in the barrel. No close time is observed for lobsters. All the lobsters they get on this coast are not worth speaking about. The price of crabs has increased very much; it has risen from $8d.$ to $10d.$, $1s.$, and $14d.$ a dozen.

CRABS.
Gauge.
Close time.
LOBSTERS.
Gauge.

(Examined by Mr. Buckland.) There are no lobsters worth speaking about. The bottom is sandy and rocky, more sand than rock. They fish on about two miles of sand and four miles of rock. The lobsters live chiefly on the rock, the crabs on the sand. The rock is covered with weed. Can form no idea why the lobsters have gone away. The Gourdon fishermen knew that he (witness) was coming to give evidence, and thinks that, if they

Decrease.

CRABS.

Used for bait.

were in the room, they would agree with him. Crabs are very seldom broken up for bait. Mussels are chiefly used. Crabs are too valuable. Lobsters are tied and not plugged.

*No decrease.**Boats.**Gauge.**Close time.*

ROBERT ADAMS (*examined by Mr. Walpole*), manager at Gourdon for Joseph Johnson and Sons. Has been engaged six years; before that was at Montrose as cooper and fisherman. Buys a great many crabs for Messrs. Johnson. Contracts with three boats for their whole take. Has done this for three years. The take continues much about the same. There are 20 boats at Gourdon; last year there were 19. They have had from 18 to 22 boats every year for six years. The take per boat is just about the same as it always has been. No legislation is needed except as to size. All crabs under 5 inches should be returned to the sea. About a third of the present take are below 5 inches. Knows very little about lobsters. There are very few lobsters in this district. A close season is not necessary for crabs. October to March is a natural close season.

(*By Mr. Buckland.*) There are about three men in each boat at Gourdon. Thinks that most of the fishermen agree with evidence given by Moir and Walker.

WILLIAM DOUGLAS JOHNSON (*examined by Mr. Buckland*), a member of the firm of Messrs. Joseph Johnson and Sons, Montrose. Has been engaged for 25 years in business. Arbroath is the principal station of the firm for crabs and lobsters. Does not think that there is any falling off in the aggregate take of lobsters and crabs so as to affect the public supply. Whenever the price rises the quantity always comes forward. Is not in favour of a close season; thinks it would be of no great advantage. Thinks a crab of 4½ inches is a good marketable crab, and should not be returned. It would be worth 1½d. boiled and retailed. Thinks, therefore, the gauge should be 4 inches. All below that size should be returned. Lobsters below 4½ inches in the barrel are half lobsters, and no lobster under 4 inches should be taken at all. Never heard of lobsters being plugged. The berried hens are very valuable; but the London merchants do not give more for berried hens than others.

(*By Mr. Young.*) Knows no places where crabs and lobsters were once plentiful and are now fished out.

Gauge.

LOBSTERS.

Gauge.

Imperial Hotel, Aberdeen, Saturday, 7th October 1876.

PRESENT :

FRANK BUCKLAND, SPENCER WALPOLE, and ARCHIBALD YOUNG,
Esquires.

CRABS.

*Decrease.**Spawning.**Soft.**Used for bait.*

WILLIAM PAUL (*examined by Mr. Buckland*), advocate of Aberdeen; lives at Stranathraw Cottage, Muchalls. Has lived there 10 years, and been interested in crab and lobster fisheries. There are five boats in village of Stranathraw or Muchalls, representing about 30 men. They are all white fishermen, but all have crab pots. Each boat 10 or 12 years ago had three or four creels, and now each boat has only one or two. The crabs have fallen off in numbers. Has observed no decrease in size. Was told last night by an old man, Alexander Christie, that crabs had fallen off in size. Thinks that the falling off is due to the mode of fishing, which is most improvident. In September and October crabs are in the best order. After that the female crabs spawn, and they get in bad order and are unfit for food. Understands from fishermen that when they spawn they cast their shell, and gradually improve from that time till month of July. When they get in bad order fishermen catch many more than when they are in good order. Has often in November himself seen great baskets full of crabs, all of which were unfit for human food. These crabs are used as bait. The breast is pulled off and the back is used. The crab is the best bait, far better than mussels. A line of 40 score hooks is baited one half with crabs (if they can be got) and one half with mussels or bullock's liver. Twenty crabs are required to bait one line. The crabs are not used as bait when they are in good order, they are too valuable. The claws of crabs in November are soft and watery. Thinks that the wanton destruction of crabs unfit for food is the cause of scarcity. Even in October, when crabs are in

good condition, the claws are sent to market and the bodies used as bait. The body of the male crab is rarely sent to market, it is retained for bait, and the claws alone are sent to market. Both the claws and body of the female crab are sent to market. Sees no cause whatever for diminution of crabs, except catching them out of season from November to July. November to July would perhaps be too long a period for close season, but some close season ought to be adopted. In the season when crabs are in good order there are very few small crabs caught. Sees the small crabs chiefly in winter and spring. The sea off Stranathraw is rocky, but southwards towards Stonehaven and Bervie there is more sand, and this is the chief seat of the crab fisheries. The reason of this is that the bottom is sandy and more favourable. Even in October there are always a few spent crabs among the good ones, and *vice versa* in November there are always a few good crabs among the bad ones. The only way to stop improvident fishing is a close time. Does not think it would be practicable to have a gauge. The fishermen would break up the crabs for bait. Does not think that the fishermen are in favour of a close season; they all say things are going on well as they are. Ten years ago would have considered 2d. or 3d. a fair price for a crab. The same sized crab now would cost 5d. or 6d. The increase in price is 100 per cent. The fishermen now don't make the fishery so much of a trade as they used. They devote their attention to the haddocks. A great proportion of the crabs caught go to Glasgow, Birmingham, Manchester, and the midland towns. The crab fishing ground extends from the Bay of Stonehaven to Bervie, about 15 miles.

*Close time.**Price.**Season for.**Bait.**Boats.**Close time.**Weather.**Used for bait.**Enforcement of law.**Used for bait.*

(*By Mr. Young.*) Thinks that a continuance of this improvident mode of fishing will lead to further evil. Is not aware of the statutory close season for lobsters. The Act is neither known nor observed. The fishermen now go further from the coast to set their creels than they used to do. Understands from the fishermen that the male crab is in the best order about Christmas, the female crab in September and October. The present season has been a very good season for crabs. This is due to the fact that there has been a good deal of rough weather, and the crabs go easier into the pots. The crab pots are invariably baited with haddocks' heads. The pots are made of thin spars of wood and netting.

The number of creels in each boat has diminished from three to one. Practically there is less machinery for catching crabs than there used to be. At some of the villages they don't fish at all. The reduction of machinery is not, however, leading to increased production of crabs. The evil is, no doubt, reduced, but the reduction has made no perceptible impression. The great object of the fishermen is to get crabs for bait. Crabs are the most successful bait. Thinks it not possible that crabs may be more useful as bait than as food. Other bait is always available. The provision of other bait would be more expensive, but the evil would not be comparable with the evil done to the crab fisheries.

(*By Mr. Walpole.*) A close season in June, July, and August would be in the period of the year when crabs are getting into good order, and would be too late. Would much rather make the close season commence from the middle of November or 1st December for four or five months. This is a very stormy period of the year. Fishermen cannot pursue their fishery in the stormy period of year, but in frosty weather they can go out very easily, and they often go to the crab pots when they cannot go out with their lines. The natural close time due to storms is dependent on seasons. Taking crabs out of season is almost entirely due to taking crabs for bait. The reduction of fishing machinery spoken of before has not led to an increase of crabs. The fishermen are so anxious for bait that they will hardly sell a good crab; it pays them better to get them for bait than to send them to market. The law of close season could be enforced by the coast-guard. The White Herring Fishery Board has no officers on the coast that he knows of. Thinks it would be impracticable to enforce a gauge. It could be enforced in the markets, but the small crabs would then be used as bait. Does not think that the fish caught with crabs as bait compensate the consumer for the crabs that are destroyed.

(*By Mr. Young.*) Is not aware that in the Firth of Forth the long-line fishermen prefer mussels to crabs for bait. In this part of the coast they prefer crabs to any other bait. The crab is broken up and tied on to the hook

CRABS.

with wool. If there is a close season it must at any rate be for the whole of Scotland. There would be no difficulty in enforcing a local close season in his district either by the coast-guard or by the officers of the White Herring Fishery Board. Salmon nets are all removed on the commencement of the close season, and the crab creels could be removed in the same way.

(By Mr. Buckland.) There is a great demand for crabs in Aberdeen. But in the winter months there are no crabs in the market, only their claws. The crabs are all boiled in the villages. They are stabbed first.

WILLIAM REID, advocate, Aberdeen, clerk to the Dee and Don Fishery District Board (*examined by Mr. Young*). Objects to a gauge for crabs, because, though it would be a test of size, it would not be a test of condition. In the winter months even well-sized crabs have scarcely any meat in the shell, only in the claws. Would prefer to have a close time of at least four months, commencing on the 1st November. Thinks it would be generally observed by the fishermen if passed into law.

WILLIAM MEFF, fishmonger at Aberdeen. A fishmonger 16 years. Had a fishery at Catterline (5 miles square), near Stonehaven, for 10 years up to 1874. There were 25 men fishing for crabs from April to July. The herring fishing commenced in July. In September and October resumed crab fishing. Left off from November to April. Crabs have not decreased. The last year he had the fishery he had 800 dozen in five days. The number of creels had doubled in the 10 years; there were more traps taking the crabs. But thinks the crabs are fewer, and that if the fishing machinery had not increased he would not have half so many crabs as 10 years ago. Thinks, therefore, that the crabs have decreased both in size and quantity. Gets crabs as large as 8 or 9 inches, and some as small as 3 or 4 inches. Fully one half are small. Is in favour of a close season in June, July, August. Thinks the crabs are then in good condition. They are in the worst condition in November and December; but November, December, and January are naturally closed. In those months the crabs have scarcely any meat in their shells; the claws only are used. Thinks that it is impossible for many crabs to be taken then. Does not think many are taken in those months. The male crab is in the best condition in March, April, and May; the female in September and October. The English prefer the male crab; the Scotch the red meat (undeveloped spawn) of the female. Manchester is the best market for crabs. There ought to be a gauge. All below 4½ inches ought to be returned to the water. Thinks that a good many fishermen are in favour of this. The gauge would effect an improvement in time.

The gauge should be 4½ inches; it would be a test of size not of condition. The Aberdeen people are very fond of crabs, and have been used to them for many years. Would be pleased with a regulation gauge, as very small crabs are of no use to them. The crabs six years ago were sold to him for 10d. a dozen of 13; he now pays 3s. and as much as 4s. for them. This is due to the scarcity and also to the railway, though at this time (October) the railways don't take them south, and the crabs are chiefly used for the local (Deeside) demand. They are sent all over the district up Deeside as far as the castle town of Braemar and up Don side. Cannot get as many crabs as he wants for the local demand, they are over-fished. To prevent this would have a close season in June, July, and August, and would return also all unsaleable crabs to the sea.

Gets his lobsters principally from the Orkneys.

JAMES BARLOW, clerk to Mr. Meff (*examined by Mr. Walpole*). Manages Mr. Meff's accounts. Has directed his attention to accounts of the Catterline fishery. The produce of that fishery decreased while Mr. Meff had it. The decrease was due to over-fishing; double the number of nets only caught the same number of crabs. Heard what Mr. Meff said about a close season. It is difficult to say when a close season should be. Thinks, however, it should be in June, July, and August. The male crabs are not unsaleable then, but they are better in April and May. Is in favour of a gauge, thinks it should be 5 inches. This is the smallest that there should be. All crabs below this should be returned. Would have the same gauge for males and females. Males are the largest, especially their claws.

(By Mr. Young.) The close season should apply to the whole of Scotland, and should be a close season for buying and selling as well as taking, as in the Salmon Fishery Acts.

ISABELLA MCKINLAY. The best months for crabs are July, August, September, and October. Nothing under 5 inches ought to be taken. In April, May, and June the female crabs are in bad order but the male crabs are good.

CRABS.
Gauge.
Season for.

MRS. LIVINGSTONE, fish-saleswoman. Londoners want crabs in January and February, the Scotch in September and October. If the fishermen could not catch crabs in winter they would have no bait for the lines. Mussels are expensive and difficult to get on account of the spates in the river.

Used for bait.

North Eastern Hotel, Peterhead, Monday, 9th October 1876.

PRESENT :

FRANK BUCKLAND, Esquire.

THOMAS HUTTON, Custom-House officer. Has lived at Peterhead nearly 60 years. Knows the bulk of the fishermen. There are not above five or six boats going out to the crab and lobster fishing. In his experience the crabs have diminished in numbers more than half. Does not know if they have diminished in size. A great many crabs are taken among the rocks with clips by women and children in the months of April, May, June, and July. The crabs taken with the clip are mostly small, about 3 or 4 inches; a 6-inch "partan" or crab is a large one. Other crabs are called "dog crabs." They are not in spawn at that time. Never saw them in spawn on the shore; they spawn in deep water. Attributes the falling off in number to the bad weather here while casting their shells. Has not been able for the last three years to get a he-partan or crab that did not want a claw, and many had no claws. This is on account of their being soft when casting their shells, their claws being then knocked off by storms. The crabs here are not over-fished. Those caught here mostly go south by railway. To increase the size and number of the crabs, there should be a close time from July to September for crabs under 4½ inches to enable them to harden their shell and increase in size. There are some lobsters taken here, but the numbers have fallen off. Thinks it is owing to the bad seasons, not to over-fishing. They have fallen off during the last two or three years. They are caught with clicks. Lobsters with "ran," i.e. spawn or roe, under 4 inches in the barrel, should be put back into the water. The larger lobsters should not be put back because they are of considerable value for the market. Lobsters are found with roe at all seasons. Has seen lobsters as small as 3 inches. Lobsters cast their shells in June, July, and August. The female lobsters should not be taken during that time. The he-lobsters might be taken then.

Decrease.

Spawning.

Soft.

Close time.

LOBSTERS.

Gauge.

Spawning.

Soft.

CRABS.

GEORGE BRUCE, fisherman. Has fished for crabs for 14 years. Fishes from Rattrayhead to Buchanness Light, a distance of 12 miles. The farthest distance he fishes out at sea is 400 yards. The crabs are taken on a rocky bottom, at a depth from 15 fathoms to 3 feet of water. Catches them in rings (iron rings of 22 inches diameter with a net of small mesh). Baits this net with fish of any kind. The rings are lifted four times at night. Sets about 40 rings. Never saw more than one partan in a ring. A crab could get out of a ring quite easily. Does not think the crabs have fallen off much here. Last season there were three boats from Buchanhaven, one from Peterhead, and one from Burnhaven. Crabs have not diminished, either in size or number. Is sure the ground is not over-fished. Believes it would be advantageous to have a close season for crabs. July and August should be the close season, because then they spawn, and cast their shells and are soft. Thinks crabs under 4½ inches should be returned to the water at all times of the year. The fishermen would not regard this as a hardship. Uses small crabs for bait in May and June. They are put on hooks to catch cod. During these months small crabs, or "bowers" are valuable for bait. Few partans are used as bait. If it were made illegal to take these small crabs for bait it would be a little inconvenience to the fishermen. More small crabs are taken by women and boys on the rocks than by regular fishermen. They sell and eat them. Does not know if they would consider it a hardship to be prevented. The general

Bait for.

No decrease.

Close time.

Gauge.

Used for bait.

size caught by the women and children is about 4 inches and under. These crabs are not sent away by railway. The regular fishermen send crabs away by railway to London, Newcastle, Manchester, and elsewhere. The price is about the same as it used to be. Has seldom, if ever, seen a partan with roe in it, therefore no law on the subject is necessary.

LOBSTERS.

Decrease.

Spawning.

Gauge.

Migration.

Destroyed by tobacco.

Season for.

Close time.

CRABS.

Gauge.

Lobsters are caught in the same places and in the same way as crabs. They have fallen off greatly during the last four years, both in size and number. The causes are over-fishing, the bad coast, and destruction by storms. They deposit their spawn among the rocks and the sea rolls it up and destroys it. They principally spawn in July and August. Has found berried hens at all seasons of the year. Would put back all small berried hens under 4 inches in the barrel. Many small lobsters are found in spawn. The largest lobsters caught are about 7 lbs. In the winter the crabs go into deep water. Would not deny that a law giving a close time for crabs during July and August would do good, nor that a gauge of 4½ inches for the minimum size of crabs would do good, if the fishermen were allowed the privilege of using them for bait when the bait was scarce. A great many crabs are killed during January and February,—in fact throughout the year,—by storms. The best part of the coast is between Aberdeen and Peterhead, especially from Fraserburgh to Rattray Head. The latter coast is the best for lobsters. A ship with a cargo of tobacco was wrecked about 40 years ago at Kirkton Head, 3 miles north of Peterhead. Before the wreck occurred it was usual to catch four or five lobsters in a ring; after the wreck occurred they were thrown up in cartloads on the shore, and the fishery has been very poor since.

There is a local saying that, "as the corn fills the lobsters improve." Crabs and lobsters are in best condition at harvest time. Would have a close time for July and August, and fishing to commence in September.

Captain DAVID GRAY, of the steamship "Eclipse." Has known Peterhead all his life. Has heard the witnesses, and agrees with them. Most decidedly thinks July and August should be a close time, to allow the females to mature their ova and recover from spawning. As protection is applied to salmon in the breeding season, so it should be applied to crabs and lobsters. No crabs, male or female, under 5½ inches should be taken. If it were made illegal to take crabs under 5½ inches, the women and children who took them about the rocks would be prohibited. It is very necessary that they should. All crabs under that size should be returned to the water. Occasional storms in July and August may have the effect of destroying large numbers of crabs when they are soft. Peterhead is not a place where the fishermen make crab and lobster fishing a regular business.

GEORGE BUCHAN, of Buchanhaven. Has been a fisherman for crabs and lobsters for two years. Did not get so many crabs last season as he did the season before. Thinks they are falling off on account of being over-fished. They have diminished about one half. Fishes in May and June. Thinks there ought to be a close time during July and August, because then they are casting their shells and are breeding. All crabs under 4½ inches should be put back into the sea at all times of the year. Lobsters were very scarce last summer. Thinks the cause is over-fishing; but the scarcity may be caused by the season. Berried hens under 4 inches in the barrel should be returned to the water. Larger berried hens should be kept. Sends crabs by railway to merchants. The price has not altered. Before the wreck at Kirkton Head there was a great abundance of lobsters. The tobacco was in casks and killed the lobsters for six or eight miles along the coast, as the casks broke up. Does not think it of any use to restock the ground; but the lobsters are not utterly exterminated. Has lately got 35 lobsters in one night up and down this ground in 40 rings and 20 creels.

CUMMING SUMMERS, Peterhead. Has fished for crabs and lobsters about a year and a half. Fishes from about half-a-mile to 100 yards from the shore. Uses the creels (not the rings). The first year he did very well. Has caught four or five lobsters in a creel. Last year he used 14 creels and caught no lobsters at all. Crabs (partans) go south of Buchan. They are plentiful and are not fished out. The average size is 7 inches. Thinks there should be a close time for crabs in July, August, and September, to allow the young ones to be born, and the small ones to grow larger. Lobsters have got scarce. Last year he fished with six creels in the winter, and caught as many as with

Decrease.

Close time.

Gauge.

LOBSTERS.

Gauge.

Decrease.

CRABS.

Close time

20 creels in the summer, therefore he argues they have been over-fished. **LOBSTERS.**
 Would have a close time for lobsters from 1st June to 31st August, during *Close time.*
 which time no lobsters, of any kind, should be taken. The fishermen are of *Spawning*
 this opinion. Lobsters spawn in June more than in any other month of the
 year. There used to be many fishermen, but the scarcity of lobsters has
 reduced the number. Does not believe he could trace the scarcity of the
 lobsters to the wreck of 40 years ago; it has simply been caused by over-
 fishing. Has never heard of the Act of 9 George II. cap. 33 giving a close
 time for lobsters.

THOMAS HUTTON (*recalled*). Has heard of the Act of 9 George II. cap. 33; but never knew it carried out.

J. STEVENS, of Bodham. Is a fish curer. Used to go about as a boy **CRABS.**
 with his father, 25 years ago. Caught many crabs then. Caught 72 crabs full *Decrease.*
 grown in one creel. There were plenty of crabs at that time. They are much
 scarcer now. Nobody at Bodham now fishes for crabs; it does not pay.
 Thinks a close time would do no harm, but gives no opinion on the subject.
 Undersized crabs should be thrown back, to grow to maturity. It would be of *Gauge.*
 great advantage to put back all crabs under 5½ inches. Used to get six
 lobsters in an evening with rings; but now does not get so many in the
 whole season. Thinks the small hen-lobsters should be put back. The women
 and children catching crabs take many thousands. Thinks this has much to
 do with the scarcity. They catch them for bait and food. Has seen partans
 not larger than his thumb-nail caught.

Captain DAVID GRAY (*recalled*). Suggests the formation of districts like *Enforcement of*
 the Salmon Fishery Districts, which should be let to and placed under the *law.*
 authority of tacksmen, who would fish them on a system, and enforce the close
 season and the throwing back of small crabs in their own interest. Killing small
 crabs is like pulling up small potatoes before they are half grown. None
 under 4½ inches across the back ought to be taken. There used to be seven *Gauge.*
 boats from Peterhead and the neighbourhood, now there are only two; the
 rest have knocked off on account of the unsuccessful fishing. Something
 ought to be done to preserve the fishery. Has fished on ground that was never
 fished before, and caught a good many large lobsters. Returned again in
 about three weeks and caught none. Thinks they were all fished out on the
 first occasion. Shifted his ground for three months, and then returned to the
 same place and fished it on and off for three weeks, and only caught three
 lobsters all the time.

JAMES INGRAM. Has been secretary to the Ugie District Board for *Enforcement of*
 20 years. Thinks the herring fishery officers should have authority to carry *law.*
 out the regulations as to close time which have been proposed.

The Hotel, Cove, Kincardineshire, Monday, 9th October 1876.

PRESENT:

SPENCER WALPOLE and ARCHIBALD YOUNG, Esquires.

PETER TESTER (*examined by Mr. Young*). Resides at Torry, and has been a
 salmon fisherman for 29 years. Has during that time paid attention to the crab
 fisheries. A good many crabs are caught between this and Bervie; Shield Hill
 (3 miles from Bervie) is the principal station for crabs on this coast. There are *Decrease.*
 not so many crabs now as there were 29 years ago. They have decreased both
 in number and size, especially in number. There are more boats employed in
 taking crabs than there used to be, but there are fewer pots. The crabs are *Boats.*
 in best season in October. In November the crabs begin to get very soft,
 have little meat in the shells, and are not so well worth catching. Can't tell
 reason of decrease. Does not think it is due to over-fishing. Does not think
 it is, because in December, when out of condition, the crabs are as plentiful as
 ever; when they are in condition they are scarce. Thinks a close season would *Season for.*
 do good. There is no close season observed at present. The close season
 should comprise December, January, and February. The weather greatly *Close time.*

CRABS.

prevents crab fishing in these months, so that nature makes a close season of her own. Thinks, however, it would be well to supplement the natural with a statutory close season.

Gauge.

Is also in favour of returning small crabs to the water. The gauge should be from 4½ to 5 inches across the back. The White Herring Fishery Officers and the coast-guard men could see the gauge enforced. A gauge would be no test of condition, only of size. Crabs are not used for bait for the long lines, but they are used for the haddock lines. 40 score of hooks are on a common fisherman's line. The hooks are baited with crabs, bullock's liver, and mussels. Mussel bait is not plentiful here. It all comes from Montrose. There are no mussel scalps between Cove and Bervie. Mussels come from Montrose and Port Glasgow. The reason for using crabs for bait is the scarcity and dearth of mussels. Cannot say that the use of crabs for bait has been the cause of their scarcity. Crabs are more valuable to the fishermen for bait than for the market.

Boats.

(By Mr. Walpole.) 29 years ago there were about 30 boats; there are now two extra boats at Muchalls, five extra at Skateraw, three extra at the Dunnies, four extra at Porthlethen, five extra at Cove. There are now 51 boats. The crab ground extends from Cove to Bervie 18 miles, and 4 miles seaward. The boats do not depend on the crabs but on the herrings, and only fish for crabs till the herring fishery commences. 29 years ago the boats carried 10 pots each. They do not average now three to a boat.

Close time.

Crabs are very valuable for bait. If December, January, and February were closed the fishermen would not be much injured because they cannot get out to sea then. It would, however, do good to close those months.

Decrease.

MITCHELL CRAIG (examined by Mr. Walpole). Has been fishing for 40 or 50 years at Cove. There are not so many crabs as there were. As a youngster has taken 40, 50, or 60 crabs in a creel; there would not now be a dozen crabs in a creel. Does not know what the decrease is due to; but thinks that they catch more full crabs to the southward, and more out of condition on his own ground. Recollects smacks coming down from London for crabs before the railway was opened. The crabs have been decreasing ever since. This looks as if the crabs were being over-fished. The crabs spawn about November. Thinks it would be a good thing to prevent crabs being caught in November, December, January, and February. It would be no injury to the fishermen, who can always get bait because of the railways, which bring them mussels. Mussels cost here about 1½ a ton in carriage by rail; this is the chief cause of the expense of mussels. Thinks it would be a good thing to throw back all crabs below 5 inches. Thinks the fishermen would be in favour of this law. Fishermen would like a law to say that no crabs should be taken in November, December, January, and February, and no crabs under five inches at any time. A close season in June, July, and August would be absurd because they are then in good condition.

*Spawning.**Close time.**Gauge.**Trawlers.*

PETER TESTER (recalled). Blames the trawlers on this coast. They come all over the crab ground and keep the crabs they trawl up. They began to come three years ago. There were very few trawlers before that time. The crabs decreased 20 years ago, but there has been a decided decrease since trawlers came on the coast. The trawlers come principally from the Firth of Forth. Is in favour of a law stopping all inshore trawling. The trawlers also interfere with the lines.

Decrease.

JAMES MARR (examined by Mr. Young). Lives at Cove; has been a salmon fisherman for 25 years. Has paid some attention to crab fishing on the coast. Is sure they do not catch so many crabs now as they did 10 years ago. The crabs are not much smaller but much less numerous. Can't tell what is the cause of the decrease.

Thinks too many breeding crabs are taken. The crabs get out of condition in November.

Has formerly seen in the Bay of Nigg 70 to 80 crabs in one net, and now there are not a dozen taken. The boats do not engage regularly in the crab fishery; a few crabs (the best) are sold, and the rest are kept for bait. There is very little fishing for crabs in the winter months except for bait. The fishermen might object to being stopped fishing from November to February, because the bait is valuable. Thinks the trawlers have done as much harm as anything. They sweep up everything small and large.

Trawlers.

The Inn, Muchalls, Monday, 9th October 1876.

PRESENT:

SPENCER WALPOLE and ARCHIBALD YOUNG, Esquires.

ALEXANDER LEPER (*examined by Mr. Walpole*). Lives at Muchalls; has been a fisherman 40 years; has fished for crabs all that time. There are now five boats; 40 years ago there were three boats. They fish also for haddock and herring, and for crabs all the year through except during May, June, July, and August, when they are on the herring fishery. Commences crab fishing in September, and fishes all through the winter to the following May. In the winter crabs are used as bait. There are five men in a boat, and each man has a creel. 40 years ago used to use two or three creels per man. Doesn't think that the crabs are scarcer, but can't get freedom to take them. The Stonehaven and Cowie men fishing with long lines find their lines get foul with the creels and then cut the gear of the crab lines. The Stonehaven men fish for crabs themselves. This conduct keeps the Muchalls men from crabbing, and so they can't get crabs. If it wasn't for this there would be as many crabs caught as ever. Has often had his own gear cut. The Stonehaven men say they do this, and that they will do it again. The ground extends from Carron Ness on the north to Dunnottar Castle on the south. This is about three miles long. This was the best crab ground between Stonehaven and Aberdeen; it is a patch of rock in the middle of the sand. The conduct of the Stonehaven men keeps them off it now. If it wasn't for the Stonehaven men the crab fishing would be as good as ever. The conduct of the Stonehaven men took 100% out of Muchalls village this season. There are no fewer crabs in the sea this year, but every year is not alike. The crabs cast their shells in the latter end of October. After the 1st November it would be a good thing to prevent their being caught. November, December, and January being closed would not injure the fishermen. Could get other bait in those months. There are not many small crabs taken. They get out of the creels. The 2-inch crabs get out of the creels.

CRABS.

Used for bait.

Soft.

Close time.

(*By Mr. Young*.) Every third hook on the long lines is baited with crabs, while two thirds of the hooks are baited with mussels and bullock's liver. The mussels come from Montrose and Port Glasgow, and cost about 1^l. per ton for carriage. If crabs were prohibited as bait could get other bait for the long lines. Recollects smacks coming down from London for crabs, but they did not occasion any scarcity. There is no meat in the crabs in November. A gauge would be no test of condition, only of size.

Used for bait.

ALEXANDER CHRISTIE of Muchalls (*examined by Mr. Young*). Has been a fisherman since he was 16, is now 72. Came to the village of Muchalls in 1823. Has a long acquaintance with the crab fishing. There are not nearly so many crabs now as there were when he was young. They are full as big in size, but they have fallen off in number. When he began there were only two boats out of Muchalls. Each boat had 12 creels and 4 men. Crabs then were 1s. and 14^d. a dozen. They have this year been as high as 4s. or 5s. per dozen. Most of the crabs here are large. They use the crabs in November, December, and January as bait, but it would be a good thing not to catch them in those months. Does not think it would do any good to return the small crabs. Agrees generally with Mr. Leper's evidence. It is 10 or 12 years since he was actively engaged in the fishery.

Decrease.

Price.

Used for bait.

Close time.

ALEXANDER CHRISTIE (*examined by Mr. Walpole*). Nephew of the preceding witness. Lives at Muchalls, is 50 years old, has fished all his life; began fishing in 1845. There are not so many crabs now as there were in 1845. But would get as many crabs as ever, if he could go to the old ground. Can't go there now because the Stonehaven and Cowie men destroy their creels. Has often had his own gear destroyed. There are just as many crabs if he could go to the same ground. Thinks that in November, December, and January crabs are of no use for food, and very little for bait, and that these months therefore ought to be closed. They don't seek the crabs in February and March. Only care for September and October. The trawlers don't come here, and the great thing would be to stop the Stonehaven and Cowie men interfering with them. The Stonehaven boats have gradually increased from 6 to

Decrease.

Close time.

CRABS.

30, and so got too strong for them. Crab pots are a fixture and do not interfere with the long line fishing.

Captain HENRY THORBURN has lived here 13 years in the summer, and confirms the evidence of preceding witnesses, who are all reliable men.

JAMES CHRISTIE (*examined by Mr. Young*). Resides at Skateraw; has been a fisherman for 22 years. Has fished for crabs all that time except this year. The crabs are scarcer than when he began, they are a complete failure. The crabs are over-fished. The crabs are very plentiful in the winter months, and taking them then for bait has to do with the falling off in the fishery. It would be a good thing to close November, December, and January for the crabs, but it would not be favourable to the fishermen, as it would prevent them getting bait. Fishes off Muchalls. The Stonehaven men only occasionally come up there. They have never destroyed his gear. There are double as many boats as when he began fishing. The boats carry fewer pots than they used to do. This year there is not a single pot in the whole village. Last year was a very bad year, and the October storms destroyed the pots, and they did not think it worth while renewing them. Crabs under 4 inches are all thrown back, and all berried crabs are thrown back.

(*By Mr. Walpole.*) Would not object to November, December, and January being closed.

Decrease.

Close time.

Station Hotel, Stonehaven, Monday, 9th October 1876.

PRESENT:

SPENCER WALPOLE and ARCHIBALD YOUNG, Esquires.

JOHN MASON (*examined by Mr. Walpole*). Has lived all his life at Stonehaven, is 61 years old; a fisherman; fishes for crabs and lobsters; fishes off Dunnottar for crabs; finds the lobsters and crabs all along the coast where the bottom is rocky. There are 5 boats from Stonehaven fishing for crabs, over 30 boats long line fishing. The long line fishing extends 20 miles out to sea. Some boats carry 30, some 20, some 60 creels. There are decidedly not so many crabs on the Dunnottar ground as when he began fishing. They have all gone to Manchester and London and the better markets. They are over-fished. Can't see how they can be restored. Commences fishing for crabs in April; continues till the end of June, when the bulk of the fishermen go to the herrings. The herring season lasts from the 10th July to the 10th September. In September resumes crab fishing, and fishes till the end of October. After October crabs are only used as bait. Does not think it good that they should be used as bait. Thinks the close time for Kincardineshire should be November, December, and January. Such a close season would not be a bad thing. Returns many small crabs to the sea. Thinks it would be a good law to return all unsizeable crabs to the sea. The undersized crabs are now used for bait. It would be a good thing to return all under 5 inches. It would be a difficult thing to enforce this law; if it could be enforced it would be desirable. A penalty on buyer and seller would be a restraint.

Decrease.

Close time.

Gauge.

LOBSTERS.

Decrease.

Gauge.

Close time.

CRABS.

Decrease.

Used for bait.

Used to get a good few lobsters, but they are over-fished. Not nearly so many as there used to be. Takes all lobsters from 4 to 5 inches in the barrel. It would be a good law to prevent capture of lobsters less than 5 inches in the barrel, but it would be difficult to observe it. The crab close season (November, December, and January) would do for lobster close season. Cannot practically catch them in these months. Thinks that crabs in roe should be returned to the sea. Wouldn't return berried lobsters.

(*By Mr. Young.*) Crabs have not decreased so much in size as in number. When he commenced fishing crabs were 6d. per dozen. The last he sold were 1s. 6d. a dozen. It would be difficult to enforce the law of gauge. There are many ways of evading a law at sea. If you can't stop the sale in the market, you can't stop their capture at all. At this time of the year (October) no crabs are used as bait. They are too valuable. The great bulk of the fishermen have given over crabbing as it doesn't pay. Mussels are the great staple bait of Kincardineshire. They are very costly—2s. 6d. the quarter basket—

23 of these to the ton. They are nearly 3*l*. a ton before they are delivered at Stonehaven. Crabs are the best bait if they can be used quickly, but otherwise they are soft and bad. Has never heard of the 9th Geo. II., which provides a close season for lobsters. Does not approve of the close season in that Act, (June, July, August,) for Kincardineshire.

CRABS.

Used for bait.

JOHN TAYLOR COWIE (*examined by Mr. Young*). Has been a fisherman for 45 years. Crabs have decreased; the decrease began about 20 years ago. The decrease is due to over-fishing. Agrees with every word of Mr. Mason's evidence.

Decrease.

JAMES NOBLE, of Cratown (*examined by Mr. Young*). Has been a fisherman for 20 years. Has fished a good deal for crabs. They have fallen off greatly in numbers since he began fishing. There are too many creels and the crabs are over-fished. Cratown is about two or three miles from Dunnottar and the Cratown ground extends about four miles along the coast. There are many more boats than when he commenced fishing, and the boats carry more than twice as many pots as they used to. Each boat, with double the number of pots, doesn't get half the number of crabs. The price is about three times what it used to be. Thinks it would be a good thing to close November, December, and January. Thinks the fishermen would observe the close season. Would rather lose the bait than take the crabs then. Has caught 30 or 40 lobsters in one creel. They have fallen off too. Thinks this is due to over-fishing. Thinks the close season for lobsters should be the same as for crabs. Would return all crabs under 4½ inches to the water. A 5-inch crab is a fair marketable crab. A lobster 4 inches in the barrel is very small. Would return all under 4½ inches. There is no trawling on this ground.

*Boats.**Close time.*

LOBSTERS.

*Decrease.**Close time.**Gauge.*

JAMES BRODIE (*examined by Mr. Walpole*), of Cratown. Has been fishing for crabs for 30 years. There were nine boats at Cratown 30 years ago; there are eight now. Thirty years ago boats used to carry 5 to 10 creels for each man; now they have 40 to 50 betwixt two men. They caught a good deal more with 10 to 12 creels than they do now with more than double that number. Thinks the close season should commence in the middle of October, and end at the end of January or the middle of February. There is no doubt that this would be a good law for the fishermen. Crabs are of little value in these months. A 4½-inch gauge would be a good thing for crabs. A 5-inch gauge would be too large. The gauge now used for lobsters is 4½ inches in the barrel. Below that they count two for one, and below that thinks they should all be returned.

CRABS.

*Close time.**Gauge.*

LOBSTERS.

Gauge.

The Fife Arms Hotel, Banff, Tuesday, 10th October 1876.

PRESENT:

SPENCER WALPOLE and ARCHIBALD YOUNG, Esquires.

GEORGE FINLAY, of Whitehills, near Banff (*examined by Mr. Young*). Was born and bred a fisherman; is now a general merchant and fish merchant. Is 53 years old. Commenced fishing for lobsters and crabs 40 years ago. Was at this work for 7 years. There are as many crabs caught now as were caught then, but there is more machinery used in taking them. He commenced fishing in 1832. An English company at that time sent down walled smacks, and bought lobsters through an agent, James Logie. This agent engaged the fishermen who had 1*l*. bounty and 3½*d*. for every lobster over 7 inches from tip of nose to the flap. Under this size half price. These smacks bought a great many lobsters, but no crabs. This system went on for about 12 years. After that time the smacks left the coast, as the lobsters were becoming so scarce that it was hardly possible to get them. It was also stated that the Norway lobsters were coming then into the market and competing with the Moray Firth lobsters. It did not therefore pay the smacks to come for them to the Firth. Since that time the lobsters have always been scarce. They have never recovered themselves. Lobsters are to be had all along the shore of the Moray Firth. The coast is rocky near the shore, sandy further out: From 1832 to 1843

CRABS.

*Boats.**Price.*

LOBSTERS.

the lobsters were 3 $\frac{1}{2}$ d. each. When smacks ceased coming in 1843 an agent came from Roshearty to Portsoy; the name of the man who sent the lobsters away by rail was Duthie. He gave 8d. each for them. This agent remained about three years and then left for the Western Highlands. There has been no agent since, and each fisherman sends his own take away south by rail. The price varies, but they have had as much as 5s. for a lobster. The close season of the Act 9 Geo. II. cap. 33 was never known or observed here. There is very little doubt that a close season for lobsters would be beneficial, but it would be a puzzle to fix it, as lobsters breed all through the year. Thinks that a gauge would be beneficial and that it should be seven inches from the tip of the nose to the beginning of the tail. For the sake of preservation it would be better to return all below that size. There are not many caught below this size, but those that are caught are kept. Thinks no reasonable fisherman would object to the gauge. It would be a great advantage to return berried lobsters to the water, but at the same time it would be a great sacrifice to the fishermen: 30 per cent. of all the lobsters taken are "berried" all the season through.

Close time.

