

An Account of the Researches on Races of Herrings

Carried out by the Marine Biological Association at
Plymouth, 1914-15.

By

J. H. Orton, D.Sc.,

Naturalist at the Plymouth Laboratory.

With Figs. 1 to 6 in the Text.

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[The following Tables record the measurement and enumeration of a number of characters in certain samples of Herrings taken in the neighbourhood of Plymouth. The work was carried out as part of a general scheme for studying the question of the existence of local races of herrings around the British Coasts, which was organised by the Board of Agriculture and Fisheries. In consequence of the war there is no immediate prospect of the figures being analysed and compared with similar figures relating to fish obtained in other localities. It has therefore been thought

advisable to place them on record as they stand, so that they may be available for other workers at any time. The short explanatory statement of the methods employed was prepared by Dr. Orton, who had charge of most of the work, to accompany the figures when they were sent to the Board of Agriculture and Fisheries, and was not written by him with a view to publication. The drawings have been made by Mrs. Sexton.—E. J. ALLEN.]

THE INVESTIGATIONS MADE.

IN accordance with the general scheme of the Board of Agriculture and Fisheries two samples of herrings each of more than 500 specimens have been examined. In the season of 1914–15 we were able to examine in such numbers only the herrings spawning near Plymouth, i.e. in the locality of Bigbury Bay. In December, 1914, a sample of 550 herrings of the shoal spawning in this area was examined in all the characters recommended by the Board, and in January, 1915, a further sample of 525 fish from the same locality was investigated similarly.

In early December, 1914, a small sample of herrings from Cawsand Bay was examined for the purpose of practice and also for comparison with fish from the spawning grounds.

Along with the investigations mentioned above are submitted particulars of a sample of 84 herrings taken in the Channel and examined by Mr. R. S. Clark in July, 1914.

THE CHARACTERS STUDIED.

The following is the scheme of the characters studied, as authorised by the Board of Agriculture and Fisheries :—

All measurements* are to be made with the special apparatus supplied by the Board. The fish should be placed upon the board in such a way that the snout is pressed against the end board sufficiently hard to keep the mouth shut and the body of the fish should be at right angles to the end board. The measurements are to be in all cases the shortest distance from the end board to each point specified. They are to be in the order given below, and tabulated in this order on the forms supplied. A diagram of the herring is appended (Fig. 1), showing the measurements to be taken.

The measurements required are as follows :—

From the end board to

- (1) Nearest point of bony orbit.
- (2) Hinder edge of operculum.

* Measurements are all given in centimetres.

- (3) Anterior end of dorsal fin.
- (4) Base of pelvic fins.
- (5) Posterior end of dorsal fin.
- (6) Anterior end of anal fin.
- (7) Posterior edge of hindmost scale.*
- (8) Distal end of mid-caudal ray.
- (9) Distal end of longest ray in dorsal fluke of caudal fin, when fluke is placed so that its dorsal margin lies parallel to line of measurement (i.e. line on board upon which snout and mid-caudal ray should lie).

These measurements made, the following are counted :—

- (10) Number of keeled scales on median ventral line in front of base of pelvic fins. [This character was found unreliable and was omitted.]

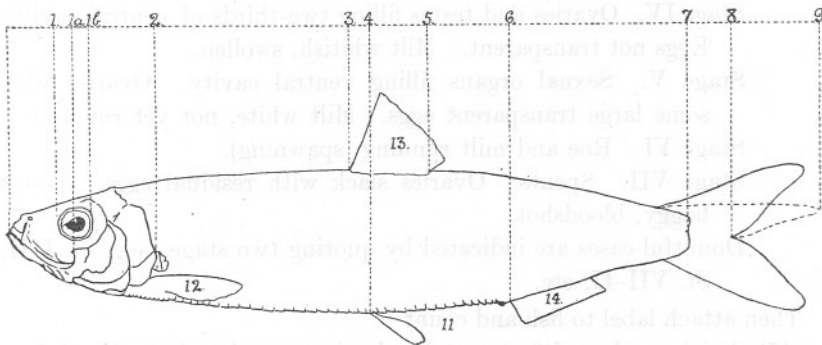


FIG. 1.—Diagram of Herring, showing the measurements, etc., taken by Dr. Orton, copied from the figure supplied by the Board of Agriculture and Fisheries.

- (11) Number of keeled scales between base of pelvics and anus.
- (12) Number of rays in right pectoral fin.
- (13) Number of rays in dorsal fin.
- (14) Number of rays in anal fin.

Then take

- (15) Weight of fish in apparatus supplied † to nearest 10 grms.

Then

Take scales ‡ from neighbourhood of pectoral fins and preserve in envelopes to be examined by Hjort's method.

Then open fish and take

- (16) Sex and degree of maturity (Hjort's scale).

* See p. 83.

† Each fish was weighed singly to the nearest gram on an ordinary balance in our work.

‡ The scales were forwarded to the Board for examination. The pyloric cæca of each fish were also preserved (see p. 86).

State of sexual organs is classified in 7 stages (Publications de Circonstance, No. 53, p. 35).

Stage I. Virgin individuals. Very small sexual organs close under vertebral column. ♀ wine-coloured torpedo-shaped ovaries about 2-3 cm. long and 2-3 mm. thick. Eggs invisible to naked eye. ♂ whitish or greyish-brown knife-shaped testes 2-3 cm. long and 2-3 mm. broad.

Stage II. Maturing virgins or recovering spents. Ovaries somewhat longer than half the length of ventral cavity, about 1 cm. diam. Eggs small but visible to naked eye. Milt whitish, somewhat bloodshot, same size as ovaries, but still thin and knife-shaped.

Stage III. Sexual organs more swollen, occupying about half of ventral cavity.

Stage IV. Ovaries and testes filling two-thirds of ventral cavity. Eggs not transparent. Milt whitish, swollen.

Stage V. Sexual organs filling ventral cavity. Ovaries with some large transparent eggs. Milt white, not yet running.

Stage VI. Roe and milt running (spawning).

Stage VII. Spents. Ovaries slack with residual eggs. Testes baggy, bloodshot.

Doubtful cases are indicated by quoting two stages, e.g. St. I-II, St. VII-II, etc.

Then attach label to fish and count

(17) Serial number of first vertebra having complete hæmal arch.*

(18) Total number of vertebrae.

METHOD OF WORK.

The measurements and weighings of the fish were first made and the counting of the scales and fin-rays accomplished in a second series of operations, and finally the skeletons were prepared in a third stage.

It was found possible to take the weight and measurements of only 250 fish in the first sample and 300 fish in the second sample within 24 hours of the landing of the fish, but weights and measurements of the whole samples of 550 and 525 respectively were completed within less than 36 hours of the landing of the fish. The fish not examined on the first day were kept in an ice chamber until required and remained in good preservation. It may here be noted that both the larger samples were obtained from steam-drifters, on which boats it appears that the fish are subjected to rougher handling than on sailing drifters. Some fish

* The figures given in Tables II, III, and IV denote the number of vertebrae with perfect and imperfect hæmal arches. For details see pp. 80-82.

were damaged with respect to one or more of the characters required, and were rejected ; apart from these damaged fish there was no other selection effected.

Both larger samples were samples from a large haul of fish and were taken at random from the catch.

The method of work in detail was as follows :—

1st series of operations.

The fish were first weighed singly and a sample of the scales taken from the region under the pectoral fin and put in a previously numbered envelope. A light metal label attached to a small safety pin was then stuck into the fish, which was passed on to be measured, the weight of the fish in the meantime being called out to the recorder. The measurements 1 to 9 were then taken—being called out and recorded successively. The sex and condition of the gonad were next determined and recorded and the fish finally labelled—by pinning the label to the skull through the orbit—and put into an ice-chest tray. Four persons were concerned in this operation—one to weigh and take scales, one to record, one to hand the fish on and assist mechanically with the measuring, and one to measure and take condition of gonad and sex. It was found that weighing and taking scales could be done on the whole rather more quickly than taking measurements and sex. In this way from about 34 to 44 fish could be examined in one hour's continuous work. The time within which a given number of fish were examined was noted and is given in the account of the examination of the different samples.

2nd series of operations : Counting.

In the large samples the counting of the keeled scales and fin rays (Characters 11 to 14) began on the third day of the investigation and was finished on the fourth. When four workers were available each counted the same fin—or the scales—in all the fish, and handed each fish on to his or her neighbour in turn. In the early stages of the work each worker called out the count to be recorded, and later each worker kept a record to check the count called out, but in the whole of the second sample, each worker simply recorded his or her own work. When the Characters 11 to 14 had been recorded the alimentary canal was taken out and labelled with the number of the fish, and preserved for the future examination of the pyloric cæca.

3rd stage : Preparing skeletons.

It was found better to place the fish in cold water, to bring the water to the boil, and allow to boil only two minutes than to boil for ten minutes.

Not more than upwards to about 50 fish were boiled at a time, and a shallow tray which just fits into the fish kettle was used for containing the fish during boiling, one tray being used for boiling while the boiled fish in another tray were being cleaned.

It was found that with one worker cleaning the fish roughly, another worker could clean up to 30 skeletons in an hour after a little practice. The skeletons of the whole sample in each case were prepared in two working days by one worker cleaning them roughly and two others cleaning them finally. All the skeletons have been kept with their own label for future reference and comparison with others. It was found important not to clean the skeletons too well in the region in front of the anterior complete hæmal arches, and to cut the vertebral artery at an early stage in the cleaning operation. The prepared skeletons were kept in shallow wooden trays.

DISTRIBUTION OF WORK AMONG THE WORKERS.

The work in the different stages was accomplished with the help of workers who gave their services at different times. The responsibility for the method and form of the work was undertaken by Dr. Orton, but the assistance rendered by the team of helpers can best be shown in tabular form as follows:—

Weighing and taking scales	Mr. A. J. Smith.
Recording	Miss Clark, Mrs. Matthews, Dr. Allen.
Measuring characters 1 to 9 and recording sex and condition of gonad	Dr. Orton.
Counting rays in pectoral fin	Mr. A. J. Smith, Dr. Orton.
Counting rays in dorsal fin	Dr. Allen, Mr. Crawshay, Dr. Orton.
Counting rays in anal fin	Mrs. Orton, Mrs. Matthews, Dr. Allen, Dr. Orton.
Counting keeled scales between pelvic and anal fins	Dr. Orton.
Preparing skeletons	Dr. Orton, Mr. Smith.
Counting vertebræ	Dr. Orton.
Checking counting of vertebræ	Mrs. Orton, Mrs. Matthews, Dr. Allen.

Mr. William Searle assisted in handling and labelling the fish and labelled the gut with attached pyloric cæca for further examination.

It may be mentioned that a fair amount of practice in measuring, weighing, recording, and counting was done by Dr. Orton, Mr. Smith, Miss Clark, and Mrs. Orton before the large samples were investigated.

DESCRIPTION OF THE WORKING OF THE SEPARATE SAMPLES.

Four samples of herrings have been investigated fully, two small samples and two large ones. For the sake of convenience they have been numbered in chronological order.

Sample	I.	84 herrings	9 miles S. of Looe, July 15, 1914.
„	II.	32 „	from Cawsand Bay, Dec. 9, 1914.
„	III.	550 „	from 6 miles W. by S. of Start Point, Dec. 15, 1914.
„	IV.	525 „	from about 8 miles W.S.W. to about 3 miles S.S.W. of Start Point, Jan. 6, 1915.

Sample I.

Particulars of this sample are given on the recording sheets. Characters 13 and 14 are given as totals. This sample, being a batch of summer herrings from the Plymouth district, should be specially interesting in comparison with the winter spawning herring; it was examined by Mr. R. S. Clark, with the assistance of Mr. E. Ford and Mr. F. M. Gossen.

Sample II.

This sample of 32 fish from a total catch of from 250 to 300 was taken on December 9, 1914, from drift nets moored in Cawsand Bay. The fish were in excellent condition and were weighed and measured during the morning of December 9.

In this sample two additional characters to those recommended by the Board were investigated, namely, (*a*) the position of the posterior border of the maxilla in relation to the position of the eye, and (*b*) the number of pyloric cæca. The former necessitated two additional measurements, which were numbered "1*a*" and "1*b*." 1*a* is the shortest distance between a line tangent to the posterior border of the maxilla taken at right angles to the long axis of the fish, and a line tangent to the tip of the lower jaw at right angles to the long axis of the fish.

1*b* is the shortest distance between a tangent to the posterior border of the orbit taken at right angles to the long axis of the fish, and a similar tangent to the tip of the lower jaw.

To obtain the number of pyloric cæca the gut of each fish was taken out and preserved with a label attached bearing the same serial number as the fish.

The number of fin rays is given in each case as a total, but during the examination of the fin rays it was observed that an attempt might be

made to analyse the fin rays in the dorsal and anal fins. The analysis of the vertebræ in this sample is the same as in the larger Samples III and IV (see pp. 80 and 82).

Sample III.

This was a sample of 550 fish examined from a catch of 22 cran, i.e. about 20,000 herrings. The fish were caught in herring drift nets by the steam-drifter *Diadem*, Lowestoft, near Bigbury Bay, with Start Point bearing about E. by N. 6 miles. The sample was taken at random from the catch, and consisted of fish of various sizes, but mostly in a condition approaching ripeness. Fish which were damaged were not investigated; otherwise there was no selection.

In the circumstances under which the research was carried out it was possible to examine only 250 fish in measurements, weight and condition of gonad on the first day, that is within 12 hours of the landing of the fish. The fish not examined the first day were kept in ice, and were found to be in excellent preservation on the second day, when the remainder of the sample, namely 300 fish, was examined for measurements, weight and condition of gonad. The whole sample was examined within 35 hours of the landing of the fish, and a record of time was taken as the examination of each lot of 50 fish was completed. These records are given with those for Sample IV in tabular form on page 79.

Sample IV.

In this sample 525 fish out of a catch of 56 cran, i.e. about 50,500 herrings, were examined. The catch was taken by the steam-drifter *G.M.V. 1062*, Lowestoft, in herring drift nets near Bigbury Bay, between a region 8 miles W.S.W. of Start Point and a position about 3 miles S.S.W. of Start Point. The fish were caught during the night of January 5-6, 1915, and landed about 10 a.m., January 6. Work was begun on the sample during the same morning, and 300 fish examined for weight, measurements and condition of gonad in the course of the day. The completion of the examination of the whole sample was effected within $33\frac{1}{2}$ hours of the landing of the fish.

The fish were mostly in a condition almost ready for spawning, some few being spent. In this sample there were a good many damaged fish, and to obtain 525 fish from a sample of 600 it was necessary to reject about 40 to 50 fish, most of which were too badly damaged about the head to be measured. The damage to these specimens had undoubtedly chiefly occurred in unmeshing them. No selection of specimens occurred other than that of damaged ones.

The times at which successive batches were examined for weight,

measurements and condition of gonad are shown with those for Sample III in the following table :—

Total fish examined.	Sample III.	Hours from landing.	Sample IV.	Hours from landing.
		Hr. min.		Hr. min.
50	12.40 P.M. Dec. 15	2.10	12. 2 P.M. Jan. 6	2. 2
100	4.30 „ „	6. 0	2.58 „ „	4.58
150	7.30 „ „	9. 0	4.40 „ „	6.40
200	8.55 „ „	10.25	7.20 „ „	9.20
250	10.13 „ „	11.43	8.47 „ „	10.47
300	11.55 A.M. Dec. 16	25.25	10. 4 „ „	12. 4
350	1. 5 P.M. „	26.35	11.49 A.M. Jan. 7	25.49
400	4.35 „ „	30. 5	2.45 P.M. „	28.45
450	7.20 „ „	32.50	4.30 „ „	30.30
500	8.30 „ „	34. 0	7. 0 „ „	33. 0
550 or 525	9.40 „ „	35.10	7.35 „ „	33.35

EXPLANATION OF RECORDS OF CHARACTERS 1A AND 1B IN SAMPLES II AND III.

In Sample III two characters in addition to those recommended by the Board were examined in a few fish. These characters are 1a and 1b. Character 1a, as in Sample II, is the shortest distance between a tangent to the posterior border of the maxilla taken at right angles to the long axis of the fish, and a tangent to the tip of the lower jaw at right angles to the long axis of the fish. Character 1b is the shortest distance between a tangent to the posterior border of the orbit taken at right angles to the long axis of the fish, and a similar tangent to the tip of the lower jaw.

It was found, however, that the taking of those measurements would decrease the number of fish examined within the shortest time recommended for the Characters 1 to 9, hence it was decided at an early stage to discontinue to take the additional ones.

EXPLANATION OF RECORDS OF CHARACTERS 13, 14, AND 17 IN SAMPLE III.

With regard to Characters 13, 14 and 17 on the sheets an attempt has been made in the case of the fins (13 and 14) to analyse them, and in the case of the vertebræ with hæmal arches to give additional information. The records for these characters are given in the general form of $a+b$.

In Sample III the dorsal and anal fins (13 and 14) were analysed in the following manner: in each case the fin-rays in the anterior portion of the fin equal to or less than two-thirds the height of the longest rays were

counted separately from the fin-rays posterior to them; thus the records take the form of $a+b$, the sum of which gives the total number of rays in the fin. A cursory examination of the records indicates that $2+17$ is the commonest form for the dorsal fin and $2+15$ the commonest form for the anal fin (Figs. 4 and 5).

In the case of Character 17, which is stated in the scheme to be the

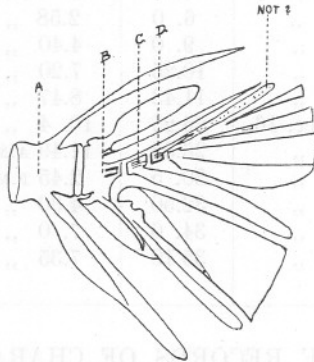


FIG. 2.—Diagram of Tail-bones of Herring, from Williamson. A is the last vertebra counted in the present work. B is regarded by Williamson as the last vertebra. Not ? = Notochord ?

“serial number of first vertebra having complete hæmal arch,” the records have been made in the form of $(a+b)$ where b = the total number of vertebræ with complete hæmal arch—not, however, counting the

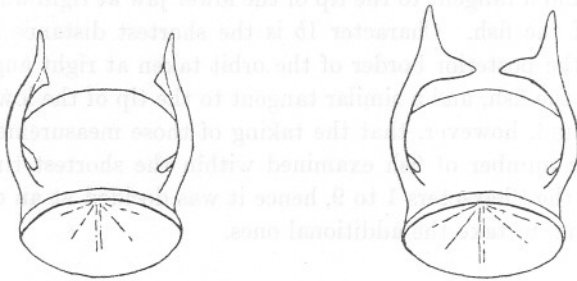


FIG. 3.—Vertebræ, showing incomplete but “well-developed” hæmal arch.

terminal vertebra-like ossicle regarded by Williamson as the “last vertebra” (see Fisheries, Scotland, Sci. Invest., 1914, I (April, 1914) Fig. 7, B, p. 21). Williamson’s figure is here reproduced as Fig. 2.

In this character (17), a = the number of vertebræ having an incomplete, but “well-developed” arch, and an arch was considered “well developed” if the hæmal processes were almost as large as those of the first complete arch, and if these processes possessed even the smallest trace of an internal cross-piece (see Figure 3). It should be mentioned that all inter-

mediate stages are met with between a trace of an internal cross-piece and a complete arch. It is not improbable that in the living animal these arches are closed by a cartilaginous cross-piece. cursory examination of the records indicates that in a majority of skeletons the sum of the number of vertebræ with complete hæmal arch and the number with well-developed (i.e. potentially complete ?) arches is 33 ; or it might be said that the commonest number of vertebræ with potentialities for complete hæmal arches is 33 ; the greatest number of such vertebræ appears to be 35.

EXPLANATION OF CHARACTERS 13, 14, AND 17 IN SAMPLE IV.

In Number IV Sample it was thought that more information could be obtained by analysing the dorsal and anal fin (Characters 13 and 14) in a slightly different way from that adopted in Sample III.

Thus in Sample IV all the anterior fin-rays of the dorsal fin which were distinctly shorter than the longest fin-ray were counted separately from the following and recorded in the general form of $a+b$, where a is the

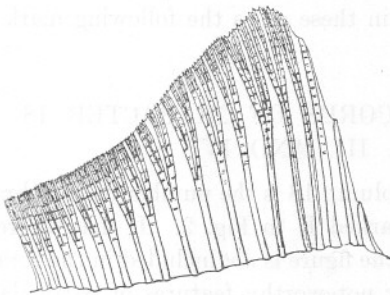


FIG. 4.—Dorsal Fin. In Sample III the above would be recorded as 2+17 ; in Sample IV as 3+16.

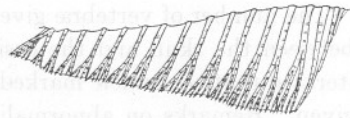


FIG. 5.—Anal Fin. In Sample III the above would be recorded as 2+15 ; in Sample IV as 3+14.

number of the smaller anterior rays and b the number of rays posterior to these. In this way it is possible to reconstruct a fin to represent the commonest form which by cursory examination of the records is seen to be one having 3+16 rays. A drawing of the type of ray is shown in Fig. 4.

In the case of the anal fin (Character 14) the fin was analysed in the following manner : all the anterior fin-rays which were not subdivided at the tip or splayed out in any way were counted and recorded separately as " a " from those in which the rays were splayed out—recorded as " b ." The commonest form of fin is seen from the records to be one recorded as 3+14. This type of fin is shown in Fig. 5.