Breeding.
Gauge.

CRABS.

Decrease.

The crabs have also fallen off, though more are coming into the village in consequence of the increased number of appliances for taking them. With the same number of pots in 1832 they would have caught double the number of crabs. When he commenced taking crabs as an agent 12 years ago he paid 11d. for 12. The present price in Whitehills is 3s. 6d. a dozen. This is due to competition, and cannot probably continue.

Migration.

Produces rough chart of sea bottom adjacent to Banff, McDuff, and Whitehills, showing that in the autumn months the crabs are out three miles from land; and in the summer months, May to August, near land for shelling.

Soft.

There is very little meat in the shells in November. The crabs will make a close season for themselves in the winter months when they are all down in the sand. November, December, and January are useless months to the fishermen. Crabs cannot be caught in these months. Crabs are occasionally used as bait; but not in November, December, and January. The principal bait are mussels, which come from Port Glasgow, though the crabs are the finest bait. The crabs are too valuable to use for bait. Would return all crabs under 5 inches.

Used for bait.

Gauge.

(By Mr. Walpole.) The sketch purports to show the position of the crabs from May to August, and in September to November. From May to August the crabs are on the sandy bottom near the shore, and on the adjacent reefs near the shore. Thinks they come on to the foreshore for the purpose of "shelling." The crabs at that time are in a very bad condition, though many people fancy them. Not 10 per cent. of the crabs caught in the summer months (May to August) are females. The rest are all males. The male crabs are, however, also in bad condition in these months. The young crabs (male and female) are near the shore. Though they are in bad condition the value does not fall. The fishermen would think it a great hardship to close these months. In September and October the crabs are first class. In November they have just spawned, and the game is up. The soft crabs on this part of the coast are in May, June, July, and August. Proposes as a remedy that no person should take any crab below a certain size. Is not sure whether this gauge should be 5 inches or 4 $\frac{1}{2}$ inches.

Shedding shells.

Season for.

Soft.

Gauge.

Decrease.

Shedding shells.
Close time.

Gauge.

Decrease.

WILLIAM RITCHIE (examined by Mr. Walpole), a fisherman living at Whitehills. Has been a fisherman for 20 years. Heard Mr. Finlay's evidence. Agrees that there are fewer crabs and lobsters than when he began fishing. Agrees with Mr. Finlay that the crabs are near the shore from May to August, and further out to sea in September and October. Thinks (with Mr. Finlay) that the crabs cast their shells in June, July, and August. Thinks it would be a good thing to have a close season for crabs. Catching crabs in June, July, and August is like cutting green corn. The fishermen (old men) catch them at that season as bait, and is afraid that closing these months would be an injury to those old men. If those months cannot be closed, it could be no use closing any months. Proposes, as an alternative, a gauge. Would let no crab be caught under 5 inches. Lobsters are also decreasing. It is a rare thing now to get a lobster. Thinks it would be necessary to close lobster fishery altogether. There are above 30 boats at Whitehills crabbing. After the crab season they go to other fish. When he began there were not a dozen

boats. There are now too many boats and too many fishermen. The price is so good that almost everyone takes to fishing. CRABS.

(By Mr. Young.) There might be some difficulty in enforcing a gauge. The officers of the White Herring Fishery Board might possibly assist.

JAMES WATSON, of Whitehills (*examined by Mr. Young*). A fisherman; is about 65 or 66 years of age. Has had long experience of the crab and lobster fisheries. Agrees with the statements of previous witnesses. Crabs and lobsters have decreased very much in numbers, and increased much in price. Recollects crabs 2*d.* or 3*d.* a dozen. They are now 3*s.* 6*d.* a dozen. Thinks there is only one way to improve the crab fisheries. They ought to have a seven years' jubilee; they are now practically fished out. Thinks the close season for crabs should commence on 1st November and end on 1st June. The crabs then are not in good condition. Lobsters are in season and out of season at every period of the year. Would have a close season for them in May, June, and July. Decrease.
Price.
Close time
LOBSTERS.

(By Mr. Walpole.) Closes November to June for crabs because they are out of condition. They are not, however, in order in June and July; but in June and July old fishermen depend on them; would not like to hurt these fishermen. Closes May, June, and July for lobsters, because they come in to the rocks then to shell. There is not so much demand for lobsters in those months.

JOHN WATT (*examined by Mr. Walpole*), resides at Gardenstown. Has been a fisherman for every kind of fish for nearly 50 years. Has been in the Shetlands and Orkneys, and wherever he could find plenty. The lobsters are not one third so numerous either in the Moray Firth or in the Orkneys as they used to be. Now in the Orkneys they catch very few lobsters unless they go to very rough places. Goes to the Orkneys every year. Thinks the scarcity is due to too many people fishing for them. It is impossible to stop fishermen fishing altogether; but thinks May, June, and July might be closed. The lobsters then come in shore and are very easily taken. Agrees with Mr. Finlay that there should be a gauge, but Mr. Finlay's 7-inch gauge is too large. 5 inches from tip of snout to the flap of tail is a fair lobster. Decrease.
Close time.
Gauge.

If there is a gauge for crabs, it must apply to only edible crabs.

(By Mr. Young.) Has fished in Loch Erribol. There used to be a very good lobster fishery there; but it has very much fallen off. There are scarcely any lobsters to be got except in very rough places. Decrease.

JAMES WATT, son of the preceding witness (*examined by Mr. Young*). Has heard his father's evidence. Thinks that, at this season of the year, you will not get 3 per cent. of berried lobsters. Out of 35 lobsters caught recently only one was berried. In July and August the lobsters are in bad condition, and they will not have roes when they are in bad condition. No coast exposed to the Atlantic can be fished in the winter season, and the close season, June, July, and August, recommended by other witnesses, would prevent these fisheries being fished. The Act, enforcing this close season, has never been enforced. Personally, he would have June to September, inclusive, closed. Thinks a gauge for lobsters would be a good thing, but has never acted on this himself. Thinks a 7-inch gauge would be too large, and that there are many lobsters which do not grow to 7 inches; is speaking of the barrel gauge. Would have a 5-inch barrel gauge. Thinks it especially necessary to close August and September. Lobsters are then in poor condition, and easily caught. The weather is fine. Always gets crabs when fishing for lobsters, but never carried out crab fishing as a special pursuit. Would not have a close season for crabs. It would not be observed. Would never consent to a law that would prevent fishermen from taking crabs for bait. Berried.
Weather.
Close time.
Gauge.

(By Mr. Walpole.) Believes that a close season from June to September inclusive would suit the fishermen at the back of the Lewis, as the weather is so warm that the lobsters often do not go to market and the men get employment in other ways. Weather.

ALEXANDER GARDEN NICHOLLS (*examined by Mr. Walpole*). Lives at Gardenstown. Has been a fisherman for 20 years, fishing for lobsters and other fish. Has been to the West Highlands for lobsters. The lobsters are not now one for three what they were. Is in favour of a close season for lobsters. It should be June, July, August, and September, and thinks the fishermen on the Moray Firth would not object to such a close season. Is in favour of a gauge for lobsters. A whole lobster used to be 4½ inches in the barrel and Decrease.
Close time.
Gauge.

CRABS.

9 inches long from snout to tail. Lobsters below that size are not of much use, and might be returned to the water.

Decrease.

Creels.

LOBSTERS.

Decrease.

Close time.

ANDREW WILSON (*examined by Mr. Young*), resides at Macduff. Has been a fisherman for 45 years, and has had great experience in crab fishing. Crabs are not so plentiful as they were. Thinks that they have decreased both in number and size. There are more men crab fishing now than there were 40 years ago. When he was young all the crabs were taken in rings near the shore. A ring is an iron ring filled with netting, and with three braces from the centre. There were no creels in his younger days. They were introduced about 20 years ago. Thinks that all lobsters below 4 inches in the barrel should be returned. The lobsters are now so scarce that he can hardly get one. Has taken 20 in a night in olden times. The lobsters are overfished. Would give the lobsters, not a jubilee of seven years, but a jubilee every seventh year. They require a good many crabs for bait. The very smallest are a useful bait. There are mussel scalps in the Moray Firth. The mussels are very dear. They go for the mussels themselves to Cromarty and other places. When he first went for mussels he could get a cargo for 1*l*. A cargo would cost now 20*l*. No crabs are taken between the 8th of October and the 10th of June. They are then out of condition. Would have no gauge for crabs, because it would prevent the small ones being used for bait.

Decrease.

Spawning.

Bait.

JAMES WEST (*examined by Mr. Walpole*), a fisherman at Macduff. Has been fishing for crabs and other fish for 40 years. 40 years ago the crab fishing was only an "orra" or bye-job. Men would go at their leisure time with rings and take as many as they could. The trade is now pushed hard, and it would be impossible to get any crabs in rings now. The crabs have been overfished. Would approve very much of a jubilee for crabs every seventh or every fourth year. Crab fishing is one third of his living. Perhaps 20 others in Macduff are in the same case. Thinks the fishermen would be able to support themselves. He does not think that they would be tempted to break the law. Could scarcely fish for crabs without detection. It is difficult to fish for crabs without being seen. Thinks the fishermen could get on with a year of jubilee, and that it would be a good thing for them. Thinks that at this time of the year the roe begins to gather, and from the first of next month they do not fish them at all. They have already (10th October) stopped this year.

Is a mussel merchant. Has been so for 22 years. 22 years ago could buy Clyde mussels at 14*s*. a ton in the Clyde. The carriage by rail was 1*l*. 16*s*. This made the mussels about 2*l*. 10*s*. a ton. In the Clyde now the mussels are 1*l*. 5*s*., the carriage is reduced to about 1*l*. 1*s*. Crabs are very good bait. When there are few mussels, crabs are good substitutes for them.

Decrease.

Close time.

Gauge.

GEORGE PATERSON (*examined by Mr Young*). Resides at Macduff. Has been a fisherman for 39 years. Has heard preceding evidence. There is not the fourth part of the crabs there used to be. The decrease is due to over-fishing. A close time would do a great deal of good. The close time should commence 1st November and end on the 1st June. The gauge for crabs is 4½ inches. Below that size they are used for bait. Thinks that it would be a good plan to give the crab fishing a rest, one year in seven, or one year in four. The lobsters are very nearly cleared out of this part of the country altogether. Recollects the London smacks coming down, and thinks that a decrease began with their over-fishing.

Season for.

JAMES WATSON (*recalled*). The Whitehills men fish six weeks later than the Macduff men. They find crabs all through October; they are not so good towards November. There is a reef of rocks opposite Whitehills, which the crabs come to. Whitehills is only 2½ miles from Macduff.

St. Combs, Peterhead, Tuesday, 10th October 1876.

PRESENT :

FRANK BUCKLAND, Esquire.

ANDREW BUCHAN. Has fished for crabs for four years only. The first season, four years ago, he caught 3,368 crabs. In the second season a few hundreds only. The third about 4,000, and the fourth year about 5,000. He

fishes with creels and rings. There are now more creels and rings than there were four years ago. The crab merchants have instituted a gauge of 4 inches across the back; crabs under this gauge go two for one. He would prefer to put back into the water all crabs under 5 inches than give the merchants two for one. Would not think it oppressive to put back crabs under 5 inches. CRABS.
—

Begins to fish in April and May. In the winter the crabs retire into deep water, and seaweed grows on their back. The close time should be from the 1st of September to the 1st of April. June is the best month for crabs, because the creels will then stand best. Goes on catching crabs till July and then goes to the herring fishery. Gauge.
Migration.

Lobsters are getting scarce. Has heard of the lobsters being killed by the wreck of the vessel laden with tobacco. The tide about Rattray Point runs north and south. The general size of lobsters about here is very large. Approves of the gauge of $4\frac{1}{2}$ inches in the barrel for lobsters; all under that size should be returned to the water. Sells them by the pound. Gets from 8d. to 10d. per lb. for them. LOBSTERS.
Decrease.
Gauge.

Catches spawning hens all the year round. Would like to keep the hens for the market. His market for crabs and lobsters is Manchester and London. Spawning.

WILLIAM BUCHAN. Fished for crabs last season. Began in July and fished on to the 2nd of August. The season about here closes itself about the 1st of September. After that the creels will not stand on the ground on account of rough weather. Agrees that it would be better to put back crabs that are sold two for one, than sell them. Lobsters under $4\frac{1}{2}$ inches in the barrel should be put back. Did not catch over 50 lobsters last year; the year before he caught about a hundred, and about the same number previous years. The bottom of the sea about here is all rock, except a belt of sand about a mile broad. The ground is too wide spread to allow the lobsters to be fished out. The lobsters about here are very large. Crabs are used for bait in July, August, and September. Weather.
Gauge.
CRABS.
Used for bait.

WILLIAM DAVIDSON, an old man, and crab fisher. Would not keep any crabs below 5 inches. Would put them back rather than sell them two for one. He must have crabs of all sizes for bait, for taking cod. Mussels are no good. The cod come in, seeking the crabs when they are shedding their shells. The bait he uses at that time is soft crabs. When fishing for crabs for sale, would have no objection to turn back the small ones, but when the cod come in they are very necessary for bait. Gauge.
Used for bait.

Mrs. DAVIDSON gathers crabs for bait. If not allowed to collect them in July and August it would be a great loss, because her husband and some other old men must have the crabs for bait. Has tried other bait but it failed. At this season her husband must have crabs to catch the cod. Mussels would not do.

Inverallochy, Tuesday, 10th October 1876.

PRESENT:

FRANK BUCKLAND, Esquire.

WILLIAM STRACHAN, fisherman. Throws back all crabs under 4 inches, because the curers will not buy them, or they go two for one. If these were thrown back, crabs would be more plentiful. Begins fishing the 1st of April; about the end of July he stops fishing and goes to the herring fishery. Between September and April he cannot fish. The only time he can fish is from the 1st of April to the end of August. 30 years ago he used to fish for crabs for bait; he now fishes for them only for the market. He could sell double the number if he could only get them. The coast in the neighbourhood is rock and sand. Gauge.
Close time.

Lobsters used to be plentiful 12 years ago; cannot say why they have fallen off. LOBSTERS.
Decrease.

WILLIAM STEVENS. Has been fishing the last three seasons. The first year he caught a great many crabs; the second year they were not so plentiful; the third year he caught as many as he did the first year. For the last three years he CRABS.
Decrease.

CRABS.

has been putting back all crabs under 4 inches; two 4-inch crabs go for one whole crab.

*Gauge.**Price.*

A great number of crabs run in size between 4 and 5 inches across the back; 5 inches is the standard at present; under that they go two for one. A good means of increasing the supply would be to throw back all crabs under 5 inches; no close time is wanted here. He does not get a better price for a ran or spawning hen. He gets 1s. 2d. each for lobsters above 4 inches in the barrel; gets few lobsters below 4 inches in the barrel.

ANDREW WHITE. Has been fishing for crabs eight or nine years. The fishing ground is about 6 miles, backwards and forwards, opposite the villages of Inverallochy and Cairnbulg. Caught few crabs last year. There were six boats when he began, there are now 20 boats. There is little difference between the number of crabs caught last season and formerly, because there are now more fishers.

The railway came here about nine years ago, and opened up a market for the crabs. He begins fishing at the end of April and leaves off in July, and then goes away to the herrings. Thinks that the small crabs should be put back. Lobsters also under 4 inches in the barrel should be put back. Lobsters about here run rather large.

LOBSTERS.*Gauge.***CRABS.***Used for bait.*

JAMES STEVENS, fisherman. If crabs under 5 inches were put back it would be a good thing. Small lobsters also should be put back. Crabs are used for bait in August and September for cod which appear at that season. Would not like to be deprived of crabs for bait. Would not object to return small crabs to the water when not required for bait. Thinks that 20 boats in course of time might fish out the ground.

Gauge.

ANDREW RITCHIE. Fisherman for 12 years. Thinks a gauge is necessary. All crabs below 4 inches should be put back, except when they are wanted for bait to catch cod in July, August, and September.

*Spawning.**Gauge.*

JOHN STRACHAN. Has been a fisherman for 40 years. Thinks it impossible to over-fish the ground. Crabs spawn far out at sea, where they cannot be reached. The adult and young crabs come inshore in the summer time. If the small crabs, that is below 4 inches, were thrown back into the water, it would tend to keep up the stock.

*Migration.**Used for bait.*

The crabs retire from the shore in the autumn. They come back in the spring. It would be unjust to deprive the fishermen of the use of them as bait. They cast their shells in August and September. Would greatly object to any law about crabs if the law proposed made it illegal to use crabs for bait during the months of July, August, and September, because the crabs then are the best bait for cod. If a law were made prohibiting the use of crabs for bait it would be broken, especially in the case of old people, who then would be obliged to break the law in order to get a living.

Fraserburgh, Tuesday, 10th October 1876.

PRESENT :

FRANK BUCKLAND, Esquire.

*Decrease.**Close time.*

JAMES LOWDON, Fraserburgh. Has been a dealer in crabs and lobsters for six years. Has bought crabs from Inverallochy, St. Combs, Cairnbulg, Fraserburgh, and Roschearty. Crabs have diminished, not so much in quantity as in size. The average size used to be 6 inches across the back; now it is about 5 inches. Attributes the decrease to over-fishing, and to fishing in July, August, and September. "Shell" crabs should not be taken at all in those months. They are taken for bait in that time. The supply of cod does not depend on soft crabs at that time. In April, May, and June crabs are worth more than at any other time of the year. Crab fishing should only be allowed from 1st April to 12th July. During the other months of the year crab fishing should not be allowed, as they are not in a marketable state. Would further suggest that means should be used to protect crabs during the whole year from idlers, who gather the small ones to a great extent from under

tide-mark. Has no doubt that if these crabs were protected the crab fishing on this coast would greatly improve.

All crabs under 5 inches should go back into the water. Crabs do not grow so large here as about Peterhead and in the South. A rule was made in the Firth of Forth that no crabs under 5 inches should be sold. Those under 5 inches go two for one. The price has increased 50 per cent. in the markets at London and other places. Does not know the rate of growth in the crab. All crabs now counted two for one should be returned. Does not get so many lobsters now as he got four years ago. The reason is that there are not so many about. Lobster fishing is not of much consequence on this coast. They are caught principally about Roseheart. All lobsters under 4½ inches in barrel, or 7 inches in length, should be returned to the water. A whole lobster is 7 inches in length, and all under this size ought to be returned. Does not get so many "half" lobsters as "whole" lobsters. The price has increased. He only gets lobsters when they are coming in from all other parts of the coast. Lobsters then are worth 9d. or 10d. to 1s. per lb. In January, February, and March, however, they fetch long prices.

In July, August, and September he gets ran or berried lobsters; these should be returned to the water. The spawn should not be killed. Merchants give 5 per cent. more for a ran hen, than for a lobster without spawn. If ran hens were put back, it would increase the number of lobsters. The herring fishing begins about the 10th July. Lobster fishing in this neighbourhood is of little consequence because the men cannot get a good price for them in the London market.

WALTER NOBLE, fisherman at Fraserburgh. Has fished for crabs and lobsters nearly 30 years. Uses 30 creels. Puts his nets down at the end of April, and takes them up on June 20. Then the partans come to shore to cast their shell, and will not take the bait. They will not take bait when soft. They spawn in September and August. The smallest partan is about the size of a man's nail. Catches these in July and August in considerable quantities. A 5-inch crab would be three to four years old. Partans are very good bait. They are called "Pullers" when their shells are loose. "Meticks" is another name for soft crabs. There is plenty of bait at this time of the year (October). Crabs are easiest managed; they should not be used for bait. There are four boats fishing now for crabs and lobsters at Fraserburgh. The ground is fished out by hunting them so much. The remedy is to put back all crabs that count two for one, and enact a gauge, fixing the minimum size at 5 inches. "Two-for-one" crabs should also be preserved. Considerable destruction is caused by women and children catching crabs and lobsters before they have come to maturity.

Lobsters have fallen off very much. They are too much fished in the summer and winter. At Roseheart there are five boats. Each boat carries 25 to 30 creels. They work over the ground, which is 4 miles long and extends a quarter mile out to sea. Twenty to thirty years ago they used to catch 100, 70, or 80 in the 24 hours. They now get a dozen to half a score in the 24 hours. Twenty years ago they used to consider a lobster of 9 inches a whole lobster; below that they went two for one. All below 9 inches should be put back. The measurement should be from the joint above the tail. Two-for-one lobsters should be put back. Twenty-eight years ago smacks used to come. The railway was opened 11 years ago. There should be a close time from the end of August to March at Fraserburgh to give the lobsters time to "gather up" again. The railway may be the original cause of scarcity, by opening up new markets.

WILLIAM BUCHAN, Fraserburgh. Has fished for crabs and lobsters for 20 years. Crabs have greatly decreased. The cause is the taking of "soil," i.e., young crabs. These young fish are not fit for use. All "two-for-one" crabs, i.e., all under 5 inches, should be put back. Lobsters under 4½ inches in the barrel should be put back. The coast is being made bare by the women and children taking the "soil." Crabs should not be allowed to be used for bait. The fishermen could get other bait.

JOHN MELLIS, M.D. Has taken an interest in the fisheries. Suggests that the boats used for the crab and lobster fishery should be licensed and carry a distinctive flag or mark, and be looked after by the coast guard. If they make

CRABS.

Gauge.

LOBSTERS.

Decrease.

Gauge.

Price.

Spawning.

CRABS.

Shedding shells.

Used for bait.

Gauge.

LOBSTERS.

Decrease.

Gauge.

Close time.

CRABS.

Decrease.

Gauge.

Enforcement of law.

- LOBSTERS.** any breach of the law, the fishermen should be brought before a Justice of the Peace.
- Decrease.* **ANDREW DUTHIE**, fisherman, Duke Street, Fraserburgh. Is 39 years of age. Lobsters are decreasing, because fishing is excessive. Creels have increased sixfold in the last two years. Would recommend that all lobsters under 8 inches should be put back into the water. Lobsters turn soft about July and August, and when they have spawn they should be returned; this would greatly increase them. Fishes most in shallow water with rings, and with creels in deeper water. There should be a close time for lobsters in July, August, and September. Crab fishing has not been developed here till the last few years. Great quantities are landed. Would return all crabs under 4 inches. Creels should not be used for crabs during July, August, and September. Considerable numbers are wasted by children gathering them from under the rocks when immature.
- Gauge.*
- Soft.*
- Close time.*
- CRABS.**
- Gauge.*

Station Hotel, Inverness, Wednesday, 11th October 1876.

PRESENT :

SPENCER WALPOLE and ARCHIBALD YOUNG, Esquires.

- Trade in.* **WILLIAM CAMPBELL**, 72, Castle Street, Inverness (*examined by Mr. Walpole*). Was for some time, beginning in 1869, traffic manager for the Great Northern and North Eastern Railways at Inverness. His district extended over all the Northern portions of Scotland from Perth to the Shetland Isles, Portree, Stornoway, and the outer Hebrides. Has known these districts for 40 years. In the above capacity his attention was drawn to the fish traffic, commencing with the Inverness white fish traffic (sprats); the trade was at first very small, and gradually developed till 800 to 1,000 barrels a day were sent to London. In 1869 he began to consign shell fish to London. These crabs and lobsters came from the West coast of Sutherland, 60 miles by land from Loch Inver and other places to Lairg, and thence per railway. They had not equal facilities for sending the fish from the other places. The quantity of crabs and lobsters is unlimited, but the expense of the land journey from Loch Inver to Lairg is a great barrier to the development of that traffic. His attention was directed to Loch Inver because there was a great demand for lobsters in London, and the Sutherland Railway did not go beyond Golspie. When the railway was extended to Helmsdale, the lobsters came from Wick and the West coast of Caithness-shire. The Dingwall and Skye line was opened in 1870, and had the effect of opening up a traffic from Stornoway and Portree. The lobsters from these places had previously gone to Glasgow by steamer. The Post Office are now establishing a new route to Harris and the Outer Isles, *via* Strome, which will have the effect of sending an unprecedented supply of lobsters to the London market. The fisherman in Benbecula alone are prepared to supply the London market with 500 dozen lobsters a week from the Atlantic coast. He contracted to do so with Forbes, Stuart, & Co., but the lobsters did not live to reach Greenock. The lobsters went from Oban. There are at Greenock and Oban 40 or 50 men doing nothing but receiving lobsters from the Outer Hebrides. They take them out of the heavy boxes they arrive in, and repack them in light boxes for the railways. Believes that the fisheries in these places on the outer or Atlantic side are inexhaustible, and that, when facilities for the transit of the crabs and lobsters caught there are created, the great fishery will be not on the Minch, but on the Atlantic side of these islands. The only good harbours in these islands, at present, are on the Minch side. Is acquainted with Loch Erribol. That loch is not fished out; but given up owing to the length of the land carriage. The remoteness of the situation of that loch is alone interfering with the fishery. There are 40,000 people in the Long Island dependent on fishing, and they are worse off for communication than the Pacific Islanders. The Post Office are now affording increased communication, which will open up these fisheries. The
- Railways.*

carriage of lobsters from Strome Ferry to London is 3*l.* 15*s.* to 4*l.* per ton. Is not afraid of the fisheries being exhausted. All that is required is transit facility. There are beds of crabs and lobsters on the Atlantic side which have never been touched by the hand of man, and will last for 1,000 years. The traffic which he spoke of at Benbecula goes on to Barra Head. In the fishing season there is an increase of 15,000 to 20,000 people in the population of the Long Island.

If the Atlantic fisheries were opened up no close time and no gauge would be required for either crabs or lobsters.

ADAM MACDONALD (*examined by Mr. Young*). Is a pastry-cook in the High Street, Inverness. Used to deal largely in crabs and lobsters. Since 1842 he has been purchasing them for the purpose of sale. They are not nearly so plentiful now as they were in 1842; have fallen off more than one half. Used to get them from the fishers at Nairn, who went over to Brora, where the crabs were caught. They have not fallen off in size. Thinks the decrease is due to the fishermen killing the hen crabs when they are berried. He refuses to take them personally when they are berried. The hen crab in spawn is full of water. The hen lobster in berry is in its best condition. On this coast, the hen crabs get out of condition about the middle of October. There is little meat in the shell then. Has heard that the fishermen use the crabs for bait, but does not know it of his own knowledge. Mussels are the principal bait. Sand eels and herrings are used when they can be got. Used to buy crabs as small as 4 inches, never below this. Has seen a very good 4-inch crab, but does not think they are so wholesome as the larger. Would return all crabs below 4½ inches to the sea. The fishermen tell him that the crabs in these localities have been fished out. Thinks that there should be a close season for crabs from 1st November to 1st March. A 4½-inch gauge, combined with a close time in those months, would be a great benefit to the crab fisheries.

CRABS.

Decrease.

Season for.

Gauge.

Close time.

The lobsters have fallen off equally with the crabs. Has to send now to Wick or Kirkwall for his lobsters. They go from Wick to Aberdeen per steamer, and thence here by rail. The price of lobsters and crabs has doubled since 1842. This is due both to the increased demand for them and to the difficulty of getting them. Thinks it would be a good thing to have a gauge for lobsters. No lobster should be taken under 5 inches in the barrel. There should not be a close time for lobsters. They are in season all the year round. Never heard of the 9 Geo. II. c. 33, s. 4, which imposes a close season for lobsters. The fishermen are not aware of it. The lobsters are in excellent condition in that close season—June, July, and August.

LOBSTERS.

Decrease.

Gauge.

Season for.

(*By Mr. Walpole*.) Crabs are of no use in May; better in June, and go on getting better. Not good enough to be eaten in June; may be eaten in July. Is speaking of the female crabs. The male crabs are in good order at Christmas. Very good order in January and February. Would not like to say they were in good order to March and April. The principal demand here is for females. There would be no difficulty in making the close season applicable to any females. The males are not in good order in November, they get in good order about Christmas.

CRABS.

Season for.

Royal Hotel, Thurso, Friday, 13th October 1876.

PRESENT:

ARCHIBALD YOUNG, Esquire.

WILLIAM THOMSON, residing in Thurso. Has been a crab and lobster fisherman for 35 years. There are a good many crabs all about the coast from Loch Erribol to Duncansby Head; but not a fourth of the number are now taken that were got 35 years ago. There has been a decrease also in size. Fished with rings when he was first a fisherman; but about 15 years ago the fishermen gave up the rings and used crab-pots instead. These are much more deadly than the rings.

Decrease.

CRABS.*Decrease.*

The number of boats engaged in crab fishing is four times greater than 35 years ago. Far more crabs would be got with the increased number of boats and pots now if the crabs were as plentiful as formerly, but only a fourth part are taken nowadays. The number of crabs has, therefore, very greatly diminished. The fishermen used to return all crabs under 6 inches to the water. Thinks that over-fishing is the cause of the diminution. Some of the boats engaged in crabbing have from 20 to 30 pots. Crabs are not used here as bait for the long lines, limpets are used. There are no mussel scalps on this part of the coast. Is in favour of a gauge, and would return all crabs under 5 inches to the sea. Crabs are in the best condition just now (October). Next month they begin to fall off and get watery. There is scarcely any meat in their shells, only in the claws. Approves of a close time for crabs, from 1st November to 1st March.

*Close time.***LOBSTERS.***Decrease.**Spawning.**Gauge.**Close time.*

Lobsters are getting scarce. Four times as many were taken 35 years ago as are taken now, yet there are now four times as many boats fishing. 35 years ago 2½d. and 3d. was the price of a marketable lobster; now 1s. 6d. is paid. Lobsters are now sent south by train, London is the chief market. Thinks that lobsters spawn in June. Berried hens bring the highest price in the market. Would put back all lobsters under 4 inches in the barrel. Never heard of any Act of Parliament fixing a close time for lobsters. They are fished for here the whole year round. Thinks that there should be a close time from 1st March till the end of June.

Decrease.

Remembers smacks coming down from London more than 30 years ago. There were then two or three smacks. They took the whole catch from Loch Erribol to Duncansby Head. Loch Erribol was then a great place for lobsters. More than 10,000 were taken from it in a single season; but owing to the over-fishing to supply these smacks, the fishing there and all along the north coast has very much fallen off. The over-fishing began with these smacks. If you have a close time for crabs and lobsters you must also forbid buying, selling, or having in possession for the purposes of sale any crabs or lobsters during such close season. The fishermen about here have been talking of the necessity of a close time. They find that the fisheries are suffering from the want of it. It is only the present high prices that are keeping them up.

CRABS.*Gauge.*

WILLIAM MANSON, Thurso. Has been 40 years a fisherman and has had a good deal of experience in the crab and lobster fisheries. Agrees with the preceding witness that there has been a great falling off in these fisheries. Both crabs and lobsters have very much increased in price. There ought to be a gauge, and no crab under 5 inches should be allowed to be taken, and no lobster under 4 inches in the barrel. Has heard the evidence of the preceding witness and entirely agrees with it.

*Season for.***LOBSTERS.***Price.*

WILLIAM DUNBAR, Brawl Castle, Thurso. Has had a long and extensive acquaintance with the fisheries on this part of the coast. Used to get large numbers of lobsters 25 years ago. Both crabs and lobsters have now fallen off at least half. Thinks this is very much owing to the over-fishing. From the improved appliances for fishing and the increased number of boats, the fishermen now should get twice as many crabs and lobsters as they did formerly if they were as plentiful, whereas they only get half as many; there should be a gauge and all crabs under 5 inches should be returned to the sea. Would also have a gauge for lobsters and would return all under 4½ inches in the barrel. It is "killing the goose that lays the golden eggs" to take them too young. Crabs are now (October) in about the best condition. They begin to fall off in November. Male crabs are in good order at Christmas. Would have no close time for crabs; a 5-inch gauge would be sufficient. The gauge would require to be combined with a provision against buying, selling, or having in possession for the purposes of sale any crab or lobster under the prescribed size. Remembers the smacks coming down from London 32 years ago. In 1844 they came to Loch Laxford for lobsters; but they had been down on the coast for years before. They took the whole catch along the west and north coasts from Ru More near Loch Broom to Strathy Head half way between Cape Wrath and Duncansby Head. One smack would take from 20,000 to 30,000 lobsters. The fisheries have never recovered the over-fishing at that time. These smacks used to give 6d., 7d., and 8d. for lobsters of 4½ inches in the barrel and upwards. The small lobsters below that size counted two for one. The fishermen can now fish with the creels where they could not fish with the

rings. They can fish in much deeper water. It is only the increased prices that keep up the fishings. A man could not now make half wages at the old prices. Lochs Laxford and Erribol and the Kyles of Tongue are almost fished out. They would not now yield anything like half of what they used to yield. Never heard of the Act 9 Geo. II. c. 33, s. 4, enacting a close time for lobsters from 1st June to 1st September. It is neither known nor observed here. The close months in that Act would be very suitable for lobsters in this country, for the lobsters are then out of condition. But the Norwegian lobsters are then in first-rate condition, at least up to the 10th August. Would have no close time for lobsters, but a 4½-inch barrel gauge. Would allow berried hens to be taken all the year round. Berried hens are the most valuable lobsters in the market. There would be plenty left for stock. The gauge would provide against killing them too young. Crabs are never used as bait for the long lines here, but limpets chiefly, and sometimes mussels.

LOBSTERS.

Gauge.
Berried.

The Town Hall, Wick, Friday, 13th October 1876.

PRESENT :

FRANK BUCKLAND and SPENCER WALPOLE, Esquires.

DONALD THOMSON (*examined by Mr. Buckland*). Lives at Dunnet Head Has been a fisherman for 35 years, from the Ord of Caithness to Cape Wrath. Till within the last few years fished with rings, fishes now with creels. The supply of crabs has fallen off far more than one half in number. They have not fallen off in size. The average size is 7 inches, but there are some as small as 3 inches. The small crabs are mostly hove overboard, because they are of no value. They are too far from any market to send their crabs. They are given away. His trade is principally in lobsters. Never gives them away. 20 years ago they did not commence fishing till 20th April, and continued till 30th June. They think the crabs are rather too many, because they destroy the bait for the lobsters. The lobsters are sent by rail to London.

CRABS.

Decrease.

Valueless.

Has been fishing lobsters 35 years. They have fallen off very much. Used formerly to get from 10 to 18 hundred in a year. Now won't get more than 400 to 500. Used to have 40 rings. The size of lobsters is much the same. The lowest size is 8 inches from the tip of the snout to the tail. They don't sell any below that size. The decrease is attributable to the creel fishing. The creels are fishing every day and night all the year round. This should not be allowed. It has been going on during the last seven years. Fishes now with creels only in the Pentland Frith about 6 miles. The creels fish in water from 10 to 20 fathoms deep. The fish go away from the land to hibernate. Thinks that the lobsters are over-fished. Is in favour of a close season for lobsters. Lobsters should only be fished from the 1st March to the 15th June. The rest of the year should be entirely closed. The lobsters during the rest of the year are full of water and unfit for human food. The lobsters generally spawn in July, August, and September. Then finds the Ran hens. Finds a few Ran hens at other periods of the year, but not many. Thinks the Ran hens should always be returned. The fishermen get no more for the Ran hens than the other lobsters. Sells the lobsters to an agent. In cold weather the lobster will live eight days out of water. They are packed in seaweed. The lobsters are measured from the tip of the horn to the end of the tail. Thinks all lobsters under 8 inches should be returned to the water. Never fishes lobsters in harvest because they are not good. Has found the cast skins in creels in June and in May. Doesn't know when the young lobsters are hatched out. Has seen lobsters as small as 2 inches. Thinks that heavy gales of wind destroy the young lobsters. Has no suggestion to make except the close season and the gauge.

LOBSTERS.

Decrease.

Migration.
Close time.

Spawning.

Gauge.

Weather.

(*By Mr. Walpole.*) There are about 10 boats on the mainland fishing for lobsters in the Pentland Frith. There are 12 to 15 from Stroma Island, and there are occasional boats from the coast between Duncansby Head and Wick. 35 years ago there were 20 boats from the mainland, and about the same number from Stroma. 35 years ago all these boats had rings and no creels.

Boats.

- LOBSTERS.** Each boat now carries 30 to 40 creels: he (witness) carries 60. The creels are generally placed about 22 yards from each other. The rings were not half that distance from each other. The deepest water in which the rings could be fished was 10 fathoms. The creels are generally fished from 15 to 20 fathoms.
- Creels.* As the weather gets warm the lobsters are coming into shoal water. They generally draw in to land on the 1st March, and remain in shoal water till middle of July. Thinks they leave the land in July, return in the harvest time; and in October they again draw off into deep water. So long as rings were the only instruments in use it was impossible to fish for lobsters from October to March, and therefore during six months there was practically a close time. Attributes decrease to invention of creels. Would be glad to see a law made that it should be illegal to use creels. Does not know what other fishermen would say to such a law, but knows that all fishermen think that creels are the ruin of the fishing. Would be in favour both of a close season and prohibition of creels, but prohibition of creels would practically secure the close season. The creels are destructive in deep water where there are no weeds. In shallow water the weeds close the doors of the creels. There would not be so much harm in using the creels in the summer months.
- Migration.*
- Price.* Thirty-five years ago lobsters were 4d. each. Smacks came down from London and carried them away. They were a good few years at 4d. About 20 years ago they became 6d. They remained 6d. for four or five years. They then rose per head 2s. each in February and March, and 1s. in April and May. It is two years ago since the railway was made. Never went lobster fishing to the Orkneys nor the Outer Hebrides. Can't carry creels so far, and so is obliged to stay at home.
- (By Mr. Buckland.) Is in favour of prohibiting creels in the winter months and harvest time. But the fishermen might rebel against this. Would himself prefer that creels should be prohibited altogether. Has heard of 9 Geo. II. c. 33 instituting a close season for lobsters, but never knew it observed. Cannot say who should carry out the law. There are no coastguard here. The officers of the White Herring Board might carry the law out.
- Close time.* JOHN BAIN (examined by Mr. Walpole). Lives at Keiss, seven miles north of this. Has been a fisherman for 13 years. Has been occasionally fishing for lobsters. Begins lobster fishing about March, and goes to the herrings in the middle of May. The herring fishing continues till the 6th September. After that goes out line fishing for haddock and other fish. After that gets herring for bait. Herring is the principal bait. Never used crabs for bait. 13 years ago there were four boats lobster fishing between Duncansby Head and Keiss, now there are five boats. 13 years ago fished principally with rings, now almost entirely with creels. Each boat carries different numbers of creels. Can work 40 creels at home, 20 to 30 creels when they go away. There is not one lobster now on the coast, for six 13 years ago. The price of lobsters 13 years ago ranged from 15d. to 4s. The price is much the same, if anything less, now. Can't account for the decrease of price with the decrease of fish. It may be due to the Norway lobster. Would be glad to see a close time for lobsters. The close season should begin about the middle of June, it should not end before the end of January. There are plenty of boats lobster fishing these months, and they ought to be stopped. He does not try for lobsters in those months himself because the lobsters are not good and the price is small. Thinks a close season of this kind would restore the fishery.
- Has heard Mr. Thomson's evidence about creels. Creels are no more destructive than rings. Gets very few small lobsters. Was one year in Orkney, five years ago. Didn't find many lobsters, the weather was unfavourable. This was in January.
- Bait for.* (By Mr. Buckland.) Flounders are the principal bait for lobsters. Lobsters will, but crabs will not, take a stinking bait. Thinks Ran hens should be put back, but they are very valuable. The fishermen might be discontented with a close season, but it would be a benefit to them.
- Decrease.* FINLAY McLEAN (examined by Mr. Buckland). Has been fishing for crabs and lobsters on both sides of the Moray Frith and at the Land's End for 40 years. Lobsters have fallen off very much. Used 40 years ago to average 20 to 25 lobsters in a night. Wouldn't now perhaps catch seven. In four months caught 1,000 lobsters for Mr. Barnes. Does not know whether he could now catch 400 in the same time. Thinks the decrease is due to their being killed,

big and little, all the year round, Has not fished for lobsters for four years, the fishing is so bad. He fishes now from Sinclair's Bay to Wick Bay. Fishes now for crabs. Has occasionally sent them to Aberdeen. Sometimes sells them here. They have not decreased. They are principally used for bait, and from the month of April to the end of October they are important as bait for cod, haddock, and coal fish. There are no mussels nearer than the Dornoch Firth. A great many crabs are broken up for bait in the course of the year. Has had from 70 to 80 crabs in each of four creels made for the purpose of catching them. The greater part of these crabs were used as food, the rest for bait. It would be a great hardship to prevent the crabs being used for bait. There are six families in one village in Sinclair's Bay who live entirely by using crabs for bait. Can't get herrings for bait in October.

CRABS.

Used for bait.

Thinks a close season for lobsters would be very good, but it should be in the spawning season. Lobsters spawn all the year round. The greater number of lobsters are spawning between June and September. These four months should be closed. The close season should apply both to Cornwall and Scotland. The Wick fishermen do not use crabs for bait.

LOBSTERS.

*Spawning.
Close time.*

(*By Mr. Walpole.*) The 1,000 lobsters caught in four months for Mr. Barnes were taken in Banffshire between Port Knockie and Portsoy. Has not been on that ground for 24 years. But from the accounts he has had thinks he couldn't get 1,000 lobsters there now. Has not been to the Land's End for 32 years. Was there in February and March. The weather wasn't too bad to fish some nights. Doesn't know whether stopping fishing in summer months in Cornwall and the Atlantic side of the Lews would be tantamount to stopping fishing altogether. Is over threescore years old and has not prosecuted lobster fishing for three or four years. Hasn't given up lobster fishing because of his age, but because the lobsters are too few.

Decrease.

(*By Mr. Buckland.*) The best season for lobsters here is from January to June. From June to September they are watery and bad.

Season for.

DAVID GUNN (*examined by Mr. Walpole*). Is a fish merchant in Wick. Has been in business for 35 or 40 years. Buys lobsters from fishermen and sends them away. Thirty-five years ago had dealings with about four boats. Lobsters were 3½d. to 4d. They were sent away by steamer to London and Leith. Lost a great many lobsters in the transit in the hot weather. In the cold weather they carried easily. There was a good deal of loss in the transit in the summer months. The price is usually low in the summer months. Attributes this (1) to increased supply in London markets from other places, and (2) to difficulty of carrying the lobsters in hot weather. In 1852 the price of lobsters was 6d.; in 1857 5d. They remained at 6d. till about 1855, and then gradually rose to 1s. and 1s. 6d. There was no falling off of lobsters before 1851. After 1851 there was an increased competition for lobsters in the Wick market. This led to increased fishing and increased price. The increase of price was first due not to decreased supply but increased demand. From about 1860 there has been a decrease in the supply. Attributes this decreased supply to the over-fishing consequent on the increased demand after 1851. Thinks the proper remedy is to do away with the creels. Is not sure that the lobsters are not becoming accustomed to creels and won't get into them. Thinks that the men in shallow water might catch more lobsters in rings than in creels. The creel is not so much concealed with the weed as the ring. The diameter of the ring is 21 inches. The creel is 2 to 3 feet by 16 inches deep. Wishes to resume ring fishing (1) because he considers it more efficient in shallow water, and (2) because it would be a protection to lobsters in deep water. If rings only were used, would be only possible to catch lobsters from 1st March to 15th June. There is a great demand for lobsters in the London market in January, February, and March. Could get some lobsters in rings in these months.

*Price.**Creels.*

Doesn't deal in crabs. Thinks they are falling off very much. The people used to bring them into the town by cartloads, now there are hardly any. The district in which they are caught, Sinclair's Bay, is narrow; they are over-fished and so falling off. Would give lobsters and crabs the same close season, June, July, and August. During the rest of the year lobsters and crabs might both be taken.

CRABS.

*Decrease.
Close time.*

(*By Mr. Buckland.*) Welled boats were given up because they didn't pay. There was less loss by the steamer than by welled boats. Some of the fisher-

LOBSTERS.

Gauge.

men would object to a close season in June, July, and August. This used to be the close season. The merchants would not formerly take them after the 15th June. Now they take them at any time of the year. Doesn't think that the lobster fishery will entirely be destroyed without fresh legislation, but it will decrease very much. Is in favour of a standard of $4\frac{1}{2}$ inches in the barrel. This is now the standard for a full fish. There are parts of the coast (near Hoy) where the lobsters are very small. They are large at other places (Dunnet for instance). Has seen 1,000 lobsters in April, and not two lobsters over $4\frac{1}{2}$ inches. These were from the north coast of Hoy Island. The lobsters are always small there. It may be a small breed. Got 2s. 6d. each in London for these small lobsters. Eight days afterwards only got 4d. apiece in London for lobsters. Doesn't know who could carry out close season unless a party was appointed for the purpose.

Decrease.

ALEXANDER MITCHELL, chief constable, Caithness-shire (*examined by Mr. Buckland*). Is acquainted with crabs and lobsters from seeing them in market. Crab fishing is not prosecuted to the south of Wick. North of Wick and on the shores of the Pentland Frith the lobster fishery is of considerable importance. There is no doubt that the supply of lobsters has been falling off. This is due to the increased price and consequent over-fishing. Would propose, as a remedy, to limit the fishing season, and to prevent the capture of small immature fish. Is not sufficiently acquainted with the subject to say what the close season should be, or what the gauge should be. No Act like the 9 Geo. II. c. 33 has ever been enforced in the county of Caithness. The people are not aware of it. Thinks that there would be no difficulty in carrying out the law of close season. The fishermen are a law-abiding people, and would obey the law with very little compulsion. The fishery officers might carry it out where they are stationed; and north of Wick, where there are no fishery officers, it could be enforced by the police. After May the whole population is absorbed by the herring fishery, and none but old men are left. They return from the Lews in the middle of June, but are so busy in preparing for the east coast fishing that all other fishing is disregarded till September, when they commence haddock fishing. The lobsters therefore have a very good time of it.

(*By Mr. Walpole.*) The duties of the police would not be materially increased by their employment on these services. Would, perhaps have to apply for one additional man. Does not think that it would be fair to tax the agricultural ratepayers to protect fisheries, and is aware of no authority who could pay for it unless the Fishery Board undertook it. Believes the Fishery Board to be self-supporting.

Get out of creels.

DONALD THOMSON (*recalled*). The lobsters will get out of the pots when daylight begins. It is easier for them to get in than out. Believes that the lobsters are getting acquainted with the creel. They go out and in of the creel very quick. When the creels are in one place the lobsters get accustomed to them, and they have to shift the creels.

Decrease.

JOHN MACKIE, editor of the "Northern Ensign" (*examined by Mr. Walpole*). Has lived 33 years in Wick; has interested himself a good deal in the fisheries. Concurs with Mr. Thomson's evidence almost entirely. There has been a very great decrease in supply of lobsters on the coast, and this is due to the over-fishing. Concurs also with the remedies which Mr. Thomson proposes. These are the prohibition of creels, the close season, and a gauge. Thinks a close season would be the most comprehensive remedy. Thinks that the creel is certainly a more efficient engine than the ring, and that a close season would be better and cover the difficulty. Thinks that Parliament should be guided by the evidence of the fishermen as to what the close season should be. Thinks it necessary to have a gauge for lobsters. Thinks that the capture of the 1,000 small lobsters on the north-west coast of Hoy was a wholly exceptional event, and ought not to regulate legislation.

CRABS.

Decrease.

The existence of crabs in the locality is purely nominal; they have fallen off very much, and are a great scarcity in the market. There were a great many crabs 20 years ago. The locality is not unsuited to crabs, but something has interfered with their production; this no doubt is over-fishing. Proposes for crabs the same remedies as Mr. Gunn suggests.

The herring fishers are not usually the crab and lobster fishers. None of the Dunnet men go to the crab and lobster fishing. The attraction of the

herrings does not afford a sort of natural close season to the crabs and lobsters. The lobster fishers are to a great extent dependent on the lobster fishing. Thinks that the benefit from the close season would compensate them for the temporary loss they might incur; and the decrease is gradually increasing, so the temporary loss must in any case occur.

(By Mr. Buckland.) The fishermen in the course of a few months or so would be so much benefited that they might stand the temporary loss. Would allow the use of crabs for bait. They are only used to a limited extent. Limpets are largely used. It is not necessary in the district to have any law about use of crabs for bait.

Thinks that any law that is made should be enforced by fishery officers. *Enforcement of law.* There are two at Wick, four in the fishing season, and they could easily carry out the law. The fishery officers are stationed—two at Wick, one 13 miles south at Lybster, one at Helmsdale 20 miles further on, one at Cromarty, one at Burghhead, one at Buckie, one at Macduff, one at Fraserburgh, one at Peterhead. The nearest officer north of Wick is at St. Margaret's Hope at Orkney; there is one at Shetland, one at Stornoway. The fishery officers are constantly travelling about the coast, and could then manage to enforce the close season. The Wick officer once or twice a year makes a circuit of the coast from Wick to Cape Wrath.

WILLIAM REID, commission agent, Wick (*examined by Mr. Buckland*). Born 60 years ago, has studied natural history for a long time, has paid special attention to the natural history of the lobster. The eggs of the lobster are formed inside, they are then in a very minute form, and latterly they are extruded by two canals in the body of the fish and are made to adhere under the tail. Believes that they are not all extruded at the same time. There are from 24,000 to 30,000 eggs in a lobster. Believes each hen lobster spawns once a year. Most of the berried hens are found from April to June. From March to July never partook of a hen without coral in or outside of her. Thinks the hen carries her eggs for a very long time, because in the same fish he finds the minute coral inside and the berries outside. These are gradually extruded just as the hen gradually lays her eggs. Thinks lobsters are in the best condition before the eggs are extruded, but the cooks value them when they are berried. Believes that the young when they are hatched out are not protected by their mother. Thinks that the decrease is not due to storms, which always occurred, but to over-fishing. Is opposed to a close season because lobsters are in the best condition when they are in roe. A close season could never be carried out. In Orkney, where he has lived for 30 years, there are 60 islands, 30,000 people, 1 fishery officer, and 3 police, and the law of close season could not be carried out. The same thing applies to the Western Highlands. All lobsters under 8 to 9 inches long, or 4½ inches in the barrel, should be put back. This law could be enforced in the markets. The law of close season could also be enforced in the markets, and believes that any law to be made must be enforced in the markets. There would be a difficulty about the close season because the lobsters might arrive from other places. If there is a close season it must be a universal close season, and it would be necessary to stop importation in those months. The lobster fishery at Wick was, but is not now, an important industry. They have fallen off in numbers, and there are other fishings more profitable, *e.g.*, herrings in summer, haddocks in autumn, cod and herrings in winter. The enactment of the gauge would to a limited extent remedy the decrease, but not entirely.

Believes the fertilisation of the ova in the lobster is effected in the ordinary way. The lobster is called zoea in its early shape. Sees a French book says they shed their shell four times a year. Has no opinion whether they shed their shell more than once a year. Crabs are not of great importance in Wick commercially.

Staxigo is the first village north from Wick; there are only a few boats for crabs and lobsters there. Keiss is the next place where crab and lobster fishing is carried on, and Ackergill is the next village. Freswick is the next to Ackergill; there is no important crab and lobster fishery there, and John-o'-Groat's is the next place, and is an important fishing station.

LOBSTERS.

Spawning of.

Young of.

Gauge.

Huna, John O'Groat's, Saturday, 14th October 1876.

PRESENT :

FRANK BUCKLAND, Esquire.

CRABS.

DONALD MOWAT, Duncansby. Has been fishing for 35 years. There are plenty of crabs in the neighbourhood. There is no difference in their size or number as compared with former years. There are plenty of small crabs measuring 5 or 6 inches. Does not take the smallest ones, and has been accustomed to put back all under 4 inches. There is no sale for crabs at all in the neighbourhood. Would be glad to have a sale for them. Has sent lobsters to Wick. Thinks that when crabs are so small as to be counted two for one, by the Billingsgate rule, they should be returned to the water. This would include all crabs under 5 inches. No close time is necessary as there are plenty of crabs. They are caught summer and winter.

Gauge.

LOBSTERS.

ALEXANDER MOWAT. Thirty years a fisherman. Some years crabs are plentiful and in others scarce, according to the season. None less than 5 inches should be taken. Lobsters have fallen off. They are not over-fished, and a close season is unnecessary. None should be taken, whether male or female, under 8 inches in length, measuring from the tip of the nose to the point of the tail.

Gauge.

CRABS.

THOMAS DUNNET. Five inches should be the gauge for crabs. The take depends on the season. More used to be caught 40 or 50 years ago than at the present time. There is a scarcity now, but some years more are caught than others.

Gauge.

DONALD MOWAT (*recalled*). The falling off in lobsters is caused by their being killed in the winter months. What is caught in the winter cannot be had in the spring. The winter lobsters are caught in 16 to 18 fathoms. The fishermen begin to fish about 8th April and leave off in July. There are 10 to 12 boats fishing from Stroma all the year round, except during the herring fishing. The herring fishers leave for the herring fishery on July 16th, and return on September 6th. The crab and lobster fishing begins in March or April, if the weather is good, and continues till July 16th. From July to March the lobsters are not fished. These dates relate to the ground two miles on each side of Duncansby.

Close time.

There are plenty of fishers in Stroma. They fish for crabs and lobsters all the year except in October and November, when they go out for cod. There should be a close time for crabs and lobsters from December 1st to the end of February.

GILBERT LAIRD, Duncansby. Has been fishing here all his life. Crabs are plentiful, but less so than formerly. Sometimes a good number can be caught. The average size is from 5 to 6 inches across the back, sometimes they are smaller. Cannot tell the reason. Would agree to a 5-inch gauge. Crabs spawn about 1st April, and cast their shells about May and June. Has been fishing for lobsters 15 years. They are fewer than formerly. Thinks the scarcity is caused by storms. The "coarse" weather has been worse than usual during the last four or five years. The storms have destroyed many spawning places. Lobsters are more fished than they were, 10 or 12 years ago. Some lobsters caught are very small. They range from 4 or 5 to 10 inches. All lobsters under 8 inches, and all partans under 5, should be returned.

*Decrease.**Gauge.**Spawning.*

LOBSTERS.

JOHN DUNNET, aged 75 years. Has been 50 years a lobster fisher. First fished with rings, and has always done so. Saw the first creel about 10 years ago. Has had 60 boats fishing along the Pentland Firth between Orkney and Caithness, and even in Shetland had five boats in one season, but did not do well with them, having only had 150 lobsters in two months. They were large, but scarce. In Shetland has found large whelks attached to the lobsters, and has thought they destroyed the lobsters by sucking the life out of them.

Enemies of.

Lobsters are fewer now. Eight or nine years ago caught 1,000 to 1,500 in three months, but now only 300 to 400, bringing 1s. each, while formerly they were 3d. to 4d. Smacks used to call for the lobsters and take them to Wick. Formerly a vessel beginning on the west coast at Ullapool or Rumore and ending at Scrabster would take off 9,000 or 10,000. The smack used to pay 3d. to 7d. each for large lobsters; now the same lobsters would be 1s. to 1s. 6d. each. The rule of the smack-owners was that all lobsters under 8 inches

Decrease.

should count two for one. The cause of the decrease is the invention of creels, which catch the lobsters in winter, so that they cannot be got in spring. If he were a king, he would make an Act of Parliament putting an end to creels altogether in the winter, and would have a close time for creels, allowing them to fish only from March to the 9th July, when the herring fishing begins; all lobsters of less than 8 inches, and crabs less than 5, should be put back into the sea.

CRABS.
—
Creels.
—
LOBSTERS.
—
Gauge.

Would allow no creels at all to fish in December, January, and February. Good lobsters might be caught after July 16th, but the fishermen are all then gone to the herring fishery.

Close time.

HUGH MACKENZIE, landlord of John O'Groat's Hotel. Has known the place for 10 years. Knows all the fishermen at Huna and Stroma, and Yells. There are about 150 small boats from Duncansby Head to Dunnet Head, including Stroma, fishing for crabs and lobsters. Last year lobsters fell off, and this year they have increased. The fishermen blame the creels which are used in winter, for the falling off. The lobsters cannot get out of the creels, and they fish day and night all the winter. Rings are used in the summer, from March to July. There should be a close time in December, January, and February. The Stroma men depend much upon the winter fishing in these months, and it would be unfair to them to have the loss of three months. One crew there has caught 4*l.* to 5*l.* worth of lobsters in one week in the winter; and has not been able to get out again to the fishery for a month.

Decrease.

Close time.

Thrumster, Saturday, 14th October 1876.

PRESENT:

FRANK BUCKLAND, Esquire.

ANDREW COMER, fisherman, Sarclet. Knows the coast of Caithness. There are 56 boats on the Sarclet estate. None of them go for crabs and lobsters, but fish for haddock, cod, &c. Has seen boats coming from Staxigo carrying creels. They come in the summer—in May and June. There are plenty of crabs and lobsters in the Voes between Wick and Sarclet. Catches partans with the clip among the rocks; uses them as food for himself and family. Begins herring fishing at the Lews on the 10th May, and returns on July 6th. Then goes to the herring fishery till the 10th September, and after that to the haddock fishing. Has seen partans 8 inches across the back; the smallest are 3 inches. Uses limpets for bait for white fish. There are no mussel scalps in the neighbourhood. It would be a very great advantage to establish mussel scalps if possible, but the storms would not allow the mussels to remain. The fishermen here are also farmers, and only fish for herring or cod, having no time for the crab and lobster fishery. It pays better to look after the herrings. Twelve years ago Captain Bentley Innes brought some lobster pots from Yorkshire, and gave them to some of the fishermen; these fishermen got many good lobsters in the Voes. Has seen lobsters travelling about in the Voes. It is not worth his while to fish for them. The people about here are half farmers and half fishermen, and will not attend to the crab and lobster fishery. Thinks all crabs under 5 inches and all lobsters under 8 inches should be returned to the sea.

CRABS.
—

Bait.

Valueless.

Gauge.

ANGUS MOORE, Sarclet. Has been a fisher for 30 years. Has mostly fished for haddock, herring, and cod. Never fished for crabs and lobsters. Does not think it worth his while. Boats sometimes come from Ackergill. Does not know what they catch. Is acquainted with the shore from Noss Head to Wick, a distance of 9 miles. Thinks there are plenty of crabs and lobsters if the fishing were prosecuted. There are lobsters between Sarclet and Wick. Haddock fishing pays better than lobster fishing. Opposite Sarclet the water is deep, from 9 to 20 fathoms. The cliffs are 200 feet high. Has never seen the skins or shells of crabs or lobsters thrown up.

Herring fishery.

CAPTAIN BENTLEY INNES. Is owner of Sarclet. Has heard the foregoing evidence, and corroborates the statement as to the experiment with the lobster pots 12 years ago. Knows that crabs and lobsters are in the Voes, but the

Herring fishery fishers are too well off to prosecute the fishery. They can make more money by other means, such as herring, cod, and haddock fishing. Would have no objection to the enforcement of a gauge, and agrees that partans under 5 inches and all lobsters under 8 inches should be returned to the water. Thinks it would be desirable to have a close time for lobsters according to the individual locality. Caithness is a month later than other counties, both with harvest and game, and probably also fish.

Ackergill, Saturday, 14th October 1876.

PRESENT:

FRANK BUCKLAND, Esquire.

LOBSTERS.

Size of.

CATHERINE MORRISON. Crabs and lobsters are sent away on Wednesdays and Thursdays to Wick to suit the steamers going to Aberdeen. The price has not increased. There are two sizes of lobsters, the largest 10 inches, the smallest 8 inches; this is the average size. Thinks that before the railways came crabs and lobsters were more plentiful. Remembers large lobsters being sold here for 3*d.* or 4*d.* each.

Decrease.

W. REID, fish curer, living at Keiss. Lobsters have fallen off. There are two boats fishing—three men in each boat. There are 30 creels in each boat. They begin fishing in February, and leave off in May. The space of ground for the fishermen where crabs and lobsters are found is small, and they have very nearly ceased fishing for crabs and lobsters.

Gauge.

Close time.

JAMES BAIN. Crabs are no object to the fishermen here. Would not object to a gauge of 8 inches for lobsters. Would have a close time from August 1st to February 1st. Goes to the herring fishery when not engaged with the lobsters. Sends his lobsters away by steamer.

Gauge.

Close time.

JAMES MOWAT, fish curer. Agrees with the 5-inch gauge for crabs, and an 8-inch gauge for lobsters. Thinks there should be a close time to allow the lobsters to multiply. The ground is over-fished. The close time should be from the 1st of August to 1st of February.

The Castle Hotel, Kirkwall, Monday, 16th October 1876.

PRESENT:

SPENCER WALPOLE and ARCHIBALD YOUNG, Esquires.

ROBERT BROUGH (*examined by Mr. Walpole*). A fish-merchant at Kirkwall: has been in business between 20 and 30 years. Has been buying lobsters all this time from the fishermen and sending them to London and other parts. There were steamers 20 or 30 years ago by which the lobsters were sent away. They go now by steamer to Aberdeen and thence by rail. His recollection does not go back to the period when there were no steamers. When he commenced business, lobsters were 7*d.* to 8*d.* each, the price now is 14*d.* to 18*d.* The price has risen over 100 per cent. Thinks that lobsters are scarcer, and that the scarcity, due to over fishing, has led to an increased price. Does not think that the increased demand has produced a rise in price. When he began business took no lobsters under 9 inches. Two men, 20 to 30 years ago, would take 1,200 to 1,400 lobsters in a fishing season. Now they would not get above 200 lobsters. 20 or 30 years ago the fishermen used rings, now they use both creels and rings. The men fish in the same localities, but the creels enable them to fish in deeper water. Believes that there is only one lobster now where there were six twenty years ago. Thinks that this scarcity is due to over-fishing. The decrease has been gradual. Attributes it to over-fishing and fishing at the wrong period of the year. By over-fishing means there are too many fishermen. The principal grounds are Westray, Papa Westray, Eday (a fine fishing place), Sanday, North Ronaldsay, Stronsay, Rowsay, Scapa,

Price.

Decrease.

and Ham Sound. The lobsters are pretty universal all round the islands. Thinks that July, August, September, and October are bad months for fishing lobsters. During these months constantly gets soft lobsters. The fishermen don't return the soft lobsters; it would be practicable to return them, and it would be a good thing to make it illegal to buy or sell them. The soft lobsters will not live when they are sent away. Is compelled to buy the soft lobsters, because others do it. If Parliament made a law that it should be illegal to buy soft lobsters there would be no practical difficulty in distinguishing between a soft and hard lobster. Thinks even with such a law a close season would be necessary. The fishermen would do better in the other months of the year. LOBSTERS.
—
Soft.

Gets berried hens more or less all through the year. Most of them are caught in May and June. Berried hens take the market more readily than any others. It would not do to make it illegal to buy and sell berried hens. Is aware of the old close season under 9 Geo. II. Never knew or heard of its being enforced. That law is a dead letter here. It would be a good thing if it were not. The fishermen now want full price for every lobster, even for those under 9 inches. There are a good many under 9 inches. In most cases they get their price. The competition is so keen they can command their own terms. Would be in favour of a law enforcing the return of all lobsters under 9 inches from the tip of the snout to the tip of the tail. Thinks that the return of these lobsters would make a great difference, but is in favour of a close season in addition. Berried.

Gauge.

Would enforce the law of close season and gauge by making it illegal to buy and sell lobsters in close season and small lobsters. It would be absurd to make a law applying to the fishermen and not to the markets. If there is a close season it must be universal and apply to London. Imagines that the habits of lobsters are the same everywhere, and that therefore the same laws would be applicable everywhere. Enforcement
law.

(By Mr. Young). There has been a decrease not only in numbers but in size. The decrease in size is also attributable to the over-fishing. Thinks the old close season, June, July, and August, not so good as the four months he recommends. Would have a provision like that in the Salmon Acts against the sale of lobsters in close season. There are more boats in the lobster fishery than there used to be, and they carry more creels and rings. The boats therefore ought to get more lobsters than they used to, instead of fewer. Decrease.
Close time.

DONALD NEIL (examined by Mr. Young). A fisherman at Kirkwall. His experience in the lobster trade extends over 10 years. Lobsters are not so plentiful as they used to be. They have fallen off a good deal, but there are more people following them than there used to be. They are less in size as well as fewer in number. Formerly they only fished in May and June, now they fish throughout the year. There are more boats, men, rings, and creels. Thinks that all lobsters under 9 inches over all should be returned. A lobster of 9 inches is not much. 9 inches is the very lowest size that should be fixed for the gauge. Would make it illegal to buy or sell lobsters under this size. Decrease.

Gauge.

Thinks that there should also be a close season. Thinks that the close season should commence on 1st July, and should last two or three months. Believes that four months would not be too long so far as the fishing is concerned, though the fishermen might object. Has often heard of the old Act imposing a close season, but never heard of its being enforced. His experience extends over most of the Orkney Islands. There are places like North Ronaldshay exposed to the Atlantic, where it is impossible to over-fish lobsters. Imagines that the natural habits of lobsters are the same everywhere, and that the close season should extend everywhere. Couldn't tell how close seasons could be enforced. Thinks the law would be obeyed. Close time.

(By Mr. Walpole.) Thinks that there is only one officer of the White Herring Board in the Orkney Islands, and that there is no Coastguard. There are only three policemen. The law, therefore, ought to be enforced in the markets, and the sale must be allowed one week after the close season commences. Wants a close season for July to September, because the lobsters are soft in those months. It would not be sufficient to have a law prohibiting the sale of soft lobsters, because it is difficult to distinguish some of them from hard ones.

LOBSTERS.

JOSEPH MURRELL (*examined by Mr. Walpole*). Fishcurer, fish-salesman, and auctioneer, at Stromness. Has been in the lobster business 26 years. Buys from fishermen in the South Isles and West Mainland. The lobsters on the east side were larger than those on west side. The west side lobsters were 25 years ago from 5*d.* to 7*d.* In March they would be 7*d.*, in May fall to 5*d.* The lobster season then commenced in March and continued to the 16th July. This system continued till 1854. In 1854 he began to take lobsters in the harvest-time from the middle of August. They went on from that time taking them all the year round. In 1854, when the harvest fishing began, the price was 6*d.* The price has risen more rapidly since 1866. In 1865 the lobsters were about 9*d.* to 1st May, 6*d.* afterwards. In 1866 the price was the same. In 1875 the lobsters were 1*s.* in September, 1*s.* 3*d.* in November, 1*s.* 6*d.* in December, 2*s.* January to March, 1*s.* 6*d.*, April to May, and 1*s.* afterwards. Thinks that the price is due to increased competition. But there are not so many lobsters in the sea as there were. There are 4 to 1 more buyers. There is a locality from Houton Head to Stromness and from Stromness Head to Cantick Head where they formerly could go out and get 40 to 50 lobsters in a night. They could not now get two. Three men run out the whole of their gear on this ground with fully 40 rings and creels, and only get 36 lobsters. The proper remedy for this is a close season.

Season for.

Price.

Decrease.

Close time.

Spawning.

Gauge.

The close season should commence on 16th July and end on 1st December. July, however, practically protects itself as the men are on the herrings. Thinks that a close season of this kind would do much to restore the fishery. Would make it illegal to fish for, buy, and sell lobsters in these months. The spawning season here depends on the weather. In hot weather the lobsters spawn earlier. Has found berried lobsters in all seasons of the year. Thinks that when the berries get reddish and ripe the lobster should be returned. Thinks that there would be no temptation to the fishermen to remove the berries, and that the fishermen would not lose much, as there would only be about 10 in a season. It would be impossible to return all the berried lobsters. Has seen 70 out of 100 berried. The lobsters are generally kept in chests while afloat in the sea. The lobsters in the chests eat each other's spawn.

Would also return all lobsters under 10 inches to the sea. There is a bed of small lobsters off Hoy Head. Off Hoy Head, however, not 10 per cent. would be below 10 inches.

The decrease is not so marked on the Atlantic side of the islands as in the Bays. The Rackwick (South of Hoy) was never fished except between March and July before last year. The men also took to creels last year, and in one season they cleared the ground, and have had this year to go into deep water. Nine years ago the nine boats at Rackwick caught 1,250 lobsters each; last year they only caught 450 each. Thinks that the fishery was fished out in one year, but the preceding year there was a Banffshire boat on this ground. The year was a calm one.

(*By Mr. Young.*) Believes that a lobster ground of limited extent may be entirely fished out in a few years. Knew all the London smacks that came down to buy lobsters. The smacks took from 20,000 to 30,000 lobsters each, but they only fished in the proper seasons, and did therefore no injury.

Would have a close season enforced by advertisement and by the public prosecutor. The 25th Section of the Act of 1868 (Scotch Salmon Fisheries) would, *mutatis mutandis*, be sufficient, but it would be better to enforce the law on buyer and seller.

CRABS.

Valueless.

LOBSTERS.

Decrease.

Price.

Rings.

(*By Mr. Walpole.*) Crabs are caught here, but are not used as merchandise, a few are sold in the towns. It wouldn't pay to go and fish for crabs alone.

ROBERT HERCUS (*examined by Mr. Young*). A fisherman residing at Kirkwall. Has been a fisherman for 30 years. During that time has seen a great deal of the Orkney lobster fisheries especially in the North Isles. There are not so many lobsters now, not half so many as when he commenced fishing 30 years ago. They are also smaller. 30 years ago would get 5*d.* for a lobster. Would get now 1*s.* 3*d.* to 1*s.* 6*d.* There are not more fishermen engaged in the fishery than there were 30 years ago. But after harvest-time the farmers take to it.

Thirty years ago the boats had no creels, only rings. Now they carry

both rings and creels, and more of them. If the lobsters were as plentiful as they were, they ought, with the increased machinery to catch double the number of lobsters. LOBSTERS.

Thinks that the falling off is due to over-fishing. Is in favour of a close season from the 1st July to the end of October, and would prohibit the sale of lobsters during these months. The close season would not restore the fishery to what it was, but would make a change for the better. Would also return all lobsters under 9 inches. Would take berried hens, except during close season. Close time.
Gauge.

Agrees generally with the preceding witnesses. There are a few lobsters to be found on every ground, but not many now. Catches crabs only when fishing for lobsters. They are beginning to go out of condition now (October). Crabs are not used for bait. The fishermen use mussels, which they get for themselves. Thinks July, August, September, and October would be a sufficient close season. The crabs should be as good in May and June as at any time. Close time.

(By Mr. Walpole). Fishes nearly the whole of the Atlantic coast. Doesn't go far out. The lobster ground extends a good distance out. The water he fishes in is 5 to 6 fathoms. There are fewer lobsters than there used to be. Has been out to 10 fathoms water, but didn't get so many lobsters as inshore. There is no reason why they shouldn't go out. Some Banffshire boats came down and went out 15 to 18 fathoms, and they were successful. It is not the practice of the fishermen to go out so deep. In deep water.

JOHN HERCUS (examined by Mr. Walpole). Lives at Kirkwall. Has been a fisherman for 15 years. Has fished for lobsters chiefly in the North islands. 15 years ago used both creels and rings, but fewer of them. Now the fishermen use about 40 creels and 40 rings, then about 30 and 20 rings. 15 years ago used to get about 800 lobsters in a good season (March to July). Now gets about 300 lobsters in the same months. Does not get half so many as he used to 15 years ago. Decrease.

Does not think that there are many more boats on the lobster ground. There are not half so many lobsters in the sea as there were 15 years ago. Fished 15 years ago in 6 and 7 fathoms water, and fishes in the same depth now. Doesn't know whether it would be a good thing to try deeper water.

Believes that a close season would be a good thing. It should commence in July and end in October. The fishermen, as a rule, go on to the herrings in July, and stay herring fishing till 6th September. Never fish for lobsters then; but there are some fishermen who fish all through. Doesn't know why these men don't go to the herrings. Close time.

Would not think it unfair if he were made to return all small lobsters under 9 inches to the sea. They would grow into big ones if they lived long enough. Thinks it would be very well to return the berried hens when the berries become reddish. They get a good few of these about June and July. Gauge.
Berried hens.

ROBERT BROUGH (examined by Mr. Young). A fisherman living in Kirkwall. Has been a fisherman about 10 years. Agrees that there has been a decrease in the number and size of lobsters, and that a close season and a gauge would be necessary. It would be easy to remove all the berries from a berried lobster. Decrease.

(By Mr. Walpole.) Thinks it would be impossible to detect removal of berries, and it would be absurd to make such a law. Fishes in about 5 fathoms of water. Has never tried deeper water. Thinks it would be a good thing to try deeper water, but it takes the fishermen from home, and is lonely. At present comes home every day, but if he fished in deeper water would have to stop away a week. In deep water

(By Mr. Young.) The true way to enforce a close season would be to prevent the sale of lobsters. Close time.

The men get large crabs here, measuring 5 or 6 inches across the back, but they only sell them locally. They will not carry. The lobsters have their claws tied and are packed in seaweed. CRABS.
Will not carry.

Mason's Arms Hotel, Stromness, Monday, 16th October 1876.

PRESENT :

SPENCER WALPOLE and ARCHIBALD YOUNG, Esquires.

LOBSTERS.

Decrease.

Creels.

Close time.

Gauge.

Close time.

Gauge.

No decrease.

Close time.

No decrease.

SAMUEL FLETT (*examined by Mr. Young*). Lives at Stromness. Has been engaged in the crab and lobster fisheries for five or six years. The lobsters have fallen off a good deal. Has fish coming in from three different places. In Rackwick Bay, Hoy Island, they commenced with the creels last fall; they had only used rings before. This spring they got very few lobsters where the creels had been used the previous year. They can fish in deeper water with the creels, and begin earlier. The men began fishing with the creels this year (1876) in February; they continued till the 1st June. They then left off till about the 1st September, most of them being away at the herring fishery. They finished about the 14th October. Would like to see no lobsters fished in Rackwick Bay from the 1st July to the 1st January. The fish are not strong at that season of the year; they are not full in the shell. There is a place called Birsay, on the west coast of the mainland. The fishermen cannot fish there so early as they do at Rackwick. The shore is peculiar. They commence at Birsay about the last days of April or 1st of May. Thinks that in that place they should fish till the end of July, otherwise they can do nothing. Would not fish after 1st August. The fishermen there stop fishing now after July. The third place he gets lobsters from is around the small islands to the east of Hoy. There are not many lobsters caught there. Four years ago some fishermen went there, with creels, and got some fine large fish. In the following season the lobsters were few and small, and since then many have not been got. Takes lobsters under 9 inches; refused last year at Birsay to take lobsters under 8 inches. Would approve of a law enacting a close season. This would be good both for the fishermen and for the salesmen. The sale of lobsters should be prohibited in close time. Thinks that it would not do to insist on return of berried hens. Would rely on a close season, and allow the berried hens to be taken in the open months.

(*By Mr. Walpole.*) Would perhaps require some supervision to enforce the law. On reflection, thinks that Birsay and Rackwick Bay must have the same close season, and this must commence on the 1st August. It would be unjust to the Birsay men to close July. Sends the lobsters to London, Liverpool, and Manchester. The price is very fluctuating: it has been very low lately. Thinks that an 8-inch gauge is too small, and that a 9-inch gauge is preferable.

PETER SINCLAIR (*examined by Mr. Walpole*). Lives at Stromness. Has been a fisherman for 30 years, and fished for lobsters all that time more or less. Most of them are got outside in the Atlantic, a few are got inside. 30 years ago used to get 800 to 1,200 lobsters a year, according to the season. In those days commenced fishing about March and ended about the 12th July. There were then only three boats from Rackwick, and there are now nine. They don't fish the same ground as he does. The boats which fish the same ground as he does have also increased, and each boat carries three times the material. Each boat now takes from 600 to 800 lobsters a season. 30 years ago three boats would have got 1,000 lobsters each, or 3,000. Now nine boats could get 700 each, or 6,300 lobsters. Believes that the ground produces now as many lobsters as it did 30 years ago. 30 years ago fished in 5 fathoms water, now fishes up to 18 fathoms. Gets superior fish in that water, which were never caught before. Is very well satisfied, except that he thinks that fish should be let alone in the spawning season. By the spawning season, means June, July, August, and September. Thinks most of the fishermen round this coast will agree to this close season. The Birsay men would be able to catch the lobsters in the other months if they choose to try for them, but they must work harder. Would approve of returning all lobsters under 9 inches.

(*By Mr. Young.*) Has heard of the 9 Geo. II. fixing a close season for June, July, August. It has never been observed. Believes there are as many lobsters now as there used to be.

WILLIAM STANGER (*examined by Mr. Young*). Lives at Stromness. Has been a fisherman for 12 years. Is a partner of previous witness. Agrees with his evidence. Has nothing else to say.

PETER SINCLAIR (*recalled*). The fishermen are all agreed as to the necessity for a close time and a gauge. There are eight or nine boats fishing for lobsters now. There were only three, when he began, out of Stromness. There are too many boats for the ground, and there are likely to be more. Lobsters are bought now at seasons when they could not be carried before. It would not do to prohibit creels. Rings cannot be fished in 20 fathoms water. They catch plenty of crabs, but there is no market for them. The small crabs are rarely used for bait. There are plenty of mussels.

LOBSTERS.

Creels.

Rings.

Burghead, Thursday, 19th October 1876.

PRESENT:

FRANK BUCKLAND, Esquire.

THOMAS JENKINS, fisherman, of Burghead. Has been in business 38 years. Crab fishing is prosecuted to a very small extent about here. The people fish with clips among the rocks. There is only one boat fishing for crabs. Gets many partans from 4 to 6 inches in length among the rocks. Prices have doubled during the last few years. Lobsters are especially dear. Is in favour of a close time in July and August. No crabs should be sold under 5½ inches across the back, and no lobsters under 4 inches in the barrel.