Character 17 in Sample IV is also recorded in a manner slightly different

from that in Sample III. In this sample (IV) it was decided to include under "well-developed" open hæmal arches those in which the hæmal processes were relatively stout to those of the first closed arch, but which processes did not necessarily possess the trace of a cross-piece on their internal faces. This change of recording has resulted in only a slight difference in the records, but in a few cases the number of vertebræ

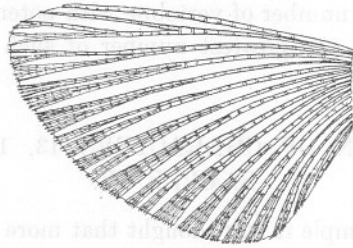


FIG. 6.—Pectoral Fin. 17 rays.

recorded in the "a" category is higher than in corresponding skeletons in Sample III.

It should be mentioned that in some skeletons the hæmal processes of the vertebræ anterior to the first vertebra with complete arch were missing, having been cleaned away; in these cases the following mark † is placed alongside the record.

EXPLANATION OF THE RECORDS OF CHARACTER 18 IN SAMPLES II, III, AND IV.

The number of vertebræ given in column 18 is the number of vertebræ between the skull and the ossicle marked B in Fig. 2. It may be reiterated that the ossicle marked B in the figure is *not* included in the total given. Remarks on abnormalities or noteworthy features of particular skeletons are connected by an asterisk to explanations in the Appendix to the Tables. It may be noted that in several skeletons two or more vertebræ have apparently become fused together; as, however, such fused vertebræ show uniformly only two articulations, they have in each case been counted as one vertebra, although it is most probable that most of these abnormal vertebræ are equivalent to two or more normal ones. Each case is discussed in the Appendix to the Tables.

EXPLANATION OF RECORDS OF CHARACTERS 1 TO 9, 11, 12, 15, AND 16 IN SAMPLES III AND IV.

Characters 11 and 12 call for little comment.

In counting the keeled scales between the pelvic fin and anus (11) the adjacent scales were cleaned well away before beginning to count. In

this way the insertions of the keeled scales could be made out and their total number established with certainty. Practically no difficulty was experienced in counting the rays in the pectoral fin (12). It was noticed, however, that in fins with a large number of rays the increase in the number appeared to be accounted for by additions of small rays near the posterior border. No attempt was made to analyse this fin as in the case of the dorsal and anal fins, but it is possible that useful information might be obtained by attempting such an analysis.

The weight of the fish (15) was taken separately and to the nearest gram.

In recording the condition of the gonad (16) it was found necessary to use combinations of the numerals representing different stages, which require explaining.

In the records occur such combinations as IV-VI and VI-IV. A record such as IV-VI is put down to represent fish in which the gonad appeared to be about ripe, although it did not fill the body cavity entirely. These records, however, refer mostly to males, in which the approach to and incidence of ripeness of the gonad are not easy to differentiate. In the case of records such as VI-III or VI-IV, these indicate that the gonad is definitely ripe, but has become reduced by spawning (or compression in some cases) to the size in the stage indicated by the second numeral; thus VI-IV indicates gonad reduced to the size of half the volume of the abdominal cavity. The numeral VII was reserved for fish which were spent or practically spent. By distinguishing spawning fish in this way it is possible to correlate to some extent the weight with the size of the fish.

With regard to Characters 1 to 9 all measurements were taken with the instrument supplied by the Board of Agriculture and Fisheries. An attempt was made to measure Character 1 to the nearest .2 of a millimetre in Samples III and IV.

Character 2 was measured to the nearest .5 mm. in Sample III and to .2 mm. in Sample IV.

Characters 3 to 9 were measured to the nearest .5 mm. in both Samples III and IV.

DEFINITION OF CHARACTER 7.

Characters 1 to 9 are those recommended by the Board except No. 7. Character 7 is defined in the Scheme as "from the end-board, etc. . . . to the posterior edge of the hindmost scale." In preliminary investigations, however, it was found that posterior scales were either rubbed loose or missing in about one-third of the specimens examined. It was therefore

decided to use some other fixed point of more constant position. The point chosen is in all probability the one shown in the figure of the Herring supplied by the Board. It is the point from which the perpendicular 7 arises, and marks the origin of the median caudal rays from the muscular part of the tail. The muscular part of the tail is covered by an epidermis of metallic appearance, and is in nearly all cases sharply marked off from what may be regarded as the tail fin proper where this kind of epidermis is absent. The caudal fin-rays are slightly embedded in the fleshy part of the tail. Thus the point chosen for measurement may be stated shortly to be the *origin of the mid-caudal rays from the fleshy part of the tail*.

The origin of these rays is, however, a concave line, as indeed is shown in the Board's figure, and the point actually measured is the line at right angles to the long axis of the fish which forms a tangent to the posterior border of the fleshy part of the tail. This line is apparently the same as the perpendicular No. 7 shown in the Board's figure.

There were only a few fish in which this point was at all difficult to determine and these were among Sample IV. It is of course well known that the posterior scales extend over the mid-caudal fin-rays.

ACCURACY OF MEASUREMENTS.

Before the large samples were examined a batch of 33 fish was examined twice, in order to obtain some determination of the error in measuring under the conditions in which the samples would be examined. The fish measured were not in good condition, so that it is probable that the errors observed in this case would be the maximum error, especially as more practice in measuring was obtained afterwards. In this experiment the average difference in the two sets of readings was less than 1 mm. in all measurements except 4 and 6, in which the average difference was 1.3 mm. and 1.1 mm. respectively. These 33 fish were examined in 47 and 45 minutes respectively, i.e. about the rate of 44 per hour, about the maximum rate for the large samples. After this experiment assistance was obtained in making measurements for Characters 3, 4, 5, and 6, and there can be no doubt that the accuracy of the measurements was thereby increased. In all measurements therefore it may be confidently stated that they are correct on the average to one millimetre, and in the case of 1 the average error is probably not more than .5 mm. It is believed that only isolated *errors of measurement* occur of as much as 3 mm., but errors would increase in frequency towards zero.

It is, however, possible that occasional *errors of observation* may occur of as much as 5 mm. where the .5 cm. line on the scale has been read as a

whole cm. division line, for one or two cases of this kind were actually observed in time to prevent this error. It is probably very difficult to exclude completely *occasional* lapses of this nature in examining large numbers of fish at the high rate of speed required.

It is unfortunate in some respects that the experimental sample mentioned above was not a fresh sample exactly comparable with a research sample, and it would probably be better in future work to re-examine a batch of the research sample in order to determine the error of measurement.

An experiment was carried out to determine how accurately the instrument would measure. A number of slips of paper (30) were ruled with lines parallel to one end, which was placed against and was parallel with the "end-board" of the instrument. The points measured on the ruled lines were similar to those measured on herrings, so that in measuring them it was necessary to move the instrument about in approximately the same way as when measuring the research herrings. The slips of paper represented in fact paper herrings. These 30 slips were measured twice at a rate greater than the maximum rate at which the research samples of herrings were examined. Characters 1 and 2 were read to $\cdot 2$ mm., and Characters 3 to 9 to the nearest $\cdot 5$ mm., just as in the research sample. The average difference between the first and second measurements of Characters 1 and 2 was less than $\cdot 1$ mm., and in only 4 cases was the difference as much as $\cdot 3$ mm. The average difference between all the measurements of Characters 1 and 2 and the actual distance—as measured by a 15-cm. ivory rule divided to fifths of a millimetre—was also less than $\cdot 1$ mm., and in only 5 cases were there differences of $\cdot 3$ mm.

The average difference between first and second measurements of Characters 3 to 9 was less than $\cdot 1$ mm., and in only one case was the difference more than $\cdot 5$ mm. The difference was exactly $\cdot 5$ mm. in 30 cases, and in 159 pairs of measurements the results were exactly the same. In all the measurements of Characters 3 to 9 the average difference from the actual distance measured was about $\cdot 13$ mm.

In a large number of measurements, however, it is considered that the instrument may be taken as reading accurately *on the average*, since the plus and minus variations would tend to balance each other, although ranging between plus and minus the maximum error mentioned above. The average algebraical error of all the measurements taken in the paper-herring sample mentioned above was less than $+\cdot 03$ mm. in Characters 1 and 2, and $+\cdot 04$ mm. in Characters 3 to 9.

REMARKS ON ADDITIONAL CHARACTERS TO THOSE RECOMMENDED BY THE BOARD.

In Sample II two additional characters to those recommended by the Board were examined, namely, the relation of the posterior border of the maxilla to the orbit, and the number of pyloric cæca. In the large sample it was found impracticable to examine the former character in addition to the Board's characters, owing to the exigencies of time, but the pyloric cæca of all the fish in Samples III and IV have been preserved with their proper number, and can be examined and recorded at leisure.

The examination of these characters is considered of equal importance to those recommended by the Board, since they are characters in which *Clupea harengus* differs from allied species.

HAUL.

Table I. Herring Race Investigations.

SAMPLE I.

Position . . . 9 miles S. of Looe ; Plymouth.
 Date . . . July 15/14. (Nets shot July 14/14.)
 Vessel . . . Motor Drifter (Looe Boat) "John Wesley."
 Net . . . Drift net.

Number examined . . . 84.
 Quantity of fish caught . . . 1000 (total catch).
 Date examined . . . July 15/14.
 Examined by . . . R. S. Clark.

The characters are briefly : Length in centimetres from snout to (1) eye, (2) operculum edge, (3) front of dorsal fin, (4) pelvic, (5) back of dorsal, (6) front of anal, (7) root of tail, (8) end of mid-caudal, (9) end of longest caudal ray. Number of (11) keeled scales (pelvics to anus), (12) rays in pectoral, (13) rays in dorsal, (14) rays in anal, (15) weight in grams, (16)

No. of fish.	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16
1	1.3	4.2	10.2	10.5	12.5	14.8	19.7	20.3	22.6	15	16	19	19	107	♂ i
2	1.4	4.4	10.9	11.1	13.2	15.8	20.9	21.7	24	14	16	18	18	123	♂ i-ii
3	1.3	4.1	10	10.4	12.6	15	19.7	20.5	22.5	14	17	19	18	104	♂ i
4	1.2	3.7	9.6	10.1	11.8	14.9	19.4	20.3	22.3	15	18 ?	18	17	91	♂ i
5	1.3	4.3	10.1	10.6	12.6	15.1	20.3	21.1	23.3	15	16	20	17	129	♂ i-ii
6	1.4	4.5	11.6	12.2	14.3	17.3	22.7	23.8	26.1	15	16	20	18	151	♂ i
7	1.3	4.2	10.3	10.4	12.7	15.5	20.3	21.3	23.6	14	17	19	16	120	♂ i
8	1.3	4.3	11.1	11.6	13.9	16.7	22	22.8	25.2	15	17	19	17	146	♂ i
9	1.3	4.2	10.4	11	12.8	15.6	20.1	21.3	23.5	15	17	20	18	112	♂ i
10	1.2	4	9.8	10.4	12.3	14.5	19.6	20.3	22.3	14	16	19	17	100	♂ i
11	1.3	4	10.3	10.9	12.8	15.4	20.4	21.4	23.5	15	16	19	18	118	♂ i
12	1.2	4.3	10.6	11.2	13.2	15.8	20.8	21.8	24.2	15	17	19	18	121	♂ i
13	1.2	4	10.3	10.5	12.8	15.4	20	21	23.1	15	16	19	18	112	♂ i
14	1.2	4	10.1	10.3	12.4	15.0	19.6	20.2	22.2	15	15	19	17	101	♂ i-ii
15	1.2	4.1	10.3	10.6	12.7	15.1	20.1	20.7	23.1	15	16	19	17	116	♂ i-ii
16	1.2	4.1	10.1	10.8	12.9	15.3	20.2	21.2	23.5	14	15	19	19	122	♂ i
17	1.2	3.9	9.7	9.9	12	14.5	18.8	19.6	21.6	15	17	19	18	82	♂ i
18	1.3	4.3	10.5	10.8	13.4	15.5	20.9	21.6	24.1	15	17	19	18	126	♂ i-ii
19	1.3	4.2	10.5	11	12.9	16.1	21	21.8	24.1	15	17	18	18	126	♂ i-ii
20	1.2	3.9	9.4	10.1	11.9	14.5	18.8	19.8	22	15	16	19	18	90	♂ i
21	1.3	4.2	10.1	10.7	12.6	15	19.8	20.8	23.1	14	17	19	19	118	♂ i-ii
22	1.3	4.1	10.2	10.7	12.7	15.3	20	20.7	23	16	17	20	17	100	♂ i
23	1.3	4.5	11.1	11.6	13.7	16.7	21.5	22.6	25.1	15	16	19	19	138	♂ i-ii
24	1.2	4	9.9	10.3	12.3	14.9	19.7	20.4	22.7	14	17	19	18	111	♂ i
25	1.2	4.2	9.8	10.7	12.5	15.1	20.1	21	22.3	14	17	19	18	114	♂ i
26	1.2	3.8	10	10.6	12.3	15	19.8	20.8	22.6	15	15	17	16	102	♂ i
27	1.2	4.2	10.2	10.8	12.8	15.9	20.6	21.5	23.8	14	16	19	17	128	♂ i-ii
28	1.3	4.3	10.3	11	12.7	15.4	20	21.0	23.3	14	16	18	16	121	♂ i
29	1.2	4.1	9.8	10.5	12.4	15	19.9	20.6	22.7	15	17	18	18	107	♂ i-ii
30	1.2	4.1	10	10.3	12.4	15	19.7	20.7	23	15	16	19	17	100	♂ i-ii
31	1.2	4.2	10.1	10.6	12.7	15.1	19.9	20.7	22.8	14	17	19	18	114	♂ i-ii
32	1.1	4	9.6	10.4	12.2	14.3	19.3	20	22.2	15	17	19	18	114	♂ i
33	1.1	4	10.1	10.3	12.4	14.7	19.4	20.1	22.4	14	17	19	19	105	♂ i
34	1.2	4.1	10.1	10.8	12.6	15.1	20.2	20.9	23.1	15	17	19	18	113	♂ i-ii
35	1.2	4.2	10.3	10.7	12.7	15.2	20.2	21.1	23.3						♂
36	1.2	4	9.3	10	11.9	14.1	18.7	19.4	21.7	15	17	19	18	92	♂ i-ii
37	1.2	4	9.8	10.6	12.6	15.1	19.7	20.6	22.9	15	16	19	17	114	♂ i-ii

No. of fish.	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16
38	1-2	4-3	11-3	11-9	14-1	17-3	22-2	23-1	25-4	16	17	19	18	154	i
39	1-3	4-3	10-8	11-6	13-6	16-5	21-9	22-7	25-1	15	18	20	17	140	i-ii
40	1-2	4-1	10	10-7	12-5	15	19-9	20-7	22-8	14	15	20	18	112	i
41	1-2	4-2	10-1	10-6	12-8	15-1	20-2	21	23-3	14	17	19	19	113	i-ii
42	1-2	4-3	9-9	10-6	12-4	15-2	20-2	21	23-1	14	17	19	16 ?	115	i
43	1-2	4-3	10-1	10-7	12-9	15-4	20-7	21-5	23-8	14	17	19	17	122	i
44	1-2	4-2	9-8	10-3	12-3	13-8	19-2	20-2	22-2	15	17	19	17	93	i
45	1-2	4-2	9-9	10-5	12-4	15-1	19-4	20-3	22-4	14	18	19	18	104	i
46	1-3	4-3	10	10-6	12-7	15-3	20	21	23-3	15	19	19	19	113	i
47	1-2	4-2	10-3	10-7	12-8	15	20-1	21-1	23-4	15	17	19	19 ?	118	i
48	1-3	4-5	10-8	11-3	13-5	16-3	21-5	22-3	24-9	14	17	20	17	155	ii
49	1-3	4-4	10-4	11-2	13	15-5	20-7	21-5	23-8	14	17	19	16	127	i-ii
50	1-2	4-3	10-7	11-3	13-5	15-8	21-3	22-1	24-4	15	17	19	18	130	i
51	1-2	4-4	10-4	10-9	13-0	15-3	20-5	21-1	23-6	14	18	19	17	126	i-ii
52	1-2	4-1	9-7	10-4	12-3	15-2	19-9	20-6	22-9	15	17	20	18	109	i
53	1-2	4-3	10-4	11-3	12-9	16-2	20-6	21-6	24-0	14	16	19	16	117	i-ii
54	1-2	4-2	10-5	11-3	13-2	15-5	20-5	21-2	23-5	14	17	19	16	121	i
55	1-2	4-4	10-2	10-9	12-5	15-2	20-2	21	23-2	15	17	20	17	116	i
56	1-2	4-1	9-7	10-4	12-1	14-8	19-6	20-3	22-4	14	17	19	17	105	i
57	1-3	4-4	10-7	11-4	13-3	16-2	21-4	22-1	24-5	15	17	18	18	138	i
58	1-3	4-6	11-4	11-8	14-1	16-8	21-9	22-7	25-3	15	17	19	17	154	i-ii
59	1-2	4-1	9-5	10-6	12	14-5	19-3	20-2	22-3	15	17	20	19	108	i-ii
60	1-3	4-4	10-6	11-2	13-4	16	21-5	22-3	24-7	14	17	19	18	141	i-ii
61	1-1	4-1	9-5	10-2	12-1	14-4	19-3	20	22-2	15	17	20	17	102	i-ii
62	1-2	4	9-9	10-5	12-3	15	19-6	20-5	22-7	15	16	19	19	100	i
63	1-2	4	10	10-5	12-2	15-3	19-9	20-6	22-7	14	15	19	17	115	i-ii
64	1-2	4-1	9-7	10-6	12-2	15-1	19-7	20-4	22-6	16	16	18	16	113	i
65	1-2	4-3	9-5	10-1	12	14-4	19-3	20	22-1	14	16	20	18	99	i-ii
66	1-2	4	10-3	11-1	13	15-8	20-6	21-4	23-7	15	17	20	18	113	i
67	1-2	4-1	9-6	10-0	12	14	18-9	19-7	21-8	13	17	18	18	99	i
68	1-2	4-2	9-9	10-6	12-5	15	19-6	20-5	22-8	14	17	19	17	109	i
69	1-1	4-1	9-3	9-9	11-8	14	18-8	19-4	21-5	15	15	19	18	85	i
70	1-1	4	9-5	10-1	12-2	14-4	19-3	19-9	22-2	14	15	20	17	99	i
71	1-3	4-3	10-1	10-9	12-6	15-2	20-2	21	23-3	14	16	19	18	119	i
72	1-2	3-9	9-5	10-2	11-8	14-5	19-1	19-9	21-9	15	17	19	17	98	i-ii
73	1-1	4-1	9-7	10-5	12-1	14-5	19-4	20	22-2	15	16	18	16	101	i
74	1-3	4-5	10-5	11-4	13-3	16-1	21-2	22	24-3	15	17	19	17	137	i-ii
75	1-2	4-1	9-8	10-1	12-2	14-7	19-7	20-3	22-8	15	17	19	18	103	i
76	1-2	4-2	9-7	10-7	12-3	14-7	19-5	20-3	22-3	14	16	20	18	98	i
77	1-1	3-9	9-4	10-2	11-9	14-2	19-1	19-7	21-9	14	16	19	18	91	i
78	1-2	3-9	9-9	10-3	12-3	14-5	19-5	20-2	22-4	14	16	18	18	102	i-ii
79	1-2	4-2	10-2	11-1	13	15-4	20-4	21-2	23-5	14	16	19	18	125	i-ii
80	1-2	4-1	10-2	10-6	12-8	15-4	20-2	21	23-4	15	17	19	17	113	i-ii
81	1-2	4-1	10-0	10-6	12-7	15-2	20-3	20-9	23-3	15	16	19	17	123	i-ii
82	1-2	3-9	9-9	10-5	12-3	15-1	20-2	20-9	23	15	16 + 1	19	18	110	i
83	1-2	4-1	9-8	10-6	12-3	14-7	19-7	20-3	22-7	15	16	19	17	113	i
84	1-2	4-3	10-4	11-3	12-9	15-5	20-4	21-3	23-8	15	17	20	18	119	i-ii

Table II. Herring Race Investigations.