CRABS.

Price.
Close time.
Gauge.

JOHN ROBB. Has been a fisherman for 60 years. Used to get crabs 20 years ago. Now it is difficult to see one in a month. Outside, the bottom of the sea is shelly and sandy. The trawlers have fished out the crabs. Trawlers also fish up the spawn of haddock, crabs, and all other sea fish. The fishermen often used to catch crabs on their lines; now they don't catch one. They are much scarcer than they ever have been.

Decrease.
Trawlers.

W. DAVIDSON. Has been a fisher all his life. 40 years ago, when a boy, he used to catch many crabs and lobsters; but does not catch one now for a hundred formerly. The trawlers have fished out all the crabs. The trawlers come from Lossiemouth. The crabs caught by them are sent to the south from Lossiemouth. The trawlers catch them in July, which is their best time. They should be forced to put back all crabs under 4 inches over the back. Used to catch crabs on hooks when fishing for haddock; but catches very few now.

Decrease.
Trawlers.

Gauge.

T. JENKINS (*recalled*). Cod fish are great enemies to lobsters. Hardly ever opens a cod without finding young lobsters in the stomach; this is particularly in February and March. Has seen cod throwing up lobsters on the deck of a vessel; as many as five or six lobsters in one cod. These lobsters would be three or four inches in length, or even smaller. Cod eat lobsters all the season. In the spring, and in January, February, and March, there are many cod about.

LOBSTERS.

Enemies.

JOSEPH MACKINTOSH. Endorses the evidence of previous witnesses. There should be a close season in July and August, and all lobsters under 4 inches in the barrel should be put back into the water. There are 29 trawlers at Lossiemouth. The fishery is 7 miles long by 2½ miles wide. They begin fishing in September and fish till February. Trawlers destroy the haddock and the young crabs. The crab fishing ground is 6 miles from Lossie Bight to Burghead. Few crabs are got at Buckie. The Banff coast to Fraserburgh is a good crab coast. The extent of the ground is about 18 miles.

Close time.
Gauge.

JOHN REID. Has been station officer of the Coastguard for the last 11 years. There is no crab or lobster fishing going on now. Thinks small crabs should be put back into the water. Thinks the crabs are nearer to the rocks than the trawlers dare come. If there is a new law regulating the crab and lobster fisheries it should be confided to the Herring Fishery officers.

CRABS.

WILLIAM MAIN. Has been 20 years a fisherman. When he was a boy there were many partans about; now there are few. The cause is the trawling. The trawls turn up the ground where the spawn is and destroy it, the spawn being buried in the sand. Crabs are also caught by the trawlers. Crabs spawn on this ground where the trawlers come. Gets crabs 10 or 12.

Decrease.
Trawlers.

CRABS.
Close time.

15 miles out to sea on the haddock lines. There should be a close time for crabs in July and August. In these months crabs are in spawn. Does not use crabs for bait. Has opened a good many cod, and found either a crab or a lobster inside them. This is the chief food of cod.

Season for Growth.

ROBERT WALKER. Has been a salmon fisher for 22 years. Has had creels set from St. Abb's Head to Holy Island. Has fished at Hartlepool. Crabs are in best condition at harvest time; they spawn in May. They should be caught when in proper condition to be eaten. There should be a close time when they are spawning. If left in the water the spawn would develop into thousands of mature crabs. Thinks that it takes two years for a crab to come to maturity.

Decrease.

Trawlers.

Season for.

JOHN MACKIE. Has lived at Burghead for 55 years. Hardly sees any crabs now where there used to be plenty. The trawlers began about three years ago. Before the trawlers came they used to catch plenty of crabs on the lines, now they catch none. The trawlers have banished all sorts of fish off the ground. Crabs have two seasons; one season is in October, this is for out-shore crabs. The other season is in June and July, for in-shore crabs. He means that then they are full of meat. The outside crabs would be 8 inches, the inside crabs would be smaller.

Coastguard House, North Berwick, Friday, 20th October 1876.

PRESENT :

FRANK BUCKLAND, Esquire.

Decrease.

Provost P. BRODIE. Has known North Berwick for 40 years. There is a crab and lobster fishery here. Both the crab and lobster fisheries in North Berwick have fallen off about one half within his recollection. Has seen them sent off in barrels and boxes 15 years ago. The railway was opened 18 or 20 years ago; does not now see the same numbers of barrels and boxes going away as he formerly did. Can give no reason for the diminution. It would be of great advantage to the town to have the fisheries increased, and would like to see this done. The resident population of the place is about 1,000; in the summer season there are about 2,000 people in the town. It is a celebrated watering place; a good resort for invalids. Many visitors come from London, and it would be an advantage to have fresh crabs and lobsters for the visitors. The visitors from Edinburgh and Glasgow would have fresh crabs and lobsters, and this would be an additional attraction to North Berwick.

Decrease.

Close time.

JAMES GOODALL. Fish merchant. Has been in the trade five years. White fish, lobsters, and crabs have fallen off one quarter within the last five years. Lobsters have not fallen off so much in quantity, but they have become smaller. In consequence of this deterioration in size, prices have fallen off. Sends crabs and lobsters to Hull and London. Four inches across would be a "full crab." Crabs measuring under 3 inches, when measured the long way of the back, would go two for one. Sends them away from April to the end of August. There are few to be taken in March. There should be a close time for crabs when they are casting their shells, that is, between the end of August and the end of November. White crabs are then unsaleable and unfit for food.

ROBERT MILLER, fisherman. Has fished for 20 years. The mode of fishing at North Berwick is by creels, which are baited generally with codfish. Never fishes with rings. The fishermen begin to set their creels at the end of March, and about the middle of July they bring them ashore, as they cannot get a sufficient quantity of crabs to pay.

Decrease.

When he first began he used to get a creel full of crabs. Now he only gets 9 to 12 crabs in a creel. Has seen as many as 35 crabs in a creel, halves and wholes together. A large whole crab would be 4 inches across the back, a half crab is 3 inches across the back. Anything below 4 inches goes two

for one. The cause of the falling off is the use of small crabs as bait for the lines. All the fishers use lines from April to June.

A 6-inch crab (in length of shell) would be counted a whole crab; an extra big one would be 8½ inches, and the proper size for a half crab would be 5 inches. All "partans" below 5 inches should go back into the sea. It would be an advantage to put back two crabs now worth 3d. each in order to get two crabs worth 6d. each the next season. Crabs begin to spawn in April. Rarely sees crabs in April and May. So far as he and his crew are concerned, any crabs full of spawn are put back. There is no market for these crabs. Would like to have a law enjoining that these crabs should be put back. Thinks that by taking spawning crabs he would be robbing himself and his fellow fishermen of thousands. Would like a close season from the latter end of August till November. Crabs cast their shells in the middle of August. Lobsters, like crabs, have fallen off very much at North Berwick, the cause being the catching of females in spawn and of small ones. The merchants' gauge at present is 4 inches across the barrel. Lobsters under this measurement should be thrown back into the water. They are called half lobsters.

Has seen a hen lobster put into a box, and in about three or four weeks after a great many young ones were born, and they clustered round the mother like chickens round a hen. Has seen a lobster on the top of a hole, and young lobsters, 1 or 1½ inches long, within sight of the holes. The mother was evidently looking after her young. A hen lobster when spawning makes a nest like a swallow, building it with mud and sand with her horns; and spawns in the nest. A lobster found in a nest is always full of spawn. It would be a good plan to throw all berried hens into the sea, and he would answer for himself and his crew that this should be done. Lobsters over 4½ inches long bring 1s. each. Is engaged by Mr. Goodall to fish. Small lobsters should be put back into the sea.

JAMES GOODALL (*recalled*). People will not buy the half lobsters: they should be put back into the sea. This would be a benefit to his business, as people do not care about them. He should like to see it enacted that female spawning lobsters be put back during all the season for two or three years to come, with a view to reinstate the breed. In North Berwick lobsters are never "plugged," and crabs are put into hot water, not into cold.

Provost BRODIE (*recalled*). Thinks it would be a good thing to enforce the putting back of lobsters in spawn in localities where this is desirable.

JAMES FOSTER, fisherman. The North Berwick fishery ground begins at Cauty Bay and extends to the islands of Lamb and Fidra, and is one mile wide; altogether it is about four miles in extent, and in this there are set, during summer, about 1,000 creels. The depth is about 4 to 8 fathoms. In the winter crabs and lobsters go into deep water. "Partan" fishing should be closed from August till November. He would agree to put back all spawning hen lobsters for at least two years. Lobsters spawn all the year round.

JAMES GULLAN. Has fished for crabs and lobsters for 20 years. The fishing has fallen off both in the size and number of the fish. He and his comrade used 20 creels from April to the end of September. Partans then go into deep water. He commences fishing for lobsters on October 1st, and goes on to April. Thinks the ground is fished out. Agrees that there should be a close time during the time when crabs are casting their shells from August to November. A great many partans are used for bait for haddock and whiting. The nearest place for getting mussels is 23 miles off. Crabs are only used on every tenth hook. If a law affecting all alike were made, that no small "partans" should be used for bait, he would not object to it, and he should think the other fishermen would agree to it.

All half lobsters, two for one, should be put back into the water. The merchants would rather be without them. The ground outside is all rocky hard ground, with patches of sand. The fishermen must go a mile from the land before they get clear of the rocks.

There are plenty of cray-fish on the ground; but the fishermen never go after them, as there is no sale. Has seen tons of these fish thrown away. Has thrown them back for the last 20 years. Calls them soft-ground lobsters. They average 3½ inches in the barrel. Would be glad to find a market for them. They are not falling off.

CRABS.

*Gauge.**Berried.**Shedding shells.*

LOBSTERS.

*Decrease.
Gauge.**Spawning.**Boiling.**Berried.*

CRABS.

*Close time.**Migration.**Close time.**Used for bait.*

CRAY-FISH.

Value.

Enforcement of law.

JOHN MORRIS, station officer of the Coastguard. Has been here two years. There are 45 boats from North Berwick: 22 of them are crab and lobster boats: the rest are engaged in the white-fish trade. Has never been instructed by his commanding officers to carry out the Act of George II. enforcing a close time for female lobsters. He and his officers are in a position to carry out any law that may be made.

Portree Hotel, Portree, Friday, 20th October 1876.

PRESENT:

SPENCER WALPOLE and ARCHIBALD YOUNG, Esquires.

LOBSTERS.

DONALD MACDONALD, steamboat agent, Portree (*examined by Mr. Young*). 12 years supercargo in the steamship "Clydesdale." Carried a good many fish. Carried more lobsters—a great many more—at the commencement of his experience than latterly. The lobsters came chiefly from Tarbert in Harris. But they came also from Stornoway, and Lochmaddy. They got lobsters from Lochmaddy all the year round. The fishermen fished all the year round, and there was no close time. Never saw anything but creels used. Believes there are more boats employed in the fishery now than when he first knew it. They could, if lobsters were equally plentiful, get more than they used to do, but they don't give the lobsters time to grow, they are "nipped in the bud," and don't have fair play. The lobsters are put into half tea chests, and sent away by steamer. Has seen 30 or 40 lobster chests in a single trip, when they went to Tarbert and Lochmaddy. The lobsters now have fallen off so much in size that twice the number are put in a box that there used to be. Thinks that there should be a close season, commencing 1st May and ending 31st August, because lobsters are out of condition and watery in those months. No lobsters under 4½ inches in the barrel ought to be sold. The only people this would interfere with are the fishermen who fish on the Atlantic coast of the Long Island, who fish chiefly in the summer months. The small lobsters won't sell in the Scotch markets. The lobsters come chiefly from the west coast of the Lews. They had ponds for them there, but the ponds did not succeed. The lobsters fell off in condition when they were confined in ponds. His ship had no crabs consigned to her, but had oysters from Skye, Harris, and the Lews. Never heard of a lobster ground which was entirely fished out. A great many lobsters come from Tobermory and from the west side of all the Hebrides. The best fish and fishermen are on the Atlantic shore of all these islands. The coast is more stormy; the lobsters cannot be over-fished; they have time to grow and get stronger and firmer.

(*By Mr. Walpole.*) He ceased to be supercargo in the "Clydesdale" in July. The Skye Railway was not built when he was first connected with the "Clydesdale." It was made in 1870, and the lobsters have been considerably diverted from the steamship to the railway. But this does not account for the falling off. There are fewer caught. Believes that there are fewer lobsters caught in Harris than there were 12 years ago, at any rate that there are fewer boxes. The lobsters being smaller more are packed in each box. The price is three times as high as it was 12 years ago. If May to August were closed the men on the Atlantic coast of the Long Island would only be able to fish occasionally in frosty weather. Thinks that lobsters can be caught as easily in frosty weather in winter, as in summer. But the west coast is a stormy place. There are now as many lobsters under the gauge as there are above it. 12 years ago nearly all the lobsters were above the gauge. Believes that May, June, and July are the chief spawning months, but is not sure of this. Has heard the fishermen say that the ground was over-fished, because they caught so many small lobsters. Two weeks ago lobsters were 9s. 6d. a dozen in Skye, wholesale, they were last week 8s., but they did not pay at either of those prices.

JOHN ROBERTSON (*examined by Mr. Walpole*). Fish merchant, Portree. Commenced buying lobsters on his own account in 1862, but bought them

previously for his father. The supply comes from the north-west and west coast of Skye. The lobsters are brought over in carts and sent by rail to London, Liverpool, and Manchester. In 1862 lobsters were from 6s. to 20s. a dozen. The lobsters are cheap in September because they are plentiful; in February they rise in price to 22s.; and 35s. a dozen has been paid for them. This is the highest price. The season commences in September and ends in May, when the spring work begins, the men being half farmers, half fishermen. The lobsters are not so plentiful as they were in 1862, but there is more difference in the size than in the number. The lobsters are measured by the barrel gauge, and lobsters below $4\frac{1}{2}$ inches, or wanting a claw, count two for one. There are a larger proportion of lobsters under gauge than there used to be. About 20 per cent. of the lobsters were under gauge in 1862, and about 50 per cent. are so now. Thinks that this falling off in size is due to over-fishing. Believes so because there are more boats on the lobsters than there used to be, and the boats carry more creels. As a remedy would make it illegal to take any lobsters below a certain size. Thinks that the gauge might be fixed at 4 inches in the barrel. The lobsters this year are more plentiful than last year, but smaller. Would also recommend a close time. In Skye no lobsters ought to be fished after April till September. There are not many lobsters taken in those months now, in Skye, but a few are taken. There would be no difficulty in fixing one gauge for the whole country. The lobsters are sold in Liverpool and Manchester by the weight, in London by the chest. They never talk of the size. Would have, however, a uniform gauge over all the country, for the fishermen and the first buyer.

LOBSTERS.

Season for.

Gauge.

Close time.

(By Mr. Young.) The close season, if there is a close season, must be universal, and there must be no lobsters in the market in these months. Has had no lobsters from the Lews or Harris since he commenced business. The lobsters from these islands go away by the direct steamer to Glasgow. In 1865 he went to buy lobsters at Tarbert in Harris. They were fine large lobsters, he never saw finer except from Rona. The island of Rona had not been fished for some years. When men the commenced fishing at that island the lobsters were remarkable for size, only four dozen and nine went in a box which ordinarily contains seven to nine dozen. After the fishing the lobsters became very scarce. The place was so small that it was almost entirely fished out. It is therefore advisable to take some precautions against over-fishing. Is aware of 9 Geo. II. c. 33, s. 4, instituting a close season for lobsters. Most of the fishermen are aware of it. It was once enforced or threatened to be enforced in the Lews. Till lately there was no need of this Act as the fishermen didn't fish there. Since the Skye Railway was made they have begun to do so. Thinks the diminution in the size of lobsters is a striking proof of over-fishing. The fishermen do not give the lobsters time to grow. The most effectual way of enforcing a close season and gauge would be through the markets. Had a Skye lobster in 1863, weighing 7 lb. 9 ozs. It came from the west coast of Skye. It was 29 inches long. About the same time he had another from Rona of the same size. The last consignment he had was on the 17th October 1876; he had 84 lobsters weighing 120 lbs. They came from Kilmaluig. Believes that the fishermen on the west coast of Skye fish in 12 fathoms. The farther they go from the shore the larger the lobsters they get. There is a place called Stein, in Loch Bay, on the west coast of Skye, where the lobsters are always small. A 4-inch barrel gauge would close the fishing at that place. There is, however, a place near, where they get large lobsters. Kilmaluig, Gendale, Ruan Dunan, and Rona, produce the best lobsters in Skye. Stein produces the smallest. There are lobsters in Raasay.

In deep water.

WILLIAM STEWART (examined by Mr. Young). Resides at Portree; is a fisherman. Buys lobsters and sends them to Billingsgate Market. The lobsters are not nearly so plentiful nor so large as they were 20 years ago. There are as many boats fishing now as there were when he first remembers it. The boats carry more creels than they did formerly. The lobsters have not risen in price. 18 years ago paid 25s. 6d. a dozen for them, and could buy them now for 7s. 6d. In February they would be from 12s. to 15s. Thinks that the diminution in size is due to over-fishing. In some parts of the island, the fishing goes on throughout the year. Thinks that there ought to be a close time in May, June, July, and August. During these months it should be illegal to buy or sell any lobsters. The lobsters then are of little

Decrease.

Creels.

Close time.

LOBSTERS.

value because they will not carry to market. It is waste to take them in those months. Doesn't think that it would do to put back small lobsters. The fishermen take everything, small and large, and would not obey such a law. It could, however, be done by enforcing the law in the markets, if there was a man for the purpose in every town where lobsters are sold. Has caught lobsters from the Lews and from Harris. There are a great many lobsters caught in these islands. Can form no opinion when lobsters spawn, but thinks they spawn in March and April. Thinks that the small Stein lobsters Mr. Robertson spoke of are a distinct species.

Spawning.

Dunbar, Saturday, 21st October 1876.

PRESENT :

FRANK BUCKLAND, Esquire.

CRABS.

Provost JAMES BRAND. Has been provost for 28 years. Dunbar has been, and is now, a great crab and lobster fishing station. Boats have now to go further out at this season of the year than formerly, because the crabs have gone out into deeper water. There are not many lobsters in comparison with crabs. There are two parties of fishers, of different opinions, at Dunbar. Would advise legislation for the protection of crabs and lobsters, which would benefit the fishermen and the public as well. Thinks there should be a close time for crabs and lobsters. Generally many men here fish all the year round, therefore a close time would be opposed. It would not be more profitable to put back soft crabs or small crabs.

Decrease.

Lobsters are not caught in any quantity. The bottom is hard soil, and there is much sand. The ground extends from St. Abb's Head to the Bass, a distance of 23 or 24 miles, and $2\frac{1}{2}$ to 3 miles out to sea. The fish chiefly go to the London market. Legislation would have greater effect and be more valuable if it could be made to suit the local circumstances of Dunbar. There is a bar at the mouth of the harbour formed of the debris of rocks fallen from the cliffs at Castle Rocks. It has been increasing during the last 10 years. Formerly there was no bar. This bar is dangerous to fishers, and they have to stay out till the half flood before they can get in. Very often this bar causes the boats to lose the train. It should be removed, as it is dangerous to life and property, and deteriorates the value of fish. Men have to go up the Forth for safety, and land cargo there on account of not having sufficient water at low tide. The stones should be removed to enable the current to carry off the sand and keep the harbour open. Went to Mr. Stevenson, C.E., and Mr. Primrose, and asked them to assist in the work. Would subscribe 100% to improve the fishery. If the bar were removed the fishery would increase. Would wish these facts brought before the Board of Trade, and Sir H. Ferguson Davie and Lord Elcho, M.P.'s for East Lothian.

JOHN SHARP, Springfield Villa, Dunbar. Agrees with the evidence of Provost Brand, especially that it would greatly conduce to the benefit of the public in general, and Dunbar in particular, if the bar were made passable.

Decreased size.

JOHN SMITH. Has been a fisher for 30 years. There are as many crabs now as ever brought ashore, but they are smaller in size. The merchants take small and large together. Sometimes four crabs count as one. A crab like this would measure 3 to $3\frac{1}{2}$ inches across the back. They can always get a market for them. Thinks these small crabs should be put back to grow. Begins to find soft crabs in August and up to October; these are crabs that have cast their shell, and whose new shell has not yet hardened. Finds soft crabs below the dabs. The shell of a soft crab breaks. Most of these crabs are sold for human food. In the months of December and January soft crabs would become hard. Fishers put them on board both at sea and in harbour. They should be preserved.

*Soft.***LOBSTERS.***Close time.**Young.*

There should be a close time for lobsters in June, July, and August. Hen lobsters sit and spawn on their nests like hens. Has heard that young lobsters go under the tail of their mother. They quicken in June, July, and August. Has seen spawn alive. The merchants have a gauge of $4\frac{1}{2}$ inches.

Instead of merchants taking soft crabs for 1s. per dozen they should give the fishers 3s. per dozen to make up for the return of soft crabs. They now give 1s. a dozen for hard and soft crabs mixed.

CRABS.

JAMES ROBERTSON. Has been a fisherman for 20 years. Crabs have not got any scarcer. When he first went to sea there were four boats; none of them fished. This was at Skateraw. Came to Dunbar about 1860, then there were 30 or 40 boats; there is about the same number now. In the summer each boat carries from 100 to 140 creels. They begin to set the creels in March, and take them up in July. A few boats go to the Skerries, only three or four. They fish all the year round. They do not use crabs for bait, and do not break up the small ones for bait. The merchants in the inland towns, such as Leeds, Sheffield, Nottingham, &c., desire the fishers to send smaller crabs, not large ones. The reason is that people can afford 3d. each better than 6d. apiece for crabs. In the general run of the season, in the spring, small crabs are full of meat from January to July. Thinks a gauge would not answer because it would lead to disputes, and time would be wasted in measuring the crabs. A good haul would be 30 to 40 dozen; seven to ten kits holding four dozen each. Three years ago there was an excellent season: no diminution in the number of fish. Soft crabs are of no use, and ought to be put back. Sometimes they are saleable in the market.

No decrease.

Soft.

CHARLES FILLEUL. Has been a fish curer for 15 years. Since he has been here there are not so many crabs as there were 15 years ago. There might be as many in number, but not so many in bulk. The size has decreased to a great extent. The cause is over-fishing. Formerly there used to be over 70 creels per boat. Now there are 150. If there is to be a close time it should be from August to October, which would save the soft crabs and allow the smaller ones to grow. Any gauge would be awkward when the men were in a hurry, but thinks crabs are far too small. Has heard the expression of "Dunbar cast." If crabs were larger he could afford to give more for them. Has always bought little and big crabs together, but gets more money for the big ones. The gauge might be a hardship for a time, but would eventually benefit both dealers and fishers. Could not say what this gauge should be.

Decreased size.

Close time.

Lobsters have diminished. Dunbar used to be a famous place for lobsters 25 years ago. It is not so now, the ground having been over-fished. A whole lobster is 4½ inches in the barrel. A half lobster is 4 inches in the barrel. Gets about equal numbers of both. It would be a benefit in the long run to return the half lobsters to the sea. Understands there is an Act to make a close time from 1st May to 1st August. The town clerk posts this Act. Never heard of any prosecution under it. Most undoubtedly soft crabs should be put back. Says this most advisedly. Fishmongers in town often write to complain of the soft crabs, because they lose their customers by selling inferior articles.

LOBSTERS

Gauge.

CRABS.

Soft.

ALEXANDER COMBIE. Is 70 years of age. Has fished for crabs for the last 50 years. When he was a boy there were three for every one now, and they were also larger. They have gradually degenerated. Every year there would be six boats; now there are 30 or 40 boats. The railway came in when he was a boy. Formerly the fishermen did not send away the crabs, but only the claws, which sold in town at 3d. a dozen. Now they send crabs, claws and all, to London. Thinks that for the sake of future generations soft crabs should be put back when they are taken. The merchants settle the gauge between themselves and the fishermen. Has heard of the Act of George II. giving a close time for lobsters in May, June, July, and August, but the Act has never been carried out. The ground is the same as it used to be. The crab fishers fish in 16 to 18 fathoms of water in spring. All little lobsters should be put back, say under 4 inches in the barrel. This was the former gauge for them.

Decrease.

Soft.

LOBSTERS.

Gauge.

CRABS.

Decrease.

Soft.

W. HUTCHINSON. Has been in Dunbar 18 years, and has been a fish merchant for 15 years. Thinks crabs and lobsters are falling off. If the same number of creels were used now as were used 18 years ago, the fishermen could not get so many fish. Gets most crabs in heavy weather, when the boats can just go out. The crabs are drowned, and the swell washes them up. Soft crabs should be put back all the year round, and this would ultimately do the fishermen good. The boats often come in a hurry to catch the train, and mistakes might be made in sorting the crabs to the half or quarter of an inch. There should be a close time in July and August to the middle of September. This close time would do no harm, because the boats could not go out at that time, and

Close time.

LOBSTERS.*Season for.
Spawning.
Gauge.*

it would not pay to do so. Gets too many lobsters in May, and gets a very small price for them. Only the principal fishmongers ask for berried hens; the berries are used for sauce for other fish. Would be beneficial to everybody to return all lobsters to the sea under $4\frac{1}{2}$ inches in the barrel; a lobster measuring 4 inches to-day is worth 6d.; each time it casts its shell it grows half an inch, so that very soon it would be worth double the money. Has a shell which has been cast to prove this. A lobster grows half an inch in the barrel when it has shed its shell once.

*Enforcement of
law.*

JOHN DOUGHTY, Station Officer of Coastguard. Has been here 18 months and has never had any orders to carry out regulations for lobster fishing. The Act could not be carried out with the present number of men. There are four on the establishment here. There is no fishery officer here. Help would be required to carry out any law on the subject. There are about 170 boats on the register; about 13 of these are crabbers now, but the number fluctuates.

CRABS.*Increased.*

W. ROBERTSON. Has known Dunbar 37 years. Has been 37 years in the trade. Crabs have increased in number, because the fishery has been more prosecuted than formerly. Formerly there were three boats, now sometimes there are forty; the dealers get as many crabs as ever. The small crabs should be returned to the water. If there is any close time it should be from October to January. All crabs under 5 inches should be put back into the water.

*Close time.**Gauge.**Soft.*

A law should be made that soft crabs should not even be brought ashore; they should be thrown over into the water at once from the creels. The merchants will not take these soft crabs; they are broken up by the fisherman for bait, or thrown dead into the harbour, the fishermen having broken their shells with their thumbs. A good crab would be from $6\frac{1}{2}$ to 8 inches across the back; [*two of this size were produced, picked out of five or six dozen*]. From October to January, if a thousand crabs were caught, five hundred of them would be soft and would be destroyed. It is most important to make a law to prohibit the destruction of soft crabs. A whole lobster is $4\frac{1}{2}$ inches in the barrel. All under 4 inches in the barrel should be put back into the water.

LOBSTERS.*Gauge.*

The Royal Hotel, Stornoway, Saturday, 21st October 1876.

PRESENT :

SPENCER WALPOLE and ARCHIBALD YOUNG, Esquires.

No decrease.

MURDO MORRISON (*examined by Mr. Young*). Lives in the island of Bernera. Has been dealing in lobsters for 30 years. Believes that there are as many lobsters caught now as there were 30 years ago. There are more boats than there were, and they fish with creels. Rings have not been used for about 20 years. The creels enable the fishermen to fish in deeper water than the rings. Thirty years ago each boat used to carry 24 to 30 rings; they now carry from 20 to 30 creels. There are as many lobsters caught as there used to be. But the creels are more deadly than the rings, and he believes the lobsters are not so plentiful. Fishes all through the year except June and July. Lobsters won't carry in those months. The lobsters are chiefly sent to London. Sends off 6,000 or 7,000 lobsters annually. Has a store pond at Bernera where he keeps the lobsters for the market. There are about 5,000 lobsters in the pond. They are sent to market from time to time as convenient. Is in favour of a close season in June and July. The close season should be universal throughout the country. Would prohibit taking, buying, and selling lobsters in these two months. Would object to a longer close season than June and July. Lobsters $4\frac{1}{2}$ inches in the barrel count as full fish. Those below this or without a claw count two for one. Is in favour of all lobsters under 8 inches from nose to tail being returned to the sea. At present buys lobsters under this size but none under 7 inches. Knows that a good many lobsters are caught at Tarbert, but believes that the Bernera ground is better. The chief lobster fishing in the Lews is on the Atlantic coast. That is a very exposed coast, and cannot be fished in bad weather. Wishes to add that at all times of the year he gets lobsters, both poor and fat, both from his pond and from the sea. They are spawning and casting their

*Creels.**Store ponds.**Spawning.*

shells at every season of the year. Gets many berried hens. These sometimes are very valuable in the market. 15 fathoms is the deepest water fished. Lobsters are larger in the deep water, but this depends on the season of the year. Believes that about 12,000 lobsters are exported from Bernera annually.

LOBSTERS.
Berried.
In deep water.

GEORGE MACAULAY (*examined by Mr. Walpole*). A tenant and constable of Creer, island of Bernera. Has been a fisherman for lobsters for 40 years. There are about 20 boats, or more, fishing at Bernera. 40 years ago there were fewer. 40 years ago used creels and now rings. His ground is towards the Atlantic side of Bernera. The ground in some places reaches 6 miles out seawards, and extends along the whole west coast of the Lews. 40 years ago the fishing season commenced in April and ended in October. The lobsters were then taken to London in smacks, and the smacks could not rely on good weather after October. The fishing season now commences on the 1st August and ends in the following June. The lobsters are not fished in June and July, because the men cannot get enough to make it worth their while, and the buyers won't buy because the lobsters won't stand the carriage. The smacks could carry them in June and July because they had wells, and the lobsters could be kept alive in the wells. On an average, catches more lobsters now than he did 40 years ago. From the 1st August to the 20th October 1876 has caught 800 lobsters. Some boats have caught 1,000. 40 years ago could have taken from 700 to 1,000 lobsters a season. Has this year had 9d. for each full fish. 40 years ago the price was from 3d. to 6d. The first English company gave 4½d., the last English company gave 7d. each for lobsters. The first English company came more than 40 years ago, the last about 20 years ago. Is earning more money in lobster fishing than he used to; but spends more time at it. Fishes in deeper water than he did 40 years ago. Seldom fishes now where he used to then. His creels are safer in the deeper water. There are not so many lobsters in the shallow water as there were 40 years ago. Thinks the lobsters are about the same size as they were 40 years ago. Out of 9,100 lobsters, on an average about one third are under 4½ inches in the barrel. It would not pay to follow the lobsters if all under that gauge would be returned. Would be willing to return all lobsters under 8 inches from tip of snout to tip of tail. 15 to 20 per cent. of them would be under this size.

Season for.

Gauge.

Close time.

Never fishes in June or July now. These months are practically a close season. The coast is very stormy, and the fishermen would be stopped eight to nine days a month throughout the year. Sells his lobsters to Mr. Morrison. Mr. Morrison puts them in his stock ponds.

Thinks that the lobsters are going out to the deep water more than they used, and that this is the case with all fish. When he began to fish for ling and cod he fished them three times nearer the shore than he does now. Has to go now about 20 miles to make the best fishing. There are no herrings on the west coast now; but they used to come there.

(*By Mr. Young.*) There are many crabs about Bernera, but they are too far from the market to be kept alive. Crabs are not used for bait; mussels are.

MURDO MORRISON (*recalled, examined by Mr. Walpole*). His store-pond is about a mile in circumference. It averages about 4 or 5 fathoms deep; doesn't ebb dry; fresh salt-water comes in from the sea with each tide through the porous wall which he has built. Gets his store lobsters out of the pond with iron rings and creels. There are about 6,000 lobsters in it. There are fish in it, cod and ling, and other fish, and he also throws fish into it. Throws in about a hundredweight of fish a week. Sees dead lobsters in the pond, but doesn't think they are starved. Thinks that with the natural food and the supply he gives them they have food enough.

Puts berried lobsters in the pond; believes they breed in the pond. The smallest lobster he ever put into the pond was about 6 inches, and has never seen any smaller in it. Pays rent for the pond to Sir James Matheson, as owning the foreshores.

Mr. Macaulay and witness were deputed by the other Bernera fishermen to give evidence on the subject.

CRABS.
Will not carry.
LOBSTERS.
Ponds.

Spawning.

Royal Hotel, Stornoway, Monday, 23rd October 1876.

PRESENT :

SPENCER WALPOLE and ARCHIBALD YOUNG, Esquires.

LOBSTERS.	KENNETH SMITH (<i>examined by Mr. Young</i>). Is a fish merchant in Stornoway. Has had 24 years' experience in the lobster trade. Speaks of the Lews only as regards lobsters. Obtains as many lobsters as formerly; but they are not so large, with the exception of those in Broad Bay, where they are not fished in the summer months. The Atlantic coast is more exposed than the east coast, but there are sheltered bays in it. The lobsters are more plentiful on the Atlantic than on the east coast. They have a wider range. The fishermen do not fish in May, June, July, and August on the Minch or eastern side of the Lews. They fish on the Atlantic side. Has heard of the Act of Parliament imposing a close season; but it has never been observed. There are more boats fishing than there were, and each boat has more creels. The boats ought, therefore, to get more than they used to do; and as they do not, lobsters cannot be so plentiful as they were. Is in favour of a close season in May, June, July, and August, which must be enforced in the markets. Is in favour of a gauge, $4\frac{1}{2}$ inches in the barrel. Anything under this should be returned to the sea. The fishermen fished with rings and creels when he had first experience of the fishery, and they fish with both rings and creels now. The creels fish in deeper water. There is a practice here of keeping lobsters in ponds till they are wanted for the market. Does not approve of this practice. The lobsters in these ponds are inferior to those obtained in the sea. They don't get sufficient nourishment. Tried a pond himself for one year, fully three quarters of a mile long by half a mile broad. It was an arm of the sea. Had 7,000 lobsters in the pond. The London agents complained of the quality of the lobsters from this pond and from other ponds in the neighbourhood. The lobsters in such a pond would eat each other and each other's spawn. Got 1,500 fewer lobsters out of the pond than he put into it. In consequence he gave up the pond after one year's trial. Has shipped, on an average, 8,000 lobsters a year from Stornoway. Believes that lobsters spawn all the year round, but especially in the summer months, when they cast their shells, and are in a weak state. Thinks the pond system so prejudicial that it should be prohibited. The lobsters, after being a month or two in the pond, are unfit for human food. London is the chief market, but a few boxes are sent to Manchester, Liverpool, and Birmingham. The price of lobsters, during his experience, has risen from 6s. a dozen to from 7s. to 20s., according to the season of the year.
Decreased size.	
Boats.	
Close time.	
Gauge.	
Creels.	
Kept in ponds.	(<i>By Mr. Walpole.</i>) Proposes legislation to make it illegal to keep lobsters in a pond. The lobsters may be kept for a week or for a fortnight without injury. If there was a close season for four months this legislation would not be so necessary. He would do away with the ponds, however, because they are injurious. Thinks that, if the practice of keeping lobsters in ponds is proved injurious, Parliament is entitled to put a stop to it. Proposes that a clause should be inserted in an Act of Parliament making it illegal to have any pond in which lobsters could be kept.
Price.	
Prohibition of ponds.	
No decrease.	ARCHIBALD MUNRO (<i>examined by Mr. Walpole</i>). Manager at Stornoway for Mr. MacLachlan of Glasgow, who is extensively engaged in the lobster trade. Has been five years in Mr. MacLachlan's employment, and is a native of Stornoway. Engages boats to fish for them and purchases lobsters from other fisherman fishing on their own account. There are sometimes three or four boats engaged, and from 15 to 20 boats from which he buys. Some of these boats fish on the west side of the Lews near the Butt, and others in Broad Bay, north of the peninsula, near which Stornoway stands. Thinks that there is no decrease in the number of lobsters in either place, and the lobsters are as large as they used to be. Has no falling off to complain of. For the last four years has on an average sent off 700 dozen a year from Stornoway. They are sent by the "Clansman" and "Clydesdale" to Glasgow, and thence by railway to London. The fishing season commences about 1st September. Commences buying soon after that date. There are very few lobsters taken here after February. The fisherman do not prosecute the fishery after that time. The weather is broken up after this time, and the lobsters are less plentiful.
Season for.	

LOBSTERS.

They are habitually in the deep holes. The fisherman do not, on this portion of the coast, resume fishing till the following September, but in deep water lobsters are fished all the year round, and they are stored in ponds till the weather is suitable for carrying them. Is in the habit of taking all lobsters over 4½ inches in the barrel; under that size they count two for one. The very small ones, 2 to 3 inches long, are rejected. These are very numerous in certain calm localities near the shore. Is in favour of returning all lobsters under 4½ inches in the barrel. Is in favour of a close season for lobsters. It should commence on 1st May and terminate on 30th September. Is in favour of including September. The close season must apply to the sellers as well as the takers. It must therefore be universal. Thinks, however, it would be possible to enforce a close season locally. There are no Coastguard here, and only one White Herring officer, who is stationed here. There are also five officers connected with the Custom House. Thinks it would be practicable to enforce a local close season. The Bernera men fish all the year round. The lobsters which they take in the summer months are placed in ponds and kept. Considers this practice prejudicial. The fish do not get sufficient food. They are artificially fed in these ponds. Believes that there are two of these ponds, one belonging to Mr. Morrison, one to Mr. MacLeod. There are about 7,000 lobsters in the pond at Bernera. Has bought lobsters from the pond, and found that they did not stand the carriage, but died. The ponds pay because the lobsters are bought at a very cheap rate in the summer months. If the summer months were closed there would be no fish to put into the ponds, and the ponds would be closed as a matter of course. Thinks, however, it would be necessary to supplement the close season with legislation prohibiting the fish being kept in ponds. Gave up pond lobsters because they wouldn't carry. They are now sent direct to market by the owner of the pond.

Gauge.

Close time.

Enforcement of law.

Kept in ponds.

Supply of.

Does not deal in crabs; they don't pay to carry. He sends away 8,000 lobsters, Mr. Smith 8,000, Mr. Morrison 7,000, and other dealers 8,000. There are fully 30,000 lobsters go away annually from the Lews. There are more than 40,000 lobsters caught annually in the Lews.

JOHN MCSWEEN (*examined by Mr. Young*). Is a fisherman in Stornoway. Has fished for lobsters for 15 years. Gets as many now as he got 15 years ago. They are as good and as large. The fishermen use about the same number of creels as they used to. They fish on both sides of Broad Bay. There are about 15 boats fishing there. 15 years ago there were only four or five boats. The 15 boats get three times as many lobsters as the five boats got 15 years ago. Fishes in from 9 to 10 fathoms water, at high water. Commences fishing 1st October and ends 31st March. Lobsters 15 years ago were 8s. per dozen. They are now from 10s. to 20s., according to the season. Thinks that lobsters spawn in April. Would have a close season commencing 1st May and ending 30th September. Lobsters under 4½ inches in the barrel now count two for one. These should be returned. They get very few small lobsters on the east coast. In a dozen lobsters they get two or three under 4½ inches in the barrel. Is in favour of keeping such lobsters. Would put back all below 2 or 3 inches in the barrel, which would be of no use to him or anybody else.

No decrease.

Boats.

Season for.

Close time.

Gauge.

JOHN MACDONALD (*examined by Mr. Walpole*). Fisherman of Stornoway. Has heard Mr. MacSween's evidence, and agrees with him. Has been fishing for lobsters eight or nine years. There are as many lobsters as there were, and as large. Is in favour of a close season commencing 1st April and ending 30th September. Is in favour of returning small lobsters to the sea. Gets three or four lobsters in every 12 under 4½ inches in the barrel. Wouldn't put back lobsters under 4 inches in the barrel. It would be a very great reduction to throw back all under 9 inches in length.

No decrease.

Close time.

Gauge.

ANGUS McLEOD (*examined by Mr. Young*). Has been for 12 years a fisherman in Stornoway. Fishes in Stornoway Bay. Does not get more than half as many lobsters as he caught 12 years ago. They are about the same size that they used to be. There are 30 creels in each boat. There are two hands in each boat. 12 years ago there were four hands, and they used 60 creels. 12 years ago lobsters were 9s. a dozen, the year after 7s.; they are now 10s. The fishermen begin to fish in the latter end of September, and they leave off about the 1st February. After that the lobsters are scarce, and they don't fish for them. Is in favour of a close season for lobsters. It should commence on the 1st April and end in September. They do not get any lobsters in these months.

Decrease

Price.

Close time.

- LOBSTERS.** The lobsters are generally large, but there are sometimes four or five in a dozen under $4\frac{1}{2}$ inches in the barrel. Would put back all lobsters under 4 inches. They get very few of them under that size. The water in the Bay of Stornoway is very shallow. Outside the bay they fish in 10 fathoms water. Never saw any ponds for keeping lobsters. There are some on the west side of the island. They take a good many crabs, but there is no sale for them. They are large crabs. They would on an average measure 6 to 8 inches.
- Gauge.* (By Mr. Walpole.) Never fishes on the west side of the island. Was fishing on the Shiant Isles 10 years ago. Was fishing for lobsters. They are fine lobsters but scarce. The lobsters get very scarce in February. They are most numerous in October. They get less every month after October. The rocks about here do not extend very far out to sea. There are very few lobsters about here. Fished in Broad Bay one year, but was too late. Does not go there because there are too many boats at it. There is no other Stornoway boat in Stornoway Bay. A stranger from Peterhead came here a fortnight ago. The stranger is a bigger boat and goes further out to sea. Always finds some spawn lobsters, even in the winter. There are four or five in a dozen. Does not think he caught 40 dozen lobsters last year. During a portion of the year he is not lobster fishing, but works as labourer as well as fisherman. Is also a pensioner from the Navy.
- CRABS.**
- Valueless.*
- LOBSTERS.**
- Season for.*
- Spawning.*

Newhaven, near Edinburgh, Monday, 23rd October 1876.

PRESENT:

FRANK BUCKLAND, Esquire.

- CRABS.** JAMES WILSON. Has fished for crabs 30 years. There are just about as many now as ever, but the average size is diminished. They are mostly caught in April, May, and June. The close time should be July, August, and September. The largest crab would be about $5\frac{1}{2}$ inches across the back.
- Decreased size. Close time.*
- Decrease.* JAMES FLUCKER. Has fished for crabs 60 years. There are fewer crabs, because there are so many catchers at work. Formerly he used to take ten or twelve dozen in a day, now he catches about half this number. There are very few lobsters about Newhaven; but crabs of the best quality are caught there.
- Creels.* No creels are used, only nets. These are not baited; they are set in a line with corks at the top and stones at the bottom; they stand up like a hedge. The mesh is from $2\frac{1}{2}$ to 3 inches, and about 4 feet in height. Each net is 50 fathoms long. About 20 boats fish for crabs from April to June.
- Soft.* A few old men fish from June to August. All soft crabs should be returned to the water without injury. Sometimes crabs are so soft that they cannot be lifted out of the net; the crabs get so entangled in the net that it takes a long time to get them out. A gauge would not act at Newhaven, because the crabs get so tangled in the net. A full crab is 8 inches, the smallest is about 3 inches. The months of April, May, June, and July should be open months for crab fishing.
- Gauge Close time.*
- Decrease.* WILLIAM WATSON. Fifty years ago crabs used to be more plentiful than now. There are very many more catchers. Formerly there were three or four only, now there are 15 or 16. Before the railway came the crabs were only sold in Edinburgh. Now the men can sell any quantity. Nets for catching crabs have been used all his time. The ground for fishing the crabs is from Musselburgh up to Queensferry, about nine or ten miles in length, and all along the shore. The nets are hauled into the boats and small crabs are thrown away. He will not give any opinion about the gauge. Crabs are never used here for bait, as there are plenty of mussels.
- Nets for.*
- Decrease.* JOHN LISTON. Has been fishing crabs for 25 years. They are less in number because there are so many fishers. Creels will not act in this district, the water is too shallow. The bottom is composed of hard rock and there is not much sand. Is in the habit of throwing over all little crabs because they are no use for sale or bait; he heaves them over alive if possible. The smallest crab caught should be $3\frac{1}{2}$ inches. There are three men fishing in each boat. There are not many lobsters about Newhaven, it is not worth while
- Gauge.*

troubling for them. It is a great deal of trouble for the fishermen to pick out the crabs which have been entangled in the nets. It has sometimes taken him the whole day to pick out the small crabs from his nets.

Mrs. ANNIE FLUCKER. Has been a dealer in crabs for many years. When she was a girl recollects that 17 dozen crabs were caught in the nets and remained in the water two days; this was in the month of April. Crabs begin in April and go on to August. After August they become white and are no good till April again. Last year she got crabs 8 inches across. The smallest crabs are 3 inches, they are of no use, the men put them back into the water in order that they should grow to maturity. A $4\frac{1}{2}$ -inch crab is a good crab. The fish-mongers require two crabs for one, according to the claws. If a crab wants a claw the fisherman has to give an extra crab to make up for it. About Anstruther the small crabs are called poults. If any lobsters are caught at all they are large. Crabs have become much dearer. When she was a girl she paid 10d. a dozen, now she pays 3s. 6d. a dozen. More crabs are caught in Dunbar than here. Three years ago saw 17 dozen of small crabs sent to market in a herring barrel. She crabs have small claws and large shells. He crabs have very large claws and small shells. All crabs below $3\frac{1}{2}$ inches should be returned to the water. Soft. Price of. Gauge.

Mrs. SMITH, fishwoman. Agrees with Mrs. Flucker. The smallest crabs should measure 3 inches from the eye to tail or 5 inches along the back. A 3 inch crab is very good to eat; crabs this size are worth 2s. a dozen or 2d. each. The small crabs are called covies; if a crab wants a claw the fish merchants require two for one. Crabs begin to get soft about the end of August. Thinks they spawn in September. Has known the nets catch from Saturday to Monday 10, 12, to 17 dozen. This is a good fishing. The fishing depends very much on the weather. A swell in the sea makes the crabs crawl. Soft. Spawning.

Mrs. MAYNE, of the Peacock Inn, Newhaven. Buys crabs and lobsters for the hotel. Both crabs and lobsters are getting very scarce, and require a close time. When the oysters come in the crabs go out. The crabs are best in harvest time. There should be no fishing from August to April. It is a wicked thing to bring on shore small crabs. They are only given to children to play with. All crabs under 5 inches should be put back. The white crabs with transparent shells, if boiled, are found to be all water. They are unseasonable and should be put back. Decrease. Close time. Gauge.

A crab is called a partan here. The red and green crabs are called covies. They are not partans.

Mrs. CARNIE, dealer in crabs and lobsters many years. At certain times of the year the little crabs are better than the big ones, because they have filled up their shells. 5 inches is just little enough for a crab. The little ones should be put back and be left to grow. Has seen barrels full of small crabs in the Edinburgh market. Thinks that all soft crabs should be put back into the water alive, and that all crabs under 5 inches should be put back at all times of the year. Gauge. Soft.

The test by weight will not act, because it cannot be ascertained what crabs weigh until they are boiled. Crabs have doubled their price these last three years because they are scarce, and have been fished out. Has seen rock codlings with their stomach full of crabs. Price. Enemies of.

The Tarbert Hotel, Tarbert, Harris, Monday, 23rd October 1876.

PRESENT:

SPENCER WALPOLE, Esquire.

NORMAN MACLEOD, junr. A general dealer and fisherman at Tarbert. Has been in business 17 years. Has been dealing 8 years in lobsters. Buys from the fishermen, and sends them away by the "Dunara Castle" and "Clydesdale" steamships to Liverpool, London, Birmingham, &c. Sends away 6,000 to 7,000 a year. Begins buying in September or October, and

LOBSTERS.

Supply of.

goes on buying till the 1st May. There are six other dealers at Tarbert buying lobsters. His business is bigger than the others. The six other dealers are sending away a good many, and it is estimated that 40,000 lobsters are sent annually from Tarbert. Two of the dealers send the lobsters away throughout the year, observing no close time at all.

The principal lobster grounds in the neighbourhood are off the Island of Scarpa, but lobsters also come from the East and West Lochs. The Harris fishermen, too, go both to Skye and the Lews to fish for lobsters, but they bring them to Tarbert to sell. There are some 44 boats fishing in East Loch Tarbert, for lobsters. 30 of these are from Scarpa alone. Can recollect the time when there was no fishing for lobsters in East Loch Tarbert. There are about 16 boats in West Loch Tarbert; nine of these come from Scarpa. The 16 boats on the West Loch catch more than the 44 on the east side.

Decrease.

Mr. MacLachlan, of Glasgow, was the first man who started the fishing for lobsters in East Loch Tarbert. He sent a smack down about 22 years ago. The men fished for him in the winter season and spring. The fishery was very successful. There were not so many boats—not a fourth part so many—as there are now. They fished with creels. The few boats started at that time caught as many lobsters as the 44 boats catch now. Thinks, therefore, indeed is sure, that the lobsters are falling off in numbers in East Loch Tarbert. There is too much fishing. The lobsters are also falling off in size. They haven't time to come to maturity. Thinks the fishing gets worse every year. The proof of this is that the fishermen have to leave the Harris coast for the Lews, Skye, and North and South Uist.

*Rings.**Close time observed.*

West Loch Tarbert, was fished before the East Loch fishing commenced. The lobsters were sold to London smacks. The fishery in West Loch Tarbert is also falling off. It used to be fished with rings, but it wouldn't pay to fish with rings now. Scarpa is the best place, but it is also falling off. The fishermen there only fish from December to May, and never fish the rest of the year. Scarpa belongs to Mr. Scott. He has only 16 tenants, and they have made a mutual arrangement among themselves only to fish these months. The arrangement is kept. The coast is too wild for a stranger to fish there. It is only, however, on the coasts of the island, which is a small one, that the arrangement is kept. All the surrounding mainland is hard fished. If it were not for this, Scarpa would show no falling off. The Scarpa men generally get some good weather for fishing in February, March, and April, and they can fish when the wind is off the land. During the rest of the year some of the Scarpa men go away to the herrings, and others are preparing potatoes and peats. This Scarpa arrangement has been going on for some time. The Scarpa men consider that they can earn more money, and do better, by confining their own fishing to the few months when the fish are at the highest price.

Close time.

Is in favour of a six months' close season. Would commence fishing at the end of November, and end at the beginning of May. This is only five months, but it is long enough. It is no use fishing in September and October, because the market in those months is always choked with Norwegian lobsters. Thinks that a law of close season could be carried out. Would himself inform against an offender.

Gauge.

Some of the lobsters caught are very small lobsters; those under $4\frac{1}{2}$ inches in the barrel count two for one. Would be in favour of returning all these small lobsters to the sea. Thinks such a rule would be for the benefit of the fishermen. Thinks that if a close season were made as proposed, and a gauge instituted, the fishery would recover. The lobsters in Uist are fished all the year round; can't say how the fisheries there are doing.

Decrease.

ANGUS MACLEOD, partner with Norman MacLeod. Agrees that lobsters are decreasing, and concurs in the recommendations of the previous witness both as to close season and gauge.

The "Dunara" steamship comes once a week till the New Year. From January to March it comes once in ten days. The "Clydesdale" also comes once a fortnight all through the winter.

Tarbert Hotel, Tarbert, Harris, Tuesday, 24th October 1876.

PRESENT:

SPENCER WALPOLE, Esquire.

WILLIAM MACQUEED, for 25 years buyer for Mr. Maclachlan, of Glasgow. **LOBSTERS.**
 Lobsters, 25 years ago, were 8s., 10s., and 12s. a dozen. The season in those days began in November and ended in May. The price of lobsters has since *Price.*
 risen to 28s. a dozen, and averages from 15s. to 20s. The fishermen are fishing for them now all the year round. Begins buying on 1st January, and ends on 1st May. During the rest of the year the lobsters are sent away by the fishermen on their own account. Pays away about 1,600*l.* a year for lobsters. Buys the lobsters from fishermen both in the East and West Loch. About 20 years ago the Irish boats came; they ceased to come about 10 years ago. *Creels.*
 The Irish first introduced the creels. The supply of lobsters is not so great as it was, and they are not so heavy. One dozen lobsters 20 years ago would weigh as heavy as two or three dozen now. Thinks the decrease is due to the fishermen catching them large and small, and to their catching them when the fish are breeding. Is in favour of a close season in May, June, July, and August. Is in favour of returning all lobsters under 8 inches to the *Gauge.*
 sea.

There are 10 times as many boats as there used to be, but they do not earn such good wages as they used. The Scarpa Island men are the most experienced fishermen in the whole country, and if others keep clear of their ground they won't begin fishing till November or December. They can't keep the strangers off the ground.

RODERICK MCKAY. Has been fishing for lobsters since he was a boy, 30 or 40 years ago; fished at Scarpa. When he began fishing was employed by a London company. Used to commence on the 1st May, and go on till the end of August. The lobsters were sent away in walled smacks, and so lived in hot weather. The weather during the winter months was too rough for the smacks, and the fishermen could not fish in the winter with hoops. Went on for the London company for six or seven seasons; the company then failed. Soon after that, began fishing for Mr. Maclachlan, of Glasgow, who commenced buying 25 or 26 years ago. For Mr. Maclachlan the fishermen fished in the winter months from November to May. Mr. Maclachlan sent them away in boxes by steamer. Went on for Mr. Maclachlan for 20 years, and during the last three or four years has been sending them himself by steamer in boxes. Sends his own take, and buys from other fishermen. Begins sending in September and goes on till May. There are only a few fishermen fishing lobsters in the summer time. *Hot weather.*
 Sends lobsters away himself in summer time. Sends them to London and Manchester. Many die. Sometimes they all die. This is a great waste, and ought to be stopped. Would like to see it stopped. *Steamers.*

There are not so many lobsters in any place as there were 40 years ago. If they had had creels at that time they could have got three times as many as they do now. The lobsters are also smaller. The London company would not take any lobster under 8 inches for a half, or 9 inches for a whole one. *Decrease.*

Is in favour of a close season commencing on the 12th May, and would resume fishing on the 1st September. Would throw back all lobsters under 8 inches. *Close time.*

The Scarpa men stop fishing in the summer months. But they can't stop other men coming and fishing the neighbouring grounds. The Scarpa men make more money by the lobsters than any other. Lobsters are more plentiful at Scarpa than at any other place near here. *Gauge.*

DAVID MACDONALD. Has been fishing for lobsters for two years; fishes off Scarpa. The Scarpa men begin fishing in November, and stop at the beginning of May. The coast of Scarpa is so rough that they keep other men off it, but the strangers come and fish from the mainland. The coast is very rough, but the fishermen watch for fine weather. In north-east and south-east winds they can always fish. The Scarpa men are all against fishing in summer and harvest time, and he agrees with them. *Weather.*

MALCOLM KARE. Has been fishing for 46 years for lobsters and all kinds of fish in the West Loch. There were about 13 boats 46 years ago in the West Loch. Does not know how many are there now. Gave up fishing *Boats*

LOBSTERS. 12 years ago. There were 30 times more lobsters when he began fishing 46 years ago than there were when he left off 12 years ago. Attributes decrease to summer fishing. The fishing now commences in October and ends 1st May. Some boats, about 20, go on all through the year. The fishing ought to begin not sooner than October, and close at the end of April. Has been shovelling lobster-spawn overboard found in herring nets in September. Fished 46 years ago for the London company. They fished in the summer months then. That was the first commencement of the fishery here. At that time the lobsters were so numerous that they could be picked up dry on the shore. The London company threw away every lobster under 9 inches. Is in favour of the same rule now.

Close time.
Spawning.

Gauge.

EWEN MACDONALD. Lives at Tarbert. Has been a fisherman for 14 years. Fishes about Loch Tarbert. Begins fishing about the end of October, and goes on to the end of April. There are five or six boats fishing afterwards in the West Loch all through the summer. There are not half so many lobsters as there were 14 years ago. There are about the same number of boats that there were 14 years ago. Lobsters 14 years ago were 12s. to 14s. a dozen. They are now about 10s., but they will get dearer in the winter months. Is in favour of a close season commencing 1st May and ending 31st October. Thinks the fishermen would agree to this. Is in favour of returning all lobsters under 8 inches.

Decrease.

Close time.
Gauge.

DONALD MUNRO. Fishes with Mr. Macdonald. Has heard his evidence and agrees with it.

RODERICK MCKAY (*recalled*). Is in favour of prohibiting lobsters being kept in ponds in summer months. These ponds encourage the fishermen to fish in the summer, when the lobsters are so light that they are not worth fishing for. There is a pond here near Clure belonging to Donald MacLeod, Junior.

Ponds.

Salen, Mull, Tuesday, 24th October 1876.

PRESENT :

ARCHIBALD YOUNG, Esquire.

DUNCAN CAMPBELL, residing at Salen. Is in business with his father, David Campbell, fish merchant, Salen. Has had 10 years experience in the lobster trade. Lobsters have fallen off both in number and size since he was first in the business. There are fewer boats and men now engaged in the lobster fisheries than there were formerly. The prices in London are not equal now to what they were. Creels have been used as far back as he remembers. Never saw rings used. Thinks that the decrease in the number and in the average size of lobsters has been principally caused by over-fishing. There should be a close time and a gauge combined to counteract the effects of this overfishing. These will be the most effectual remedies. The close time should be from 1st June to 1st September, and the gauge should be 8 inches in total length, or 4 inches in the barrel. Both the close time and the gauge should be enforced in the public markets under a penalty. The penalty should be against taking, buying, or selling during the close months, and against taking, buying, or selling any lobster under the prescribed gauge. Has heard the fishermen discussing the question of a gauge and a close time.

Decrease.

Creels.

Close time.

Gauge.

Does not recommend the use of artificial ponds for storing and keeping lobsters; his father, Mr. D. Campbell, who has had great experience as a lobster fisher, once had a large boat which was decked over, and into which the water flowed. This he used as a sort of lobster preserve, and in it he kept and stored lobsters. The lobsters were fed, but the experiment proved a failure. The lobsters got weak and watery and out of condition, and were unfit for the market. A close time extending over June and July might possibly interfere with the fisheries on the west and south coasts of Mull, which are very much exposed; these fisheries are most easily prosecuted in summer. But there are times even in winter and spring, especially in frosty weather, when the fishermen can go on with their fishing on these coasts. Lobsters are often packed in tea-

Ponds.

boxes. There are from six to seven dozen in a tea-box. A good many of them are lobsters which count two for one, either from being under 4½ inches in the barrel or from wanting a claw. There are plenty of crabs of a good marketable size caught in the lobster creels around Mull; but they are too far from a market, and people hereabout won't eat them. They are more delicate than lobsters. They won't keep good for much more than 24 hours.

CRABS.

Will not carry.

Cockburnspath, Cove, Berwickshire, Tuesday, 24th October 1876.

PRESENT :

FRANK BUCKLAND, Esquire.

WILLIAM WATTEY, station officer at Redheugh. Along the coast in the Cove district there is crab and lobster fishing. There are 21 fishing boats at Cove, *Boats.* of which 16 are engaged in fishing for crabs and lobsters, crabs being principally sought after. The fish are sent to Edinburgh, London, and Manchester. Creels are used, and not nets, in the fishing. Each boat has from 80 to 100 creels, and the ground extends from Cove to St. Abb's Head. A good many soft crabs are taken. Crabs are taken as small as three inches. Most of these are cast overboard. A few are retained for bait. The price has increased.

THOMAS FAIRBURN. Has fished for 20 years here. The crab fishing should *Close time.* be closed from May to September. The fishing has fallen off about one third. A "full" crab would be 8 or 9 inches across the back. Crabs are not used for bait. Crabs of 5 inches and under go two for one in selling to the merchants. Soft crabs are put back into the water. Lobsters have diminished. The bottom is rocky. The fishermen begin fishing with creels on 1st October and leave off 31st July.

Coldingham Shore, Tuesday, 24th October 1876.

PRESENT :

FRANK BUCKLAND, Esquire.

WILLIAM WILSON. Has fished for crabs for 28 years out from Coldingham. The bottom is mostly all sand, and 30 to 35 fathoms deep. The ground extends for two square miles. Crabs this year have not been so plentiful as some years, but sometimes they have been scarcer. Has fished for crabs from September to June for 14 years. Ten boats from Coldingham with 36 men are engaged in crab fishing. The population is 200. They fish with creels which are placed 20 fathoms apart. The boats carry 730 altogether, or about 80 creels each. The deep water fishing lasts from September to March. A few boats put in a small number of creels in the shallow water in the end of March, but the shallow water fishing generally lasts from April to end of May. The largest number of crabs he ever saw in a creel was 63, and that was in 1865; the largest number this year has been 40, counting large and small. The largest was 10 inches across the back, and the smallest three inches. Within the last few days many of the crabs caught have been small and soft. *Decrease.*

Soft crabs are mostly caught in September, October, November, and *Soft.* December. These are generally put overboard,—some into the sea, and some into the harbour. As the season advances and the crabs get harder, many of them are sent to the market. The markets the fishermen send to are Manchester, Leeds, and Birmingham, and sometimes London. Complaints have been made of late about soft crabs.

Out of one boat's catch lately of 10 barrels of crabs 6½ barrels only were good. Is strongly of opinion that all the white crabs should be returned to the water. Can tell white crabs by the claws being transparent, and these

CRABS.*Soft.*

should be returned to the water with as little injury as possible. By killing these crabs large numbers of useless crabs are destroyed that would presently be valuable. Has to pay for the carriage of crabs. Gets from 20s. to 22s. a barrel for good fish; but if a barrel contains many white crabs the merchant reduces the price. There should be a positive law prohibiting the destruction of white crabs either by sending them to market or using them for bait. Very few white crabs are used for bait in Coldingham. Mussels and limpets are got for bait from Boston Deepes. The small crabs should be returned to the water; none under 4 inches should be retained. Big crabs bring more money per barrel than small crabs, but in the spring the small ones are the sweetest. A "full crab" would be $9\frac{1}{2}$ to 10 inches; sometimes crabs of 7 inches are called full crabs. The fishermen here market all crabs themselves; they have no agents. The salesmen do not complain of the small size of the crabs. No crab under 4 inches should be taken. A large crab is called a "pod," a small one a "partan." The fishermen generally put back all crabs under 4 inches of their own accord, and do not put them in the barrels.

*Used for bait.**Gauge.**Close time.**Spawning.***LOBSTERS.****CRABS.***Enemies of.*

There should be no close time for good crabs at all, but there should be a close time for white crabs, and small crabs under 4 inches, all the year round. Seldom gets any female crabs at all, because when they commence to spawn they are sanded up. At the end of October the crabs commence to sand up in about 30 fathoms, and remain there until the spring, when they hatch the young from the eggs. The smallest crabs he ever saw were in May and June. These were *Zoea*. The spawn is beginning to come on to the tail now (October). As to lobsters sometimes as many as one to the creel are caught, sometimes in 40 creels there are only 17 lobsters. Seasons vary. Lobsters under $4\frac{1}{2}$ inches in the barrel are worth little, for they are sold by the weight. The average size of lobsters is 6 inches; the merchants' gauge used to be $4\frac{1}{2}$ inches in the barrel. Off the two miles square which are fished outside Coldingham, between 2,000 and 3,000 barrels of crabs have been caught and sent to the market every year for 10 years. When the crabs go to the deep water, the fishermen follow them. The enemies of the crabs are skate, codling, whiting, and haddocks.

There are still plenty of crabs; about as many are caught now as were taken 10 years ago.

Never fishes for crabs with nets.

LOBSTERS.*No decrease.**Gauge.***CRABS.***Soft.**Decrease.*

JOHN RAY. Has been fishing for lobsters for 55 years, winter and summer. There are as many lobsters now as there were years ago, but there are fewer crabs. Would throw back all lobsters under $4\frac{1}{2}$ inches in the barrel. Berried hens are found all the year round, and are the most valuable. Lobsters are all sent away alive from here, and tied, not plugged. All white and small crabs should be put back to the water.

JOHN PURVIS, fish curer. Has been 20 years in Coldingham. Crabs have fallen off about a third. Cannot tell the cause. Agrees that white and small crabs should be returned to the water, but does not approve of a close time. Considers a 5-inch crab a full one.

Gauge.

The gauge should be not less than 4 inches.

Close time.

WILLIAM WILSON (*recalled*). Is well acquainted with the neighbouring village of Eyemouth. Has met with and consulted with several fishermen of that place. They are all of the same opinion as the Coldingham fishermen. They do not think there is any need of a close time at Eyemouth for good crabs, as they are still plentiful, but they much wish to have a law to prevent the destruction of small and white crabs, either sending them to market or for any other purpose. The reasons they have for objecting to a close time are that there are a great many old men who are unfit to go to other fisheries. Boys also may have a widowed mother, and, it may be, a few younger members of a family dependent on them for their living. A close time for three or six months in the year would throw many of these sort of people out of work and tend to burden the rates; another reason is that a close time would have a tendency to drive all the able-bodied men out of the trade of crab fishing; should the fishery be closed for three or six months as some would wish, all that were able would have to take themselves to other fisheries that could not be dropped when the crab fisheries opened. For this reason crab fishery would be left entirely to old men and boys that are not fit to prosecute it to the extent that it should be, and the markets would be worse supplied. There

are hundreds of miles along the coast that are swarming with crabs where none yet have ever been taken; these districts could be fished at the rate of a thousand barrels to the square mile yearly, that is in places where there is a sandy bottom and the water is from 30 to 40 fathoms deep.

Has watched the evidence all the way along in the papers, and sees that many wish for a close time in the months when they themselves are not in the habit of fishing. On the 16th October he marked the backs of a few crabs with his initials, "W. W.," and put them back inshore. On the 27th of November these crabs were caught again two miles seaward, having passed over eight fleets of creels. One crab was caught in the 9th, and another in the 10th fleet. The creels are let down to the bottom by a rope; the rope is attached to a long stout rope which is buoyed on the surface of the water by corks; this rope is called a messenger. Eighty creels are fastened to one messenger. The creels are placed 20 fathoms apart, so that the messenger would be 3,200 yards long or nearly two miles. When the men fish these creels the boat travels along the messenger, and the creels are drawn on board over the bow to be examined, the crabs taken out, and the creels returned over the stern of the boat rebaited. At Coldingham there are 10 crab boats, of these seven set 80 creels, and two set 40, making 640 creels in all. At Dunbar each creel has its own messenger.

CRABS.

*Migration.**Creels.*

More crabs are caught here in winter than at any other places round about. *Season for.*

The dead crabs in the harbour are those which are found dead when packing the barrels. These are soft crabs, and the hard ones crack them when packed in the barrels. *Soft.*

ROBERT THORBURN. Has been a fisherman at Coldingham for 60 years. Before the railway was opened 18 years ago, the fishermen never fished for crabs, as they were then of no use—there was no market for them. Since they commenced to fish for crabs the inshore fishing has diminished. Does not know anything about the deep-sea fishing for crabs, having never fished far from the shore. Agrees that white and small crabs should be put back. Always puts back small lobsters under 3½ inches in the barrel. They are not used as bait for crabs. Small lobsters have been put back ever since he knew. Crabs are not cannibals, and will not enter creels baited with broken crabs. If a lobster entered a creel, crabs would not enter it. A white crab is unfit for human food. Cuttle fish are capital bait for crabs.

*Railways.**Decrease.**Soft.*

LOBSTERS.

Bait.

It takes from November to February for crabs to "fill up."

Oban, Wednesday, 25th October 1876.

PRESENT:

ARCHIBALD YOUNG, Esquire.

ALEXANDER CARMICHAEL, fisherman, residing in Oban. Has been a fisherman for more than 30 years, and is well acquainted with the crab and lobster fisheries about the islands of Mull and Kerrera. There are plenty of crabs in this neighbourhood, especially about the island of Kerrera. They are fine large crabs, fit for the market; but the only market there is for them is Oban, and that only at certain seasons. They are in the best condition in October, but good also in August and September. Would have these months for the fishing season, and would observe the rest of the year as a close time. There should also be a gauge for crabs. All crabs under 5 inches should be returned to the water. The small crabs are not used for bait hereabouts; but they are used for that purpose on the west coast of Mull. The men don't fish specially for crabs, but great numbers of crabs are taken in the lobster creels—so many that the crabs are falling off both in number and size.

CRABS.

*Season for.**Gauge.*

Lobsters are to be found all round the coasts of Mull except from Salen to Loch Don; but they have decreased since he was first a fisherman, both in number and size. Would have a close time for lobsters, as in the old Act of George the Second, and would also have a gauge. Every lobster under 4 inches in the barrel should be returned to the sea. The prices both of crabs and lobsters have

LOBSTERS.

*Decrease.**Gauge.*

Boats. doubled since he first remembers the fisheries. Has never seen rings used for fishing, only creels. The shores in this neighbourhood are chiefly rocky. There are not as many boats and men engaged in the fisheries as formerly. It would not pay them, lobsters and crabs are getting so scarce. The best lobster fisheries in Mull are on the south and west coasts.

CRABS.

Decrease.

Close time.

Gauge.

Season for.

LOBSTERS.

Decrease.

Close time.

Gauge.

DUGALD MACKENZIE, fisherman, residing in Oban. Has been a fisherman for about 30 years. When he began fishing, crabs were twice as plentiful as at present. Thinks they have become comparatively scarce owing to the great number taken in the lobster creels. The men never return any of the crabs taken, but keep large and small. There are fewer boats and men now than formerly, but each boat carries more creels. One boat sometimes carries 60 creels. There should be a close time for crabs. They should only be fished during the months of July, August, September, and October, and the rest of the year should be observed as close time. There should be a gauge, and all crabs under 5 inches should be returned to the water. The gauge and close time should be enforced in the public markets under a penalty. Thinks that if a gauge were enacted the lobster fishermen would put back the small crabs taken in their creels. Crabs are dearer now than formerly. Has seen 1s. a dozen only paid for smallish crabs; now 1s. apiece is sometimes given in Oban for large crabs. Crabs are now in about the best condition. The best places in this neighbourhood for crabs and lobsters are Scarba, Jura, Eisdale, Kerrera, and the south and west coasts of Mull. The south and west coasts of Mull can only be fished to advantage in summer time, they are so exposed to the Atlantic gales. Lobsters are not now half as plentiful as when he was first a fisherman, and fewer boats and men are engaged in the lobster fisheries. There is only one third of the number of boats, but each boat now carries more creels than formerly. Only one smack now comes here for lobsters, while long ago there used to be three or four. The falling off in the fisheries accounts for this. Would have a close time for lobsters in June, July, and August, to be enforced in the public market, combined with a gauge of 4 inches in the barrel to be enforced in the same way.

Mish Nish Hotel, Tobermory, Mull, Wednesday, 1st November 1876.

PRESENT:

ARCHIBALD YOUNG, Esquire.

Decrease.

Boats.

Price.

Close time.

Spawning.

ARCHIBALD MACLEAN, general merchant, residing in Tobermory. Has been acquainted for 20 years with the lobster fisheries in Mull, Raasay, Skye, and the Lews. This year has been an exceptionally good year for the lobster fisheries around Mull; but, previously to this year, there had been a great falling off, probably to the extent of a fourth. This decline commenced about six years ago. The lobsters have decreased in average size. The two-for-one lobsters form nearly half the whole take now. Over-fishing is the chief cause of this decrease. Creels have been used ever since he knew the fishings; never remembers seeing rings used. Twice as many boats are engaged in the fisheries as when he commenced business, and these boats carry three times as many creels per boat as were formerly carried. It is therefore abundantly evident that there are not as many lobsters in these seas as there used to be, or else far more would be got from the increase in the number of boats and creels. Once sold a dozen lobsters for 7l. They were picked lobsters, weighing from 7 to 10 pounds each. In his early days the prices of lobsters in London and the English markets were higher than now; but the prices in the Highlands are higher now than formerly. Is in favour of a close time for lobsters, from May to September inclusive. This would be for the general good of the fisheries, though it might be hard upon the fishermen on the Atlantic coast of the Long Island and similar stormy localities, where the fishing is chiefly carried on in summer and autumn. Lobsters spawn all the year round, but chiefly in the months of May, June, July, August, and September. Does not think that the enforcement of a close time through the markets would be sufficient. Would prefer to have an officer specially appointed

to see that the close time was strictly observed. One such officer would be sufficient for the whole of the island of Mull. Would also combine with the close time a gauge for lobsters. There should be a 5-inch barrel gauge, and lobsters of $4\frac{1}{2}$ inches in the barrel should count two for one; but all lobsters below $4\frac{1}{2}$ inches should be returned to the water. The same officer who sees to the enforcement of the close time might also see that the gauge was adhered to during the open season. If a gauge were fixed for British lobsters, would admit no foreign lobsters into the home market under that gauge. There are only four shipping places for lobsters in Mull. These are Tobermory, Salen, Bunessan, and Croaig. Has heard of the artificial ponds at Bernera, Tarbert in Harris, &c. Does not at all approve of them. They keep lobsters caught in the summer months until they can be sent to market. The lobsters in these ponds are forced, by starvation or insufficient food, to prey upon each other. They get watery, out of condition, and unfit for human food. Has no doubt that it is quite possible to clear out a lobster ground of limited extent so as to render it not worth fishing. Has known localities where this has taken place. Thinks a proof of this is that, in the end of the season, the fishermen will scarcely get a dozen lobsters in a week on spots where in the beginning of the season they would get a dozen in a day. Very fine lobsters are taken in the mouth of Loch Sunart off the Sound of Mull. Has a dozen just now in his shop weighing upwards of 60 pounds. The lobsters from the Island of Barra are even finer. Very few are taken there under four pounds.

*Gauge.**Ponds.*

DAVID CAMPBELL, fish merchant, Salen. Has been acquainted with the lobster fisheries of Mull, and the immediately adjacent lochs and islands, for more than 30 years, since 1844. Lobsters have diminished, both in number and size, since he began business. The London prices were higher formerly than at present; but the prices in the Highlands are higher now than formerly. Has got as much as 3s. 6d. and 4s. a piece for lobsters in the months of February and March. From 1847 to 1855 was the time when the prices were highest in London. There are scarcely half as many boats fishing now as there once used to be, but each boat carries more creels. Formerly each boat carried from 18 to 36 creels, whereas now each boat carries from 60 to 80. If lobsters were as plentiful as they once were, the improvement and increase in fishing gear should produce more fish. Thinks that the principal cause of the decrease in the number and average size of lobsters is fishing during the months of July and August. Lobsters breed all the year round, but it is in these months that the spawn comes to maturity, and therefore there should be a close time in July and August. Does not approve of the close time from 1st June to 1st September, enacted by the old Act of George II. Remembers Lord Strathallan giving him a copy of that Act; but it was never observed or enforced here. Would restrict the close time to July and August. Would not be satisfied with enforcing the close time under a penalty in the public market. Prefers enforcing it by an officer specially appointed. One such officer would be sufficient for Mull and Iona. Lobster fishing is not readily concealed, so the close time might be easily enforced by such an officer. Possibly the July close time might be felt as a hardship by the fishermen on the western coasts of the outer Hebrides, but the lobsters caught in these remote places in July would not carry to the London market. The lobsters that count two for one, that is, the lobsters under $4\frac{1}{2}$ inches in barrel, are often under 3 inches in the barrel—in fact, of any size. This is a very destructive practice. Would prevent it by enacting a gauge; and would return all lobsters under $3\frac{1}{2}$ inches in the barrel. Would prefer 4 inches; but thinks there might be a strong opposition to this among the fishermen. Would enforce the gauge, like close time, by the fishery officer. 12 fathoms water is the deepest they fish in here. Believes they might get bigger lobsters if they occasionally fished in deeper water. Does not approve of the artificial ponds. The lobsters in them are starved and prey on each other, and those that remain are in bad condition, unfit for human food. Once tried a pond on a small scale himself, by decking over a large skiff and keeping lobsters in it. Although he fed them, he found the plan did not answer. The lobsters were unfit for the market. The coming in of a large consignment of Norwegian lobsters to the London market at the same time as a quantity of Scotch lobsters, an occurrence which not unfrequently takes place, causes a glut in the market, and lowers prices. Has occasionally, owing to this cause, got as little as 1s. 5d. a dozen for four boxes.

*Decrease.**Price.**Boats.**Spawning.**Close time.**Gauge.**Ponds.*

LOBSTERS.

The Mull lobsters are very good in size and quality, though not quite equal to those from the island of Barra, which he believes to be the largest in Scotland. The lobsters from the mouth of Loch Sunart are large and fine, but not numerous. Got one there last summer upwards of 7 lbs. weight. The chief lobster grounds in this district are the south and west coasts of Mull, the Trishnish islands, the Torren rocks, and Iona. Does not think there would be much opposition to a close time among the fishermen here, especially when they began to see its advantages. There are a good many crabs about Mull; but they won't carry to the English market. They are chiefly got in the lobster creels. They are well sized, but somewhat watery. Those got in the crevices of the rocks are of better quality. Crabs don't keep like lobsters; they are much more delicate.

CRABS.

Will not carry.

LOBSTERS.

Decrease.

Migration.

Close time.

Spawning.

Gauge.

Creels.

Ponds.