HAUL.											SAMPLE II.										
Position . . .	Cawsand Bay (condition of fish : very good).										Number examined . . .	32.									
Date . . .	Early morning Dec. 9/14. Landed morning of Dec. 9/14.										Quantity of fish caught . . .	250-300.									
Vessel . . .	Not known.										Date examined . . .	Dec. 9/14.									
Net . . .	Moored drift nets.										Examined by . . .	J. H. Orton.									
The characters are briefly : Length in centimetres from snout to (1) eye, (2) operculum edge, (3) front of dorsal fin, (4) pelvic, (5) back of dorsal, (6) front of anal, (7) root of tail, (8) end of mid-caudal, (9) end of longest caudal ray. Number of (11) keeled scales (pelvics to anus), (12) rays in pectoral, (13) rays in dorsal, (14) rays in anal, (15) weight in grams, (16) sex and maturity, (17) vertebrae with hæmal arch, (18) total vertebrae.																					
No. of fish.	1	1 _a	1 _b	2	3	4	5	6	7	8	9	Pyloric caeca.	11	12	13	14	15	16	17	18	No. of fish.
1	1.28	1.86	2.3	4.1	9.8	10.35	12.1	14.5	19.05	20.1	22.3	22	15	17	18	17	79	♂ iv-vi	0+32	55	1
2	1.53	2.1	2.6	4.55	11.45	11.85	14.25	17.15	22.4	23.4	26.25	18	16	17	18	18	149	♀ iv-v	1+31	55	2
3	1.5	1.9	2.55	4.4	10.2	10.65	12.7	15.1	19.8	20.9	23.25	25	15	18	18	17	94	♂ v-vi	0+32	55	3
4	1.6	2.3	2.7	4.95	11.45	12.3	14.2	17.05	22.5	23.65	26.35	20	15	17	18	17	114	♂ ii	1+32	55	4
5	1.4	1.9	2.4	4.45	11.3	11.8	13.9	16.8	21.65	22.7	25.45	17	15	16	19	16	123	♀ iv-v	0+32	55	5
6	1.53	2.0	2.6	4.6	11.15	11.7	13.55	16.5	21.4	22.4	25.1	20	16	17	18	16	106	♀ v	2+31	56	6
7	1.45	2.15	2.6	4.7	11.3	11.8	13.9	16.5	21.9	23.0	25.6	19	14	17	18	18	126	♀ iv-v	1+32	55	7
8	1.33	1.46	2.34	4.2	10.1	10.8	12.55	15.1	19.7	20.8	23.1	18	15	17	19	14	96	♂ v-vi	1+32	56	8
9	1.46	2.0	2.53	4.35	9.95	10.5	12.4	14.45	19.35	20.35	22.85	19	14	17	19	17	91	♂ v-vi	0+32	55	9
10	1.2	1.74	2.2	4.1	10.1	10.8	12.2	15.2	19.75	20.8	22.96	23	15	17	17	15	93	♂ v-vi	2+31	55	10
11	1.4	1.95	2.5	4.4	10.65	11.26	13.2	16.05	21.15	22.15	24.65	20	15	17	20	19	114	♂ iv-v	1+32	56	11
12	1.46	2.15	2.6	4.8	11.5	12.4	14.1	17.3	22.3	23.4	26.1	23	15	16	20	16	106	♂ ii	1+32	56	12
13	1.28	1.73	2.28	4.13	9.65	10.26	12.2	14.25	19.05	20.0	22.4	18	15	18	21	17	83	♀ iii-iv	1+33	57	13
14	1.4	2.0	2.5	4.4	10.1	11.1	12.9	15.2	19.85	20.9	23.4	18	14	18	19	16	100	♂ v	1+32	56	14
15	1.25	1.75	2.25	4.05	9.6	10.3	11.05	14.0	18.55	19.4	?	21	14	16	20	17	78	♂ v-vi	1+31	55	15
16	1.8	2.45	3.1	5.45	12.25	13.15	15.2	18.45	23.95	25.3	28.2	21	15	17	19	17	125	♂ ii	1+33	55	16
17	1.45	2.0	2.5	4.5	10.3	11.45	12.85	15.8	20.7	21.7	24.4	20	15	16	18	1+16	106	♂ v-vi	1+32	55	17
18	1.53	2.05	2.6	4.7	11.0	11.7	13.85	16.05	21.5	22.6	25.2	20	14	17	20	17	114	♂ ii	1+32	56	18
19	1.35	1.77	2.35	4.15	10.3	10.95	12.9	15.85	20.6	21.7	24.25	22	15	16	20	1+17	101	♂ iv-v	1+33	56	19
20	1.5	2.15	2.63	4.8	11.15	11.7	13.8	16.85	21.8	22.95	25.55	19	15	17	19	1+16	119	♂ iii	1+32	55	20
21	1.45	2.0	2.5	4.4	10.95	11.65	13.3	16.2	21.35	22.5	25.0	22	14	16	18	1+16	111	♂ v-vi	1+32	56	21
22	1.42	1.92	2.46	4.3	10.45	11.4	12.8	15.95	20.65	21.65	24.2	20	15	17	18	15	107	♀ iv-v	1+32	56	22
23	1.35	1.9	2.36	4.1	9.3	10.1	11.8	14.2	18.65	19.6	21.9	18	15	17	18	16	78	♀ ii-iii	0+33	56	23
24	1.4	2.0	2.4	4.5	10.7	11.6	13.15	16.2	21.4	22.5	24.95	16	14	17	18	1+16	108	♂ iv-vi	1+33	56	24
25	1.46	2.0	2.45	4.4	10.5	11.1	12.8	15.5	20.5	21.5	24.0	19	15	17	19	1+16	106	♂ v	2+31	56	25
26	1.4	2.0	2.45	4.4	10.05	11.1	12.6	15.3	20.3	21.45	23.8	21	16	16	19	17	103	♂ iv-vi	2+31*	56	26
27	1.3	1.8	2.3	4.3	10.46	11.25	12.8	15.7	20.5	21.4	24.0	21	14	16	19	1+16	81	♂ i-ii	2+31	55	27
28	1.23	1.75	2.2	4.0	9.7	10.55	12.0	14.4	18.85	19.85	22.05	21	14	17	19	2+14	84	♀ iii-iv	2+31	55	28
29	1.5	1.8	2.55	4.4	10.2	10.9	12.75	15.2	19.95	21.1	23.3	22	14	16	18	1+14	94	♂ v	1+32	56	29
30	1.48	2.0	2.53	4.5	10.2	10.25	12.5	15.5	20.1	21.1	23.5	19	15	17	19	1+14	88	♂ v	1+31	55	30
31	1.4	1.88	2.35	4.2	9.5	10.3	11.85	14.3	18.9	19.9	22.3	25	15	17	19	2+14	72	♀ iii	1+32	55	31
32	1.4	2.05	2.45	4.58	11.3	11.7	14.2	16.7	21.85	23.0	25.5	25	16	17	19	2+15	126	♂ iv-v	0+33	56	32

* One vertebra with 2 neural and 2 ventral arches.

Table III. Herring Race Investigations.

HAUL.
 Position . . . Start Pt. E. by N. 6 miles.
 Date . . . Dec. 15/14. Landed at 10.30 a.m.
 Vessel . . . Steam Drifter "Diadem," Lowestoft.
 Net . . . Drift.

SAMPLE III.

Number examined . . . 550.
 Quantity of fish caught . . . 22 crans (about 20,000).
 Date examined . . . Dec. 15/14.
 Examined by . . . J. H. Orton.

The characters are briefly: Length in centimetres from snout to (1) eye, (2) operculum edge, (3) front of dorsal fin, (4) pelvic, (5) back of dorsal, (6) front of anal, (7) root of tail, (8) end of mid-caudal, (9) end of longest caudal ray. Number of (11) keeled scales (pelvics to anus), (12) rays in pectoral, (13) rays in dorsal, (14) rays in anal, (15) weight in grams, (16) sex and maturity, (17) vertebrae with haemal arch, (18) total vertebrae. * For explanation of signs see Appendix to Tables.

No. of fish.	1	1a	1b	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18
1	1.5	2.1	2.6	4.8	12.35	13.1	15.55	18.16	23.9	25.2	27.95	15	18	3+17	3+15	156	♂ v	1+32	56
2	1.63	2.36	2.9	5.2	12.45	12.8	15.45	18.2	23.3	24.55	27.6	15	18	3+17	2+15	182	♂ iv-v	0+33	56
3	1.7	2.45	3.05	5.35	12.55	13.65	15.55	18.6	24.4	25.75	28.65	15	16	3+16	2+16	181	♂ v	0+32*	56
4	1.4	2.0	2.5	4.7	11.6	12.55	14.15	17.8	22.85	23.9	26.7	16	16	2+17	2+15	132	♂ iv-v	1+32	56
5	1.47	1.95	2.53	4.6	11.25	12.1	14.0	16.9	22.1	23.3	26.1	14	16	2+17	2+15	141	♂ v	1+33	56
6	1.8	2.34	3.0	5.25	12.75	13.9	15.8	19.1	24.75	26.0	29.0	14	17	2+17	2+15	205	♂ iv	2+31	56
7	1.5	2.0	2.6	4.6	11.4	12.1	14.0	16.9	21.9	23.1	25.8	14	16	2+17	2+17	156	♂ v	1+32	56
8	1.55	2.2	2.75	5.0	12.0	13.0	14.9	18.1	23.4	24.5	27.4	15	17	2+17	2+16	178	♂ v	2+32	56
9	1.6	2.1	2.75	4.7	11.65	12.6	14.7	18.15	23.0	24.15	27.1	15	16	3+17	2+16	166	♂ iv-v	0+32*	56
10	1.6	2.1	2.78	5.0	11.9	12.85	14.85	18.15	23.25	24.45	27.3	14	18	2+17	2+16	162	♂ iv-v	1+32	55
11	1.55			4.8	11.9	12.9	14.5	17.7	22.6	23.6	26.55	14	16	3+16	2+15	146	♂ iv	0+32	56
12	1.5			4.6	11.4	11.95	13.95	16.8	22.1	23.1	25.8	14	17	2+17	2+16	139	♂ v	0+33	56
13	1.53			4.7	11.4	12.55	14.25	17.6	22.65	23.7	26.3	15	16	3+17	3+15	162	♂ v	0+33	56
14	1.5			4.7	11.4	12.0	14.0	16.9	21.9	23.0	25.8	14	18	3+17	2+16	142	♂ iv	0+32	55
15	1.5			4.8	11.75	12.05	14.4	17.3	22.3	23.4	25.9	15	17	2+17	2+18	148	♂ iv-v	1+32	56
16	1.52			4.7	11.5	12.05	14.3	17.05	22.0	23.2	25.7	14	16	3+17	2+14	159	♂ v	1+32	56
17	1.5			4.8	12.3	12.55	15.2	18.0	23.0	24.25	26.9	16	16	2+17	3+16	172	♂ iv-v	1+32	55
18	1.5			4.7	11.15	11.75	14.9	16.6	21.7	22.8	25.2	15	17	3+16	2+15	117	♂ iii-iv	1+32	55
19	1.56			4.7	11.5	12.5	14.0	17.3	22.0	23.3	25.8	14	17	2+16	2+15	152	♂ iii-iv	2+31	56
20	1.5			4.6	11.25	12.15	13.8	16.9	21.85	23.0	25.6	15	17	2+17	2+15	114	♂ iii	+1+32	56
21	1.6			4.9	11.95	12.35	14.85	17.4	22.6	23.7	26.6	13	16	3+17	2+16	152	♂ iv-v	1+32	56
22	1.46			4.6	12.15	12.65	14.9	17.45	22.8	24.0	26.45	13	17	2+17	3+16	158	♂ iv-v	2+31	56
23	1.47			4.6	11.2	12.4	13.95	17.3	22.0	23.25	25.8	15	16	3+17	3+15	135	♂ iv	0+33	56
24	1.43			4.46	11.3	11.9	14.1	16.7	21.8	22.95	25.65	13	16	3+16	2+16	140	♂ iv	1+32	55
25	1.53			4.66	11.65	12.6	14.45	17.4	22.2	23.35	26.15	15	16	3+16	3+14	166	♂ v	1+32	56
26	1.35			4.2	10.25	10.6	12.5	15.05	19.3	20.4	22.7	14	17	3+17	2+16	95	♂ ii-iii	1+31	55
27	1.6			5.2	12.4	13.05	15.3	18.5	23.9	25.2	27.9	15	16	2+16	2+17	165	♂ v	1+33	57
28	1.4			4.25	10.35	10.85	12.55	15.3	20.05	21.1	23.6	15	17	2+16	2+14	104	♂ iii	0+32	56

29	1-47		4-8	11-7	12-7	14-35	17-15	22-3	23-55	26-2	14	16	2+17	2+15	139	♂ v-vi	1+32	56	
30	1-43		4-5	10-6	11-4	13-4	15-8	20-8	21-9	24-3	14	16	2+17	3+15	113	♂ iii-iv	2+31	55	
31	1-7		5-0	12-1	12-9	14-8	18-2	23-3	24-5	27-0	15	16	2+16	1+15	122	♂ vi	1+32	56	
32	1-55		4-7	11-5	12-4	14-35	17-2	22-2	23-3	26-2	15	17	2+17	2+14	120	♂ iii	1+31	54	
33	1-4		4-4	10-1	11-3	12-75	15-5	20-3	21-3	23-9	15	17	3+16	2+16	93	♂ iii	1+33	56	
34	1-43		4-58	11-7	12-35	14-2	17-45	22-45	23-7	26-3	15	17	3+16	3+13	124	♂ iv	0+32*	55	
35	1-68		5-15	12-45	13-6	15-15	19-1	24-6	25-8	28-7	15	16	2+17	2+14	183	♂ iv-v	1+31	56	
36	1-3		4-1	10-05	11-0	12-4	15-4	19-85	20-9	23-35	15	16	2+16	2+15	90	♂ iv	0+33	56	
37	1-42		4-3	10-45	11-5	12-9	16-0	20-45	21-65	24-1	15	18	2+17	3+14	120	♂ v-vi	2+32	56	
38	1-27		4-2	10-3	11-3	12-9	15-9	20-5	21-5	23-85	14	16	2+17	2+16	105	♂ iv	0+32	55	
39	1-3		4-2	9-8	10-6	12-05	14-85	19-6	20-6	22-8	14	16	2+17	2+16	95	♂ iv	1+33	57	
40	1-4		4-4	11-1	11-8	13-7	16-8	21-7	22-85	25-55	15	17	3+17	3+16	137	♂ iv	1+32	56	
41	1-4		4-3	10-6	11-3	13-0	15-95	20-6	21-7	24-2	13	17	3+15	2+15	115	♂ iv-v	1+31	55	
42	1-5		4-45	10-85	11-45	13-3	16-3	21-05	22-05	24-6	14	16	2+17	2+16	106	♂ iii	2+31	56	
43	1-6		5-1	12-55	13-75	15-9	19-1	24-55	25-9	28-7	15	17	2+17	3+16	186	♂ v	1+32	56	
44	1-25		4-0	9-45	10-3	11-9	14-65	19-1	20-15	22-4	15	16	3+16	2+16	185	♂ vi-iii	†0+32	55	
45	1-5		4-4	10-75	11-3	13-2	15-95	20-9	22-0	24-4	15	17	2+17	2+17	115	♂ iv-v	0+33	56	
46	1-43		4-5	10-8	11-7	13-3	16-4	21-3	22-35	24-8	15	17	3+17	2+15	99	♂ ii-iii	1+32	56	
47	1-6		4-9	12-15	13-2	15-05	18-45	23-6	24-8	27-45	15	16	2+16	1+14	165	♂ v	0+32	56	
48	1-5		4-8	11-7	12-2	14-7	17-6	22-8	23-95	26-55	17	17	3+17	2+13	144	♂ v	1+32	56	
49	1-48		4-8	12-3	12-8	15-0	18-2	23-0	24-2	26-8	14	17	3+16	2+16	142	♂ iv-v	1+31	56	
50	1-6		5-1	12-6	13-6	15-75	19-05	24-9	26-2	29-1	14	16	3+16	2+16	193	♂ v	1+33	57	
51	1-43	2-06	2-58	4-6	11-1	11-5	13-55	16-2	21-35	22-5	16	17	2+16	2+16	123	♂ iv	0+33	56	
52	1-6	2-2	2-8	5-05	11-9	12-8	14-9	17-9	23-1	24-2	27-05	15	18	2+17	2+14	157	♂ iv-v	1+32	56
53	1-4	2-0	2-43	4-45	11-3	11-9	14-0	17-25	22-4	23-5	15	17	3+16	2+15	147	♂ iv	0+32	55	
54	1-5	2-1	2-65	4-65	11-95	12-6	14-5	17-75	23-0	24-2	15	16	2+16	2+14	163	♂ v	1+33	56	
55	1-32	1-86	2-3	4-25	10-2	11-1	12-5	15-45	20-0	21-05	15	16	2+17	2+14	94	♂ vi	0+32	55	
56	1-5	1-96	2-6	4-6	11-0	11-7	13-8	16-5	21-5	22-7	14	17	2+18	2+16	126	♂ iv-v	1+31	55	
57	1-3	1-86	2-32	4-3	10-3	11-1	13-05	16-0	20-9	22-0	16	18	2+17	2+15	122	♂ iii-iv	0+33	56	
58	1-3	1-84	2-4	4-1	9-75	10-05	11-9	14-4	18-7	19-75	15	18	2+17	3+16	81	♂ ii-iii	1+32	55	
59	1-5	2-05	2-6	4-7	11-9	12-35	14-7	17-4	22-7	23-9	14	16	2+17	2+17	149	♂ v	0+33	57	
60	1-4	2-05	2-55	4-55	11-3	11-8	14-0	16-5	21-8	22-9	15	18	3+17	2+17	141	♂ v	0+33	56	
61	1-6		5-0	12-25	12-9	15-2	18-1	23-2	24-45	27-2	15	17	3+17	2+14	153	♂ v	2+31	56	
62	1-45		4-7	11-15	12-35	13-8	16-9	21-9	23-0	25-6	14	16	2+17	2+15	128	♂ v	0+32	56	
63	1-65		5-05	12-5	13-35	15-6	18-5	24-0	25-25	28-2	14	18	3+16	3+16	180	♂ v	1+32	56	
64	1-3		4-3	10-8	11-45	13-3	15-85	20-7	21-9	24-4	15	17	2+16	2+14	116	♂ v	0+32	55	
65	1-5		4-75	11-7	12-5	14-45	17-6	22-55	23-7	26-4	15	17	2+17	2+15	135	♂ v	1+32	56	
66	1-55		4-75	11-45	12-35	14-15	17-2	21-85	23-1	25-9	14	17	2+17	3+15	121	♂ v	2+31	55	
67	1-45		4-45	10-8	11-1	13-1	16-15	20-75	21-9	24-4	15	16	2+16	2+16	116	♂ iii-iv	2+31	56	
68	1-36		4-35	10-3	11-15	12-8	15-3	20-25	21-3	23-7	15	16	2+17	2+15	94	♂ iii-iv	1+31	56	
69	1-55		4-8	11-4	11-9	14-0	16-55	21-55	22-8	25-2	14	18	2+17	2+15	129	♂ v	0+32	55	
70	1-45		4-35	10-4	10-8	12-95	15-45	20-1	21-1	23-7	15	16	3+17	3+15	108	♂ v	1+32	56	

No. of fish.	1		2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18	
	1 _a	1 _b																	
71	1·47		4·75	11·75	12·7	14·7	17·4	22·8	23·8	26·6	14	18	2+17	2+18	151	♂ v	2+33	57	
72	1·5		4·75	11·7	12·2	14·4	17·55	22·2	23·4	26·05	15	16	2+16	2+14	147	♂ v	1+32	56	
73	1·62		5·05	12·3	13·5	15·4	18·4	23·8	25·05	28·1	15	16	2+17	1+16	177	♂ v-vi	1+33	56	
74	1·48		4·6	10·95	11·5	13·6	16·6	21·3	22·45	25·1	15	18	3+17	3+15	127	♂ iv-v	1+31	56	
75	1·45		4·75	11·9	12·9	14·65	17·9	23·25	24·5	27·1	14	18	2+16	2+15	165	♂ iv-v	0+32	55	
76	1·6		5·15	13·15	13·85	16·15	19·5	24·6	25·8	28·5	15	16	3+16	3+14	171	♂ v	1+33	56	
77	1·45		4·6	11·05	12·0	13·7	16·9	21·9	22·95	25·5	15	17	1+17	3+14	124	♂ iv-v	2+32	56	
78	1·6		4·95	12·75	13·5	15·75	19·1	24·4	25·6	28·35	16	17	2+17	2+16	176	♂ iv-v	0+32	56	
79	1·36		4·3	10·25	10·9	12·85	15·45	19·95	21·0	23·35	16	17	2+17	2+16	109	♂ iv	3+30	55	
80	1·6		5·2	12·1	13·0	14·8	17·85	23·35	24·5	27·3	13	16	3+16	2+15	150	♂ v	1+32	56	
81	1·5		4·65	11·45	11·85	14·1	16·9	21·9	23·05	25·7	15	16	2+17	2+16	129	♂ iv-v	0+32	56	
82	1·48		4·65	11·0	11·8	13·75	16·5	21·45	22·6	25·2	15	17	3+16	2+14	124	♂ vi	1+31	55	
83	1·45		4·45	10·75	11·35	13·4	16·2	21·0	22·2	24·4	15	17	2+16	2+15	125	♂ v-vi	1+32	55	
84	1·37		4·3	10·6	11·45	13·2	16·25	21·15	22·3	24·8	15	17	3+16	2+16	95	♂ vi-iii	1+32	55	
85	1·4		4·4	10·2	10·9	12·8	15·1	19·85	20·95	23·35	14	17	2+15	1+16	99	♂ iii	1+32	56	
86	1·35		4·25	10·35	11·05	12·9	15·45	20·4	21·5	24·0	14	17	2+18	3+16	101	♂ vi-iv	0+32	55	
87	1·38		4·3	10·55	11·25	13·0	15·7	20·5	21·65	24·0	15	16	2+16	2+16	114	♂ iv-v	1+32	57	
88	1·55		5·0	12·2	13·1	15·15	18·15	23·5	24·75	27·55	15	17	2+17	2+15	164	♂ v	0+33	56	
89	1·37		4·5	10·8	11·7	13·5	16·1	20·65	21·75	24·35	14	16	2+16	2+15	114	♂ v-vi	2+31	55	
90	1·35		4·3	10·4	11·1	13·0	15·5	20·05	21·1	23·4	14	17	2+16	2+16	97	♂ iv	1+32	55	
91	1·3		4·35	10·7	11·2	13·1	15·75	20·85	22·0	24·45	15	16	3+15	3+15	111	♂ iv	0+33	56	
92	1·42		4·63	11·6	12·2	14·3	17·6	22·4	23·6	26·1	15	15	2+16	2+14	153	♂ iv	1+33	56	
93	1·4		4·38	10·8	11·45	13·3	16·4	21·2	22·3	24·75	14	17	2+16	2+15	119	♂ v-vi	3+31	56	
94	1·4		4·4	10·85	11·9	13·5	16·6	21·55	22·6	25·1	15	17	2+17	2+14	119	♀ iv	†1+32	56	
95	1·7		5·2	12·4	13·8	15·55	19·1	24·3	25·65	28·2*	14	17	2+17	2+17	199	♂ v	2+30	55	
96	1·3		4·25	10·05	10·9	12·45	15·35	20·1	21·25	23·55	14	17	2+16	2+17	98	♂ iii-iv	1+33	56	
97	1·52		4·9	11·95	12·65	14·6	18·2	22·9	24·15	26·85	16	17	2+16	2+14	142	♂ iv	0+32	55	
98	1·4		4·4	10·45	10·9	12·7	15·2	20·2	21·25	23·9	13	17	2+17	2+16	97	♂ vi-iv	0+31*	54	
99	1·4		4·45	11·15	11·7	14·15	17·1	21·9	23·0	25·6	15	17	2+17	2+14	133	♂ v-vi	1+32	56	
100	1·45		4·65	11·6	12·0	14·3	17·4	22·1	23·2	25·75	15	16	2+16	2+14	127	♂ iv-v	0+32	55	
101	1·4	1·85	2·45	4·3	10·8	11·3	13·4	15·8	20·85	22·0	15	16	2+17	2+15	101	♂ vi	2+31	56	
102	1·34	1·8	2·4	4·35	10·2	10·95	12·75	15·3	20·1	21·1	23·5	15	17	1+17	2+15	98	♂ v	1+32	57
103	1·35	1·92	2·43	4·4	10·15	10·75	12·4	15·1	20·0	21·1	23·5	14	16	1+17	2+16	85	♂ iv	0+33	56
104	1·73	2·3	2·96	5·3	12·4	13·3	15·6	18·8	24·2	25·55	28·5	15	17	2+17	2+15	171	♂ v	2+32	57
105	1·64	2·15	2·88	5·0	12·3	13·25	15·4	18·3	23·65	25·0	27·7	14	16	2+17	2+15	162	♂ v	1+31	55
106	1·55	2·13	2·7	4·75	11·45	12·05	14·25	17·05	21·8	22·9	25·7	14	17	2+17	2+16	163	♀ iv-v	2+31	55
107	1·42	1·95	2·43	4·55	11·1	11·75	13·7	16·6	21·7	22·75	25·4	15	17	2+17	1+15	156	♂ v	1+32	56
108	1·52	1·96	2·6	4·7	11·7	12·8	14·4	18·05	23·1	24·3	27·0	14	16	3+16	1+15	144	♂ iv-v	1+31	55
109	1·56	2·08	2·74	4·8	11·7	12·4	14·6	17·3	22·5	23·65	26·5	14	17	2+16	3+15	147	♂ v	1+31	55

110	1·7	2·2	3·0	5·05	12·2	13·2	15·1	18·2	23·4	24·7	27·5	15	16	2+16	3+14	156	♂ v	2+30	55
111	1·54			4·5	11·2	11·8	14·2	16·6	21·6	22·75	25·35	14	16	3+17	3+14	131	♂ iii-iv	1+31	55
112	1·4			4·25	10·45	11·7	12·9	16·2	21·0	22·2	24·65	14	17	2+16	1+16	114	♂ vi	2+32	56
113	1·5			4·6	11·05	12·1	13·7	16·5	21·5	22·65	25·05	14	15	2+17	2+15	120	♂ iv-v	1+32	55
114	1·58			4·74	11·2	12·15	14·25	17·05	22·4	23·55	26·3	15	17	2+18	1+17	143	♂ iii-iv	1+32	56
115	1·4			4·65	11·1	11·8	13·9	16·6	21·5	22·6	25·3	15	18	3+16	2+14	116	♂ iv-v	0+32	55
116	1·6			4·9	11·7	12·8	14·8	17·7	22·9	24·05	26·9	15	16	2+17	2+15	159	♂ v	1+32	56
117	1·58			5·1	12·75	14·0	15·9	19·15	24·65	25·95	28·85	14	18	2+17	2+16	213	♂ v	2+32	56
118	1·45			4·65	11·4	12·25	14·5	17·15	22·2	23·2	26·05	14	17	2+18	2+15	122	♂ v	†0+33	56
119	1·5			4·85	12·2	13·0	15·15	18·5	23·8	25·0	27·8	15	17	2+17	2+16	172	♂ v	0+33	56
120	1·63			5·1	12·8	13·4	15·7	19·05	24·25	25·45	28·3	14	17	2+16	2+15	176	♂ iv-v	0+32	55
121	1·4			4·65	11·05	11·55	13·7	16·35	21·3	22·45	24·95	14	18	2+17	3+14	120	♂ iv	1+33	56
122	1·33			4·5	11·0	11·8	13·6	16·8	21·65	22·75	25·5	16	16	2+16	1+13	117	♂ iv-v	0+33	55
123	1·46			4·76	11·3	11·7	13·85	16·55	21·8	22·85	25·5	14	17	2+17	2+14	128	♂ v	1+32	55
124	1·5			4·5	10·9	11·5	13·55	16·3	21·2	22·3	25·0	15	16	2+16	2+16	123	♂ iv-vi	1+31	55
125	1·5			4·55	11·4	12·15	14·1	17·1	22·1	23·25	25·3	15	17	3+17	3+16	121	♂ iv	1+33*	57
126	1·7			5·3	12·9	13·5	15·85	19·2	24·7	25·8	28·9	15	16	2+16	2+16	174	♂ v-vi	2+32	56
127	1·5			4·8	12·0	13·0	14·9	18·7	23·55	24·7	27·4	15	17	3+17	2+15	169	♂ v	0+33	56
128	1·4			4·47	11·5	12·4	14·2	17·4	22·5	23·6	26·3	15	16	2+17	2+14	144	♂ v	2+31	56
129	1·5			4·5	10·8	11·6	13·5	16·3	21·45	22·5	24·95	15	17	2+17	2+15	120	♂ vi	0+32	56
130	1·6			5·1	12·4	12·9	15·5	18·45	23·8	25·05	28·05	15	17	2+18	2+16	189	♂ v-vi	1+32	56
131	1·4			4·5	10·9	11·3	13·6	16·1	21·15	22·25	24·8	15	17	2+17	2+16	114	♂ iv-v	0+34	56
132	1·55			4·75	11·4	11·9	14·05	16·8	21·7	22·85	25·6	15	17	2+17	2+15	131	♂ iv-v	2+31	55
133	1·38			4·35	10·55	11·4	12·95	15·75	20·65	21·7	24·2	14	17	2+16	2+16	112	♂ iv-v	†0+33	56
134	1·65			4·8	11·2	12·3	14·25	17·2	22·7	23·9	26·7	14	16	2+17	2+16	168	♂ v	0+32	55
135	1·4			4·5	10·65	11·4	13·2	16·2	21·1	22·1	24·7	15	18	3+16	2+15	124	♂ iv	1+33	57
136	1·6			5·15	12·0	12·8	14·9	17·8	23·0	24·25	27·05	14	16	2+16	2+15	132	♂ iii	1+31	56
137	1·5			4·7	11·4	12·25	14·1	17·15	22·05	23·25	25·95	14	16	2+16	1+15	137	♂ v	2+32	57
138	1·7			5·0	12·4	13·3	15·3	18·4	23·75	25·1	27·9	15	17	3+17	2+16	172	♂ v	1+32	56
139	1·5			4·7	11·4	11·8	14·2	16·7	21·85	23·0	25·65	15	17	2+17	2+15	134	♂ iii-iv	2+30*	56
140	1·7			5·1	12·0	13·5	14·9	18·5	23·5	24·7	27·55	15	17	3+16	2+15	170	♂ v	1+32	56
141	1·5			4·5	10·7	11·6	13·3	15·8	20·9	21·95	24·55	15	16	2+16	3+15	115	♂ iv-v	1+31	56
142	1·4			4·5	10·85	11·6	13·7	16·5	21·5	22·5	24·9	14	17	2+17	2+16	157	♂ iv	0+32	56
143	1·5			4·86	11·6	12·4	14·35	17·5	22·75	23·95	26·65	14	17	2+17	2+16	157	♂ vi	†0+34	56
144	1·55			4·65	11·7	12·1	14·55	17·8	23·0	24·15	26·9	15	17	2+16	3+15	144	♂ vi-iv	0+32	56
145	1·5			4·7	11·55	12·45	14·3	17·5	22·8	24·0	26·75	14	16	2+16	3+15	146	♂ v	2+30	55
146	1·47			4·6	11·0	11·7	13·65	16·6	21·35	22·95	25·65	15	16	2+17	2+16	123	♂ iv	0+33	56
147	1·44			4·73	11·5	11·75	14·3	16·9	22·05	23·1	25·8	15	16	2+17	2+15	132	♂ iv	†0+32	56
148	1·5			4·7	11·55	12·7	14·25	17·8	22·85	24·1	26·6	15	16	2+18	2+15	130	♂ ii	1+32	56
149	1·5			4·6	11·5	12·2	14·3	17·45	22·75	23·9	26·55	15	16	3+16	2+16	159	♂ v	1+32	56
150	1·5			4·7	12·1	13·0	14·9	18·1	23·5	24·7	27·5	15	17	3+16	2+16	164	♂ iv-v	1+32	56
151	1·35			4·3	10·3	11·3	12·7	15·5	20·45	21·55	24·0	14	16	2+16	2+15	103	♂ iii	0+34	57

No. of fish.	1	1a	1b	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18
152	1-24			4-15	9-95	11-1	12-4	15-3	20-0	21-0	23-5	15	17	2+17	3+15	103	♂ iii-iv	1+32	56
153	1-45			4-45	10-6	11-8	13-55	16-5	21-5	22-6	25-3	14	17	3+17	2+15	127	♂ iv-v	1+32	56
154	1-43			4-6	11-55	12-3	14-45	17-6	22-8	23-9	26-7	15	16	2+16	2+16	152	♂ v	1+32	56
155	1-4			4-85	11-8	12-5	14-65	17-65	22-95	24-2	26-95	15	17	3+16	2+17	171	♂ iv-v	1+32	56
156	1-65			5-05	12-4	12-9	15-25	18-4	23-55	24-8	27-8	15	16	2+17	2+15	171	♂ v	1+32	56
157	1-47			4-7	11-35	11-7	14-15	16-7	22-1	23-2	25-75	16	17	2+17	2+14	119	♂ iii *1	+0+32	57
158	1-5			4-6	11-0	12-15	13-65	16-7	21-75	22-8	25-4	14	17	2+16	2+15	117	♂ iv	0+32	55
159	1-63			4-9	11-6	12-45	14-65	17-6	22-8	23-95	26-85	14	15	2+17	2+16	137	♂ iii	1+32	56
160	1-5			4-55	10-8	11-75	13-4	16-35	21-3	22-45	25-05	15	17	2+18	2+16	107	♂ vi-iv	2+31	55
161	1-4			4-4	11-05	11-7	13-5	17-0	21-4	22-6	25-3	15	16	2+16	3+14	138	♂ v	1+31	*?
162	1-44			4-6	11-35	12-35	14-25	17-7	22-55	23-75	26-3	14	16	2+16	2+16	157	♂ iv-v	1+32	56
163	1-43			4-35	10-8	11-65	13-25	16-3	21-05	22-2	24-6	14	16	2+16	2+14	113	♂ iii-iv	1+32	56
164	1-33			4-5	10-8	11-45	13-9	16-5	21-45	22-55	25-25	15	16	2+17	2+16	134	♂ v-vi	1+32	55
165	1-72			5-05	12-75	13-05	15-5	18-65	24-0	25-3	28-2	15	17	2+16	3+15	185	♂ v	1+32	56
166	1-35			4-5	11-0	10-9	13-4	16-2	21-4	22-45	25-1	16	17	2+16	2+16	121	♂ vi	2+33	56
167	1-36			4-14	9-8	10-75	12-3	14-8	19-35	20-4	22-9	†	†	†	†	88	♂ v	1+31	55
168	1-55			4-55	11-0	11-45	13-6	16-5	21-4	22-5	25-0	15	17	2+16	2+16	110	♂ iv-v	0+33	56
169	1-43			4-55	11-05	11-45	13-9	16-65	21-6	22-75	25-6	15	17	2+17	2+16	138	♂ v	1+32	55
170	1-6			4-65	11-5	12-4	14-1	17-3	22-5	23-7	26-4	15	16	2+16	2+14	156	♂ vi	1+32	56
171	1-4			4-5	11-25	12-05	14-0	17-2	22-2	23-35	25-9	16	18	2+16	2+14	146	♂ iv-v	1+33	56
172	1-4			4-35	10-35	11-1	12-85	15-8	20-5	21-65	23-9	15	17	2+17	2+15	108	♂ iv-v	†0+33	56
173	1-4			4-4	10-3	10-9	12-85	15-45	20-25	21-25	23-8	15	16	2+18	2+14	94	♂ vi-iv	1+32	56
174	1-45			4-6	11-3	12-0	13-85	17-1	22-3	23-4	26-05	16	16	2+16	3+13	128	♂ vi	1+33	56
175	1-46			4-6	11-4	11-9	14-1	16-75	21-65	22-75	25-4	14	17	3+16	2+16	154	♂ v	1+31	55
176	1-5			4-75	11-45	11-9	14-25	17-15	22-4	23-55	26-2	15	16	3+17	2+16	131	♂ iv-v	1+31	55
177	1-4			4-25	10-15	11-05	12-7	15-7	20-15	21-25	23-7	16	15	2+17	2+15	107	♂ v	0+32	56
178	1-5			4-65	11-5	12-0	14-15	16-5	22-0	23-15	25-65	14	16	2+17	2+17	111	♂ vii	1+32	56
179	1-48			4-7	11-1	12-15	13-85	16-6	21-75	22-95	25-7	15	17	3+16	2+15	129	♂ iv-v	0+31	56
180	1-6			5-1	12-3	13-1	15-4	18-7	23-9	25-2	27-9	15	18	2+17	2+15	154	♂ v-vi	1+32	56
181	1-5			4-85	11-85	12-65	14-75	17-55	22-55	23-7	26-3	15	15	2+17	2+15	140	♂ v	1+32	56
182	1-4			4-6	10-6	11-2	13-1	16-05	20-6	21-7	24-15	16	16	2+17	2+15	94	♂ iii	2+31	56
183	1-4			4-5	11-1	11-9	13-85	16-75	21-85	22-95	25-4	15	17	3+16	2+15	122	♂ vi-iii	0+32	55
184	1-8			5-3	12-85	13-8	15-9	18-8	24-35	25-65	28-5	14	18	3+17	3+16	163	♂ v	1+32	56
185	1-65			5-1	12-05	13-3	14-95	18-1	23-25	24-4	27-3	14	17	3+16	2+15	158	♂ v-vi	0+31	55
186	1-38			4-33	9-8	10-45	12-2	14-8	19-45	20-45	22-8	15	17	2+16	2+16	90	♂ v-vi	0+33	56
187	1-5			4-6	11-0	12-3	13-5	16-85	21-8	22-95	25-7	15	17	3+16	3+16	126	♂ iv-v	0+32	56
188	1-3			4-0	9-85	10-95	12-15	15-2	19-55	20-55	22-95	15	18	3+16	2+16	97	♂ iii-iv	†0+32	55
189	1-4			4-45	10-55	11-15	13-15	15-9	20-85	21-95	24-4	15	16	2+17	2+15	101	♂ iv	1+32	56

‡ Space devoid of scales.

190	1-46	4-4	10-4	11-35	13-05	15-8	20-55	21-5	23-45*	15	17	2+17	2+15	100	iv-v	1+32	56
191	1-54	4-65	11-65	12-25	14-3	17-3	22-3	23-4	26-15	15	18	2+17	2+15	146	v	1+32	56
192	1-46	4-6	11-0	12-3	14-1	17-25	22-3	23-5	26-15	15	16	3+17	3+15	155	v-vi	1+32	56
193	1-55	4-75	11-15	12-1	13-9	16-5	21-95	23-05	25-7	13	17	3+17	2+16	136	iii-iv	†0+33	57
194	1-35	4-5	11-0	11-6	13-6	16-4	21-15	22-25	24-7	15	18	2+16	2+15	116	iv-v	0+33	56
195	1-3	4-15	9-95	10-8	12-45	15-05	19-55	20-6	23-0	14	16	3+17	1+16	94	iv-v	3+30	55
196	1-33	4-2	10-8	11-45	13-4	16-5	21-3	22-35	25-0	14	16	2+17	2+15	124	vi-iv	†1+32	56
197	1-35	4-3	10-2	10-95	12-7	15-25	20-05	21-05	23-6	13	17	3+17	2+15	102	iv	0+31	55
198	1-43	4-4	10-5	11-4	13-2	15-9	20-7	21-85	24-4	16	17	3+16	1+16	106	v-vi	1+32	56
199	1-48	4-9	12-15	12-8	15-15	18-0	23-1	24-2	26-8*	15	17	3+18	2+16	145	iv-vi	†0+32	56
200	1-48	4-4	10-7	11-65	13-4	16-25	21-2	22-35	24-95	14	17	2+17	1+15	139	iv-v	2+31	56
201	1-7	5-0	11-95	12-9	15-1	17-8	23-1	24-2	27-05	14	17	3+16	2+16	163	v	0+32	55
202	1-45	4-4	10-7	11-35	13-4	16-15	20-9	22-1	24-6	16	17	2+18	2+16	112	vi	1+33	56
203	1-48	4-65	11-15	12-15	13-65	17-15	22-0	23-05	25-8	15	16	2+15	2+15	142	iv-v	1+33	56
204	1-44	4-7	11-0	11-6	13-5	16-5	21-55	22-7	25-2	14	16	3+17	3+15	117	v	1+31	45
205	1-36	4-3	10-3	11-0	12-8	15-65	20-45	21-5	24-05	15	17	2+16	2+16	115	iv-v	1+32	56
206	1-46	4-55	11-45	12-2	14-3	17-3	22-15	23-3	25-8	15	16	3+16	2+16	138	vi	0+33	56
207	1-26	4-2	9-9	10-8	12-3	14-9	19-3	20-5	22-8	15	16	3+17	1+16	93	v-vi	1+31	55
208	1-26	4-2	10-3	10-75	12-7	15-5	20-2	21-2	23-8	15	16	3+16	2+16	91	iii-iv	0+32	56
209	1-5	4-7	11-95	12-6	14-8	17-7	22-9	24-05	26-8	14	17	3+16	2+15	154	v-iii	1+33	57
210	1-5	4-75	12-0	13-1	14-9	18-25	23-25	24-45	27-15	15	17	2+16	2+16	174	v	0+34	57
211	1-36	4-4	10-5	11-5	13-3	16-1	20-9	22-05	24-55	14	16	3+17	2+15	116	v-vi	†0+33	56
212	1-33	4-3	10-5	10-85	12-95	15-2	19-85	20-85	23-2	15	17	2+17	2+16	93	iii	1+31	55
213	1-5	4-7	11-25	12-45	14-0	16-8	22-15	23-25	25-95	14	16	3+16	2+15	126	v	1+32	56
214	1-4	4-4	10-25	10-95	12-8	15-2	19-9	20-95	23-55	15	17	3+17	2+17	91	vi-iii	1+32	56
215	1-6	4-9	11-45	12-8	14-5	17-65	23-0	24-2	27-2	15	16	3+17	1+15	161	vi	1+33	56
216	1-6	4-85	11-7	12-65	14-65	17-95	23-0	24-3	26-65	14	16	3+16	2+16	157	v	1+31	55
217	1-75	5-35	13-2	14-6	16-6	19-9	25-8	27-15	30-2	14	17	3+17	1+16	200	v	1+32	56
218	1-7	5-15	13-05	14-1	16-4	19-75	24-85	26-2	29-0	14	17	3+16	2+14	197	v	1+31	55
219	1-65	5-15	12-55	13-45	15-2	18-2	23-9	25-2	27-85	14	17	3+16	2+16	169	v	0+33	57
220	1-55	4-55	11-15	12-55	14-2	17-2	22-5	23-7	26-35	14	17	3+17	2+15	166	v-vi	0+33	56
221	1-5	4-65	11-35	11-65	14-25	16-8	22-0	23-2	25-95	14	17	3+17	2+15	143	v	2+32	56
222	1-45	4-45	10-8	11-45	13-5	16-1	21-3	22-4	25-0	15	17	3+16	2+14	119	iii-iv	1+33	56
223	1-58	4-95	11-9	12-8	14-65	17-5	22-75	23-95	26-5	15	18	2+16	2+14	124	iii-iv	1+32	56
224	1-46	4-5	10-5	11-0	13-0	15-75	20-45	21-55	24-15	15	17	2+17	2+15	116	vi	1+31	55
225	1-4	4-5	11-1	12-0	14-05	17-15	22-3	23-4	26-0	14	16	3+17	0+15	143	iv	2+31	55
226	1-3	4-36	10-85	11-45	13-5	15-9	21-15	22-35	24-9	14	17	2+17	3+16	121	iv-v	1+31	55
227	1-66	5-0	11-65	12-35	14-55	17-4	22-65	23-85	26-8	14	16	3+16	1+16	167	v	3+31	55
228	1-5	4-8	12-15	12-3	14-95	17-55	22-6	23-7	26-65	15	17	3+17	2+16	150	v	1+32	56
229	1-4	4-45	10-9	11-65	13-55	16-55	21-35	22-45	25-05	14	17	2+17	2+15	123	v	1+31	56
230	1-38	4-45	10-8	11-75	13-4	16-3	21-2	22-25	24-9	15	16	2+17	2+16	116	v	1+32	56
231	1-48	4-6	11-2	11-9	13-8	16-8	21-65	22-75	25-3	15	17	2+17	2+15	118	iii	1+32	56