WILLIAM SPROAT, writer, procurator fiscal, Tobermory. Has been 30 years resident in Tobermory, during which time he has paid considerable attention to the lobster fisheries around Mull and the neighbouring islands. Lobsters are not nearly as plentiful as formerly, and, on an average, not above half the size. Places that were productive fishing grounds when he first came to Mull, are now almost exhausted; for example, Tobermory Bay and as far round as Caillach Head. Is quite certain that a lobster ground of moderate extent may be almost entirely exhausted by over-fishing; and such a ground, when once exhausted, is very difficult to restock, as lobsters keep very much to their own grounds. For instance, he does not think that a lobster belonging to Tobermory Bay would go far outside its own grounds. A close time for lobsters, and a gauge, are imperatively called for to restore the fishings. Neither would be sufficient separately. Their combination is absolutely necessary. The close time should be that of the old Act of George II., from 1st June to 1st September. Lobsters breed all the year round; but the summer season is best adapted for propagation. Does not consider the enforcement of the close time in the public markets, under a penalty, directed against taking, buying, or selling to be sufficient. Would also have a fishery officer appointed for the Mull district, who should have authority to examine the fishing grounds during the close months, and also the boats, creels, &c. during the fishing season. It should be the duty of this officer not only to see that the close time was strictly observed, but also that the gauge was adhered to. Is in favour of a 5-inch barrel gauge, and would return all lobsters to the sea under that size, and would prohibit the admission of all foreign lobsters to the British market under that size. The fishery officer should have power to seize *brevi manu* all lobsters under the prescribed size. The custom-house officer at Tobermory might easily act as fishery officer also, without at all neglecting his more peculiar duties. For this additional work he should get 15*l.* a year salary and an allowance of 5*s.* when obliged to be from home for a night. When he first remembers the fisheries there were not half as many boats engaged on them as at present. Remembers when there were only three or four boats belonging to Tobermory that prosecuted the lobster fisheries thoroughly. Then each boat carried only from 20 to 25 creels; now each boat carries more than double that number. This increase in the amount of fishing gear is necessitated by the scarcity of lobsters. With the old amount of fishing gear the fishermen could not earn a living. Agrees with the preceding witness, in his condemnation of the artificial ponds for keeping lobsters. The Barra lobsters are the finest that are brought to Tobermory. Wishes to express his opinion that the object of the present Commission will be fully attained if it should result in the enactment of a close time and a gauge combined. The combination of the two is essential and for the benefit both of the fisherman and the consumer.

NEIL MACQUARRIE, formerly a fisherman, and now a fish merchant in Tobermory. Was a practical fisherman for 20 years, and is now a buyer. His experience of the lobster fisheries extends not only to Mull, but also to North Uist, Benbecula, and Barra. The last-named island produces about the best lobsters in Scotland. Lobsters are decreasing in number and in size through over-fishing. Does not, however, see the necessity of a close time; a gauge is the true remedy; but if there is to be a close time would restrict it to the months of July and August. A gauge is imperatively required. They are catching far too small lobsters at present, less than 3 inches in the barrel. At least a third of the lobsters sent off from Mull are the two-for-one lobsters. Would take no two-for-one lobsters; would return them all; or rather, per-

Decrease.

Gauge.

haps, would count lobsters 4 inches in the barrel and upwards whole lobsters. Would allow the 4 inch lobsters to count two for one, and would return all below 4 inches. The gauge should be enforced in the public markets under a penalty, and should apply to the whole country and to all lobsters, from whatever quarter, brought into the home market. Has fished in 15 fathoms water; but has known fishermen fish in 20 fathoms. On sandy grounds lobsters are larger but less numerous than on rocky grounds. Thinks that lobsters spawn all the year round. Sent off this year 297 dozen lobsters, the produce of one boat fishing for him off the island of Canna. Had four other boats fishing for him—two at the Trishnish islands; one at Loch Tua; and one in Tobermory Bay and round Ardnamurchan. Believes that he has sent off this year at least 1,000 dozen of lobsters. This, however, has been an exceptionally good year as regards the take of lobsters, but prices have been low. The prices in London were much higher when he first began fishing than they are now; thinks that this is in a great measure owing to the competition of the Norwegian lobsters. Thinks that the islands of North Uist and Barra produce at least as many lobsters as the island of Mull. Bunessan, Salen, and Tobermory are the chief places for shipping the Mull lobsters. Thinks that lobsters stay very much on their own grounds. Good lobsters are to be got in Loch Ewe and Gairloch on the Ross-shire coast. Crabs are plentiful and good about Mull, but there is no market for them. Thinks that there should be a 5-inch gauge for crabs.

LOBSTERS.

Gauge.

Price.

CRABS.

No market.
Gauge.

LOBSTERS.

Decrease.

Close time.

Weather.

Close time.

Spawning.

Gauge.

Ponds.

Supply of.

CRABS.

Will not carry.

ARCHIBALD MACDONALD, general merchant, Tobermory. Has been acquainted with the lobster fisheries, as a lobster buyer, for 25 years. Can speak as to these fisheries around the islands of Mull, Rum, Coll, Tiree, Canna, and Muck, and also around Ardnamurchan. The present year has been a productive one generally, though in some places there has been a falling off. Is not prepared to say that the fisheries have fallen off much. Where there is an experienced and hard-working crew, about as many lobsters are got now as formerly. The Trishnish Islands, near Mull, have been closely fished for 30 years, and they are still productive. Twenty-five years ago each boat would carry 40 creels; now each boat will carry 60. They fish all the year round here, except from the middle of November to the 1st March, when the weather is generally too stormy. On the Atlantic seaboard of the Outer Hebrides there is no need of a close time. Nature provides one, and the lobsters get a rest. On the inner bays and lochs, which are sheltered from the Atlantic storms, and may be fished all the year round, such as Gairloch, Loch Ewe, &c., a close time might be advisable. If there is to be a close time it should be restricted to the months of July and August. Thinks that lobsters spawn principally in these months, though berried hens are to be found all the year round. The close time should be enforced in the market, under a penalty, applying to taking, buying, or selling. Thinks that there is no need of a fishery officer. Is in favour of a gauge to apply to the whole kingdom. Would allow no lobster under 4 inches in barrel to be taken: all lobsters of $4\frac{1}{2}$ inches and upwards to count as whole lobsters, and those of 4 inches as half, or 2 for 1 lobsters. There is still good lobster fishing in Tobermory Bay, and around the island that shelters it, though they have been closely fished.

Gets the largest lobsters on sandy ground, but they are not numerous on such ground. 12 fathoms is the deepest water in which they fish for lobsters here, but larger lobsters might possibly be got by fishing in deeper water, except in the summer months when they approach the shore. There are no artificial ponds in Mull for storing lobsters. Thinks they would not answer. The lobsters in them would get out of condition and be unfit for market. Ships at least 1,000 dozen of lobsters annually from Mull and believes that the whole shipment by the various lobster merchants, in the island is from 35,000 to 40,000 annually. When he first commenced business the prices in London were much higher than they are now. Attributes this to the competition of the Norwegian lobsters. This year he sometimes received only 5s. a dozen for lobsters—a ruinous price. 12s. per dozen is the lowest price that pays him. There is a plentiful supply of crabs of good size and quality all about Mull, but there is no market for them. They will not carry to where there is a demand for them, and there is no market for them here.

Glasgow, Friday, 3rd November 1876.

PRESENT :

ARCHIBALD YOUNG, Esquire.

LOBSTERS.

Decrease. Captain SWINBURNE, R.N. Is proprietor of Eilean Shona and of the island of Muck in the county of Inverness. Has paid much attention to the subject of the lobster fisheries, and prosecuted them for three years—from 1856 to 1859—in the neighbourhood of Eilean Shona and Ardnamurchan. Thinks that lobsters have fallen off both in number and size, and that the great cause of this is over-fishing. While engaged in lobster fishing, he himself always observed the close time, from 1st June to 1st September, provided by the Act 9 Geo. II., c. 33, sec. 4, but never knew of any other person who observed it.

Close time. Thinks that a close time is absolutely essential for the restoration of the lobster fisheries. It should be from 1st June to 1st October, and should be enforced under a penalty in the market. The penalty should apply to taking, buying, or selling during the close months. Where there are coastguardmen their services might possibly be made available in seeing that the close time was strictly observed. Would have a gauge in addition to a close time, and would allow no lobster to be taken under 4 inches in the barrel. There are still good lobsters to be found about the island of Muck, but the average weight has decidedly fallen off, though occasionally individual lobsters are got as large as any caught formerly. The boats now engaged in the lobster fishing carry more creels than they used to do, and would get far more lobsters than they get if lobsters were as plentiful in these seas as formerly. Considers it quite possible to exhaust a lobster ground by over-fishing so as to render it not worth working.

Gauge.

Creels.

Captain JOHN W. P. ORDE, of North Uist. Has been acquainted with the lobster fisheries, and taken an interest in them for 20 years. Speaks specially with regard to those of North Uist, and generally with regard to those of the Outer Hebrides. Twenty years ago the lobster fishing in North Uist was almost unknown as a general industry. It was first prosecuted by boats from Ireland, and was afterwards taken up by Harris and Bernera men; but now a considerable number of the natives of North Uist take part in it. The lobster fisheries in North Uist are very valuable, and there are far more men and boats now engaged in them than formerly. The fisheries on the western coast of North Uist are chiefly in the hands of men from the island of Bernera, and from the Hysker Islands. No close time has ever been observed in any of the western islands, except Colonsay. Were there to be a close time enforced during the summer and autumn months, it would practically put a stop to the lobster fishing on the Atlantic coast of North Uist and the rest of the Outer Hebrides. A gauge strictly enforced by a prohibition, under a penalty, against taking, buying, or selling any lobster under the prescribed size, is the true remedy to restore the fisheries. It should apply to foreign lobsters brought to the British markets, as well as to British lobsters. The gauge should be 4½ inches in the barrel. Inspectors of markets and harbour police should see to its enforcement. Informers should be rewarded, and any person should be entitled to prosecute. Loch Maddy and Kallin are the principal shipping places for lobsters from the Sound of Harris, coasts of North Uist, Benbecula, and the fords between Benbecula and South Uist, and Benbecula and North Uist. Was travelling in September last in the steamer which calls once a fortnight on her passage south at these shipping places and at Loch Boisdale and Barra, and there were taken on board during that trip 70 boxes containing on an average six dozen lobsters each, or upwards of 5,000 lobsters in all. This did not seem to be regarded as at all a remarkable consignment, and may therefore be taken as a fair average of the fortnightly catch at these places. The lobsters are carried in boxes on the upper deck of the steamer; believes that in warm weather considerable losses occur; but an improved method of packing and carriage might possibly be devised which would make these losses lighter.

Close time.

Gauge.

Supply of.

Glasgow, Saturday, 4th November 1876.

PRESENT:

ARCHIBALD YOUNG, Esquire.

LOBSTERS.

*Decrease.**Creels.**Close time.**Gauge.**Price.**Gauge.*

HUGH MACLACHLAN, fish merchant, 18, Jackson Street, Glasgow. Has been 30 years engaged in the lobster trade. Was the first person who ever sent a boat to fish in the island of Harris, now a chief centre of the lobster fisheries. When he first began business, Mr. Ritchie, Iona, Mr. Gallagher, Greenock, and himself had the whole trade in lobsters on the western coasts and islands in their hands. Lobsters were then very plentiful, far more plentiful than they are now, and they did not generally go farther north than Salen, in Mull, to fish for them. Was the first man to introduce creels for fishing for lobsters at Port Skerry, on the west coast of Sutherlandshire. Previously to that, the fishermen there had all fished with rings. Creels are more deadly, and enable the fishermen to fish in deeper water. The boats at first would carry about 36 creels per boat. Each boat now carries many more creels, and there are three times as many boats engaged in fishing. In 1852, one of his boats fishing at the Hysker Islands, took 100 boxes of lobsters in a fortnight, each box containing $3\frac{1}{2}$ dozen, for which he paid 10s. per dozen; $3\frac{1}{2}$ dozen lobsters would then fill a box; now it takes from 7 to 8 dozen to do so. Lobsters have decreased greatly in size as well as in number. If there were as many lobsters in the sea as there used to be, the increased number of boats and creels should catch four times as many as they do. Never used to commence lobster fishing before 1st October, and stopped on 1st May. Has paid as much as 2,500*l.* in one year for lobsters shipped at Kallin and Tarbert in Harris. His reason for commencing fishing on 1st October, and stopping on 1st May, was that it seemed to him in the long run to be the most judicious and profitable course to follow. Considers, and has always considered, that a close time is essential for the preservation and development of the fisheries; and now that they have decreased so much, they can only be restored by enacting a close time, and seeing it strictly enforced. Would have the fishing season to extend from 1st November to 1st May, and would have the rest of the year close time, the close time to be enforced in the public markets, as in the Salmon Fishery Acts. The penalty should apply to taking, buying, or selling. Is of opinion that the close time suggested would not interfere with the productiveness of the fishings on the west coast of the Long Island, and of the other Outer Hebrides, because the lobsters caught in these places during the warm months won't carry to market, the localities are so remote. They won't keep. There is a great loss, even in the case of the lobsters caught on the Atlantic seaboard of these islands during the latter half of May, in their transit to the English markets. When first engaged in the lobster trade, scarcely ever took a lobster under $4\frac{1}{2}$ inches in barrel. Lobsters counted two for one if they wanted a claw. Put back all the small lobsters, and hardly ever took one under $4\frac{1}{2}$ inches in barrel. Is obliged now to take them any size, often under 3 inches in the barrel; but strongly disapproves of taking such small lobsters, and would wish to have a gauge enacted which would effectually put a stop to it. Thinks the gauge by barrel measurement the fairest and best. Would return to the sea all lobsters under $4\frac{1}{2}$ inches in the barrel. Twelve fathoms is the deepest water in which he has known lobsters fished for. The average weight of lobsters has decreased at least one-half. Thirty years ago 20 lobsters would weigh as much as 45 now. Over-fishing is the cause of this. Prices are now higher than when he first began business. Paid at first from 10s. to 12s. per dozen all the year round, now pays double. Last year occasionally gave 40s. a dozen for lobsters. Once got a half tea-chest of lobsters from Portencross on the Firth of Clyde, containing about three dozen. This was sent to Messrs. W. Forbes Stuart, & Co. of London, and the price got for the three dozen was 18*l.* 10s. This was about the year 1851 or 1852. Norwegian lobsters first came in about 15 years ago. They have had a very bad effect in lowering prices in the home market. If a gauge be enacted it must apply to all lobsters brought to the British market, foreign as well as home. The gauge and close time should also, if possible, apply to the whole country, and not be local; but if it should be found expedient, for

LOBSTERS.

example, to allow the Cornish lobster fishermen to fish during the month of July on the great lobster ground off the Land's End, which is so exposed that summer is the only fishing season, would then have the close time he has suggested made applicable to the whole of Scotland, leaving England to be separately dealt with. Regards a close time as absolutely essential. Would prefer, if practicable, to have it applicable to the whole kingdom; but would rather have a local close time than none at all. Entirely disapproves of artificial ponds for keeping lobsters in for a length of time, until they are wanted for the market. In such ponds the lobsters are starved, and get watery and out of condition. The sending of such lobsters to the English market gives a bad character to the Scotch lobsters. All the lobster salesmen in England that have received such lobsters entirely disapprove of them. Once lost about 500*l.* in one season owing to some of his men having contracted for the lobsters from three of these ponds.

*Close time.**Ponds.**Spawning.**Supply of.***CRABS.***Close time.**Gauge.*

Has no doubt whatever that a lobster ground of limited extent may be so cleared out by over-fishing as to be exhausted for all practical purposes. Thinks that lobsters spawn chiefly in the months of March and April, though berried hens are got all the year round. In March and April there are from 40 to 45 per cent. of berried hens. Thinks that a rough estimate put before him, calculating the whole yield of the Scotch lobster fisheries at 300,000 annually, is not far from the truth. Does not think it an over-estimate. Would have a close time for crabs, the same as that for lobsters, and also a gauge of $4\frac{1}{2}$ inches; but does not speak with the same confidence regarding crabs, not having had the same experience of them as of lobsters.

APPENDIX No. II.

STATIONS of the OFFICERS of the BOARD of WHITE HERRING FISHERY,
SCOTLAND (communicated to the Commissioners by the Honourable
BOUVIERE PRIMROSE, Secretary to the Board).—February 1877.

Station.	No.	Station.	No.
Eyemouth - -	1	Wick - -	2
Leith - -	2	St. Margaret's	
Anstruther - -	1	Hope, Orkney -	1
Montrose - -	1	Lerwick, Shetland	1
Aberdeen - -	1	Stornoway - -	1
Peterhead - -	1	Ullapool - -	1
Fraserburgh -	1	Broadford, Skye -	1
Macduff - -	1	Fort William -	1
Buckie - -	1	Campbeltown -	1
Burghead - -	1	Ardrishaig - -	1
Cromarty - -	1	Rothesay - -	1
Helmsdale - -	1	Greenock - -	2
Lybster - -	1	Girvan - -	1

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Close Season—*cont.*For Crabs, recommended—*cont.*

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7 ————— 18.

9 ————— 23.

7 inches long, 23.

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17; Whitehills, 18, 19; Moray Frith, 19,
28; Orkneys, 19; L. Erribol, 19, 26; Mac-
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Fraserburgh, 23, 24; Inverness, 25; Thurso,
25, 26; Dunnet Head, 27; Keiss, 28, 34;
Wick, 29, 30; Pentland Frith, 30, 32; John
o'Groats, 32; Kirkwall, 34, 35; Stromness,
36, 38; Burghead, 39; North Berwick, 40,
41; Portree, 42, 43; Dunbar, 45; Storno-
way, 48, 49; Newhaven, 51; Tarbert, 52, 53,
54; Salen, 54; Cove, 55; Oban, 57, 58;
Tobermory, 58, 59, 60; Ardnamurchan, 62.

——— size:—Edinburgh, 2, 3, 4; Iona, 4; Peterhead, 12;
Thurso, 25; Kirkwall, 35, 36; North Berwick,
40, 41; Portree, 42, 43; Rona, 43; Storno-
way, 48; Tarbert, 52, 53; Salen, 54; Tober-
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JOINT APPENDICES
TO
REPORTS ON THE CRAB AND LOBSTER
FISHERIES
OF
ENGLAND AND WALES,
AND OF
SCOTLAND.

JOINT APPENDIX No. I.

CORRESPONDENCE relative to the LAWS in Force for regulating the SHELL
FISHERIES of NORWAY.

British Consulate General, Christiania,

6th November 1876.

MY LORD,

I HAVE the honour to acknowledge receipt of Despatch No. 7 (Commercial) of the 18th ultimo, enclosing copy of a Despatch received from the Inspector of Fisheries at Aberdeen, in which he expresses his desire to obtain either an abstract or a complete translation of the law in force for regulating the taking of shell fish.

In conformity with your Lordship's instructions, I beg leave to transmit copies of the laws bearing on this subject now in force in Norway, one relative to the preservation of lobsters, and the other to the pearl mussel fishery, with translations of the same. During the late session of the Storting, a Royal Proposition was laid before it, dated 31st December 1874, to amend the Law for the Preservation of Lobsters.

The proposed amendment only affected the third paragraph of the Act in force, in which the fine is fixed at 24 skillings (10 $\frac{1}{2}$ d.); this, it was proposed, should be raised to 60 skillings, and that an additional paragraph should declare it to be unlawful at any time to possess, sell, buy, or receive lobsters under 8 inches in length, as well as lobsters in spawn.

The rejection of this amendment was, however, recommended by the Committee appointed to report upon it, on the ground that those best acquainted with the subject failed to recognise its necessity, and, further, that the enforcement of the provisions of the proposed amendment would be attended with much difficulty; that, from the statistical facts before the Committee, there was no evidence of a diminution in the supply of lobsters of late, and that consequently the circumstances did not warrant the adoption of the extraordinary regulations proposed, which would be justifiable only when there was a prospect that without such restrictions the fishery in question would materially suffer.

The annual take of lobsters in Norway may be estimated at about 1,000,000, representing a value of about 22,500*l*. They are exported chiefly to the United

Kingdom, and this trade is rapidly increasing in importance, according to the following returns :—

Year.	Number.	Value.
1876	No returns.	
1875	400,000	£8,889
1874	365,518	8,122
1873	209,099*	4,356
1872	207,299	3,111

Further details respecting the lobster fishery in Norway will be found in Vice-Consul Crowe's Report on the fisheries for the year 1875.

The oyster fishery, which was carried on along the whole Norwegian coast, and formerly with profitable results, has fallen off so considerably of late years as to be no longer considered of any value.

No laws relative to the crab fishery have as yet been passed by the Norwegian Parliament.

I have, &c.
(Signed) HENRY M. JONES,
Consul General.

The Right Honourable the Earl of Derby, &c., &c.

ENCLOSURE.

TRANSLATION.

Law for the Preservation of Lobsters.

Malmö, June 29th, 1848.

We, Oscar, by the Grace of God, King of Norway and Sweden, &c., &c.

Make known, that before us has been laid the resolution passed by the present assembled Storting on the 9th May this year, to the effect following :—

1. It is prohibited to catch or sell lobsters between the 15th of July and the end of the following September.

2. The term of the above prohibition can be limited in different districts by the King's authority. Application to this effect must be sent through the local officers of such district. The prohibition must, however, in every case be enforced during the whole of the month of August.

3. Any person taking or selling lobsters during the period prohibited according to paragraphs 1 and 2, will be liable to a penalty of 24 skillings† for each lobster illegally sold or caught.

4. Cases arising from violations of the above regulations will be judged by the police courts. Whenever anyone is denounced for such offence the police or county magistrate is to inquire if the offender agree to pay the fine, the amount of the same being notified to him at the time by said official; if so, the said fine shall, in the event of his being unable to pay, be recovered by execution. If, on the other hand, he deny the charge, and refuse to pay the fine, the said official shall duly investigate the charge and try it before the Court.

The fines recovered will be divided equally between the informer and the local Poor Board.

5. From eight days after the commencement of the prohibited term until eight days after the expiration of the same, it is likewise prohibited to export lobsters to foreign countries. Infringements of or attempts to infringe the above regulations will be punished in accordance with the Customs law of the 26th September 1845, on the subject of smuggling prohibited goods.

6. This law will come into force on the 1st January next year.

As we have accepted and confirmed, so do we now accept and confirm this as a law.

Given at Malmö, 29th June 1848. Under our hand and Seal of the Realm.

OSCAR. (L.S.)

* *Sic* in original: but there is apparently an error in copying; the figures should be 294,099. *Vide* Report (England and Wales), p. XIV. *ante*.

† (10*sd*.)

JOINT APPENDIX No. II.

NATURAL HISTORY OF CRABS AND LOBSTERS.—By FRANK
BUCKLAND, Esq.

Having obtained during the late inquiry, and by other investigations, some additions to the general knowledge of the natural history of Crabs* and Lobsters, my Colleagues have agreed that I should have the privilege of putting these facts together in a consecutive form, with a view of elucidating the accompanying report.

Crab† and lobsters may be said to correspond with insects, and to do much the same duties in the water as insects perform on land. Linnæus formerly included the crab, lobster, and crayfish with Arachnidæ or spiders, under the general division of insects. Even now a certain kind of crab, the "Skerry," or "Corwick" of Cornwall (Maia Squinado), is called the "Spider Crab" or the "Thornback Spider."

Anatomy of crabs
and lobsters.

As a watch case contains much delicate and complicated machinery, so does the back shell or carapace of crabs and lobsters contain many highly complicated and wondrous structures. Thus in the crab, we can see by dissection the membrane which lines the carapace and covers the viscera, the large and powerful heart, two sets of arteries, the gills or lungs, the mouth, the stomach, the convoluted intestines, and the very large liver. The lobster is somewhat similar in its anatomy.

The general appearance of a crab or lobster when walking at his leisure is very insect-like. In the crab and lobster the skeleton is external; they have no bones at all; in fact they may be said to live inside their skeleton, or, if you please, to be "Natural armour-clads," the joints in their harness being beautifully adapted for offence and defence. This covering is composed of the skin more or less hardened. This "dermo skeleton," when once complete, undergoes little or no further change. It is adapted to the increasing size of the body by being periodically cast and entirely renewed at such periods as the body grows too large for its case: in fact crabs and lobsters grow by "moulting" their shells.‡

If the claw of a lobster be placed in strong nitric acid, a great effervescence takes place; this is caused by the solution of the phosphate and carbonate of lime of the dermo-skeleton in the nitric acid. In the lobster there is 60 per cent. of carbonate of lime, and 14 per cent. of phosphate of lime. The animal must, of course, secrete these mineral matters from the sea water. The shell of the crab is not quite so readily soluble in nitric acid as the shell of the lobster. When the nitric acid has done its work, and the effervescence has ceased, the lobster's claw is found to be quite soft and flexible, like a wetted glove finger, though still retaining its original shape. This substance, (the skeleton of the animal), is composed of Chytine, the horn-like substance which forms the elytra of insects. The firm horn-like covering of the wing of a cockchafer, is a good example of Chytine. I have examined the new and soft skin of a crab which has just cast its shell; it is about the consistence of thin brown paper, and when burnt smells somewhat like horn. In fact this new skin corresponds to an old skin out of which the earthy materials have been dissolved by nitric acid.

Composition
of shell.

The skeleton of the crab has been described as being composed of three layers: the epidermis or cuticle, the rete mucosum or pigment, and the corium.

* In Scotland crabs are called partans.

† The crab has been promoted to form one of the signs of the zodiac. He represents the month of June, because when the sun has come to this constellation he begins to go backwards after the manner of a crab. The crab thus got his promotion: when Hercules was fighting against the Lernaean hydra, a crab came out of the marshes and bit his foot; and June promoted him to be a constellation among the stars.

‡ See further remarks on this, pp. 10, 11, and 19.

The epidermis is horny, and has feather-like hairs on certain portions of its surface. The rete mucosum consists generally of pigmental matter diffused through a certain thickness of the calcareous layer upon the corium; the strength of the shell depends upon the calcareous material deposited in it.*

Microscopically examined, the corium is found, in the crab, to be traversed by parallel tubuli (like those of the dentine of teeth), giving off lateral branches at certain regular distances. The best examples of the dentine-like structure will be found in the black portion of the large claws.

When lobsters are boiled, their armour-like coats turn red; the coats of crabs do not turn red with boiling. There is much doubt as to the cause of this sudden change of colour by heat; but, as far as I can ascertain, it takes place in consequence of the decomposition of a peculiar substance which leaves a red-coloured oil in a free state. This red-coloured oil does not appear after contact with cold water, but appears instantly under the action of boiling water, and gradually under the action of water slowly heated. It is highly interesting to observe the bright carmine hues running like a fire-work all over the coat, and especially the eggs, of a dead lobster when water at 212° is poured upon it. The beautiful colour which appears in the egg of the lobster is one of the unfortunate reasons why so many millions of lobster eggs are so wastefully consumed every year as a garnish for the white-coated turbot, or for fish sauce. I have ascertained that spirits of wine has, as well as boiling water, the power of changing the shell of the lobster and its eggs to this bright colour. It is curious to observe that the eggs of a crab before it is boiled are of a red colour, and they do not change their colour when boiling.

When a horizontal section of one of the thin plates of an unboiled lobster's tail is placed under the microscope a distinct hexagonal network can be seen. This is found to be due to the presence of some innumerable granules of calcareous matter which are in some places so angular as to lead me to believe they are crystals of carbonate of lime.

When a vertical section of a lobster which has been boiled is examined under the microscope, both vertical and horizontal striæ will be seen, the vertical striæ being the largest. The red colour can be distinctly seen not to be contained in cells, but to consist of a finer and more compact tissue than the other parts and to have the colouring matter equally diffused through it. The reason why lobsters turn red when boiled and crabs do not turn red requires further investigation both by chemists and microscopists.

Crabs and lobsters contain much phosphorus; the following table shows—

The CHEMICAL COMPOSITION of the EDIBLE PARTS of the LOBSTER.

	Flesh.	Soft Internal Matter.	Spawn.
Nitrogenous matter - - - -	19·170	12·140	21·892
Fatty matter - - - -	1·170	1·444	8·234
Mineral matter - - - -	1·823	1·749	1·998
Non-nitrogenous matter and loss -	1·219	0·354	4·893
Water - - - -	76·618	84·313	62·983
	100·000	100·000	100·000

That phosphorus exists in large quantities in lobsters may easily be proved. A lobster in hot weather, when it ceases to be fresh, assumes a highly phosphorescent appearance when seen in the dark, equal, if not superior, to that of a glow-worm or luminous centipede. This light increases by friction. Once in my life I was called on to exorcise a ghost, which appeared in a phosphorescent form. The ghost turned out to be a mass of bits of lobster and lobster shells thrown away into a dark corner by the college cook. This phosphorescent appearance is probably

* See Catalogue, Royal College of Surgeons, "Histology," and Carpenter's Reports to British Association, 1844 and 1847.

caused by the chemical changes in the organic tissues, when life is no longer present to resist the ordained agency of decay and decomposition; in fact it is a slow combustion by combination with oxygen. Decayed wood is also sometimes luminous. On a railway in North Wales I discovered a wooden sleeper which at night was highly phosphorescent.

The presence of phosphorus in the lobster is of great importance to the consumers of these sea luxuries: there is no substance which conveys phosphorus so readily into the human system in an agreeable form, and which the system so readily and quickly assimilates, as the flesh of crabs and lobsters. For this reason lobsters, crabs, and oysters should form the diet of those engaged in business or arduous literary pursuits, where there is much wear and tear of the brain-powers, and where an extra supply of phosphorus is required for the food of the brain. It is for this reason, I imagine, that lobsters and crabs are generally eaten and most esteemed for supper. The brain towards night begins to feel a little exhausted; the lobster, crab, or oyster quickly supplies the want, and the system immediately feels the effect.

The structure and faculties of crabs and lobsters are very wonderful and perfectly fitted by the Creator to the duties they have to perform.

The mouth of the crab is very complicated. In the crab I find there are immediately under the eyes no less than six distinct pairs of moveable doors, valves or lips; some of these are subservient to the mouth, some to the breathing organs; all are worked by their own separate sets of muscles. Having dissected away, one by one, these doors, which are highly complicated structures and thickly covered at their margins with short stubby hairs, we finally arrive at two very sharp teeth. In a crab measuring 8 inches across the back, the teeth are nearly three quarters of an inch across; they are very much the shape of a human nail. Their external edge is sharp and chisel like, and on the interior aspect of the teeth is found a hard projection of glass-like enamel; these two powerful teeth are set on a very beautiful hinge. When a crab shell is opened two tendon-like bodies are perceived among the viscera. These tendon-like bodies, resembling the "leaders" of a turkey's leg, are inserted into the teeth so as to work them with very great power. The teeth themselves are fixed on to a framework of great strength and hardness. These teeth are incisors not grinders. The tooth of a large crab when dissected out of the body is nearly as large as the incisor of a calf, and much resembles it in general contour. Place the two thumb nails together, imagine them to be teeth working one against the other, and you will have a good model of a crab's incisor-teeth. Immediately behind the teeth come the œsophagus, and the stomach. This is composed of a framework between which a soft, highly elastic membrane or stomach is spread, capable of containing much or little food. In this stomach are seen three large teeth; these are powerful mill-stone grinders. The longest of these teeth are situate at the bottom of the stomach. A tooth is situated one or either side. Their surfaces are corrugated, much resembling the pattern we find in the tooth of an Indian (not African) elephant. These teeth are worked by two strong wire-like tendons, of which, in fact, they form the terminations, and are no doubt powerful masticating and crushing organs; this is proved by the fact that the fish bones found inside a crab's stomach are always very much comminuted. In their digestive apparatus the crustacea, which are all carnivorous, resemble the predaceous insects in the shortness and simplicity of the alimentary canal. The liver in the crab is highly developed. In a good dressed crab the liver or "cream" forms the best part of the dish.

The sense of smell is probably highly developed. The crab has not long antennæ like the lobster; it has, however, two small horns near the angle of each eye, also two large horns in the middle of the forehead; these are, I conclude, somehow connected with the sense of taste and smell. That the faculty of smell is probably highly developed may be inferred from their habits; because, when the pots are put down by the fishermen to catch them, they are known to come to the pots for food, from a considerable distance round; "The strongest smelling bait and the highest coloured has the preference. The white hound" is preferred by fishermen because of its smell," one witness informed us. This sense of smell may account for the fact that small fisheries are more readily fished out than large fisheries. Moreover, crabs are scavengers, and therefore the sense of smell is highly valuable to them. In terrestrial animals,

Mouth and stomach of crab.

Organs of smell in crab.

which act as scavengers, we find the sense of smell highly developed; a good example can be found in the blue bottle fly and the dung beetle.

The organs of sight are also very keen: the structure of the eye* is very insect-like: the eye of the dragon fly much resembles the eye of the crab.

This structure of the crab's eye and his sense of smell, will, I fancy, account for the fact that crabs are caught in the greatest quantities when the water is muddy and thick. Crabs under these circumstances "crawl the best." Crabs and lobsters also, having gone in the pots at night, will come out of them at sunrise if the pots are not drawn up, because they see they are in a trap.

Lungs of crab.

The breathing apparatus of the crab is very complicated and very wonderful. In the case of fishes the animal has to breathe water by means of gills; land animals have to breathe the air by means of lungs; neither of these can change places without death. But the crabs and lobsters being littoral or shore animals, and being liable to be left high and dry by the tide, require lungs that can actually breathe both in air and water. The seal, porpoise, crocodile, hippotamus, &c., though passing most of their lives in water, breathe air, and have apparatus for so doing. The crab, on the contrary, breathes both air and water. The lungs consist of a series of tufts of very delicate membranes which are pyramidal in shape; of these there are eight on each side. These sets of eight lungs are packed away as it were in a watertight box. The water therefore passes through them without interfering or coming in contact with any of the other viscera. This is a most beautiful structure, not yet imitated by any design of man. The inner side of this compartment consists of a firm box, made of the same substance as the shell; the outside is a beautiful, delicate, elastic, expansive, membrane, and is like gold beaters' skin in structure. When in good health respiration is kept up by means of a constant stream passing through this lung-containing chamber. The water enters through an aperture which I find is situated immediately under the tail. It makes its exit through a slit in the neighbourhood of the mouth, where it is regulated by the action of a curious valve-like structure, which is connected with the mouth. But this is not all: extending along the whole length of these eight finger-like lungs is a delicate curved whalebone-like filament (the flabellum) lined on each side with delicate hairs, forming, in fact, a delicate brush; this fits accurately on to the lungs. I find this whalebone-like filament is fastened to and worked by the great door, the first of the numerous doors at the crab's mouth, and which can be seen in perpetual motion, like the gills of a fish when the crab is breathing. The probable use of this beautiful mechanism is to keep up a gentle pressure upon the complicated lung structure, and regulate the flow of water to it. There is also a valve which will keep the water in the lung box, as a cork keeps the fluid in a bottle. If it were not for this structure the crab could not live equally well in the water and in the air. I have reason to believe that when he leaves the water, either accidentally or of his own accord, there is always a certain quantity of water in the lung box, which keeps his gills moist. The bubbles proceeding from the lungs of a crab or lobster when gradually dying out of water, indicate that the air in the lung box is becoming vitiated, and a further supply is required, also that the gill tufts are becoming adherent to each other, as may be observed in the gills of a dead fish. These gill tufts in the crab and lobster are popularly considered poison, and are called "dead men's fingers."

Varieties of crab.

It is an undoubted fact that crabs are much larger in some places than in others; the largest crabs are found on the coasts of Devon and Cornwall, between the Start and the Lizard. These are sent as far as the Edinburgh market. The crabs on the north-east coast of England are small crabs. The north-east coast of Scotland does not produce large crabs. At Dunbar they run small, and are known in the market as "Dunbar bugs." The largest crabs are caught at Start Point in Devonshire. The largest Cornish crabs are 11 to 12 inches across the back, and weigh from 11 to 12 pounds.† Mr. Cornish of Penzance has seen a crab weighing over 12 pounds. Large

* Crabs' eyes, as used in the Pharmacopœia of olden times, are rounded calcareous secretions found on the sides of the stomach of crayfish. These substances are supposed to act as reservoirs for the lime required by the animal to grow a new shell. They were said to be an antidote, a cure for gout. At the present day a substitute for them, composed of carbonate of lime, is used principally for cleaning plate.

† Mr. Laughrin, of Polperro, says 14 to 16 lbs.

cock crabs are common in the early months of the year in the London markets. At Flamborough the largest crabs are only 7 inches, and at Scarborough a 6-inch crab is a good crab. It is certain therefore that there are two kinds of crabs, a large sort and a small sort—by analogy “Pony crabs” and “Horse crabs”—and that the smaller kind will never exceed a certain dimension; the cause of this difference in size is probably temperature—the Cornish coast being within the influence of the Gulf stream, as shown by the vegetation and other natural products, and the sea on the east coast being as cold as any part of the North Sea, and therefore unfavourable to the growth of crabs. Mr. Spence Bate considers that Cornwall, where the largest crabs are taken, is the central habitat of the species (see Evidence, England and Wales, p. 57).

A kind of black crab is caught in Mount's Bay. These crabs, as at Scilly, are small, black, light, and not fit to take; and a small sort of crab is found in a place near Plymouth breakwater; they are never large there; it is possible that this is simply a breeding place (*vide* Evidence, England and Wales, p. 56).

Small kinds of lobsters are also caught at Scarborough. Bridlington Quay, in Yorkshire, may also be said to be a nursery for crabs; as many as 300 little crabs are sometimes caught there in one night.

Crabs are migratory in their habits. They especially resemble insects, inas- Migrations of crabs.

much as they are most lively in warm weather; they approach the shore in summer time. Witnesses at various places gave the following evidence on this point:—“On the 9th May 1876, crabs and lobsters came in in good quantities. On the 16th they came in in nice quantities. On the 31st he had three dozen very fine fish. On the 2nd June he had two dozen and four. On the 8th of June one-and-a-half dozen. On the 12th June two-and-a-half dozen. On the 15th June one dozen and a score. A dozen lobsters is 13. Twenty-six half crabs make a dozen.”

Another witness said, “Begins fishing in March, looking for cock crabs. The cold in the spring keeps back the hen crabs. When the warm weather comes he looks for hen crabs and catches fewer cocks. After the hen crabs get scarcer, in August and September, he looks out for crayfish.”

“The crab and lobster fishery ceases from the middle of August to the middle of March, when they are migrating.”

“Crabs and lobsters came to a certain ground near the Longships, and were as thick as possible, even when the fishermen left off fishing in September. When the fishermen went back in March and April to look for them they were all gone.”

“It is useless to set the pots before April. In October they (the crabs) draw off into deeper water.”

“The crabs come in from the deep water. They come some years in March, some in April, but this depends on the weather. They crawl best in April and May.”

One witness produced a “chart of sea-bottom adjacent to Banff, Macduff, and Whitehills, showing that in the autumn months the crabs are three miles from land, and in the summer months, May to August, near the land for shelling.”

“Female crabs are caught by trawlers in early part of the year, February and March, 6 to 18 miles from the shore.”

“In the spring of the year no large she crabs are seen, but in the summer they are caught”

“Crabs and lobsters come towards the shore in warm weather, and bury themselves in the winter.”