No. of fish.	1	1a	1b	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18
232	1.5			4.9	12.1	12.25	15.0	17.65	22.75	23.95	26.6	14	16	3+16	2+16	154	♂ v	1+32	55
233	1.5			4.9	11.95	12.65	14.7	17.3	22.65	23.85	26.65	14	17	2+18	2+16	137	♂ v	1+33	56
234	1.4			4.55	11.0	11.75	13.7	16.5	21.75	22.9	25.4	1+15	17	2+16	2+15	123	♂ iv	0+31	55
235	1.38			4.35	10.15	10.6	12.7	15.15	19.8	20.9	23.4	14	16	2+17	2+16	95	♂ iv	1+31	55
236	1.44			4.45	10.95	11.7	13.55	16.5	21.4	22.45	24.95	15	17	2+16	0+16	124	♂ iv-v	†0+33	56
237	1.57			4.95	12.05	13.3	15.1	18.4	23.65	24.8	27.7	15	17	3+16	2+15	171	♂ v	2+31	55
238	1.6			5.1	12.5	12.95	15.5	18.3	23.7	25.1	27.9	14	17	3+16	2+16	157	♂ v	0+32	56
239	1.6			5.0	12.7	13.5	15.7	19.0	24.75	25.9	29.0	14	17	3+16	2+16	195	♂ iv-v	2+32	56
240	1.4			4.7	11.75	12.3	14.35	17.25	22.5	23.65	26.35	13	17	2+16	2+15	157	♂ v	†1+32	56
241	1.3			4.2	10.2	11.0	12.8	15.45	20.2	21.15	23.6	14	16	3+17	1+15	107	♂ iii-iv	†1+31*	54
242	1.44			4.83	11.95	12.8	14.7	18.0	23.0	24.15	26.85	15	16	2+16	1+16	156	♂ v	1+32	56
243	1.5			4.75	11.45	12.65	14.3	17.55	22.6	23.8	26.6	15	17	3+16	2+16	160	♂ iv-v	0+33*	56
244	1.65			4.95	11.85	12.6	14.9	17.6	22.95	24.15	26.9	15	17	3+17	1+16	149	♂ vi	2+31	55
245	1.53			4.95	12.5	13.3	15.65	18.45	23.8	25.0	27.85	14	18	2+17	2+15	145	♂ iii-iv	1+32	55
246	1.5			4.6	11.2	11.95	13.75	16.95	22.1	23.2	26.0	15	18	2+16	1+15	129	♂ iv	1+32	56
247	1.48			4.46	11.0	11.6	13.4	16.45	21.5	22.65	25.1	14	16	2+16	1+16	127	♂ vi	†1+32	56
248	1.4			4.35	10.45	11.6	13.15	15.9	20.7	21.75	24.2	15	17	2+17	2+16	109	♂ iv-v	1+31	55
249	1.4			4.5	11.1	12.0	13.95	16.5	21.5	22.55	25.0	14	17	3+17	1+15	126	♂ iv-v	0+32	55
250	1.58			5.0	11.55	12.5	14.6	17.4	22.8	23.95	26.8	13	17	2+18	2+16	156	♂ v	1+32	55
251	1.35			4.4	10.5	11.05	13.2	15.35	20.2	21.3	23.65	14	18	2+17	2+17	97	♂ vi-iii	0+32	56
252	1.35			4.45	11.35	11.5	13.9	16.55	21.35	22.55	25.05	15	16	2+16	2+15	127	♂ vi-iii	0+32	55
253	1.55			4.95	11.7	12.75	14.65	17.45	22.9	24.0	27.0	13	16	2+17	3+15	166	♂ v	†0+33	56
254	1.55			4.9	12.05	12.8	14.85	18.05	23.05	24.2	27.05	15	17	2+16	1+16	130	♂ ii	0+32	55
255	1.83			5.5	13.05	13.65	16.15	19.5	25.1	26.4	29.4	16	18	3+17	2+15	189	♂ v	2+30	56
256	1.45			4.5	11.0	11.95	13.85	17.0	21.95	23.0	25.6	14	16	3+17	3+15	132	♂ iv-vi	0+33	56
257	1.3			4.25	10.6	11.45	13.15	16.3	21.1	22.15	24.6	16	17	3+16	3+15	120	♂ iii-iv	0+33	56
258	1.4			4.7	11.55	12.4	14.35	17.4	22.5	23.7	26.3	15	16	3+17	2+15	137	♂ v	2+32	57
259	1.4			4.4	10.55	11.45	13.35	16.0	20.95	22.1	24.6	13	17	2+18	3+15	126	♂ v	2+32	56
260	1.7			4.25	12.85	13.65	15.65	19.0	24.15	25.45	28.2	15	16	2+16	2+14	181	♂ v	1+32	57
261	1.3			4.4	10.8	11.2	13.2	15.4	20.4	21.4	23.9	14	17	2+17	2+15	107	♂ iv-vi	1+32	55
262	1.55			4.7	11.05	12.0	13.8	16.6	21.8	22.9	25.75	15	16	3+16	2+15	139	♂ v	1+31	54
263	1.6			4.9	11.75	12.6	14.75	17.65	23.1	24.2	27.1	14	18	2+17	2+17	168	♂ v	1+33	57
264	1.35			4.5	10.5	11.2	13.15	15.5	20.8	21.9	24.6	15	16	3+17	2+16	108	♂ v	1+32	56
265	1.4			4.6	11.2	11.9	13.9	17.0	22.1	23.2	25.85	16	18	3+16	2+15	117	♂ vi-iii	1+33	56
266	1.45			4.65	11.15	11.95	13.85	16.4	21.45	22.65	25.25	14	16	3+16	2+17	118	♂ vi	0+32	55
267	1.35			4.4	10.8	11.4	13.55	16.4	21.25	22.45	24.95	15	17	2+17	2+16	116	♀ iv-v0+(1+1+30)*	55	
268	1.53			4.7	11.4	12.0	14.2	17.2	22.05	23.3	26.1	15	17	2+17	1+16	137	♂ iv-v	1+31	55
269	1.36			4.48	11.0	12.0	13.5	16.8	21.6	22.8	25.35	14	17	2+16	3+14	133	♂ v	0+33	56
270	1.35			4.35	11.05	11.5	13.5	16.3	21.25	22.25	24.75	16	16	3+16	2+15	113	♂ v-vi	†1+33	57

271	1-35	4-36	10-6	11-35	13-4	15-95	21-1	22-25	24-85	13	17	2+17	2+14	115	iv-vi	0+32	56
272	1-55	4-85	11-95	13-1	15-0	18-1	23-4	24-7	27-35	15	16	3+17	2+15	166	v	3+31	56
273	1-4	4-35	10-5	11-2	12-95	15-85	20-65	21-7	24-15	14	18	3+16	2+15	118	v-vi	1+31	55
274	1-45	4-65	11-05	11-45	13-75	16-3	21-7	22-8	25-5	15	16	2+17	3+16	123	v-vi	2+31	56
275	1-4	4-3	9-95	10-7	12-35	14-9	19-55	20-6	23-0	15	17	2+17	3+15	95	iv-v	0+33	56
276	1-5	4-54	11-05	11-8	13-8	16-35	21-45	22-55	24-95	13	17	2+16	2+16	120	v-vi	†0+32	55
277	1-43	4-55	11-25	11-85	14-1	16-9	21-7	22-9	25-3	15	18	3+16	2+15	123	iv-v	1+32*	56
278	1-72	5-3	12-4	13-75	15-5	18-85	24-3	25-75	28-6	14	17	3+16	2+15	170	v	1+31	55
279	1-4	4-5	11-35	11-7	14-2	16-95	21-95	23-05	25-75	15	17	2+17	2+15	123	v	2+31	55
280	1-6	4-9	12-0	12-8	14-7	17-9	23-1	24-35	27-15	15	17	3+16	3+15	170	v	1+31	56
281	1-53	4-7	11-3	11-95	13-85	16-6	21-5	22-6	25-3	13	17	2+16	3+15	128	v-vi	1+31	55
282	1-3	4-1	10-5	11-45	13-15	16-15	20-9	22-1	24-5	14	16	2+17	3+15	115	v-vi	0+32	56
283	1-38	4-42	10-85	11-4	13-35	16-15	21-25	22-35	24-85	15	15	2+16	3+15	103	vi-iv	1+32	56
284	1-35	4-25	10-0	10-8	12-35	14-8	19-7	20-75	23-25	15	17	2+17	2+17	92	iv-v	0+32	55
285	1-44	4-3	10-3	10-9	12-65	15-5	20-1	21-15	23-7	15	18	2+16	2+17	95	iv-v	†0+32	56
286	1-4	4-4	10-45	11-1	13-1	15-35	20-5	21-55	24-0	9+0+5	16	3+16	3+16	102	iii-iv	2+32	56
287	1-76	5-15	12-4	12-95	15-3	18-3	23-75	24-95	27-6	16	17	3+16	3+15	172	v	2+31	56
288	1-5	4-55	11-05	11-6	13-55	16-45	21-35	22-45	25-1	16	18	2+15	2+15	119	v	0+31*	56
289	1-48	4-65	11-45	12-1	14-2	16-9	22-2	23-4	25-95	14	18	3+17	2+15	130	v	2+31	56
290	1-35	4-3	10-7	11-4	12-9	15-95	20-7	21-85	24-4	16	17	2+16	2+15	111	v	†0+33	57
291	1-4	4-48	11-05	11-6	13-6	16-2	21-25	22-4	25-05	15	16	2+17	2+15	113	vi	1+31*	56
292	1-55	4-85	11-95	12-75	14-95	18-05	23-2	24-4	27-2	1+14	16	2+18	2+15	160	v	0+33	57
293	1-3	4-3	10-2	10-9	12-6	15-15	19-8	20-85	23-3	14	17	2+17	3+14	107	iv-v	1+32	55
294	1-35	4-25	10-4	11-25	13-1	15-8	20-85	22-05	24-55	15	16	3+16	2+16	123	v-vi	1+32	55
295	1-54	4-6	11-3	12-0	14-1	17-2	22-25	23-35	26-0	15	16	2+17	2+16	128	iv-v	0+33	56
296	1-34	4-05	9-95	10-2	12-15	14-7	19-2	20-3	22-55	15	17	3+15	2+16	84	iii-iv	2+31	56
297	1-5	4-85	11-75	12-8	14-6	17-5	22-65	23-75	26-45	16	18	2+17	2+14	133	iv-vi	2+32	57
298	1-58	4-9	12-0	12-6	14-95	17-9	22-9	24-15	26-8	15	17	3+16	2+15	178	v	2+32	56
299	1-5	4-65	11-45	12-45	14-45	17-2	22-45	23-7	26-35	14	17	3+17	2+15	125	iv-v	1+32*	56
300	1-48	4-65	11-65	12-35	14-4	17-3	22-35	23-7	26-15	15	17	2+17	2+14	158	v-vi	†0+31	55
301	1-48	4-55	11-1	11-65	13-6	16-95	21-8	22-95	25-7	16	16	2+16	3+15	136	v-vi	2+31	55
302	1-4	4-2	10-5	11-1	12-95	15-85	20-3	21-5	24-0	15	17	3+16	2+15	114	v	0+33	56
303	1-6	5-0	11-9	13-0	14-7	18-0	23-35	24-65	27-25	16	16	2+16	2+15	158	vi	0+34	56
304	1-4	4-45	11-1	12-0	13-8	16-75	21-55	22-7	25-5	15	17	2+17	2+15	120	iv-v	0+32	55
305	1-3	4-0	9-75	10-45	12-05	14-65	19-2	20-3	22-45	14	16	2+17	3+16	85	vi-iii	1+32	56
306	1-5	4-9	12-35	12-8	15-15	18-2	23-6	25-0	27-6	15	17	2+16	2+16	176	v	1+31	55
307	1-5	4-8	11-5	12-2	14-25	17-4	22-4	23-6	26-4	15	16	2+16	1+15	156	v	0+32	56
308	1-4	4-4	10-45	11-15	13-1	16-0	20-8	21-9	24-5	14	17	3+17	1+15	117	iii-iv	1+33	56
309	1-44	4-58	11-3	11-5	13-9	16-8	21-85	23-0	25-6	15	17	2+17	2+17	123	v	0+32	55
310	1-4	4-48	10-95	11-45	13-9	15-8	21-2	22-39	24-95	14	17	3+17	2+16	128	v	2+31*	56
311	1-3	4-3	10-2	11-0	12-75	15-55	20-2	21-3	23-6	15	18	2+17	2+16	93	iv-v	†0+32	55
312	1-32	4-2	10-6	11-25	13-15	15-85	20-6	21-7	24-05	17	17	2+17	2+17	101	iv-v	†0+32	56

No. of fish.	1	1a	1b	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18
313	1-34			4-55	10-95	11-7	13-6	16-65	21-7	22-8	25-5	16	17	2+16	2+15	125	♂ v	0+33	56
314	1-3			4-4	10-7	11-65	13-5	16-5	21-3	22-55	25-0	14	17	2+16	2+15	121	♂ v-vi	1+31	54
315	1-44			4-5	10-75	11-4	13-35	16-15	21-05	22-3	24-75	15	17	2+16	2+16	110	♂ iv-vi	†0+33	56
316	1-6			4-95	11-75	12-7	14-4	17-55	22-8	24-05	26-9	1+14	17	2+17	2+15	152	♂ vi	1+32*	56
317	1-5			4-7	11-9	12-6	14-75	17-75	22-8	24-0	26-65	15	16	2+17	3+15	136	♂ vii	†0+32	56
318	1-33			4-2	10-25	10-7	12-55	15-65	20-35	21-4	23-9	16	17	3+16	2+14	97	♂ iv-vi	1+32	56
319	1-48			4-7	11-2	12-2	13-75	17-25	21-15	23-3	25-9	16	18	2+17	2+15	128	♂ iv-vi	1+33	57
320	1-7			4-95	11-65	12-6	14-45	17-95	23-05	24-3	27-3	15	17	2+16	2+15	166	♂ v	0+32	56
321	1-26			4-15	10-3	10-8	13-0	15-25	19-8	20-9	23-3	14	16	2+16	1+15	95	♂ vi-iv	†0+33	56
322	1-52			4-8	11-4	12-5	14-2	17-15	22-3	23-45	25-95	14	17	3+17	1+16	129	♂ v	2+31	56
323	1-32			4-3	10-15	10-85	12-8	15-4	20-2	21-25	23-65	15	17	3+17	2+17	110	♂ iv-vi	†1+31	55
324	1-6			4-8	11-8	12-7	14-75	17-65	23-0	24-2	26-95	16	17	2+18	1+15	168	♂ v	†1+30	56
325	1-40			4-4	10-75	11-8	13-4	16-35	21-35	22-5	24-8	15	16	2+17	2+15	110	♂ iv-vi	1+32	55
326	1-66			5-2	12-65	13-7	15-55	18-65	24-35	25-7	28-5	14	16	2+17	2+16	165	♂ iv-v	0+33	56
327	1-6			5-0	12-3	13-5	15-3	18-55	24-25	25-5	28-6	15	18	2+17	2+16	177	♂ v	1+32	56
328	1-38			4-45	11-35	12-2	14-15	17-2	22-35	23-5	26-0	15	17	2+17	2+15	141	♂ v	1+33	56
329	1-48			4-5	10-85	12-25	13-5	16-6	21-75	22-95	25-7	14	17	2+16	1+17	134	♂ v	0+33	56
330	1-5			4-6	10-9	11-7	13-55	16-3	21-25	22-35	24-9	14	18	2+17	2+15	111	♂ vi	1+31	55
331	1-55			4-65	11-4	12-15	14-15	17-1	22-1	23-3	25-95	14	17	2+17	2+15	161	♂ iv-v	0+34	56
332	1-58			4-8	11-95	12-65	14-75	17-8	23-0	24-2	27-05	15	17	3+16	2+15	156	♂ v	2+32	56
333	1-6			4-85	11-1	12-5	13-65	16-85	22-05	23-15	25-95	15	17	3+16	2+14	124	♂ i-ii	2+31	56
334	1-43			4-55	10-7	11-4	13-5	16-05	21-0	22-2	24-95	15	17	2+18	2+15	114	♂ iv-v	2+31	55
335	1-36			4-32	11-05	11-7	13-75	16-6	21-4	22-5	25-1	15	17	2+17	2+16	138	♂ v	2+31	55
336	1-4			4-5	11-5	12-35	14-45	17-7	22-35	23-6	26-25	15	17	3+16	2+15	138	♂ v	0+31	55
337	1-38			4-45	11-1	11-65	13-95	16-9	21-75	23-05	25-65	14	17	2+17	2+15	151	♂ v	2+31	56
338	1-3			4-25	10-1	11-1	13-25	16-05	20-8	21-9	24-35	16	16	2+18	2+16	118	♂ iv-vi	0+32	56
339	1-4			4-55	11-6	12-45	14-4	17-7	22-7	23-95	26-75	14	17	2+17	2+15	152	♂ v	0+33	56
340	1-45			4-4	10-65	11-45	13-4	16-05	20-7	21-8	24-3	15	18	2+17	2+15	114	♂ iii-iv	1+32	56
341	1-5			4-55	10-65	11-4	13-4	15-85	21-95	22-1	24-65	13	17	3+17	2+17	104	♂ iii-iv	0+34	56
342	1-5			4-68	11-6	12-1	14-25	17-1	22-5	23-8	26-3	15	17	3+16	1+16	133	♂ v	2+32	56
343	1-4			4-5	10-95	11-95	13-7	16-75	21-85	23-0	25-7	16	17	2+17	2+16	118	♂ iv-vi	1+33	57
344	1-4			4-28	10-6	11-4	13-1	16-25	21-15	22-25	24-8	15	17	2+17	2+16	113	♂ iv-vi	1+34	57
345	1-5			4-65	11-65	12-2	14-35	17-15	22-35	23-5	26-55	15	16	2+16	2+14	158	♂ v	0+32	55
346	1-32			4-15	10-3	11-15	12-85	15-6	20-35	21-4	24-0	14	16	3+16	2+15	105	♂ iv-v	1+33	57
347	1-5			4-5	11-1	11-4	13-5	16-5	21-35	22-5	25-1	16	17	2+17	2+16	115	♂ iii-vi	1+33	56
348	1-38			4-32	10-75	11-15	13-3	16-1	20-95	22-05	24-7	14	16	2+16	2+15	114	♂ iv-v	†1+32	56
349	1-35			4-3	10-2	11-0	12-75	15-45	20-05	21-1	23-5	14	17	2+17	2+16	100	♂ iv-vi	2+32	56
350	1-33			4-15	10-1	10-65	12-5	15-35	19-9	21-1	23-45	14	16	3+15	3+15	103	♂ v	0+34	56
351	1-34			4-45	10-8	11-95	13-4	16-45	21-65	22-8	25-35	15	16	2+16	2+16	137	♂ v-vi	†0+34*	56

352	1-42	4-4	10-6	11-1	13-3	16-05	20-9	22-0	24-65	15	16	2+17	2+15	117	♂ v	2+31*	55
353	1-38	4-25	10-8	11-75	13-55	16-7	21-75	22-9	25-35	14	17	2+15	2+15	128	♂ v-vi	2+33	56
354	1-5	4-95	12-2	13-4	15-2	18-55	23-8	25-0	28-15	13	16	2+17	2+14	160	♂ v	1+31	55
355	1-35	4-3	10-6	11-35	13-4	16-25	20-95	22-1	24-75	16	17	2+17	2+15	126	♂ iv-v	1+30	55
356	1-43	4-6	11-05	11-7	13-6	16-45	21-4	22-65	25-15	14	17	2+17	2+17	113	♂ iv-vi	0+33	56
357	1-42	4-4	10-3	11-15	12-8	15-65	20-35	21-55	23-9	15	16	3+16	3+14	98	♂ iv	1+32	56
358	1-46	4-45	10-8	11-5	13-45	16-3	20-8	21-85	24-2	15	17	2+17	2+16	109	♂ iv	1+31	56
359	1-34	4-2	9-75	10-75	12-25	14-8	19-6	20-8	22-9	14	17	2+16	3+14	88	♂ iii-vi	†0+33	56
360	1-53	4-75	11-3	12-4	13-9	19-85	21-85	22-95	25-5	14	17	2+17	2+15	116	♂ iii	1+32	56
361	1-27	3-95	9-6	10-25	12-0	14-25	18-83	19-8	22-15	15	16	2+16	2+15	77	♂ iv	1+33	56
362	1-55	4-85	11-95	12-6	14-8	17-65	22-75	24-0	26-65	14	16	2+17	2+16	147	♂ iv-vi	1+32	56
363	1-3	4-2	10-35	11-05	12-75	15-4	19-95	21-05	23-45	16	16	3+16	3+14	84	♂ iii-iv	0+32	56
364	1-35	4-3	10-8	11-5	13-5	16-35	21-15	22-25	24-85	15	16	2+17	2+15	108	♂ iv-v	0+34	56
365	1-34	4-0	9-65	10-15	11-9	14-65	18-95	20-0	22-45	15	17	2+16	2+14	86	♂ ii-iii	†0+33	56
366	1-5	4-8	11-65	12-7	14-5	17-7	22-7	23-9	26-7	14	17	2+17	2+16	156	♂ v	2+31	56
367	1-33	4-2	9-8	11-1	12-5	15-0	19-7	20-6	22-6*	14	15	2+17	2+14	90	♂ iv-vi	2+31	56
368	1-45	4-35	9-95	10-75	12-2	15-1	19-5	20-55	22-8	15	17	2+15	2+15	88	♂ iii-iv	3+31	56
369	1-3	4-2	9-9	10-7	12-6	15-45	20-1	21-15	23-8	15	17	2+17	2+16	108	♂ iv-vi	1+32	55
370	1-4	4-53	11-1	12-2	13-75	17-15	22-05	23-2	25-9	16	17	2+17	2+14	131	♂ v	1+32	56
371	1-45	4-73	11-4	12-45	14-0	17-25	22-25	23-45	26-0	15	16	2+17	2+15	117	♂ iii-iv	0+31	56
372	1-46	4-6	11-4	12-4	14-1	17-0	22-1	23-25	25-85	14	17	2+16	3+14	127	♂ iv-v	0+33	55
373	1-3	4-23	10-15	11-0	12-85	15-35	20-45	21-55	24-15	14	17	2+17	2+17	102	♂ iii-iv	1+32	56
374	1-4	4-4	10-7	11-25	13-5	15-85	20-6	21-75	24-15	15	17	2+16	3+14	106	♂ v	1+32	56
375	1-36	4-53	11-05	11-75	13-95	16-55	21-7	22-85	25-15	15	16	2+17	3+16	120	♂ v	1+33	56
376	1-42	4-4	10-65	11-35	13-35	15-7	20-3	21-5	24-0	15	17	2+17	2+17	112	♂ iv-v	2+30	55
377	1-43	4-6	11-75	12-5	14-5	17-4	22-3	23-45	26-15	15	16	2+15	2+15	145	♂ iv-v	0+32	55
378	1-4	4-66	11-45	12-55	13-95	17-35	22-6	23-8	26-55	15	17	3+15	2+14	141	♂ v	0+33	56
379	1-3	4-16	10-05	10-8	12-35	15-0	19-35	25-0	22-75	15	16	3+16	2+15	95	♂ iv-vi	1+33	57
380	1-4	4-3	10-7	11-4	13-25	16-05	21-0	22-1	24-6	14	17	2+16	2+15	112	♂ iv-vi	1+32	55
381	1-32	4-16	10-05	10-55	12-3	14-8	19-3	20-3	22-6	15	17	2+15	2+14	85	♂ iv	2+32	56
382	1-4	4-3	10-45	11-45	13-15	16-05	20-7	21-8	24-15	15	18	2+17	3+15	106	♂ iii-iv	0+32	56
383	1-46	4-6	11-45	12-05	13-9	17-0	21-8	22-95	25-45	15	16	2+17	2+17	113	♂ iv	1+31	56
384	1-35	4-06	9-8	10-9	12-1	15-0	19-55	20-7	23-1	14	17	2+16	2+15	87	♂ iv	0+33	56
385	1-37	4-45	10-55	11-4	13-2	15-8	20-65	21-75	24-2	15	17	2+18	2+16	104	♂ v	1+32	56
386	1-4	4-33	10-05	10-9	12-6	15-3	20-0	21-05	23-5	15	17	2+16	2+15	91	♂ iii-iv	1+32	56
387	1-47	4-55	11-25	11-8	13-8	16-5	21-7	22-9	25-65	14	17	2+16	2+16	136	♂ v	1+32	56
388	1-53	4-62	12-15	12-7	14-75	17-9	22-85	24-1	26-8	15	16	3+16	2+15	138	♂ v	0+32	56
389	1-44	4-4	10-6	11-45	13-2	15-85	20-75	21-85	24-3	13	17	2+16	2+16	110	♂ iv-v	0+32	56
390	1-34	4-1	10-35	11-0	13-1	15-95	20-9	22-05	24-4	15	16	2+17	2+16	124	♂ v	1+32	56
391	1-4	4-4	10-9	12-3	13-8	17-35	22-15	23-3	25-9	15	16	2+16	2+16	147	♂ v-vi	0+32	56
392	1-3	4-1	9-95	10-4	12-45	14-5	19-2	20-35	22-75	14	15	2+17	2+15	90	♂ v-vi	1+32	55
393	1-64	4-9	12-3	12-9	15-25	18-3	23-3	24-55	27-3	16	17	3+17	3+15	164	♂ v	1+32	57

No. of fish.	1	1a	1b	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18	
394	1.4			4.8	11.7	12.7	14.4	17.65	22.9	24.0	26.9	13	17	2+17	3+15	131	♂ v	0+33	56	
395	1.53			4.85	12.15	12.9	15.15	17.95	23.2	24.4	27.05	14	17	2+17	3+15	162	♂ v	2+32	56	
396	1.4			4.45	11.0	11.8	13.45	16.9	21.7	22.85	25.15	16	16	2+17	2+14	113	♂ iv-v	2+32	57	
397	1.67			4.9	12.05	12.6	14.8	18.15	23.35	24.5	27.4	15	17	2+16	2+15	163	♂ v	1+32	56	
398	1.5			4.74	11.8	12.6	13.7	18.15	23.1	24.3	27.25	Scales fused; 2+(1+1)+12		17	2+17	2+15	173	♂ v	1+32	56
399	1.5			4.8	11.5	12.3	14.05	17.4	22.45	23.65	26.3	14	17	3+15	2+16	161	♂ v-vi	1+33	57	
400	1.7			5.0	12.5	13.25	15.5	18.8	24.1	25.3	28.25	15	18	2+18	2+16	177	♂ v	1+32	56	
401	1.44			4.4	10.5	11.65	13.25	16.05	20.6	21.7	24.0	13	18	3+17	2+15	102	♂ iv	1+31	*55	
402	1.33			4.2	10.2	11.2	12.75	15.55	20.25	21.3	23.75	14	17	2+17	2+15	108	♂ vi	†0+33	56	
403	1.33			4.17	10.2	11.2	12.8	15.8	20.65	21.75	24.25	15	17	2+17	3+15	108	♂ iv	1+33	56	
404	1.5			4.5	11.0	11.5	13.6	16.4	21.4	22.6	25.3	15	17	3+17	3+16	118	♂ v-vi	1+32	56	
405	1.4			4.36	10.3	11.05	12.9	15.5	20.25	21.3	23.6	15	17	2+17	2+16	107	♂ v	1+30	56	
406	1.6			4.85	11.8	12.5	14.65	17.6	22.8	23.9	26.45	15	17	2+17	2+16	160	♂ v	†0+33	56	
407	1.47			4.53	11.7	12.6	14.4	17.55	22.55	23.65	26.3	15	17	2+16	2+15	140	♂ iv-v	2+31	56	
408	1.5			4.6	11.4	12.3	14.3	17.0	22.35	23.5	26.2	14	17	2+17	2+15	140	♂ v-vi	1+32	56	
409	1.5			4.75	11.9	12.1	14.75	17.2	22.7	24.0	26.75	15	16	2+17	2+16	153	♂ v	2+32	56	
410	1.4			4.4	11.2	12.2	14.05	17.15	22.3	23.4	26.15	14	16	2+17	2+16	141	♂ iv-v	1+32	56	
411	1.44			4.45	10.6	11.4	13.45	16.45	21.25	22.4	24.9	16	16	3+16	2+14	110	♂ iv	2+32	56	
412	1.8			5.35	12.3	13.35	15.5	18.95	24.65	25.95	29.1	14	17	2+17	2+16	193	♂ v	1+33	56	
413	1.5			4.6	11.8	12.3	14.85	17.85	23.1	24.4	27.1	16	17	2+18	2+16	167	♂ v	1+32	56	
414	1.45			4.54	11.55	12.3	14.3	17.3	21.3	23.55	26.4	15	17	2+16	2+14	155	♂ v	0+33	56	
415	1.75			5.38	13.5	14.65	16.95	20.25	25.7	27.1	30.15	15	17	3+17	2+16	213	♂ v	1-31	55	
416	1.6			4.9	12.2	13.2	15.15	18.35	23.35	24.65	27.6	15	16	3+16	2+15	169	♂ v	1+32*	56	
417	1.5			4.6	11.1	11.75	13.7	16.5	21.6	22.7	25.3	14	17	2+16	2+16	113	♂ vi-iii	2+32	56	
418	1.6			4.8	11.65	12.5	14.5	17.75	22.5	23.7	26.3	15	16	3+17	2+15	151	♂ v	0-32	56	
419	1.46			4.55	11.7	12.5	14.35	17.45	22.45	23.65	26.3	15	17	3+16	2+15	132	♂ iv-v	1+32	56	
420	1.44			4.55	11.45	12.6	14.4	17.6	22.7	23.95	26.45	15	16	3+17	3+14	133	♂ vi	2+31	56	
421	1.7			5.2	12.25	12.9	15.25	18.55	23.7	25.0	28.0	15	17	3+16	2+14	185	♂ v	2+33	56	
422	1.5			4.5	10.6	11.7	13.1	16.25	20.85	22.05	24.55	15	17	2+16	2+16	105	♂ v	†0-32	55	
423	1.3			4.15	10.25	10.95	12.85	15.5	20.15	22.2	23.65	15	16	2+18	2+15	95	♂ iv-v	2+30	55	
424	1.6			5.0	11.95	12.9	14.9	18.2	23.3	24.55	27.25	14	18	3+17	2+16	163	♂ v	1+32	56	
425	1.8			5.33	12.5	13.8	15.55	18.7	24.1	25.5	28.25	14	14	3+17	3+15	175	♂ v	2+31	56	
426	1.4			4.37	10.25	11.5	12.8	15.9	20.9	21.95	24.55	15	17	2+17	2+15	115	♂ iii-iv	2+33	57	
427	1.5			4.75	12.45	13.0	15.4	18.8	24.4	25.55	28.25	16	18	3+17	2+16	179	♂ v	2+33*	58	
428	1.6			4.86	11.9	13.1	14.85	17.8	22.8	24.1	26.9	15	17	3+17	2+16	138	♂ iv	1+31	55	
429	1.65			5.0	12.3	13.1	15.3	18.7	24.1	25.3	28.25	15	17	2+16	2+15	191	♂ v	1+32	56	
430	1.5			4.65	11.2	11.9	14.2	16.9	22.1	23.3	26.1	14	17	2+17	2+17	153	♂ v	0+32	56	
431	1.24			3.9	10.0	10.75	12.3	15.2	19.7	20.7	23.1	15	17	2+17	3+15	102	♂ v	0+33	56	
432	1.36			4.36	10.8	11.8	13.65	16.4	21.3	22.5	25.15	15	17	2+17	2+17	128	♂ iv-v	1+33	56	

433	1-36	4-5	10-6	11-6	13-4	16-45	21-25	22-35	25-05	14	16	2+17	2+15	110	♂ iv	1+31	55
434	1-7	5-3	12-8	13-3	15-85	18-7	24-1	25-35	28-25	15	17	3+17	1+16	156	♂ vi-iv	3+30	55
435	1-65	4-95	11-75	13-1	14-85	18-15	23-5	24-75	27-85	15	17	2+18	2+17	185	♂ v	1+32	*56
436	1-48	4-5	11-2	11-85	13-7	16-9	22-1	23-35	25-9	15	16	2+17	2+15	132	♂ v	1+31	56
437	1-54	4-9	12-05	13-15	15-05	18-4	24-05	25-2	27-95	5+000+7	17	3+16	2+15	161	♂ v	0+32	56
438	1-45	4-5	10-8	11-55	13-5	16-3	21-6	22-7	25-35	15	16	3+16	3+16	109	♂ vi-iv	1+32	56
439	1-34	4-25	10-3	11-25	12-95	15-45	20-2	21-3	23-6	14	17	2+17	3+15	99	♂ iv	†0+32	56
440	1-45	4-6	11-25	12-1	14-0	16-95	22-2	23-5	26-05	15	18	2+17	2+16	152	♂ iv-v	1+32	57
441	1-47	4-63	11-15	12-0	14-05	16-9	22-3	23-4	26-1	15	17	3+17	2+16	131	♂ iv-v	2+33	57
442	1-6	4-95	11-9	12-95	14-85	17-7	23-25	24-55	27-2	14	18	2+17	3+16	161	♂ v	0+33	56
443	1-36	4-44	11-0	11-45	13-75	16-5	21-8	23-0	25-55	15	17	2+17	2+17	140	♂ v	2+32	56
444	1-35	4-38	10-5	11-4	13-15	16-2	20-95	22-05	24-65	16	17	2+18	2+17	123	♂ iv-v	1+33	56
445	1-4	4-4	10-1	10-85	12-35	15-2	19-8	20-75	23-2	15	17	3+16	2+15	103	♂ v-vi	1+32	55
446	1-4	4-36	10-75	11-2	13-5	15-9	21-0	22-2	24-7	15	17	2+16	2+16	119	♂ iv-v	1+33	56
447	1-5	4-6	11-15	12-0	13-85	16-95	21-85	23-0	25-35	15	15	2+16	3+15	148	♂ v	1+31	55
448	1-35	4-25	10-5	10-95	13-1	15-75	20-4	21-5	24-05	15	16	3+17	2+16	100	♂ iv	2+32	56
449	1-4	4-43	10-65	10-5	13-0	15-65	20-4	21-5	23-85	16	17	2+17	2+16	105	♂ iv-vi	1+32	56
450	1-52	4-54	11-6	12-35	14-45	17-5	22-6	23-8	26-3	15	17	2+17	3+15	157	♂ v	0+33	56
451	1-38	4-43	10-9	13-55	11-9	16-25	21-4	22-55	25-15	15	16	3+16	2+16	121	♂ v	1+32	56
452	1-4	4-33	10-3	11-1	13-1	15-6	20-65	21-8	24-4	14	17	3+16	2+16	118	♂ v	2+32	56
453	1-6	4-98	12-95	13-7	15-9	19-3	24-6	26-05	28-85	15	17	2+15	3+15	194	♂ v	0+32*	55
454	1-53	4-65	10-6	11-05	13-2	15-95	20-95	22-15	24-8	13	16	3+17	2+17	113	♂ v	0+32	55
455	1-35	4-3	11-0	11-3	13-5	16-35	21-35	22-45	24-95	15	17	2+17	3+15	118	♂ iv-v	1+32	56
456	1-5	4-65	11-4	12-45	14-0	17-1	22-35	23-5	26-25	14	17	3+15	2+16	134	♂ v	2+32	57
457	1-5	4-5	11-0	11-65	13-7	16-25	21-4	22-5	25-15	15	17	2+17	2+16	126	♂ iv-v	1+32	56
458	1-47	4-55	11-35	12-2	14-0	17-25	22-05	23-3	26-0	14	16	2+15	2+13	155	♂ v	2+32	56
459	1-74	5-05	12-7	13-65	15-9	19-2	24-5	25-8	28-55	15	17	2+17	2+16	171	♂ iv-v	0+34	57
460	1-4	4-55	11-6	12-1	14-05	17-15	22-1	23-25	25-75	15	16	2+16	2+15	154	♂ v	1+32	56
461	1-43	4-6	11-1	11-9	13-75	16-4	21-5	22-6	25-05	14	17	2+17	2+16	117	♂ v-vi	1+32	56
462	1-48	4-4	10-95	11-55	13-8	16-5	21-7	22-95	25-5	15	16	3+17	2+16	126	♂ v	1+0*+32	56
463	1-6	4-86	12-0	12-7	14-95	17-95	22-9	24-25	26-7	14	16	2+17	2+14	164	♂ v	1+32	56
464	1-6	4-9	11-8	12-65	14-6	17-65	22-85	24-0	26-6	14	17	3+16	1+16	134	♂ v	1+31	55
465	1-5	4-5	10-55	11-4	13-15	15-9	20-7	21-8	24-2	15	16	2+17	2+16	108	♂ iv-v	1+33	57
466	1-4	4-4	11-15	11-9	14-0	16-8	21-95	23-1	25-6	15	18	3+17	2+15	133	♂ ii-iii	2+31	56
467	1-38	4-38	10-75	11-45	13-25	15-8	21-0	22-15	24-6	14	17	2+17	1+15	100	♂ vi-iii	1+33	56
468	1-4	4-25	10-25	10-75	12-45	15-05	19-7	20-75	23-3	15	18	2+17	2+16	98	♂ v	0+33	57
469	1-43	4-42	10-6	11-1	13-2	16-05	20-85	22-0	24-4	14	17	3+17	2+15	98	♀ vii	1+33	57
470	1-56	4-72	11-65	12-65	14-7	17-95	22-85	24-0	26-7	15 ^{(17L.)11r.} (abnorm.)	16	2+18	1+15	148	♀ v	1+32	56
471	1-4	4-38	10-5	10-95	13-2	15-4	20-5	21-65	24-05	14	16	3+17	1+15	98	♂ iii-iv	0+32	56
472	1-3	4-13	10-1	10-55	12-35	14-85	19-35	20-35	22-7	14	17	3+17	2+16	93	♂ v	1+32	56
473	1-46	4-45	10-65	11-1	13-35	15-6	20-9	22-0	24-5	14	16	3+17	1+15	111	♂ iv-v	1+33	56

No. of fish.	1	1a	1b	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18
474	1-3			4-3	10-15	10-55	12-75	14-9	19-6	20-8	23-3	14	16	2+18	2+16	103	♂ iv	0+32	55
475	1-5			4-63	11-5	12-6	14-25	17-85	22-6	23-85	26-6	15	16	3+16	2+14	159	♂ v	1+32	56
476	1-35			4-25	10-65	11-45	13-25	16-0	21-0	22-1	24-5	14	16	3+17	2+15	116	♂ v-vi	0+32	56
477	1-7			5-1	12-65	13-7	15-55	19-1	24-6	25-8	28-7	14	17	3+16	2+15	155	♂ iv	1+32	56
478	1-5			4-68	11-3	12-2	13-95	17-45	22-05	23-3	26-15	16	16	3+16	2+14	141	♂ v-vi	1+31	55
479	1-3			4-0	9-75	11-0	12-45	15-1	19-75	20-85	23-05	15	17	2+17	2+15	94	♂ ii-iii	2+31	56
480	1-6			4-9	11-6	12-2	14-4	17-05	22-15	23-3	26-1	15	17	3+17	2+14	147	♂ v	2+31	56
481	1-4			4-32	10-3	10-8	12-45	15-5	19-6	20-7	23-15	14	17	2+17	2+14	99	♂ ii-iii	0+33	56
482	1-28			3-9	9-55	9-85	11-85	13-95	18-35	19-5	21-7	16	17	3+16	2+15	84	♂ v	1+31	55
483	1-53			4-9	12-35	12-9	15-6	18-65	23-9	25-3	28-2	14	18	3+18	2+16	185	♂ v	1+33	56
484	1-6			4-7	11-45	12-15	14-2	17-4	22-3	23-5	26-05	15	16	3+16	1+16	146	♂ v	1+34	57
485	1-38			4-35	10-5	11-15	13-2	15-6	20-75	21-8	24-45	13	17	3+18	2+16	102	♂ iii-iv	0+33	57
486	1-45			4-44	10-7	11-6	13-55	16-7	21-4	22-7	25-25	15	17	2+18	2+15	137	♂ v	1+30	55
487	1-5			4-42	10-8	11-5	13-5	16-7	21-3	22-5	25-1	15	17	2+17	1+14	125	♂ iv	0+32	56
488	1-7			5-14	12-36	13-3	15-7	18-55	23-8	25-1	28-0	16	17	3+18	2+16	190	♂ v	1+33	56
489	1-56			4-62	11-35	11-85	14-1	16-65	21-9	23-0	25-6	15	17	3+17	2+15	126	♂ iv-v	2+32	56
490	1-76			4-96	12-4	13-4	15-5	18-55	23-95	25-3	28-0	13	18	2+17	2+15	187	♂ v	0+32	55
491	1-36			4-2	10-25	11-1	13-0	15-75	20-6	21-75	24-15	1+0+12	16	2+17	2+15	103	♂ v	1+32	56
492	1-6			4-92	12-0	12-15	14-7	17-6	22-55	23-75	26-3	15	17	3+16	1+17	159	♂ v	2+31	56
493	1-5			4-36	10-75	11-6	13-45	16-45	21-35	22-5	25-2	16	17	3+16	2+15	133	♂ v	0+32	56
494	1-5			4-5	11-0	12-0	13-55	16-4	21-45	22-65	25-3	15	15	3+16	2+14	127	♂ iv-v	1+31	56
495	1-6			5-24	12-75	13-9	15-95	18-8	24-6	25-95	28-65	14	16	3+17	2+15	184	♂ v	2+30	55
496	1-7			5-03	12-3	13-75	15-25	18-4	23-7	25-05	27-8	14	15	3+15	2+15	163	♂ v	0+33	56
497	1-76			5-42	13-1	13-6	16-05	18-8	24-35	25-7	28-65	15	17	2+17	2+16	191	♂ v	1+32	56
498	1-7			5-0	11-8	12-8	14-5	17-7	22-8	24-15	27-1	15	18	2+16	1+15	154	♂ v	1+32	55
499	1-4			4-5	10-85	12-0	13-9	16-6	21-85	23-0	25-7	14	17	2+18	2+15	133	♂ iv-v	0+32	56
500	1-58			4-85	11-8	12-8	14-7	18-1	22-75	24-0	26-65	16	17	2+17	2+14	158	♂ v	0+33	55
501	1-58			4-72	11-95	13-0	14-9	17-9	23-3	24-55	27-45	15	18	2+17	2+16	175	♂ v	2+32	57
502	1-58			4-75	11-1	12-05	13-9	16-8	21-75	22-9	25-6	15	16	3+17	2+16	131	♂ v	2+31	56
503	1-6			4-62	11-6	12-1	14-2	17-35	22-35	23-6	26-25	14	17	3+16	3+15	136	♂ v-vi	0+32	55
504	1-42			4-3	10-85	11-65	13-75	16-4	21-65	22-75	25-2	15	17	2+17	2+15	121	♂ iv-v	0+32	56
505	1-6			4-65	11-3	12-0	14-15	16-8	22-5	23-6	26-25	15	17	3+17	2+17	136	♂ v	0+32	56
506	1-36			4-3	10-65	11-3	13-7	16-4	21-15	22-3	24-95	15	16	3+18	2+15	137	♂ v-vi	1+31	55
507	1-65			5-18	12-65	12-4	15-6	18-5	23-65	24-9	27-85	15	17	2+16	2+14	164	♂ v	1+32	55
508	1-45			4-4	10-15	10-85	12-7	15-0	19-95	21-05	23-5	14	17	2+16	2+15	109	♂ v	1+32	56
509	1-6			4-7	10-9	11-55	13-65	16-5	21-3	22-5	25-1	15	16	3+17	2+14	117	♂ iv-vi	0+32	56
510	1-48			4-55	10-8	11-55	13-2	16-25	21-0	22-1	24-7	16	16	2+15	2+15	111	♂ iii-iv	0+31	56
511	1-3			4-2	10-35	11-1	12-8	15-65	20-3	21-4	23-9	14	17	3+16	2+15	113	♂ v	1+32	56
512	1-45			4-38	10-4	11-1	12-7	15-7	20-4	21-5	24-0	14	17	3+16	2+14	106	♂ v	3+30	55