“Crabs and lobsters will not crawl in hard frosty weather.”

Crabs will foretell the weather 24 hours beforehand, and will not move when a storm is coming on. Warm, rainy weather with westerly winds, is good for catching crabs. During the easterly winds the crabs are inferior, and no big ones are to be caught; night is the most favourable time to catch them. Crabs “crawl best” after a heavy ground swell, which is called a “crab swell.” The reason probably is that the bottom of the sea is disturbed, and the crabs are thus enabled to get worms and other food. Hot weather is necessary for crab fishing. Thick water in day time and clear water at night is the best time for fishing. The moon makes very little difference. Crabs and weather.

Habitat of crabs.

Crabs and lobsters inhabit somewhat similar localities at the bottom of the sea. Crabs, however, affect the sandy plateaux rather than the rocks themselves. The large crabs live on rocky bottoms, the smaller crabs on stony and sandy bottoms. On the coast of Cornwall large lobsters are caught in the very deep crevices far among the rocks, which are called "pills." If the pot slips into a deep crevasse large lobsters are nearly sure to be caught.

Crabs travelling.

Crabs are very fast walkers when on the march. They progress, as it were, on tip-toe, supporting their heavy carriage-like bodies by means of their eight legs, each of which is terminated by a spike. It is difficult to follow the movements of their eight legs, more difficult than to follow the movement of the four legs of a horse. The eight jointed legs, each with its spike, enable the crabs to climb among the rocks like great spiders.

Crabs also are travellers, as proved by the following cases:—

Mr. Howard Fox informed us that "A small trading craft was taking shell-fish from Mullion to Plymouth, and she sank off Fowey. Shortly afterwards a fisherman at Mullion caught some of the identical crabs in his pots at Mullion, at distance of over 40 miles. He knew the crabs were the same he had previously captured, because he tied their claws with a peculiar knot, and the knots were still on them. Other instances of this kind have happened in this neighbourhood."

Mr. Henry Lee writes:—A very singular instance of a lobster finding its way back to its former habitat came to my knowledge some time ago. The stock box belonging to a fishmonger was overturned during a heavy gale, and the fastenings broken by the force of the sea. Notwithstanding that the prisoners confined in it had their claws bound together with twine to prevent their damaging each other, they all made their escape. Some were recaptured, and one of them, which was recognised by his having a broken "thumb" to one of his claws, was taken six days afterwards three miles from the scene of the accident, and within a few yards of the hole where he was originally caught. The string was still tightly secured both to his large claws, so that he could not have used them on his journey:

Mr. Laughrin, the coastguard officer at Polperro, in Cornwall, informed us that "crabs go from place to place, and sometimes travel 10, 12, or 14 miles. Some crabs got out of a store pot, and he found them again over seven miles out at sea in a few days."

Again, Mr. Climo, of Polruan, stated that crabs had been marked and found two miles east of the harbour in about a week; they were known because they were "nicked crabs."

On 16th October another witness marked the backs of a few crabs with the initials W W and put them back inshore. On 27th November these crabs were caught again two miles seaward.

Crabs in deep sea.

In the winter time the crabs retire from the shallow water to the deep sea. They are there picked up by the trawl nets in considerable numbers during the cold rough weather. I fancy they hibernate, (insect-like again,) burying themselves in the sand.

In December last I received a deep-sea crab from Dr. Norman, of Yarmouth. It was a she crab caught by Mr. James Burgess, fishing master. He states that many large crabs are taken by trawlers in the North Sea fishery, 80 miles east of Grimsby. During the winter months the depth of water is about 30 fathoms on an average. Nearly 500 crabs are taken in the voyage of eight weeks by trawlers. Most of those caught out at sea have lost a claw. Some of them are very large and covered with barnacles. A somewhat similar instance of crabs being found in the deep-sea can be found at page 46 of the Evidence (England and Wales). As the spring comes on, the crabs approach the shore, arriving from their winter quarters in the deep sea.

Sexes of crabs.

The sexes of crabs are easily distinguished. Thus a male crab has a small narrow tail, whereas a female has a very broad tail, which is called the apron. In two crabs of exactly the same size across, the tail of the male crab measured seven eighths of an inch across, while that of the female measured two inches and one eighth across, see Diagram No. 7. The tail of the female is margined with hair; the tail of the male has no hair. The difference of the size of the tail in the two sexes can be seen from the engraving. Female crabs are called by the following names: Queens, Humps, Ran Hens, Seeding Hens, Doup Crabs, Pouch Crabs. The claws of the female are smaller

than those of the male. This of itself is a good diagnostic point besides the broad tail. The shell of the female is more convex than that of the male, the male shell being nearly flat. On the underside of the apron or tail of the female crab are seen a series of eight finger-like processes; these finger-like processes are double, are attached at their base, and are movable. In a crab which is not in spawn, these projections are trimmed on each side with a delicate hair-like substance, in general appearance not unlike the feather of a quill pen. It is to these silken substances that the eggs are attached. In the crab, curiously enough, no eggs are attached to the outer finger of each pair of fingers, but only to the inner, by means of these hairs extending on each side; the outer fingers form a kind of nest for the protection of the eggs, *see* Diagram No. 8.

A crab carries eight bunches of eggs under her tail. These eggs are of a beautiful red colour, even when unboiled, and perfectly globular; they are not unlike very minute herring roe. They are attached to the feathers by means of a very delicate but strong fibre, like very fine silk-worm gut, *see* Diagram No. 8. When floating in the water they appear to be, as it were, threaded together like beads in a necklace. From a calculation made by my secretary, Mr. Searle, it appears that there are 180,180 eggs in one bunch of crab's eggs; therefore there must be no less than 1,441,440 eggs on the eight bunches of one crab. Mr. Spence Bate, F.R.S., found in one she crab 2,000,000 ova. Previous to spawning, the eggs are contained or carried immediately under the shell, occupying at least one third of the whole space. This mass of eggs almost fills the shell. (See coloured cast in my museum.) The eggs are carried inside the shell for nine months before they are extruded; in this condition they are called the coral. The coral crab is especially esteemed at Aberdeen.

On bending back the tail of the crab two round apertures on the hard shell of the crab will be perceived. These* are covered with a drum-head-like elastic substance, which is perforated in the centre. When a crab is about to spawn these project. On passing a probe up these, it will be seen that a direct communication exists between these holes and the mass of coral under the shell. At the proper time of the year the eggs are extruded from within the shell and become attached, by the silky thread already mentioned, to the feather-like processes. How this attachment takes place and how the eggs are transferred from inside the crab's body to the apron, I am unable to say. It is, however, probably effected by means of the eight ambulatory legs, which arrange the eggs as they are extruded from the ovaries; the exact manner in which it is done I am unable to say, but hope to find out by means of that valuable sea laboratory, the Brighton Aquarium.

A crab may be said to be marsupial; she carries her eggs inside her body up to a certain point; they are then deposited under this pouch. The reason of this external gestation is obvious; the embryo inside the egg requires water to bring it to life. As, in the salmon, the young creature is not developed in the egg for some time after its extrusion from the mother, so the mother-crab carries about her eggs till the eyes of the embryo are developed in the egg, and the young ones subsequently bursting the shell of the egg assume an undeveloped existence as Zœa. When the eggs of the crab first appear under the tail they are perfectly transparent. I have on one occasion examined the eggs of a crab; in each egg the eye of the embryo was distinctly visible; these eggs would have shortly hatched out. According to Mr. Spence Bate the horny shells of the eggs remain attached to the feathers of the tail when the embryo escapes, and when the female sheds her shell she also sheds the husks of the eggs. The London merchants brush out all the spawn from the feathers under the tail.

The crab when first escaping from the egg is not by any means a perfect shape. It is, indeed, very unlike a crab, and the young zœa until lately were considered a distinct genus. "On leaving the egg," says Professor "Rymer Jones,† the young crab presents a curious and grotesque figure; "its body is hemispherical, and its back prolonged upwards into a horn-like

* One witness told me that these were the tents of the crabs, and that the young ones sucked from them.

† "General Outline of the Organization of the Animal Kingdom."

"appendage; the feet are scarcely visible with the exception of the last two pairs, which are ciliated like those of a branchiopod, and formed for swimming. The tail is longer than the body, possesses no false feet; and the terminal joint is crescent-shaped and covered with long spines. The eyes are very large, and a long beak projects from the lower surface of the head.

"In a more advanced stage of growth the creature assumes a totally different shape, under which form it has been known to naturalists by the name of *Megalopa*. The eyes become pedunculated, the cephalothorax rounded, the tail flat, and provided with false feet, and the chela and ambulatory extremities well developed.

"A subsequent moult gives it the appearance of a perfect crab, and then only does the abdomen become folded under the thorax and the normal form of the species recognisable."

By the kindness of Mr. Henry Lee, F.L.S., I am enabled to give drawings of the crab in its early stages of transformation. Fig. 1 (see Diagram No. 5), represents the young crab just as he came out of the egg; fig. 2 is the next form which it assumes previously to its becoming a perfect crab. These early forms of the *Zoea* crab are as unlike the parents as can possibly be conceived. The specimen figures were hatched under Mr. Lee's personal observations as Consulting Naturalist to the Brighton Aquarium.

My own opinion agrees with that of Mr. Spence Bate, who says:—"The berries will be exposed in January and carried till May; soon after that the berries are hatched out In May the water is tinged with the young *Zoea*."

But berried crabs with ova under the apron may be obtained in December and January. Mr. Climo, of Polruan, stated:—"Once he had been fishing in October, and had left some crabs in a store pot till after Christmas; in January every one was full of spawn. There were nine or ten crabs."

Other evidence was given at various places to this effect: *e. g.* at Prawle:—"About December the she crabs are berried; they are berried in December, January, and February."

Mr. Harvey, a London fishmonger, said, "The hen crabs would have the berries under their tail in the beginning of December."

Spawning of crabs.

It is the opinion of some that crabs spawn out at sea, *i.e.*, that the young are hatched out at sea. I am not of that opinion. The mistake, I think, has arisen on the different interpretations of the word "spawning." This may mean 1st. Carrying eggs. 2nd. The time when the young are hatched. My belief is (as I have said before), that crabs spawn—in the sense of first appearing "berried"—out at sea, but the real hatching out takes place in the warm spring months near the shore. All young things require warmth and food. The young salmon are born in the spring, absorb their umbilical bag, and become active just at the time their insect food is most abundant. Most, I may say all, sea-fish fry are found in the spring, and I am, therefore, led to conclude that the young *zoea* come out of the eggs in the spring, when there are three things present for their comfort and to assist their growth—1, warmth; 2, quiet water; 3, food. At that time both animal and vegetable life are just bursting forth into existence, and the food minute enough for the *zoea* to eat is at that time found in most abundance. In many parts of England the smallest crabs are found in May and June.

Young birds are born in the spring for the same reasons. If young crabs were born out at sea in the winter time, the conditions would not be favourable for them. My statement is further confirmed by the fact that the very small crabs, the first real crab-like creature after the *zoea* state, are found on the foreshore in the shallow warm water in the spring time.

Crabs shedding their shells.

As the crab is encrusted with a hardened and inelastic shell, composed of carbonate and phosphate of lime, and chytine, it is not able to grow like any other creature; it therefore periodically sheds its shell. I have a very fine specimen in my museum of a crab which I took myself at Herne Bay, where it is locally called a Pungar, in the actual process of shedding its shell. The shell when about to be cast off is split along the underside of the body from the mouth to the tail. This line of division, I find, is plainly marked in the shell of a full-grown crab.

It is not known how many times a year a crab sheds its shell.

The following evidence was given us. Mr. Matthias Dunn thinks "crabs shoot their shells at least once a year, and as often as they fill up. They must cast their shells more than once in 16 months to grow from 4 to 8 inches across." Mr. John George, of Sennen, thinks, "crabs shoot their shells once a year. Has found them every year in a certain hole with their shells off in March and April." Mr. Laughlin, Polperro, stated "that large crabs shed their shell twice a year; small ones every four or five months."

Other witnesses informed us that "a crab of 4 inches would shed his shell three times before he reached 8 inches." "Crabs are casting their shells between end of August and end of November." "A crab of $4\frac{1}{2}$ inches is about three years old."

When a crab sheds his shell he sheds every part, not only of his external covering, but also of the skin covering his internal viscera, even the horny casings of his lung tufts. He also sheds the coating of his eye, and even the external covering of his large pincher-like teeth. The coat and teeth of the stomach are, I think, also shed, but I have not specimens to show this. When a crab sheds his shell he increases considerably in size. In the appendix will be seen a diagram showing the rapid increase in size at each growth. This remarkable specimen was presented to me by Mr. Sandford of Cromer. The crab had cast its shell in the crab pot, so that the empty shell and the crab itself were luckily quite perfect. The empty shell measures across three inches and seven eighths. The crab which came out of the shell measures no less than five inches, namely one inch and one eighth larger than it was a few minutes previously. I have ascertained for a fact that a crab is enabled to draw out his claws through the narrow opening of the point where the claw joins the body by the curious fact that the shell splits just at this point. The shell of the lobster also cracks at this point. (See specimen in my museum.)

When at Dunbar, Mr. Hutchinson was good enough to give me a live lobster which had just cast its shell in a store-box; the length of the lobster shell was 7 inches, and the length of the new lobster was 8 inches. Mr. Hutchinson gives as evidence:—"It would be beneficial to everybody to return lobsters to the sea under $4\frac{1}{2}$ inches in the barrel; a lobster measuring 4 inches to-day is worth 6d.; each time it casts its shell it grows half an inch, so that very soon it would be worth double the money. A lobster grows half an inch in the barrel when it has shed its shell once."

Lobster shedding its shell.

It is probable that when crabs arrive at an adult age, they will not shoot their shell. The evidence I have of this is a male crab from the North Sea, measuring $6\frac{3}{4}$ inches across the back. Upon its back are two oysters. These oysters have adapted themselves to the contour of the crab's back; they measure respectively in the widest diameter about 3 inches. This individual crab had not, therefore, shed its shell for three years. I have also another crab which has one oyster attached to it. This crab (a female) is $7\frac{1}{2}$ inches across the back. This oyster shell measures 3 inches across. To both these specimens there are also large barnacles attached. I have also another specimen, presented by Mr. J. Wiseman, of a crab on which six oysters are fixed; the upper surface of the crab is almost concealed by the oysters. This crab must have been in the middle of a heavy fall of oyster spat. I have also two specimens of the common spider crab of small size. On the back of one are attached no less than 10 mussels, which I conclude are two years old; the other crab has, attached to the lower surface of the claw, an oyster of about four months old, two other small oysters are attached to the lower surface of the crawling legs.

Age of crabs.

Oysters do not very often attach themselves to lobsters. There is, however, a splendid specimen in the British Museum to which 20 oysters are attached. I calculate this lobster had not shed its shell for four or five years.

It is, however, to be observed that the crow, anomia, or saddleback oysters, seem to be especially fond of adhering to the shells of lobsters. I do not know why this should be; the crow oysters only come from warm water; when, therefore, crows are found upon lobsters, it is quite certain that they inhabited places where the temperature was somewhat warm.

Not only do crabs cast their shells, but they not unfrequently, from some cause or other, throw off their claws, and, strange to say, and it is interesting to know, that they will grow again. I have a specimen of a crab whose larger claw measures $12\frac{1}{2}$ inches long, and 7 inches in circumference at the largest part, while

the smaller claw measures 5 inches at the outside measurement, and 2 inches in circumference at the largest part. After a crab has shot his claw the wound is covered over with a firm cicatrix; after a while the new limb appears from about the centre of this cicatrix; at first it appears like the bud of a plant, it then assumes gradually larger dimensions, in its early stage much resembling the incipient graft of a tree. In Aberdeen market I saw a great many crabs' big claws sold separate without the crabs. I fear they take off the claws and return the crab to the sea clawless.

At Newhaven, if a crab wants a claw, the fisherman has to give an extra crab to make up for it. About Anstruther small crabs are called Poults.

It is probable that the female crab is impregnated by the male shortly after she has shed her shell, and when the shell is quite soft.

Mr. Thomas Hutton, Custom House Officer, informed me when at Peterhead, that when the female crab becomes a peeler, that is a soft crab, which she does yearly in the end of the month July, and in August and September, the male crab, which does not cast its shell at this time, mates.

At Hall Sands, Devon, we were informed that all soft crabs are called ripe crabs; they are always accompanied by a male.

Mr. H. Lee tells me that he has seen at the Brighton Aquarium the common shore crab mating, both being hard shelled, and that he has received evidence from fishermen at Poole, in Dorset, and elsewhere, that they have observed the same thing.

Soft crabs.

I now come to a very important subject indeed, viz., soft crabs.

A soft crab may mean two different things. Firstly, it may mean a crab which has just cast its shell, and is soft to the touch, like putty, or it may mean a crab whose shell is very brittle, like thin glass.

After the crab has cast its shell, the shell, wanting calcareous matter is very soft and elastic, like putty. At this time they retreat into concealment. As the shell hardens* the crab gradually assumes more consistency in its skin or shell. Crabs in this condition are called "soft crabs," "casters," "light-footed crabs," "light crabs," "white bellied crabs," "peelers," "pullers," "meticks," "seeding crabs," "watery crabs," "white crabs," "ripe crabs," "pale crabs," "sheer, or sick crabs." I myself prefer to call them "glass crabs." These crabs have not recovered their condition after casting their shells, they are in fact "*kelt*" crabs. I have dissected several of these crabs, and find that they contain very little else but the stomach, liver, lungs, and other viscera, but always a great deal of water.

A glass crab can always be told by pressing the shell immediately underneath the claws; at a slight pressure, it splinters up like glass. At several fishing ports in Scotland I observed the bottom of the harbours covered with a very large number of dead crabs, with their shells broken, the fracture having been caused by the fishermen smashing the shell to see if they were good or not. The crab is generally killed by the operation, though in some cases it may possibly escape with its life.

The following evidence was given by Mr. Robertson, a fish merchant of 37 years' experience, at Dunbar. "The merchants will not take these soft crabs. They are broken up by fishermen for bait or thrown dead into the harbour, the fishermen having broken their shells with their thumbs. From October to January if 1,000 crabs were caught 500 often would be soft, and would be destroyed. A law should be made that soft crabs should not even be brought ashore, they should be thrown over into the water at once from the creels."

Mr. J. Anderson, fishmonger, Edinburgh, writes me that "he has been informed that the Dunbar fishermen select all the soft-shelled crabs, and after smashing them on the shaft of the boat heave them into the sea; when asked their reason for so doing, their answer was, to prevent their coming and eating the bait out of their creels. Now such wanton destruction of the very best of the crabs is a disgrace to the community they belong to. My informant says he has seen ten dozen (120) cast into the sea in one day. It is a well-known fact that it is only crabs above two years old that cast their shells, so that the best of the crabs are destroyed."

* Take portions of the shell and put them into nitric acid. The shell of the soft crab effervesces much less than that of the crab with the hardened shell.

At Scarborough we observed several soft or glass crabs exposed for sale in a fishmonger's shop, and five soft crabs in a basket on the quay.

Mr. Sellers, fish merchant, Scarborough, stated:—"Many soft crabs are taken in the trawl nets from October to March, and in July and August. One out of four of these soft crabs are not saleable and not eatable. There is no difficulty in distinguishing between a light crab and a full crab even in the water. Is in favour of returning them to the water."

A section of the claw of a soft glass or light crab will show that the meat has shrunk away from the shell, whereas in the full crab the meat completely fills up the shell of the claws.

Mr. W. Paul stated in evidence,—"Crabs are not used as bait when they are in good order, they are too valuable. The claws of crabs in November are soft and watery. Thinks that the wanton destruction of crabs unfit for food is the cause of scarcity. Even in October when crabs are in good condition, the claws are sent to market and the bodies used as bait. The body of the male crab is rarely sent to market, it is retained for bait, and the claws alone are sent to market. Both the claws and body of the female crab are sent to market."

Crabs used for bait.

At North Sunderland we heard from Mr. Robson: "The light crabs come in about November. Sometimes they are hove away, but sometimes they are so soft that they float, and cannot get to the bottom. Thinks it is a great waste to destroy the soft crabs."

At Beadnell we heard: "In every day when he began fishing (in October) there were from 10 to 50 crabs in every net; and in some nets all the crabs were bad; the great majority were soft. Only got one barrel of crabs out of the whole take. This ought not to be allowed."

Another fisherman stated that he "Gets a great many soft crabs. Thinks this a very great waste. It would be a good thing to stop the waste."

I consider that having ascertained that such vast numbers of these glass crabs with brittle shells (which as we see from the above have many names) are annually destroyed throughout the country, the Legislature should at once put a stop to the practice. As the Salmon Fisheries have been greatly benefited by preserving the kelt or unclean salmon, so most assuredly would the crab fisheries be benefited by preserving the glass or soft crabs from wanton destruction. These crabs are of no use, except sometimes as bait to the fishermen. They bring discredit on the wholesale and retail dealers, while to the public they are worthless, if not unwholesome as food. My colleagues and myself quite agree that these kind of crabs should be preserved. There are, however, legal difficulties in the way which I trust may be overcome by those whose special duty it is to frame the laws of England. By making it illegal to kill glass or light crabs, in my opinion the crab fisheries of this country would be more benefited than by any other enactment.

As crabs and lobsters are only caught in pots, their stomachs are in consequence full of the bait which is used to entice them into these pots. They are in their habits almost purely fish eaters. This is proved by the readiness with which they go into the pots to get at the bait. They may also eat mussels and limpets, cracking them with their pincher-like claw. The following fish are used for bait: skate, cod, codlings, whiting flounders, gurnards, bibs, rays, wrasse, plaice, soles, gurnet, sharks, dog-fish, spider crabs, or corwicks, haddock's heads, and cuttle fish. The head of the fish is generally put into the pots; the eye of a dead fish is said to attract the crabs.

Food of crabs.

The fishermen break up crabs to catch wrasse, but not to catch crabs, though crabs are probably cannibals. In some places the crab is called the king of the sea.

Bait for crabs and lobsters.

The strongest smelling baits and the highest coloured baits have the preference. The whitehound, on account of its scent, is preferred by the fishermen.

It is a strange thing that lobsters seem to be attracted by colour. Richard Little, East Looe, stated, "that he generally keeps gurnards pickled in brine. It is necessary to keep the colours bright, because lobsters seem attracted by colour."

Neither crabs nor lobsters will go into the pots unless there is some scent in the fish bait. The crabs are very particular as to diet, they will not eat stale fish. Lobsters will eat any kind of bait, even dried fish or stock fish; they

will even take a stinking bait. Fish is so necessary as bait for crabs and lobsters that the fishermen are sometimes obliged to break up the young of the edible common crab to catch larger crabs. Crabs are also used as bait on lines, especially in places where mussels and limpets are scarce.

The fishermen are in most instances aware that they are acting unwisely in breaking up crabs for bait. William Prynne, East Looe, stated, "common sense leads the fisherman to spare the small crabs at all times except when they are required as bait. The fisherman agree with him that when the hookers have done fishing bait is very scarce, and that under these circumstances it is absolutely necessary to break up small crabs to catch wrasse, which are used to catch lobsters. The Looe men have sufficient sense to return the small crabs at all other times of the year."

If a law prohibiting crabs for bait were made, it would press very hard upon the old people. Crabs are also used for bait, not only for the long lines, but for the haddock lines. The hooks are baited with crabs, bullock's liver, and mussels. The evidence at Muchalls was that every third hook in the long lines is baited with crabs. Mussels are very costly in some parts of the country. They are nearly 3*l.* a ton before they are delivered at Stonehaven; the principal supply of mussels is from Boston Deep, the mouth of the Tees, the mouth of the Clyde, &c.

NATURE has laid down for land animals the great law of "eat and be eaten." We find that this law applies also to the animals which live in the sea. The enemies of the crab and lobster may be divided into animate and inanimate.

Among the inanimate we find firstly storms. The evidence at Peterhead goes to show that a great many crabs are killed during January and February, and in fact throughout the year, by storms. The occasional storms of July and August probably have the effect of destroying large numbers of crabs when they are soft. A witness at Penzance stated that the storm which occurred in 1873 was very bad for that time of year, and crabs have disappeared ever since. A witness at John O'Groats stated that coarse weather has been worse than usual. During the last four or five years the storms have destroyed many spawning places.

Crabs do not suffer like river fish from pollutions, but still they are not entirely exempt from the consequences of placing waste material into the water. Thus at Cullercoats we learnt that a vast quantity of dredgings from the bed of the Tyne ships, ballast and alkali refuse (most bluebilly) has been brought down by barges called hoppers and deposited at the mouth of the Tyne. Five hundred thousand tons of rubbish are thus deposited in the sea in the course of one year. This has been going on for 20 years. No less than ten million tons must have thus been deposited in the sea outside the Tyne. This vast accumulation of foreign and noxious matter must necessarily have greatly interfered with the natural habitat and comfort of the crab and lobster.

A similar case of pollution occurs at Plymouth; barges coming from the oil of vitriol stores shoot their refuse outside the breakwater. The refuse from these is white like mud; it is probably waste lime.

Throughout the neighbourhood of Peterhead and Fraserburgh an idea prevails that the lobsters and crabs were all destroyed by tobacco. A ship with a cargo of tobacco was wrecked about 40 years ago at Kirkton Head, three miles north of Peterhead.

Before the wreck occurred it was usual to catch four or five lobsters in a ring. When the wreck occurred they were thrown up in cartloads on the shore, and the fishery has been very poor ever since. This tobacco pollution might have taken effect at the time, but I do not think it could have been permanent.

Among the animate enemies the principal enemy I believe are cod. A witness at Burghhead stated that "codfish are great enemies to lobsters; he hardly ever opens a cod without finding young lobsters in the stomach; this is particularly in February and March. Has seen cod throwing up lobsters on the deck of a vessel, as many as five or six lobsters in one cod. These lobsters would be three or four inches in length, or even smaller. Cod eat lobsters all the season. In the spring and in January, February, and March there are many cod about."

Skates and congers, and codling and haddock, also eat crabs and lobsters. Both crabs and lobsters when in a soft condition seek concealment, as though they were aware that at that time their armour was not in a fit condition for fighting, and that they may be easily picked up by the enemy. A witness at Penzance informed us that a little insect of the shrimp tribe appeared near the Logan Rock 12 years ago. He thought this insect ate all the bait from the pots and drove the crabs away; he did not know the name of the insect. Whenever these insects were found they drove away the fish; they are now decreasing again. I have unfortunately been unable to obtain specimens of this insect, and have therefore no idea what they really are.

The same witness considers that the natural destruction of shell fish by skate and cod is ten times greater than by fishermen. Skate and cod are sometimes full of small crabs. I am also of opinion that the young crabs, when in the form of Zoea, afford food for fish and many other inhabitants of the waters.

In the spring and summer a great number of small crabs are picked out of the rocks by women and children; but I do not think much of the mischief done by them.

Among the enemies of the crab I must not forget the octopus. This creature is a great crab eater, as proved at the Brighton Aquarium. Where he exists, he, no doubt, plays great havoc among the smaller edible crabs.

As there are two different sizes of crabs, so also there appear to be two different sizes of lobsters.

The deeper the water and the further from the shore, the larger are the lobsters. Large lobsters.
The Skye and the Orkney lobsters are probably the largest in the British Islands. At St. Mawes we heard of two lobsters, one 10 lbs., and the other 9½ lbs.; and at Durgan and Sennen of one of 13 lbs. A large lobster was caught in a large earthenware pot at Gosport in 1870, he weighed 8 lbs. 10 ounces. In May 1875 a lobster, weight 12 lbs., was found at Saints Bay, Guernsey. I find a record of a lobster exhibited at Billingsgate, July 30, 1842, which measured 2 feet 5½ inches; the size of the body was 16 inches, the claws measured upwards of 14 inches. In August 1873 a lobster weighing 11½ lbs., caught in Guernsey, was exhibited by Messrs. Grove of Bond Street.

On July 1874 a lobster, weight 7½ lbs., was caught on the Fife Banks of the Forth. The lobsters from the Lizard ground are one third heavier than those in Falmouth Bay, but crabs are smaller.

The largest lobsters that have come under my individual notice are, first, a lobster weighing 10½ lbs., sent me from Tenby, and now in my museum; secondly, a lobster presented to me by John Byatt, of Messrs. Winder's, Haymarket, measuring 8 inches in the barrel, the total length being 19½ inches, and the weight 9½ lbs.

In the York Museum there is a magnificent specimen of a lobster, of which the following are the dimensions: barrel 9½ inches; top of beak to tail 19½ inches; left claw, the crusher, length 10½ inches; right claw, cutting, length 10½ inches; left claw at widest part 5 inches. This was an American specimen.

Another very large lobster we came across in our inquiry was a grand specimen which we examined in the house of Mr. Scovell, at Hamble, near Southampton. The following are the dimensions:

Length of barrel to tip of horn, 9½ inches; length of tail turned under the body, 12 inches; total length, two feet all but three quarters of an inch. Right claw, 19½ inches long; girth, 12½ inches; weight when killed, 14 lbs. This lobster Mr. Scovell informs me was caught in a trammel net on the coast of Cornwall.

In the course of our inquiry we had evidence which pointed to the possible Small lobsters. existence of a smaller kind of lobster. A witness informed us that on part of the coast, near Hoy Island, the lobsters are always small. It is an undoubted fact that the lobsters caught at Bognor are always small; the fishermen do not wish the gauge under which these lobsters should not be sold to be more than a quarter of a pound in weight, that is about five inches long; they are called "chicken lobsters;" they run 14 to 20 to the pound. These small lobsters are caught in the prawn pots. There are grass banks extending from Selsea

to Shoreham. It is very possible that the lobsters come in from great distances to breed in this locality. The water is in the summer time considerably warmed by flowing over large tracts of sand which are heated by the sun. Built in to the walls of the street at Bognor I observed several stones covered with dead oyster spat. Oysters will not adhere unless the water is warm. I conclude therefore that the warmth that is favourable to oyster breeding is also favourable to young lobsters. Small lobsters are also caught in considerable numbers in the prawn nets at Budleigh Salterton.

Again we heard that there is a ground outside St. Mawes where lobsters do not grow large. Out of 20 only 5 or 6 will measure 11 inches.

Small lobsters also come from Ayrshire. The very small lobsters at Whitby are called nintycocks or nancies.

Sexes of lobsters. The female lobster may be distinguished from the male by no less than five points of diagnosis.

Firstly, the female is much broader across the arch of the tail than the male.

I have measured the tails of a male and female lobster, both being about the same size, viz., 10 inches in length; the tail of the female was a quarter of an inch broader than that of the male. This is a beautiful provision to give space for the bunches of eggs. I have also remarked that the broad ends of the side armour plates of the tail are much closer together in the female than in the male. This serves as a protection for the eggs.

Secondly. A male can be distinguished from a female lobster by the strong spines upon the inner arch of the joints beneath the tail which support the middle plates of the tail. In the male these spines are strong and projecting. In the female, they can just be felt by the finger.

Thirdly. In the male the first pair of legs or feathery under the tail are large; in the female they are small (not half the size).

The second pair of legs also differ; the male has a kind of spur on them which is absent in the female.

Fourthly. Between the two last pair of legs in both sexes of lobsters there exists a portion of the armour in the shape of an inverted saddle; in the male the flaps of the saddle present a deep indentation, in the female these are more or less rounded off.

Fifthly. The male lobster can be distinguished from the female in the following manner. At the junction of the last pair of legs with the body can be found in the male two minute holes, large enough to admit a pin. In the female, similar holes will be found in the same relative situation, at the insertion of the pair of claws which are the second above the saddle and the third from the pinching claws.

Eggs of lobsters. The berried lobster carries five bunches of eggs on each side underneath the tail, making ten bunches in all. I have counted the eggs on one bunch and find that there are 2,496 on one bunch, making the number of eggs in this one lobster 24,960.

Lobsters are found with berries all the year round; March, April, May, are the months when they are fullest.

In order to supply lobster eggs to the cooks for sauce, Mr. Sheppard, lobster boiler, has collected in April and May from 14 to 18 pounds of lobster spawn; there are, I find, 6,720 eggs in one ounce of lobster spawn. Here then were destroyed eggs which might have represented, say, in 16 lbs. of eggs, no less than 1,720,320 lobsters.

I have fortunately been able to obtain the following interesting account of lobsters breeding. It is by the celebrated fish culturist the late M. Coste:—

“The lobster commences breeding in the month of October, and the pairing takes place sometimes as late as January. The couplings are rare at the opening of the season, but increase in frequency to the end of December, and but few take place in January. The female emits the eggs in about fifteen or twenty days after the pairing. When they have reached the stage proper for their expulsion, the female applies the inner side of the tail against the plastron or shell immediately over the stomach, in such a manner as to form a cup or cavity, in which are to be found the openings of the oviduct, placed exactly behind the third pair of legs. Consequently when the eggs escape from the stomach they fall into this natural cup or cavity, as described above. They are expelled in successive jets to the number of 20,000 in a single day.

Lobsters breeding.

"The lobster along with the eggs, emits at the same time a kind of adhesive liquid, which binds the eggs one to the other, and attaches them all to the small feet under the tail, where they remain in perfect shelter from all harm until they are sufficiently ripe for final expulsion.

"In order to forward and force the regular incubation of the ova, the females have the power to give them more or less light, as they consider requisite, by closing or opening the fold of the tail. Sometimes the eggs are kept quite covered, and at other times they give them a kind of washing by moving the flanges of the tail in a peculiar manner. The incubation lasts six months, during which time the female takes such good care of the ova, that it is rare to find an injured embryo or barren egg.

"It is during the months of March, April, and May that the actual birth of the young lobster takes place. The females, in order to expel the embryos, now ready to burst the shells of the eggs, extend their tails, make light oscillations with the fan and its appendages, so as to rid themselves gradually of the young lobsters, which they succeed in doing in a few days. The young lobster as soon as born makes away from its parent, rises to the surface of the water and leaves the shores for the deep waters of the sea, where it passes the earliest days of its existence in a vagabond state for 30 or 40 days. During this time it undergoes four different changes of shell, but on the fourth it loses its natatory organs, and is therefore no longer able to swim on the surface of the water but falls to the bottom, where it has to remain for the future; according, however, to its increase of size it gains courage to approach the shore which it had left at its birth. The number of enemies which assail the young embryos in the deep sea is enormous, thousands of all kinds of fish, mollusca, and crustacea are pursuing it continually to destroy it. The very changing of the shell causes great ravages at these periods, as the young lobsters have to undergo a crisis which appears to be a necessary condition to their rapid growth. In fact every young lobster loses and remakes its crusty shell from eight to ten times the first year, five to seven the second, three to four the third, and from two to three the fourth year. However, after the fifth year the change is only annual, for the reason that were the changes more frequent the shell would not last long enough to protect the ova adhering to the shell of the female during the six months' incubation. The lobster increases rapidly in size until the second year, and goes on increasing more gradually until the fifth, when it begins to reproduce, and from this period the growth is still more gradual."

In July 1867 I took down two berried hens and placed them in my experimental fishery at Reculvers near Herne Bay.

In a few days all the berries hatched out, the water was swarming with thousands of little zoea. After they were hatched the little lobsters swarm about in shoals near the surface, but at the end of a fortnight, although they had undergone no alteration of form, they took up their residence at the bottom. Cold easterly winds which had lowered the temperature of water may have had something to do with the change of habit. I was not able to raise these zoea as the place was so muddy, and young lobsters I believe require rocks.

By the kindness of Mr. Henry Lee, who has made several beautiful microscopic preparations of young lobsters hatched both at Reculvers and at the Brighton Aquarium, I am enabled to give in the Appendix, 1st, a drawing of the egg of the lobster with the young just ready to hatch out; 2nd, the portrait of a lobster 24 hours old. (See Diagram No. 4.)

A correspondent at Brixham in 1873 hatched out young lobsters. He writes: "I caught a berried hen in our trammel and placed her in a tank about 5 feet square with a constant flow of water. In two days the tank was alive with young lobsters, and others were rapidly hatching; they seemed busily employed in seeking for food amongst the animalculæ with which the salt water is supposed to be filled."

Lobsters when zoea undergo many transformations and sheddings of shell before they assume the form of their mother.

Mr. Saville Kent, curator of the Westminster Aquarium, informs me that according to his observation a little zoea lobster sheds his shell 12 times before

Young lobsters.

he becomes sedentary, each metamorphosis being different in shape. He will become the size of a prawn in six weeks.*

The smallest perfect lobster I ever saw was at Bognor. I have also a specimen in my museum, one of which was taken from the inside of a cod.

It measures $1\frac{1}{2}$ inches in barrel, $1\frac{1}{2}$ inches in the tail, total, $2\frac{3}{4}$ inches; also two others taken by myself at Herne Bay, measuring respectively $4\frac{1}{2}$ inches and 4 inches.

As regards the care of its young, and the nidification of lobsters, it was given in evidence at North Berwick, that a hen lobster, "when spawning, makes a nest like a swallow, building it with mud and sand with her horns." On September 28th, 1867, I obtained some evidence on this point from a lobster which I had in captivity at Reculvers. The first night she was in the tank she artfully collected cockle and oyster shells, and made a trench round herself; a branch of seaweed was made to form a canopy over her head. This house, however, might have been made for concealment. As regards the care of a mother lobster for her young, a witness stated he had put a hen lobster into a box, and in three or four weeks after a great many young ones were born, and they clustered round the mother like chickens round a hen. A lobster carrying eggs is called a "berried" or ran hen. Lobsters are found with berries all the year round, but in my experience not so much in the winter months as at other times of the year. A witness at Banff stated that thirty per cent. of all the lobsters taken are berried all the season through. Most berried hens are found in the warm months, May to July. When the young have hatched out, the lobster is called a "shotten," or hollow lobster. There is as much difference between a berried hen and a shotten lobster, as there is between a herring full of roe and a shotten herring. Lobsters are said to eat each other's spawn; you may put berried hens into a lobster store pot and the other lobsters will eat out the berries. Lobsters have been put in a store pot without berries, and found full of berries in three weeks.

No experiments have yet been carried out as to hatching and rearing lobsters by artificial means. I think it possible that if properly carried out lobster breeding ponds might be made a success.

It is apparently possible to establish a lobster fishery under favourable circumstances. I am informed on good authority that when they were building the Lowestoft pier some years ago, a small vessel sank in the harbour laden with lobsters and crabs, which, escaping, took possession of the pier, which was composed of large blocks of stone, and they have continued to breed there. Before this such a thing as a lobster had never been caught at Lowestoft, which has a low sandy beach.