513	1-6	5-0	12-35	13-25	15-35	18-1	24-1	25-3	28-15	15	16	2+17	2+15	177	Δ v	2+31	56
514	1-6	4-65	11-8	12-75	14-55	17-85	22-9	24-15	26-8	15	17	2+16	2+15	168	○ v	1+31	55
515	1-56	4-85	12-0	12-5	14-6	17-95	22-95	24-15	26-9	15	17	2+16	2+14	157	○ iv-v	2+31	56
516	1-53	4-5	10-65	11-45	13-2	16-35	20-95	22-05	24-5	16	16	3+17	2+14	124	○ iv-v	2+30	55
517	1-58	4-78	11-7	13-1	14-4	17-7	22-95	24-1	27-05	14	16	2+16	2+15	159	○ iv-v	1+34	57
518	1-55	4-6	11-4	12-4	13-1	17-55	22-65	23-8	26-6	15	17	3+15	2+14	138	○ iv	1+31	55
519	1-35	4-46	11-2	11-75	13-9	16-45	21-7	22-9	25-4	14	17	3+16	2+15	135	○ iv	0+32	55
520	1-52	4-72	11-3	12-25	14-35	17-2	22-65	23-85	26-45	15	17	2+17	2+16	134	○ vii	2+32	55
521	1-5	4-45	11-15	11-7	13-9	16-65	21-95	23-1	25-85	14	16	2+17	2+15	133	○ vi	1+32	56
522	1-52	4-8	11-6	12-4	14-4	17-3	22-3	23-55	26-1	14	17	2+17	2+16	150	○ iv-v	1+32	56
523	1-4	4-22	10-5	10-9	12-95	15-2	20-25	21-3	23-8	14	18	2+17	2+16	105	○ iv	0+33	56
524	1-34	3-9	9-45	10-1	11-8	14-0	18-7	19-75	21-9	15	17	3+17	2+17	76	○ iv	1+32	56
525	1-48	4-36	10-5	11-4	13-05	16-1	20-85	21-95	24-45	16	17	3+17	2+15	118	○ vi	0+32	56
526	1-52	4-6	11-15	11-7	13-9	16-35	21-35	22-6	25-15	14	16	3+17	2+16	122	○ iv-v	2+31	56
527	1-47	4-44	10-7	11-8	13-55	16-5	21-1	22-2	24-7	15	17	3+17	2+15	125	○ iv-v	0+31	55
528	1-7	5-0	11-8	12-85	14-8	17-9	23-0	24-2	27-0	15	17	2+16	3+15	154	○ v	1+32	56
529	1-5	4-4	10-8	11-05	12-7	15-45	20-05	21-2	23-75	14	18	2+16	2+15	109	○ iv-v	2+30*	54
530	1-58	4-65	11-7	12-5	14-6	17-45	22-75	23-95	26-6	15	17	2+16	3+16	166	○ v-vi	1+32	56
531	1-6	4-88	12-2	13-05	15-1	18-1	23-45	24-8	27-4	14	16	2+17	2+15	160	○ v	1+31	55
532	1-64	4-97	11-95	12-6	15-1	17-7	22-7	24-0	26-65	15	16	2+17	2+15	152	○ iv	3+30	56
533	1-42	4-4	10-4	11-3	12-8	15-6	20-25	21-25	23-65	15	16	2+16	3+15	100	○ iv-v	1+32	56
534	1-36	4-4	10-55	11-4	13-0	15-5	20-4	21-5	23-9	15	17	2+17	2+16	104	○ v	†0+32	56
535	1-5	4-25	10-2	10-95	12-9	15-3	20-1	21-2	23-5	15	17	2+18	2+16	111	○ iv-v	2+32	56
536	1-44	4-47	10-95	11-5	13-5	16-45	21-45	22-5	25-0	15	17	2+16	2+15	139	○ v-vi	1+33	56
537	1-4	4-3	10-55	11-7	13-15	16-0	20-9	22-05	24-5	15	17	3+16	2+15	115	○ v	0+33	56
538	1-53	4-72	11-95	12-6	14-55	17-55	22-9	24-1	26-95	14	17	2+17	2+16	140	○ vi-iii	2+32	57
539	1-5	4-8	11-95	12-4	14-7	17-8	22-85	24-1	26-8	16	17	2+17	2+15	163	○ vi	1+32	56
540	1-5	4-65	11-7	12-3	14-25	17-3	22-4	23-7	26-35	15	17	2+16	2+15	143	○ v	0+32	55
541	1-3	4-06	10-2	11-05	11-8	15-5	20-45	21-55	23-95	15	17	2+17	2+17	103	○ v	†0+32	56
542	1-46	4-3	10-55	11-35	13-15	15-7	21-1	22-2	24-8	15	16	2+17	2+16	126	○ v	1+32	57
543	1-5	4-64	10-95	11-85	13-65	16-55	21-6	22-75	25-3	13	17	1+17	2+16	136	○ iv-v	0+32	55
544	1-6	4-96	12-85	13-85	15-8	19-0	24-5	25-7	28-35	16	17	2+16	2+15	199	○ v	1+32	56
545	1-68	5-0	12-6	13-3	15-4	18-45	23-9	25-25	28-15	15	17	3+15	1+16	174	○ v	0+32	55
546	1-4	4-3	10-25	10-7	13-0	15-1	20-0	21-1	23-6	14	17	3+18	3+16	115	○ v	0+31*	55
547	1-44	4-5	11-1	12-05	13-85	16-9	21-8	23-0	25-6	14	17	2+17	2+16	136	○ v	1+33	56
548	1-43	4-15	9-95	10-7	12-3	14-9	19-5	20-55	23-05	16	16	2+17	2+16	104	○ v-vi	1+32	56
549	1-5	4-45	11-35	12-05	14-2	17-1	22-1	23-2	25-8	16	17	3+15	2+15	150	○ v	0+33	56
550	1-6	4-8	11-8	12-65	14-6	18-15	23-4	24-6	27-3	15	17	3+16	3+15	173	○ v	1+33	57

IV. Herring Race Investigations.

HAUL.				SAMPLE IV.			
Position . . .	Start Pt. E.N.E. about 8 miles to N.N.E. about 3 miles.	Number examined . . .	525.				
Date . . .	Jan. 6/15. Landed 10.0 a.m.	Quantity of fish caught . . .	56 cran (about 50,500).				
Vessel . . .	"G.M.V.," Lowestoft (Steam drifter).	Date examined . . .	Jan. 6/15.				
Net . . .	Drift-herring.	Examined by . . .	J. H. Orton and others.				

The characters are briefly: Length in centimetres from snout to (1) eye, (2) operculum edge, (3) front of dorsal fin, (4) pelvic, (5) back of dorsal, (6) front of anal, (7) root of tail, (8) end of mid-caudal, (9) end of longest caudal ray. Number of (11) keeled scales (pelvics to anus), (12) rays in pectoral, (13) rays in dorsal, (14) rays in anal, (15) weight in grams, (16) sex and maturity, (17) vertebrae with hemal arch, (18) total vertebrae. * For explanation of signs see Appendix to Tables.

No. of fish.	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18
551	1.7	5.26	12.65	14.05	15.8	19.0	24.6	25.9	28.8	15	17	3+16	3+14	157	♂ iv-v	2+31	55
552	1.55	4.85	11.85	12.5	14.5	17.85	22.7	24.0	26.5	15	16	2+16	3+15	156	♂ vi	0+33*	56
553	1.7	5.2	12.45	13.45	15.6	19.45	24.5	25.9	28.75	16	16	3+16	3+14	140	♂ vii	2+32	56
554	1.6	4.8	11.8	12.55	14.6	17.65	22.75	24.0	26.9	15	16	3+16	1+3+13	154	♂ vi	2+32	55
555	1.5	4.85	12.1	13.0	15.1	18.15	23.65	24.85	27.7	16	17	3+17	3+15	172	♀ iv	1+33	56
556	1.8	5.4	12.95	13.7	16.1	18.85	24.6	26.0	28.75	15	Fused? 12+(1+1)+2	2+17	1+3+14	171	♀ vi	1+32	56
557	1.4	4.4	10.8	11.5	13.45	16.05	20.9	22.1	24.45	15	17	3+17	3+15	117	♂ iv-v	2+31	55
558	1.5	4.85	12.05	12.65	14.9	18.0	23.1	24.2	26.9	17	18	3+16	3+14	149	♂ iv-v	2+33	57
559	1.6	4.85	11.3	12.6	14.35	17.6	22.3	23.5	26.3	14	17	3+16	3+14	161	♂ vi	†0+32	55
560	1.57	4.8	12.1	12.7	14.8	18.15	23.4	24.7	27.2	14	16	3+16	4+15	167	♂ v-vi	1+33	57
561	1.46	4.6	11.5	12.15	14.4	17.1	22.2	23.5	26.15	14	17	3+17	3+14	162	♂ v-vi	2+31	56
562	1.47	4.65	11.4	12.2	14.3	17.3	22.4	23.65	26.25*	15	17	3+16	3+14	131	♂ v-vi	0+34	57
563	1.28	4.35	10.9	11.6	13.6	16.4	21.3	22.45	25.05	15	17	3+15	3+13	129	♂ vi	†1+32	56
564	1.5	4.9	12.5	13.2	15.55	18.5	23.45	24.65	27.5	14	17	3+16	3+13	145	♂ vii	1+31	56
565	1.38	4.4	11.15	11.9	13.65	16.4	21.3	22.5	25.05	14	18	3+16	3+15	121	♂ vi-iii	1+31	55
566	1.5	4.45	10.75	11.4	13.34	15.95	20.65	21.8	24.25	13	16	3+16	3+15*	118	♂ v	†0+33	56
567	1.5	4.88	11.75	12.8	14.6	18.0	22.95	24.2	26.65	15	17	3+17	3+14	153	♂ vi-iv	1+32	56
568	1.65	5.0	12.25	13.2	15.25	18.2	23.45	24.7	27.6	15	16	3+16	3+15	175	♂ v	2+31	55
569	1.5	4.7	11.1	11.95	13.8	16.5	21.55	22.7	25.5	15	17	3+16	3+14	137	♂ vi	2+31	55
570	1.45	4.6	11.36	12.6	13.95	17.25	22.3	23.5	26.2	14	17	3+15	3+14	139	♂ iv-v	†2+31	56
571	1.5	4.63	11.4	12.5	14.25	17.55	22.75	24.05	26.45	15	16	3+17	1+3+14	146	♂ v-vi	1+33	57
572	1.5	4.7	11.4	12.6	14.2	17.1	22.1	23.25	26.05	15	17	3+16	3+15	150	♂ vi	1+32	56
573	1.48	4.6	11.1	12.0	13.65	16.75	21.6	22.8	25.4	15	17	3+15	1+3+14	113	♂ vi-iii	1+32 ^{(21+i⁺7+22) -55}	56
574	1.5	4.7	12.2	12.8	14.9	18.0	23.55	24.8	27.5	14	17	3+15	3+13	167	♂ v-vi	0+33	56
575	1.65	5.1	12.5	13.45	15.35	18.6	23.5	24.8	27.55	14	17	3+16	4+13	141	♂ vii	1+31	55
576	1.54	4.85	11.9	12.4	14.55	17.2	22.35	23.6	26.3	14	17	3+15	3+15	129	♀ vii	†0+32	55

‡ Some may be missing here. Skeleton broken.

577	1-46	4-7	11-8	12-6	14-3	17-65	22-7	24-1	26-8	15	17	3+14	3+14	152	♀ v-vi	2+32	56
578	1-53	4-75	11-55	12-3	14-1	17-25	22-1	23-35	25-95	13	17	3+16	4+13	127	♀ vi-iii	3+31	55
579	1-7	5-1	12-35	13-4	15-6	18-55	24-0	25-4	28-15	14	18	3+16	3+13	192	♀ vi	2+31	55
580	1-5	4-75	12-45	13-25	15-4	18-8	23-9	25-2	27-8	17	17	3+16	3+14	190	♀ vi	2+32*	56
581	1-5	4-6	11-35	12-05	14-3	16-95	22-3	23-5	26-2	15	16	3+17	4+15	128	♀ iii	†0+33	56
582	1-33	4-38	10-95	11-55	13-85	16-8	21-5	22-8	25-05	15	17	3+17	4+13	131	♀ v-vi	1+32*	55
583	1-5	4-65	11-55	12-6	14-4	17-45	22-85	24-0	26-7	14	17	3+16	3+16	137	♀ vi-iii	1+32	55
584	1-74	5-2	12-5	13-3	15-45	18-7	23-95	25-4	28-05	15	18	3+16	3+14	169	♀ v-vi	2+31	55
585	1-45	4-6	11-35	12-2	14-15	17-35	22-3	23-45	26-05	16	16	2+16	3+13	151	♀ v-vi	2+32	56
586	1-56	4-75	11-75	12-9	14-5	18-45	23-4	24-65	27-3	15	17	2+16	3+14	167	♀ vi	1+32	56
587	1-44	4-6	11-3	12-25	14-05	17-5	22-45	23-65	26-25	15	Rt. broken, left 17.	3+16	3+14	144	♂ iv-v	2+32	56
588	1-7	5-05	12-3	12-9	15-2	18-3	23-4	24-7	27-3	15	18	3+16	3+14	145	♀ vi-iii	1+33	56*
589	1-78	5-26	12-6	13-1	15-6	18-0	24-3	25-65	28-45	14	17	3+16	4+14	157	♀ vi-iii	1+32	57
590	1-48	4-65	11-85	12-45	14-7	17-45	22-4	23-65	26-3	14	17	3+17	4+14	140	♀ v-vi	†2+32	56
591	1-6	5-0	11-75	12-7	14-85	17-75	22-8	24-05	26-85	14	17	3+16	3+13	166	♀ vi-iv	3+31	55
592	1-5	4-6	11-5	12-3	14-4	16-95	22-15	23-4	26-15	14	16	2+16	3+15	119	♀ vi-iv	2+32	56
593	1-43	4-43	10-95	11-6	13-85	16-3	21-75	22-95	25-4	15	17	3+17	4+15	128	♀ v-vi	0+33	56
594	1-5	4-85	11-8	12-65	14-8	17-35	22-65	23-9	26-5	15	17	2+17	3+14	158	♀ v-vi	1+32	56
595	1-4	4-47	11-15	11-55	13-9	16-65	21-75	23-0	25-3	16	16	4+16	3+14	136	♀ vi	1+33	56
596	1-54	4-7	12-1	12-5	15-05	17-9	23-2	24-4	26-95	16	16	3+17	3+14	170	♀ vi	1+33	56
597	1-78	5-35	12-25	12-9	15-3	18-2	23-95	25-2	28-1	15	17	3+16	3+13	171	♀ v	1+33	56
598	1-48	4-55	11-2	12-1	14-0	16-85	21-95	23-1	25-65	15	17	3+16	3+15	134	♀ iv-vi	†0+34	57
599	1-56	4-9	12-25	13-05	15-5	18-3	23-7	24-9	28-0	15	17	3+17	3+15	151	♀ vii	2+31	56
600	1-5	4-4	10-85	11-6	13-7	16-2	21-2	22-3	24-85	15	17	3+16	4+13	123	♀ vi-iii	1+31	55
601	1-68	5-28	13-3	14-2	16-5	19-65	25-4	26-75	29-6	14	17	3+16	3+14	207	♀ vi	1+32	56
602	1-65	4-9	12-06	13-1	15-1	18-1	23-2	24-4	27-1	15	17	2+16	2+14	180	♀ iii	2+32	56
603	1-6	5-0	12-1	12-6	15-1	17-6	23-3	24-55	27-1	14	17	3+16	4+15	157	♀ vii	2+32	56
604	1-6	5-0	11-8	12-95	14-8	17-95	23-15	24-4	27-35	14	17	3+16	3+16	149	♀ vi-iv	†1+33	56
605	1-38	4-4	11-1	11-85	13-8	16-6	21-75	22-95	25-55	15	16	3+16	3+15	137	♀ v-vi	†0+32	55
606	1-56	4-7	11-3	12-4	14-2	17-65	22-7	24-0	26-7	16	16	3+16	3+15	160	♀ vi	1+32	56
607	1-52	4-65	11-5	12-5	14-55	17-6	22-65	23-9	26-4	16	16	3+16	4+13	157	♀ vi	1+32	55
608	1-68	5-14	12-3	13-00	15-55	18-55	24-0	25-3	28-2	15	17	3+16	3+14	176	♀ vi-iii	2+31	55
609	1-6	4-9	11-8	12-4	14-65	17-55	23-0	24-2	26-7	15	17	3+16	3+15	128	♀ vi-iii	†0+34	57
610	1-4	4-6	11-6	12-3	14-3	17-3	22-3	23-45	26-1	14	16	3+16	3+15	137	♀ vi-iv	†0+33	56
611	1-44	4-6	11-15	11-7	13-85	16-45	21-65	22-8	25-3	15	17	3+17	3+14	106	♂ iv-vi	2+32	56
612	1-48	4-45	10-65	10-95	13-35	15-65	20-55	21-65	24-15	15	16	3+17	3+14	117	♂ vi	0+33	56
613	1-3	4-15	10-2	10-55	12-7	15-1	19-55	20-6	22-7	15	18	3+16	3+14	101	♀ v-vi	2+32	56
614	1-25	4-2	10-15	10-7	12-85	15-05	19-85	21-0	23-3	16	17	2+17	3+13	108	♀ vi-iii	1+32	56
615	1-4	4-45	11-25	12-2	14-1	17-05	22-35	23-6	26-3	15	18	3+16	4+13	165	♀ vi	1+32	55
616	1-6	5-0	12-4	13-6	15-6	18-95	24-2	25-6	28-45	14	17	3+16	3+15	200	♀ vi	1+31	55
617	1-73	5-3	12-05	12-80	15-35	17-5	23-0	24-3	27-1	15	17	3+17	3+14	159	♀ vi-iii	1+32	56