It is curious that lobsters assume different colours during the process of boiling. Norway lobsters turn a deep red, while the Scotch are more or less marbled. French lobsters also boil red. Hence a lobster is sometimes called "The Cardinal of the Sea" by French fishermen. Off Bangor lobsters are sometimes caught which are a beautiful sky blue colour; this is simply a variety. In May 1868 I received a specimen (now in my museum) of a lobster which was half Albino. One side of the barrel was blue and the other was white. Spirits of wine has turned the blue colour of the lobster red. I cut off a portion of the white side and boiled it, but it did not turn red. Hence I conclude that the colouring matter was entirely absent from this portion of the shell. The lobster therefore was half Albino.

Lobsters are good climbers. Their favourite haunts are deep down in the submarine caves and hollows in the rocks called "pills" in Cornwall. We may conclude that they live in places either darkened by the depth above or by the seaweed. The Creator has given to the lobster long antennæ by means of which it is enabled to feel its way in dark places. It is also able to feel objects behind it. In the structure and use of their antennæ, lobsters much resemble insects; I have tried a lobster to see how he uses the antennæ. I threw a portion of food down to a lobster. He immediately set to work to

* Those who are interested in the subject of the various metamorphoses of the young lobster, should observe what happens with the zoea of the common river crayfish (*Astacus fluviatilis*). These fresh water lobsters can be kept under observation much easier than the salt water lobster.

Lobsters
changing colour.

Habits of
lobsters.

ascertain its whereabouts previous to seizing it. When feeding, the lobster moves its jaws like a weaver making a blanket; he tears his food into large pieces, leaving the pounding work to be done by the teeth in his stomach. The lobster, like the crab, has a complicated stomach. It has an elaborate apparatus of teeth which in shape are not unlike small elephants' teeth. When a lobster is cut in two, these teeth are readily seen; they are called the "Lady in the lobster's head." The œsophagus at its opening is armed with several pairs of complicated jaws. Like the crab it breathes by means of pyramidal gills* which are situated in a separate water-tight box something like the conformation we find in the crab. The intestine is one straight tube running down the middle of the tail to an aperture which can be found near the tail flaps.

Lobsters have a certain amount of intelligence. Mr. Reid, of Wick, a very observant naturalist, informs me that a lobster never sits in a hole without having a pool of water immediately in front of him into which he may escape at the slightest indication of danger. Whereas the common crab cannot swim, but crawls sideways, the lobster swims by beating the water with rapid and continuous jerks with his tail. When lobsters are undisturbed they will move very slowly along head foremost, carrying their heavy claws in front of them well away from the ground. Mr. Climo of Polruan has seen them dart through the pots as the pots were being hauled to the surface of the water; they darted through tail foremost. Lobsters can go either way, head foremost or tail foremost. I have seen a lobster, when alarmed, shoot itself backward into a hole for many feet without missing its mark. Lobsters seem to have profited by experience: there is an impression among the fishermen of Wick that the lobsters are becoming accustomed to the creels and will not go into them, having somehow found out they are dangerous.

Swimming of lobsters.

Lobsters grow like crabs, by means of shedding their shells; these shed shells are very perfect. I have in my museum the shed shell of a lobster from Reculvers ponds, where I and some friends tried some experiments. The lobster in this case could not have been more than an hour in casting its shell as the attendant when going to dinner left one lobster, and when he returned there were apparently two. Mr. Climo, of Polruan, informs me that in 1869, when he had several lobsters in a store pot, he observed one of them to be covered with silver lace. It was quite firm and lively early in the morning, but about four hours later he found it had thrown off its outer coat. I have a fine specimen in my museum presented by Mr. Hutchinson of Dunbar, of a lobster with the shell he had cast in pot. In the process of this single moult the lobster had increased one inch and an eighth.

Lobsters shedding their shell.

The crayfish at Brighton Aquarium sometimes shed their shells; a very perfect specimen of the shed shell of a crayfish has been deposited in my museum by the Directors of the Brighton Aquarium.

Lobsters are very intolerant of cold. In cold weather they seem numbed and certainly retire into deep water. In very hot weather they are difficult to carry. Mr. Scovell of Hamble informed us that a lobster in a welled smack will keep for a fortnight or more, but an average passage is a week or ten days, except in very hot calm weather. In hot calm weather they hang the lobsters overboard in nets. In the far distant islands of Scotland evidence was given to my colleague, Mr. Walpole, that lobsters could not be sent to London in hot weather on account of the distance. In cold weather the lobster will live eight days out of water; they are sent to London packed in sea-weed.

It is advisable in this place to state that lobsters, when required to be kept, live better if placed in the cellar among the coal. Coal seems to have some effect in keeping them alive. Another way of keeping them alive, which is rather a secret, is to place them in a barrel with straw; the straw should be well wetted with *stale beer*.

Lobsters are great fighters; they fight by pinching and smashing each other's claws. It will also be observed from diagram No. 1 that the tips of the two anterior pair of the walking claws of the lobster are notched and therefore prehensile, while the two hinder pair of legs end in a brush-like tip. I have not yet arrived at the meaning of this difference in structure. In the female the brush-tipped claws may possibly assist in depositing the eggs under the

Claws of lobsters.

* In nearly all the lobsters I have discovered some very curious parasites tightly adherent to the lungs, somewhat resembling the parasites attached to the gills of salmon. I have not the least idea of what use they can be. This parasite of the lobster's lung is scientifically known as *Nicothoe astaci*.

tail. A correspondent has examined 1,378 lobsters. He reports that the male lobster has the left claw always larger and furnished with coarse teeth. The female lobster has the reverse, in fact the crushing claw is on the left. According to my own observations and those of Mr. H. Lee the sharp toothed claw is as often on the right as on the left side of the animal. I have examined many thousand lobsters, and have come to the conclusion that there is no rule as to how the lobsters carry their claws. The two claws of a lobster are always different; one of the claws is made like a nutcracker to break up hard substances, in fact it is armed as it were with molar teeth. The edges of the other claw are serrated and made for tearing substances into small bits. In fact the lobster may be said to carry about with him a knife and fork. The difference in the claws can be seen in the drawing in the diagram No. 1.

Boiling crabs and
lobsters.

Both during this inquiry on every suitable occasion I have endeavoured to ascertain evidence relative to the boiling of crabs and lobsters, and have tried experiments on this point. It is quite certain that crabs in some parts of England are placed in cold water which is gradually heated up to boiling point, so that they may be said to be literally boiled alive.

At Scarborough a witness stated: "The crabs are put into cold water and "gradually boiled; they die long before the water boils, as they are drowned, "not being able to live long in fresh water. If they are put into hot water "they cast their claws." I have tested these statements by placing crabs in cold fresh water, and did not arrive at the same results as the witness.

I have also experimented by boiling crabs in cold fresh water gradually heated. I find they remain alive in the water till it assumes a temperature of 100° to 110°. During this process the crab naturally suffers great anguish. I consider it therefore very cruel to boil crabs gradually in cold water. If they are placed suddenly in boiling water they will immediately shoot their claws: this indicates the great pain that they suffer. The remedy for this is easy, crabs should be placed in boiling water, but they should be killed before they are boiled. I have made experiments with Mr. Sheppard, crab and lobster boiler to Messrs. Prosser, of Gracechurch Street. I find the crab dies directly a sharp instrument, such as an iron skewer or ice pricker, is run into the mouth. It has been stated that when this is done the crab will bleed, and the goodness come out. This difficulty can be easily met by standing the crab up against the wall with the wound uppermost; if placed in boiling water the blood (which is white) is coagulated. A crab that has been killed and immediately placed in boiling water weighs more than a crab put into cold water. A crab, moreover, put into cold water is not so tasty as if put into boiling water, so that the most merciful as well as the most economical way of killing crabs is to kill them first in the manner indicated, and then put them into water that is on the boil. I should be glad to see a law made against putting crabs in cold water and gradually boiling them.

Plugging
lobsters.

I also made inquiries as to the "plugging" of lobsters. Lobsters are great fighters, so to prevent their injuring each other when in the "hullies" or store boxes, it is necessary some way to prevent them using their claws. This is done either by tying them with wire or string, or plugging them, as it is called. The operation of plugging consists of hammering in a wedge-shaped piece of wood at the hinge of the claw. This has the effect of a wedge, and retains the claw close and a fixture. This operation necessarily causes great anguish to the lobster, which is abundantly supplied with nerves (see preparations in Royal College of Surgeons), makes the lobster "fret," and greatly injures its quality as food. I am happy to say that the fashion of plugging is getting obsolete. I understand that some years ago Mr. Gompertz, the then Secretary to the Society for the Prevention of Cruelty to Animals, waited upon the Lord Mayor, Sir Peter Laurie, to mention to his Lordship the great inhumanity of plugging lobsters. The Lord Mayor stated that he had heard from a medical authority that fish tortured into mortification by plugging was actually poisonous. He stated he should issue necessary directions. I have good reason to believe that since this Lord Mayor's time the practice of plugging lobsters has been disused. In his evidence, Mr. George Stevenson, fish merchant, of Billingsgate, stated that some of the Irish lobsters are plugged, but very few lobsters are plugged now. It has fallen out of use since Sir Peter Laurie's time.

The public should not buy "plugged" lobsters; if this were done it would greatly assist to put a stop to this barbarous practice wherever it is carried on.

I would like, finally, here to say a few words about the Cray-fish, as that animal forms an important addition to the public food. The cray-fish is also called the "spring lobster" or "red crab" (*Palinurus vulgaris*). It is not so highly esteemed for food in this country as in France, where it is called "Langouste." They are only caught on the west coast of Cornwall; the principal place for them is the Scilly Islands. I have every reason to believe that the cray-fish are migratory. Mr. Bond, a fisherman of Sennen, informed me that they came in schools, swimming on the top of the water like pilchards. The capture of cray-fish varies; "some seasons hardly any are to be caught; the next season they come in all of a body." The cray-fish are migratory and vary in number from season to season. Mr. Bond has caught 50 or 60 a day in some years, and in others not more than 12. 10 years ago the pots used to catch in one morning more cray-fish than they do now the whole season, p. 20. Their horns can be seen working on the top of the water as they swim along in shoals. They are caught in much the same places as crabs. They certainly eat mussels, for they are found in mussel grounds, and probably star-fish. Smooth water and warmth is good for catching cray-fish. The fishermen at Cadgwith get the same price for cray-fish as they do for crabs. Mr. Barber says, the cray-fish trade is quite as important as the lobster trade. Cray-fish are dearer than lobsters; they are 2s. to 2s. 6d. each when the average size. He thinks none under 10 inches should be taken. He has bought 150 cray-fish at 9d.; they are now 2s. and 2s. 6d. each. I heard of the existence of cray-fish at North Berwick; a witness stated: "There are plenty of cray-fish on the ground, but the fishermen never go after them as there is no sale. Has seen tons of these fish thrown away. Has thrown them back for the last 20 years. Calls them 'soft ground lobsters.' Would be glad to find a market for them. They average 3½ inches in the barrel." For my own part I will not express an opinion as to whether these soft "ground lobsters" of North Berwick are or are not the true cray-fish, until I have had an opportunity of examining them. According to my own experience the cray-fish carries berries in February and March.

In concluding these remarks I beg to observe that many specimens illustrative of the natural history of the crabs and lobsters can be examined at my Museum of Economic Fish Culture, South Kensington.

FRANK BUCKLAND.

JOINT APPENDIX No. III.

DIAGRAMS

TO ACCOMPANY

REPORTS

ON THE

CRAB AND LOBSTER FISHERIES

OF

ENGLAND AND WALES

AND OF

SCOTLAND.

- No. 1.—LOBSTER, 8 INCHES LONG (*life size*).
,, 2.—CRAB, 5 INCHES LONG (*life size*).
,, 3.—CRAB, $4\frac{1}{4}$ INCHES LONG (*life size*).
,, 4.—LOBSTER, IN EGG, AND 24 HOURS OLD (*life size and magnified*).
,, 5.—ZOEAE OF CRAB, TWO STAGES (*life size and magnified*).
,, 6.—GROWTH OF CRAB ON CASTING ITS SHELL.
,, 7.—TAILS OF MALE AND FEMALE CRAB (*life size*).
,, 8.—FEATHERS AND SPAWN, FROM TAIL OF FEMALE CRAB.
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APPENDIX

TO

REPORT ON THE CRAB AND LOBSTER FISHERIES

OF

IRELAND.

RETURN of PLACES where INQUIRIES have been held during SEPTEMBER, OCTOBER, NOVEMBER, and DECEMBER 1876, and JANUARY 1877, into the CONDITION of the CRAB and LOBSTER FISHERIES of IRELAND.

County.		Inquiries held at	Tenor of Evidence.
Dublin	-	Dublin - -	Supply of lobsters not so good as formerly; a good many of 8 and 9 and even 5 and 4 inch taken. In favour of enactment prohibiting capture of any under 8½ to 9 inches.
Wexford	-	Wexford - -	Supply of lobsters as good as ever. In favour of enactment that none be taken under 8 to 10 inches.
Do.	-	Kilmore Quay -	Supply not so good as formerly. In favour of enactment prohibiting any being taken under 9 inches.
Waterford	-	Waterford - -	Supply of lobsters and crabs as good as ever. In favour of enactment prohibiting lobsters under 9 inches. and crabs under 5 inches from being taken.
Do.	-	Dunmore East * -	Supply of lobsters as good as ever. In favour of not allowing any under 9 inches being taken.
Do.	-	Tramore - -	Supply of lobsters decreasing. In favour of enactment not to allow any under 9 inches being taken.
Do.	-	Ballinagoul* -	Supply of lobsters more plentiful than formerly.
Do.	-	Ring* - -	Supply of lobsters as plentiful as ever. In favour of enactment not to permit any under 9 inches being taken.
Cork -	-	Ballycotton* -	Supply of lobsters as plenty as ever. In favour of enactment not permitting any under 9 inches being taken.
Do.	-	Cork - -	Supply of lobsters and crabs decreased. In favour of enactment not to permit to be taken lobsters under 10 inches and crabs 6 inches.
Do.	-	Kinsale - -	No decrease in supply of lobsters. In favour of enactment prohibiting capture under 12 inches.

County.	Inquiries held at	Tenor of Evidence.
Cork -	Clonakilty -	Supply of lobsters and crabs as good as ever. In favour of enactment prohibiting capture of former under 10 inches and latter under 6 inches.
Do.	Dunny Cove -	Supply of lobsters increased. In favour of enactment prohibiting capture under 10 inches.
Do.	Union Hall -	Supply of lobsters increased. In favour of enactment prohibiting capture under 10 inches.
Do.	Castletownsend -	Supply of lobsters as good as ever. In favour of enactment prohibiting capture under 9 or 10 inches.
Do.	Baltimore -	Supply of lobsters falling off. In favour of enactment prohibiting capture of any under 10 inches.
Kerry -	Port Magee -	Supply of lobsters as good as ever.
Do.	Dingle -	Supply of lobsters as good as ever. In favour of enactment prohibiting capture of any under 9 inches.
Clare -	Carrigaholt -	Do. do.
Do.	Kilkee* -	Do. do.
Do.	Seafield* -	Do. do.
Do.	Quilty's Cross -	Do. do.
Do.	Freaghcastle* -	Do. do.
Do.	Liscannor* -	Supply of lobsters more plenty than formerly, in favour of enactment prohibiting capture of any under 9 inches.
Do.	Fisherstown* -	Supply of lobsters as good as ever.
Do.	Ballyvaughan -	Supply of lobsters as good as ever. In favour of enactment prohibiting capture under 9 inches.
Galway -	Spiddle -	Supply of lobsters decreasing. Against any restriction as to size to be captured.
Do.	Costello Bay -	Supply of lobsters and crabs decreasing. In favour of enactment prohibiting capture of former under 10 inches. Against any restriction as to latter.
Do.	Rossmuck -	Supply of lobsters decreasing. In favour of enactment prohibiting capture under 10 inches.
Do.	Roundstone -	Supply of lobsters increasing last two years. In favour of enactment prohibiting capture under 8 or 10 inches.
Do.	Salerno* -	Supply of lobsters decreasing. Against prohibiting small ones being captured.
Galway -	Ballyconneelly -	Supply of lobsters as plenty as ever. In favour of enactment prohibiting capture under 8 or 9 inches.
Do.	Clifden -	Supply of lobsters as good as ever. In favour of enactment prohibiting capture under 9 inches.
Do.	Tully* -	Supply of lobsters better formerly. Consider restriction as to size of capture of no importance.
Do.	Letterfrack* -	Do. do.

County.	Inquiries held at			Tenor of Evidence.
Mayo	-	Achill	-	Supply of lobsters increasing.
Do.	-	Elly Bay*	-	Abundance of lobsters.
Do.	-	Belmullet	-	Do. do.
Do.	-	Ballycastle*	-	Do. do.
Do.	-	Kilcummin	-	Supply of lobsters same as ever. In favour of enactment prohibiting capture under 8 to 10 inches.
Sligo	-	Sligo	-	Supply of lobsters decreasing. In favour of enactment prohibiting capture under 7 to 9 inches.
Do.	-	Ballyconnell	-	Supply of lobsters as good as ever. In favour of enactment prohibiting capture under 7 to 8 inches.
Do.	-	Mullaghmore	-	Supply of lobsters as plentiful as ever. In favour of enactment prohibiting capture under 7 to 8 inches.
Donegal	-	Teelin	-	Supply of lobsters as good as ever. Asserted that there is a small run of lobsters about this place, that those of 9 inches are good, and if those of that size not allowed to be taken, it would be an injury to the fishermen. Those of 11 inches hardy and good. They get as much for small as large. Seldom take any less than 8½ inches, throw small ones back.
Do.	-	Killybegs*	-	Few lobsters taken on this part of the coast.
Do.	-	Inishcoo Island	-	Lobsters as plenty as ever. As small as 4 inch taken. In favour of enactment prohibiting capture under 8 to 9 inches. Crabs as plenty as ever, but of little value.
Do.	-	Dunfanaghy	-	Lobsters as plenty as ever. In favour of enactment prohibiting capture under 8 to 9 inches.
Do.	-	Buncrana*	-	A considerable decrease in lobsters. Capture less than half as compared with 10 years ago. In favour of restriction to prevent small ones being taken.
Do.	-	Malin Head	-	On one side of Head, lobsters said to be as plenty as ever. On the other a decrease said to have taken place. In favour of enactment prohibiting capture under 8 or 9 inches.
Do.	-	Moville	-	A great falling off in supply of lobsters and crabs. Very small lobsters taken. In favour of enactment prohibiting the capture under 8 to 9 inches.
Antrim	-	Portrush	-	Supply of lobsters and crabs greatly decreased. In favour of enactment prohibiting capture of lobsters under 9 inches.
Do.	-	Port Ballintoy*	-	A decrease in lobsters.

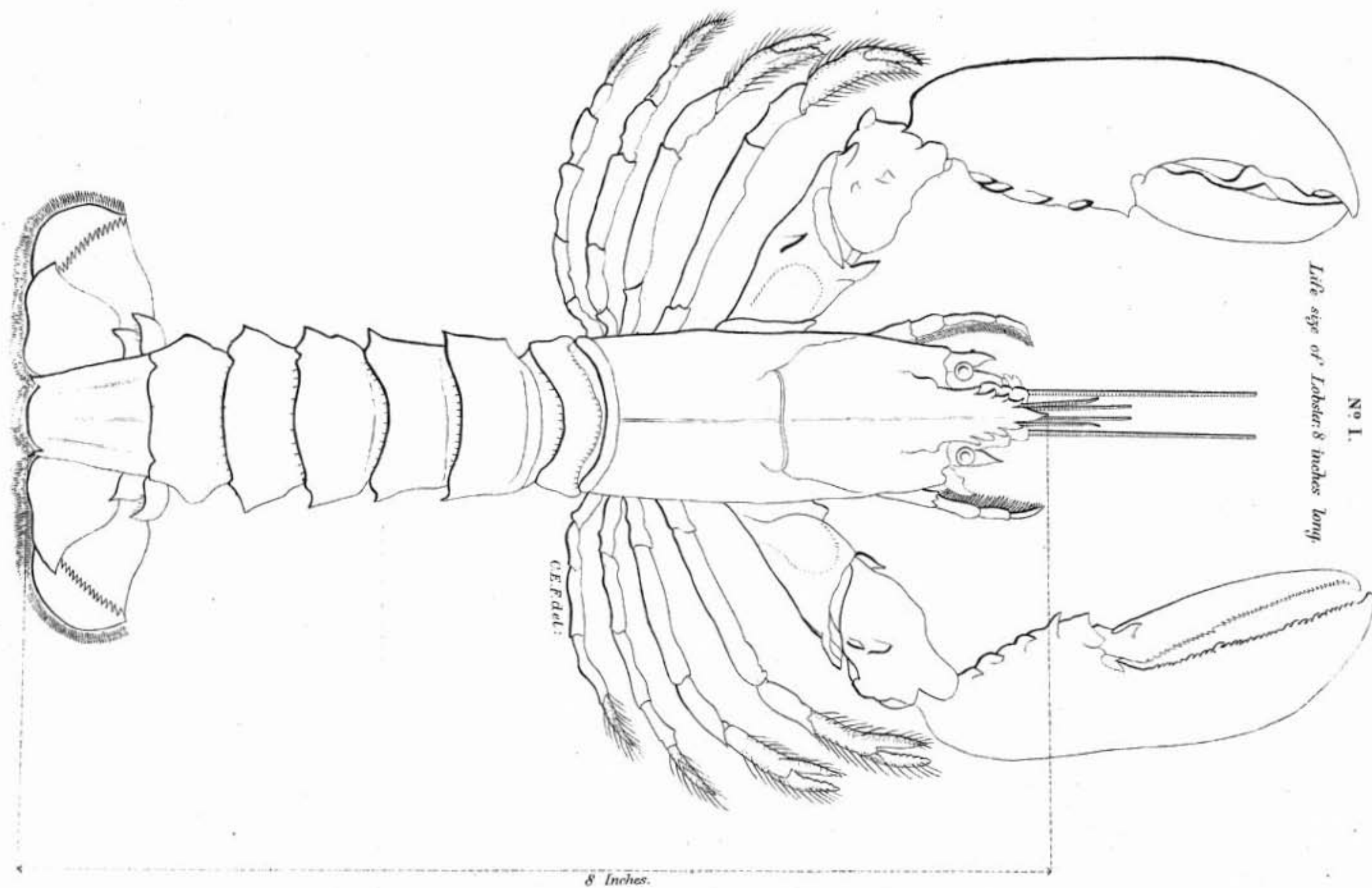
County.	Inquiries held at			Tenor of Evidence.
Antrim	-	Ballycastle	-	A great decrease in lobsters, attributed to quantity of small ones taken; small ones usually sold by the pound. Do not bring half as much as good ones. In favour of enactment prohibiting capture under 9 inches.
Do.	-	Larne*	-	A considerable decrease in lobsters. Size diminished.
Do.	-	Carrickfergus*	-	Do. do.
Do.	-	Belfast	-	A great decrease in supply of lobsters; many small ones sent to market. In favour of enactment prohibiting capture under 9 inches.
Down	-	Donaghadee	-	Lobsters as plenty as ever, but run smaller. Said to arise from not being allowed to grow. Three or four sometimes counted for one. In favour of restriction as to size to prevent small ones being taken.
Do.	-	Portaferry	-	Lobsters as plenty as ever. In favour of enactment prohibiting capture under 9 inches.
Do.	-	Kilkeel	-	Lobsters as plenty as ever. In favour of enactment prohibiting capture under 9 inches.
Do.	-	Ardglass	-	Do. do.
Do.	-	Newcastle*	-	Lobsters as plenty as ever.
Do.	-	Annalong*	-	Do. do.

NOTE.—In the places marked thus * our inquiries were not previously publicly advertized, but the parties interested were noticed to attend, and inquiries made *en route*.

LONDON:

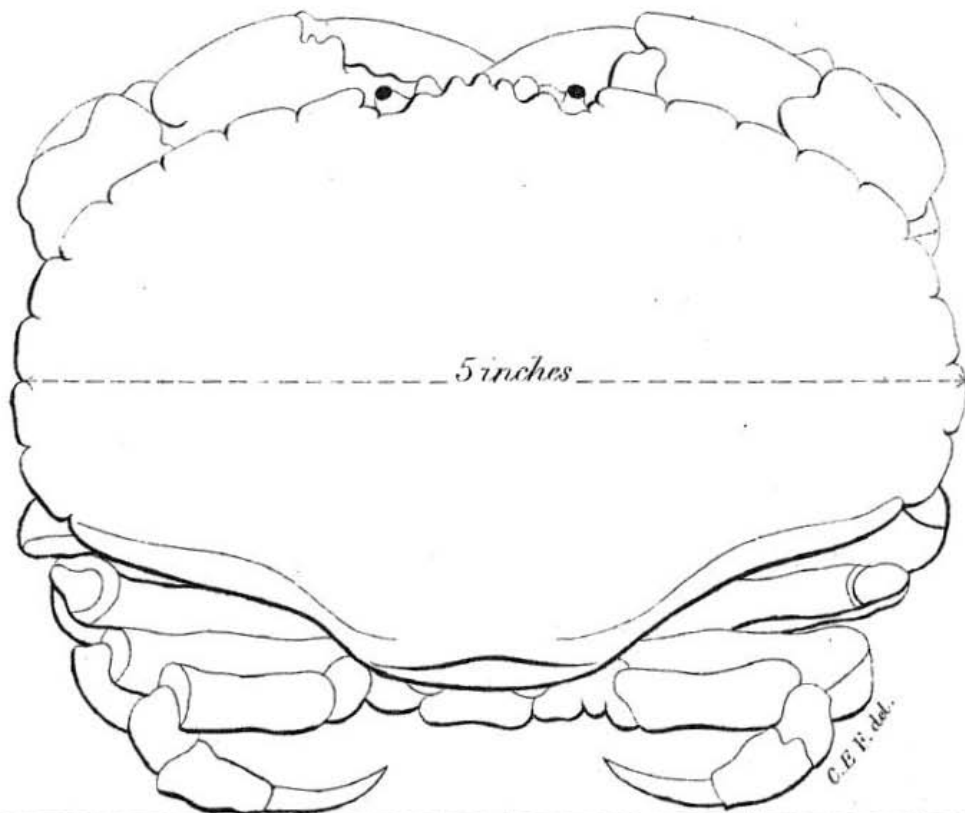
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Printers to the Queen's most Excellent Majesty.

For Her Majesty's Stationery Office.



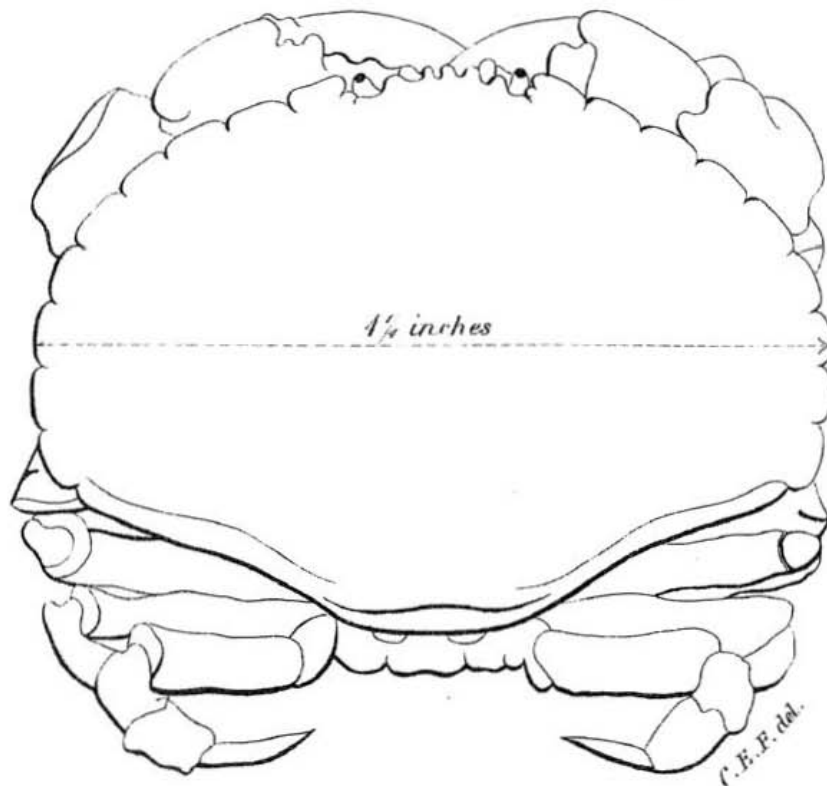
Nº 2.

Crab 5 inches across the back (life size)



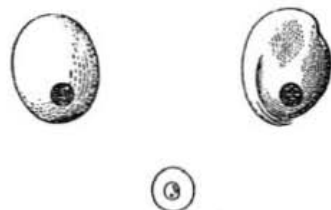
Nº 3.

Crab $4\frac{1}{4}$ inches across the back (life size)

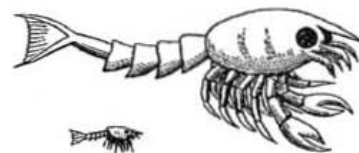


No. 4.

SPECIMENS REPRESENTING THE DEVELOPMENT OF THE LOBSTER.



LOBSTER IN EGG, AND JUST HATCHING (*magnified*).
 (*The Natural size is represented within the circle.*)



LOBSTER 24 HOURS OLD.
 (*Magnified and Life size.*)

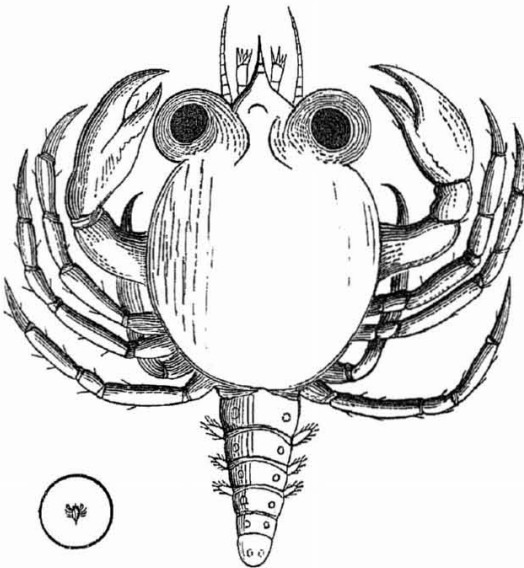
No. 5.

SPECIMENS REPRESENTING THE DEVELOPMENT OF THE CRAB.



ZOEAE OF CRAB (*First Stage*) MAGNIFIED.

(*The Natural size is represented within the circle.*)



ZOEAE OF CRAB (*Second Stage*) MAGNIFIED.

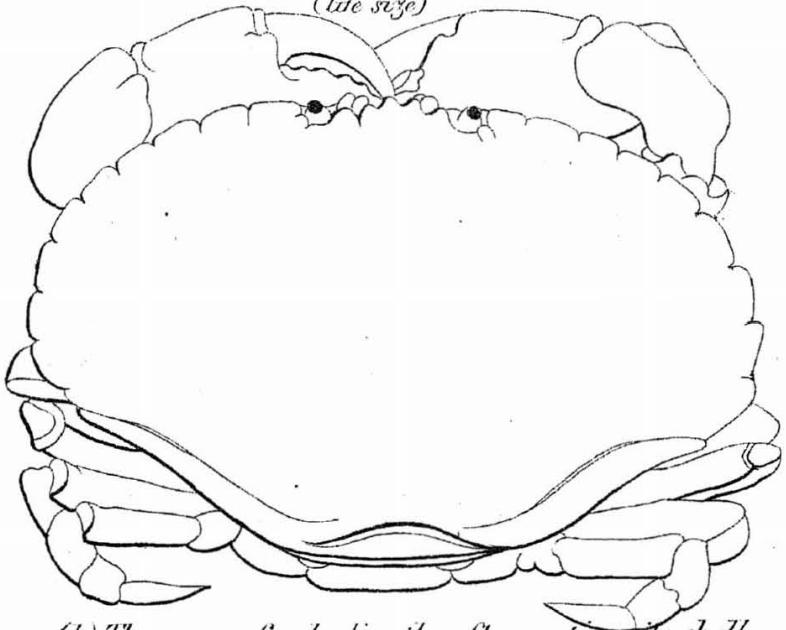
(*The Natural size is represented within the circle.*)

Nº 6.

Specimens showing growth of Crab on casting its shell:-

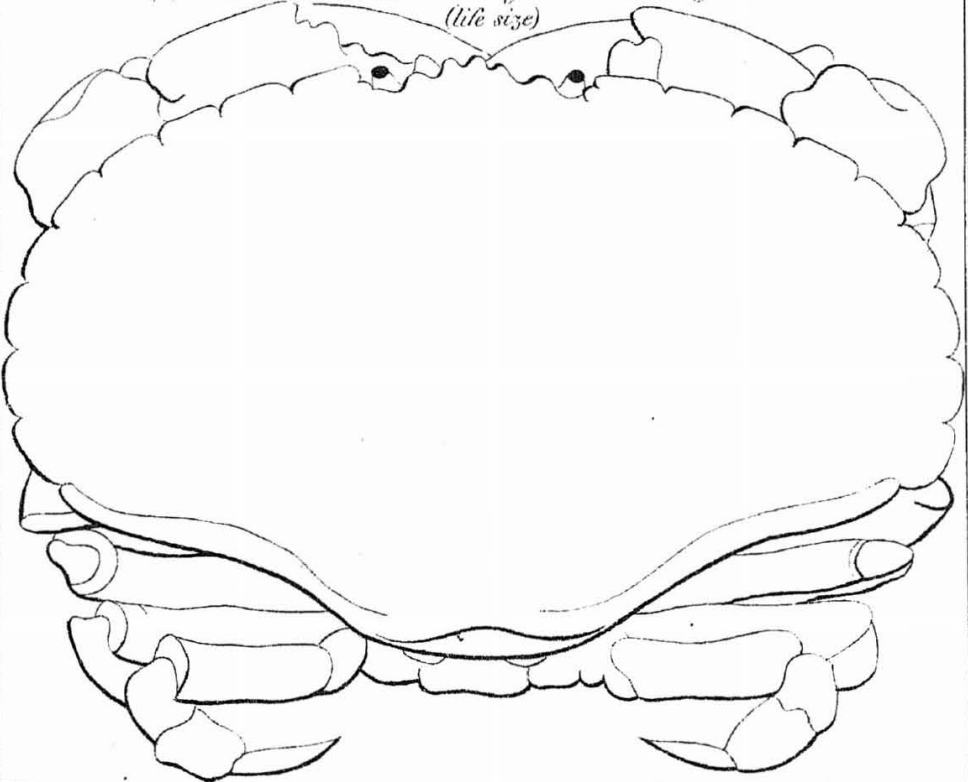
(a) Specimen of crab before casting its shell.

(life size)



(b) The same Crab directly after casting its shell.

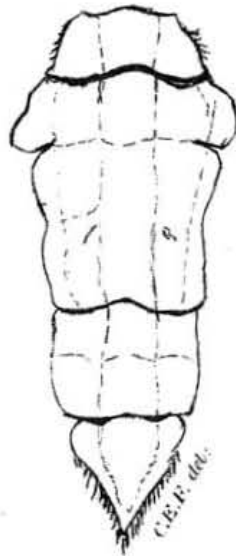
(life size)



Nº 7.

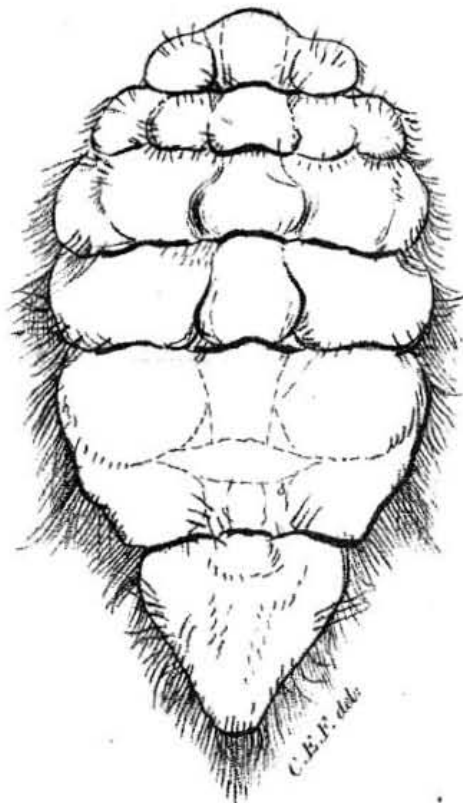
Tail of Male Crab, 7 inches long.

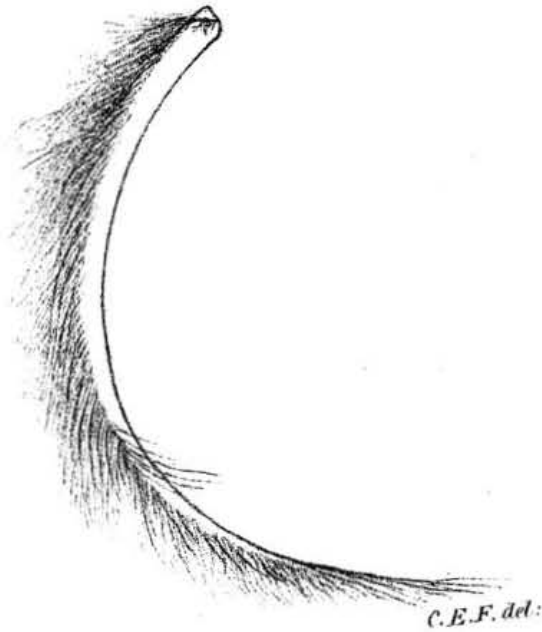
(life size.)



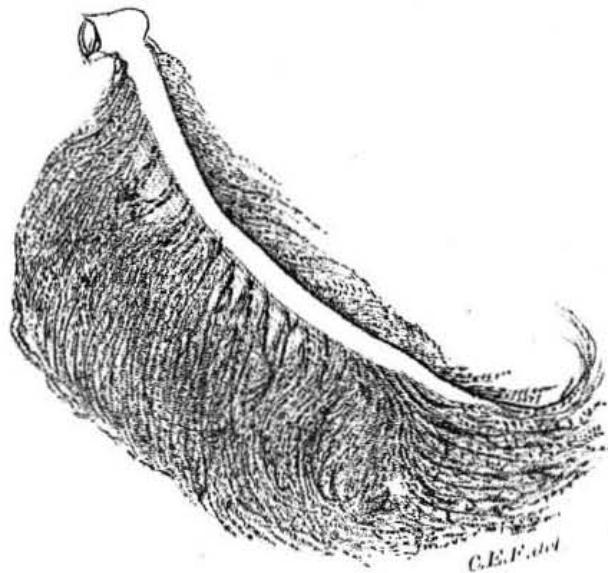
Tail of Female Crab, 7 inches long.

(life size.)





Outer Feather from Tail of Female Crab.



*Inner Feather from Tail of Female Crab with spawn,
in an immature state, attached.*