No. of fish.	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18
618	1-47	4-7	11-7	12-7	14-55	17-5	22-6	23-9	26-65	15	17	3+16	4+13	154	♂ vi-iv	+0+33	56
619	1-56	4-9	12-2	12-9	15-05	17-8	23-15	24-35	27-1	14	17	3+16	4+14	188	♂ vi	0+32	57
620	1-64	4-8	12-1	12-6	14-9	17-8	22-85	24-15	26-8	15	17	3+16	4+15	146	♂ vi-iii	2+32	56
621	1-63	4-95	11-45	12-45	14-5	17-3	22-6	23-85	26-45	14	16	3+17	4+13	136	♂ vi-iii	0+33	56
622	1-4	4-6	11-25	12-3	14-2	17-4	22-45	23-8	26-2	15	17	3+17	3+13	160	♂ v-vi	0+32	56
623	1-45	4-55	11-4	12-4	14-2	17-0	22-4	23-6	26-05	14	17	3+15	2+14	143	♂ vi-iv	0+34	56
624	1-65	4-9	11-75	12-35	14-7	17-65	22-7	23-95	26-8	14	17	3+16	3+15	165	♂ vi	0+33	56
625	1-64	4-95	12-3	13-6	15-25	18-9	24-0	25-4	28-15	15	17	3+15	3+12	199	♂ vi	1+33	57
626	1-76	5-43	13-1	14-4	16-5	19-75	25-35	26-8	29-95	15	18	3+16	3+15	187	♂ vi	0+33	56
627	1-6	5-1	12-6	13-3	15-8	18-45	24-25	25-55	28-65	15	17	2+17	3+16	180	♂ vi	0+33	56
628	1-6	5-13	12-4	13-2	15-2	18-65	23-8	25-05	27-35*	16	16	3+15	3+13	136	♂ ii	1+31	55
629	1-43	4-45	10-8	11-7	13-4	16-6	21-4	22-55	25-1	15	19	3+16	3+13	142	♂ vi	1+32	56
630	1-53	4-85	12-0	12-8	14-95	17-7	23-2	24-45	27-2	14	17	3+16	3+14	148	♂ vi-iii	1+31	55
631	1-52	5-0	12-2	12-8	14-95	18-05	22-3	24-6	27-5	14	17	3+16	3+14	175	♂ vi	*0+[1+1+30]	55
632	1-6	5-0	12-55	13-00	15-55	18-35	24-15	25-4	27-95	15	18	3+16	3+15	168	♂ vi-iii	0+33	57
633	1-6	4-85	12-45	13-3	15-45	18-6	24-1	25-45	27-7*	14	18	3+15	3+14	171	♂ vi	1+32	56
634	1-5	4-42	11-5	12-4	14-05	17-4	22-4	23-65	26-15	15	17	3+16	3+14	148	♂ iii-iv	1+33	56
635	1-4	4-7	11-3	11-7	14-05	16-75	21-8	23-05	25-65	14	17	3+17	3+13	117	♂ vi-iii	1+32	56
636	1-53	4-9	11-8	12-45	14-9	17-6	22-8	24-05	26-75	14	17	3+17	2+14	140	♂ vi	0+32	55
637	1-5	4-65	11-4	12-6	14-35	17-5	22-4	23-65	26-4	15	17	3+16	2+14	145	♂ vi	2+31	56
638	1-4	4-7	12-3	12-6	15-15	17-75	22-75	23-95	26-5	15	17	3+16	3+14	156	♂ vi	+0+32	56
639	1-55	4-85	11-6	12-85	14-6	17-8	22-8	24-1	26-75	15	16	3+17	3+14	141	♂ vi-iv	1+32	55
640	1-43	4-6	11-8	12-5	14-65	17-75	22-9	24-15	26-8	15	16	3+17	2+14	144	♂ vi	2+32	57
641	1-54	4-9	11-8	12-7	14-65	17-5	22-3	23-6	26-25	15	17	3+15	3+14	138	♂ vi-iii	1+31	55
642	1-43	4-65	11-5	12-25	14-2	17-1	22-0	23-1	25-95	14	16	3+16	3+14	137	♂ vi	1+32	56
643	1-47	4-44	10-9	11-55	13-55	16-0	21-15	22-35	24-85	14	16	3+16	4+14	129	♂ vi	1+33	56
644	1-6	4-9	12-1	12-7	14-75	17-9	23-15	24-35	27-15	15	17	3+16	3+15	148	♂ v-vi	0+32	55
645	1-48	4-6	11-15	11-85	13-9	16-7	21-8	22-9	25-5	16	16	4+16	3+14	127	♂ iii	1+33	57
646	1-55	4-8	12-0	12-7	14-8	17-9	23-15	24-5	27-2	14	18	3+16	3+14	177	♂ vi	1+30	54
647	1-48	4-65	11-55	12-5	14-35	17-5	22-25	23-6	26-35	14	16	3+16	2+13	152	♂ vi	0+32	55
648	1-67	5-37	12-95	13-7	16-05	19-2	24-65	25-95	28-7	17	17	3+16	1+3+14	181	♂ v	2+32	56
649	1-6	4-85	11-9	12-45	14-75	17-6	22-75	24-0	26-7	14	17	3+17	3+15	152	♂ ii	1+32	55
650	1-5	5-0	12-45	13-0	15-4	18-3	23-9	25-15	27-8	14	16	3+17	3+15	170	♂ vi	1+33	57
651	1-6	4-8	11-4	12-2	14-35	17-35	22-5	23-7	26-4	15	17	3+16	3+13	161	♂ vi	1+32	55
652	1-4	4-6	11-7	12-7	14-4	17-7	22-9	24-2	26-8	15	16	3+15	3+14	149	♂ vi-iii	2+32	55
653	1-63	5-05	11-75	12-4	14-7	17-4	22-55	23-8	26-6	15	17	3+17	4+14	135	♂ v	1+32	55
654	1-38	4-35	10-45	11-2	13-1	15-95	20-8	22-0	24-5	15	18	3+17	4+13	114	♂ vi-iii	+2+32	57
655	1-6	4-7	11-6	12-3	14-3	17-35	22-25	23-45	26-1	9+0+0+0+3	17	3+17	3+14	140	♂ vi	2+32	56
656	1-42	4-55	11-45	12-25	14-2	17-2	22-55	23-8	26-2	15	17	3+16	3+15	132	♂ v-vi	1+33	56

657	1-5	4-7	12-0	12-55	14-75	17-5	22-8	24-05	26-7	14	17	3+16	3+15	152	⊕ vi	1+32	56
658	1-58	5-0	12-4	12-95	15-35	18-0	23-25	24-45	27-1	14	17	3+16	3+14	150	⊕ v	2+31	55
659	1-6	4-7	11-2	12-2	14-05	16-5	21-55	22-8	25-3	14	17	3+17	3+15	136	⊕ vi	0+33	56
660	1-5	5-0	12-3	12-8	15-2	18-0	23-4	24-5	27-4	14	17	3+16	1+4+13	155	⊕ v-vi	2+32	55
661	1-47	4-7	11-65	12-3	14-6	17-3	22-55	23-8	26-6	14	16	3+16	3+14	160	⊕ vi	2+31	55
662	1-45	4-6	11-05	11-85	13-65	16-25	21-2	22-45	25-15	14	16	3+16	3+14	128	⊕ v-vi	2+30	54
663	1-55	5-15	12-75	13-25	15-8	18-8	24-15	25-5	28-35	16	17	3+16	3+14	144	⊕ ii	2+31	56
664	1-36	4-42	11-1	11-7	13-85	16-55	21-6	22-7	25-2	16	18	3+16	3+16	135	⊕ v-vi	0+32	55*
665	1-34	4-36	10-75	11-5	13-2	16-35	21-3	22-4	24-9	15	17	3+15	3+14	125	⊕ v-vi	0+33	57
666	1-5	4-9	12-3	12-85	15-15	18-4	23-5	24-75	27-6	16	18	3+15	3+15	164	⊕ v-vi	1+33	56
667	1-5	4-6	11-0	11-8	13-65	16-6	21-5	22-55	25-2	15	17	3+16	3+13	118	⊕ ii	1+32	56*
668	1-38	4-3	10-75	11-3	13-4	16-0	20-65	21-8	24-4	15	16	3+16	3+14	119	⊕ iii	1+31	55
669	1-4	4-5	11-1	11-75	13-95	16-6	22-1	23-3	25-8†	14	18	3+16	3+15	139	⊕ vi	1+31	55
670	1-46	4-45	10-9	11-7	13-7	16-75	21-7	22-9	25-4	15	17	3+17	3+16	119	⊕ vi	0+32	56
671	1-35	4-5	10-7	11-9	13-65	16-6	21-75	23-0	25-55	15	17	3+16	3+14	128	⊕ i-ii	1+32	56
672	1-6	5-05	12-1	13-0	15-1	18-2	23-9	25-2	27-8	1+0+11	17	3+17	3+14	169	⊕ iv	1+33	57
673	1-52	4-55	11-55	12-1	14-45	17-35	22-5	23-75	26-45	15	16	3+16	1+3+13	128	⊕ vi-iii	1+32	55
674	1-5	4-53	11-55	12-8	14-45	17-9	22-9	24-1	26-8	14	16	3+16	Total 17. Rays broken.	140	⊕ vi-iii	0+33	57
675	1-38	4-35	11-0	11-65	13-4	16-3	21-15	22-25	24-85	14	17	3+15	3+15	110	⊕ vi-iii	0+33	56
676	1-4	4-68	11-4	12-35	14-3	17-3	22-5	23-7	26-5	15	17	3+16	3+14	137	⊕ iv-v	†0+33	56
677	1-4	4-7	11-5	12-35	14-45	17-0	22-35	23-7	26-3	15	17	3+16	1+3+14	144	⊕ vi	1+31	55
678	1-4	4-52	10-9	11-9	13-65	16-6	21-75	22-95	25-4	15	17	3+16	3+14	108	⊕ vii	2+31	56
679	1-45	4-65	11-5	12-5	14-3	17-3	22-65	23-9	26-7	15	17	3+17	3+13	138	⊕ vi	1+33	56
680	1-43	4-64	11-5	12-3	14-25	17-4	22-4	23-6	26-3	14	17	3+16	3+15	162	⊕ vi	0+32	56
681	1-38	4-4	11-0	12-0	13-95	16-75	22-05	23-3	25-9	15	16	3+17	4+14	157	⊕ vi	2+32	56
682	1-38	4-63	11-3	12-25	14-4	17-15	22-35	23-55	26-3	15	17	3+17	4+13	126	⊕ vii	0+33	56
683	1-46	4-75	12-3	12-6	15-25	17-45	22-9	24-2	26-9	13	17	3+15	4+14	181	⊕ v-vi	1+32	55
684	1-52	4-8	12-0	13-2	14-9	18-2	23-35	24-65	27-45	14	17	3+16	4+14	161	⊕ vi	2+30	55
685	1-46	4-65	11-75	12-5	14-4	17-55	22-45	23-7	26-5	15	18	2+16	3+14	147	⊕ v-vi	†0+32	55
686	1-55	4-8	11-7	12-75	14-9	17-9	23-3	24-55	27-45	15	16	3+17	3+15	161	⊕ v	1+32	56
687	1-4	4-5	11-1	12-3	13-9	17-05	22-0	23-25	25-75	15	17	3+16	4+13	125	⊕ iv-v	*1+31	55
688	1-65	4-9	11-55	12-75	14-3	17-7	22-8	24-0	26-6	16	17	3+16	4+13	136	⊕ iv-v	2+32	57
689	1-45	4-6	11-45	13-05	14-3	17-85	23-2	24-45	27-1	14	16	3+17	3+14	166	⊕ vi	1+33	56
690	1-5	4-75	11-65	12-5	14-65	17-6	22-85	24-1	26-8	15	16	3+16	4+15	146	⊕ vi-iii	1+33	56
691	1-3	4-15	10-1	10-9	12-7	15-4	20-2	21-2	23-65	16	18	3+18	3+15	98	⊕ vii	0+32	56
692	1-45	4-52	11-3	12-4	14-2	17-2	22-4	23-65	26-2	15	17	3+17	3+15	142	⊕ vi	2+32	56
693	1-47	4-6	11-2	12-5	13-9	17-15	21-8	23-05	25-7	15	17	4+16	3+13	146	⊕ v	1+33	56
694	1-5	4-65	11-4	12-4	14-05	17-2	22-5	23-65	26-35	15	17	3+17	3+14	139	⊕ vi	2+32	56
695	1-48	4-55	11-4	12-1	14-35	17-05	22-15	23-25	25-75	15	16	3+17	3+14	140	⊕ vi-iv	2+31	56
696	1-34	4-4	10-9	11-85	13-55	16-7	21-85	23-0	25-5*	15	17	3+16	3+14	125	⊕ vi	1+32	56
697	1-46	4-7	11-85	12-4	14-65	17-45	22-55	23-7	26-4	14	17	3+16	2+16	125	⊕ vi-iii	0+32	55

No. of fish.	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18
698	1-42	4-93	12-6	13-7	15-3	18-9	24-3	25-7	28-1*	14	17	Damaged. 3+13	4+13	156	♂ vi	2+31	55
699	1-46	4-7	11-25	12-75	14-3	17-65	22-8	24-0	26-7	15	16	2+16	3+13	143	♀ vi	†0+31	55
700	1-6	4-9	11-9	13-0	15-2	18-2	23-25	24-45	27-25	16	16	3+17	3+14	149	♂ v-vi	2+32	56
701	1-5	4-55	11-75	12-45	14-55	17-4	22-65	23-85	26-5	15	16	3+16	2+14	149	♂ vi	1+32	56
702	1-7	5-45	13-6	14-1	16-7	19-7	25-7	27-15	30-15	14	17	3+16	3+15	215	♂ vi	0+32	55
703	1-75	5-55	12-9	13-7	16-0	18-8	24-4	25-7	28-6	15	16	3+16	3+14	142	♂ vi-iii	1+32	55
704	1-5	4-9	12-3	13-25	15-3	18-0	23-6	24-9	27-75	14	18	3+16	4+13	144	♂ v	0+32	56
705	1-52	4-92	12-45	13-1	15-6	18-6	24-25	25-6	28-4	15	17	3+16	3+16	185	♀ vi	0+33	56
706	1-6	4-8	11-8	12-7	14-5	17-75	22-9	24-15	26-6	15	18	3+16	3+14	143	♀ vi-iv	1+32	56
707	1-43	4-38	11-15	11-65	13-85	16-35	21-6	22-75	25-3	14	18	3+16	3+15	136	♂ v	1+33	56
708	1-5	4-9	12-0	12-9	14-8	17-9	23-3	24-5	27-2	15	16	3+16	3+15	150	♂ v-vi	1+33	56
709	1-7	5-33	12-8	13-7	15-9	18-7	24-6	25-9	28-8	14	17	3+17	3+15	199	♂ vi	1+32*	56
710	1-52	4-8	12-4	13-2	15-55	18-65	23-95	25-15	27-85	15	18	3+16	3+13	201	♀ vi	2+32	56
711	1-43	4-35	11-6	12-3	14-4	17-35	22-55	23-7	26-45	16	17	3+16	3+14	158	♂ vi	0+33	55
712	1-4	4-4	11-1	11-95	13-8	16-7	21-4	22-55	25-05	16	18	3+16	3+14	129	♂ vi	2+31	56
713	1-5	4-8	11-75	12-6	14-65	17-4	22-85	24-1	26-8	15	17	2+17	3+15	148	♂ vi	2+32	56
714	1-6	5-0	12-2	12-9	15-2	18-1	23-45	24-8	27-4*	14	16	3+16	3+15	185	♂ vi	2+31	55
715	1-4	4-42	10-95	12-1	13-7	16-95	22-1	23-3	25-85	15	17	3+16	3+14	153	♂ vi	0+33	56
716	1-52	4-7	11-65	12-4	14-45	17-65	22-8	24-1	26-9	15	16	3+16	3+16	151	♀ vi	1+32	56
717	1-6	4-82	11-75	12-8	14-75	17-8	23-2	24-5	27-0	15	17	3+16	3+14	151	♂ iii-iv	0+33	56
718	1-45	4-8	11-7	12-35	14-5	17-2	22-65	23-85	26-45	16	17	3+16	3+14	142	♂ v-vi	1+32	56
719	1-6	4-6	11-6	12-3	14-3	17-3	22-5	23-7	26-2	15	16	3+17	3+14	129	♀ vi-iii	1+32	56
720	1-4	4-35	10-75	11-9	13-45	16-55	21-55	22-65	25-25	14	16	3+16	3+15	131	♂ v	†2+32	56
721	1-47	4-85	11-6	12-2	14-35	17-0	22-45	23-6	26-2	14	17	3+16	3+16	140	♂ vi	1+33	56
722	1-48	4-66	11-6	12-9	14-45	17-8	22-95	24-2	26-95	14	16	3+16	3+15	161	♂ vi	2+32	56
723	1-45	4-55	11-3	12-25	14-2	17-0	22-1	23-25	26-0	15	16	3+16	3+14	142	♀ vi-iv	1+32	56
724	1-57	4-7	11-5	12-45	14-05	17-1	22-3	23-55	26-3	12	17	2+16	3+15	143	♂ iii	1+31	55
725	1-67	5-05	12-45	13-5	15-35	18-8	23-9	25-2	28-1	15	17	3+16	3+14	168	♀ v	0+33	55
726	1-5	4-85	12-05	12-55	14-85	17-4	22-7	23-9	26-6	14	16	3+17	17 (8+14 probably.)	138	♂ v	1+32	56
727	1-46	4-54	11-6	12-2	14-4	17-3	22-15	23-35	25-9	15	18	3+16	4+13	144	♀ iv-v	0+33	56
728	1-47	4-8	11-8	12-9	14-7	17-8	22-8	24-0	26-8	15	18	3+16	3+14	154	♂ vi	0+34	56
729	1-5	4-68	11-45	11-9	14-2	17-4	22-4	23-65	26-25	14	16	3+15	3+13	139	♀ vi-iii	1+32	56
730	1-52	4-76	11-7	12-35	14-5	17-25	22-7	23-9	26-5	14	17	3+16	1+3+14	143	♂ v	2+32	56
731	1-5	4-95	11-85	12-65	14-8	17-4	22-8	24-05	26-8	13	18	3+17	3+14	154	♂ vi	2+31	56
732	1-78	5-42	13-4	14-1	16-35	19-7	25-55	26-95	29-6*	15	17	3+16	3+14	185	♀ vi-iv	2+32	56
733	1-73	5-4	13-05	13-85	16-4	19-2	24-85	26-15	29-15	14	17	3+17	1+3+13	179	♂ vi	1+32	55
734	1-5	4-8	12-0	12-95	15-15	18-1	23-3	24-6	27-4	15	17	2+17	3+14	179	♀ vi	1+31	55

735	1-5	4-7	11-95	12-75	15-1	18-35	23-65	24-9	27-65	16	17	4+16	3+14	182	○ vi	1+32	56
736	1-45	4-32	11-35	12-4	14-15	17-25	22-15	23-4	26-0	15	17	3+16	3+15	153	○ vi	†0+32	56
737	1-7	5-3	13-3	14-25	16-4	19-7	25-4	26-7	29-55	14	17	3+16	3+14	164	○ vii	2+31	55
738	1-7	5-3	12-95	14-1	16-4	19-35	25-3	26-8	29-9	14	17	3+16	3+14	200	○ vi	2+31	56
739	1-4	4-5	11-75	11-9	14-6	17-2	22-5	23-75	26-15	15	18	3+16	3+14	144	○ v	1+31	55
740	1-4	4-88	12-2	13-15	15-35	18-15	23-65	24-95	27-3*	14	16	3+17	3+14	182	○ v-vi	0+33	56*
741	1-48	4-65	12-0	12-6	14-7	17-6	22-9	24-15	26-85	14	17	3+16	3+14	143	○ v	2+31	56
742	1-5	4-6	11-55	12-1	14-45	17-1	22-4	23-6	26-05	15	16	3+16	3+14	158	○ vi	1+33	57
743	1-4	4-4	11-25	12-05	14-05	16-9	21-9	23-1	25-65	15	17	3+16	4+12	143	○ vi	0+32	56
744	1-5	4-95	11-85	12-7	14-6	17-7	23-25	24-45	27-15	12	16	3+15	3+14	138	○ i-ii	0+32	55
745	1-5	4-56	11-3	12-25	14-05	17-4	22-2	23-5	25-85	15	17	3+16	3+14	150	○ v	2+33	57
746	1-5	4-67	11-35	12-1	14-1	17-05	22-0	23-3	25-9	15	16	3+16	3+14	138	○ iii	2+31	54*
747	1-58	4-6	11-4	12-4	13-9	17-25	22-25	23-4	25-9	14	17	3+16	3+14	155	○ vi	1+32	55
748	1-34	4-35	11-25	12-0	13-75	16-5	21-4	22-4	25-0	14	16	3+15	3+13	129	○ vi	1+31	56
749	1-45	4-73	12-1	12-85	15-15	18-0	23-25	24-55	27-1	15	16	3+16	3+14	155	○ v	0+32	55
750	1-4	4-57	11-4	12-0	14-3	17-0	22-35	23-55	26-25	15	17	3+16	3+14	168	○ v	1+33	56
751	1-58	4-9	11-65	12-9	14-7	17-9	23-0	24-3	27-05	15	18	3+17	3+14	125	○ vii	0+33	56
752	1-74	5-1	12-15	13-1	15-05	18-4	24-1	25-4	28-2	14	17	3+16	3+15	160	○ vi-iv	1+33	56
753	1-74	4-95	12-4	13-15	15-4	18-45	23-95	25-2	28-05	15	16	3+16	3+15	192	○ vi	1+32	56
754	1-74	5-3	12-6	13-4	15-35	18-25	23-65	24-95	27-85	13	18	3+15	3+14	164	○ vi	2+32	56
755	1-55	4-67	11-8	12-5	14-85	17-3	22-95	24-1	26-7	15	17	3+17	3+15	153	○ iv-v	2+32	56
756	1-45	4-4	11-25	12-25	14-05	16-75	21-85	22-95	25-7	15	17	3+16	3+13	158	○ vi	†1+31	55
757	1-5	4-64	11-5	12-4	14-35	17-05	22-2	23-35	26-0	14	18	3+16	1+2+16	165	○ v	2+32	56
758	1-56	4-87	11-6	12-55	14-4	17-7	22-8	23-95	26-55	14	18	3+17	3+15	148	○ vi	1+33	56
759	1-5	4-75	11-85	12-7	14-6	17-45	22-85	24-15	26-45	15	17	3+16	3+15	145	○ vi	2+32	56
760	1-55	4-88	12-25	12-65	15-0	18-6	23-4	24-7	27-2	15	18	3+16	17 rays broken.	175	○ v	0+33	56
761	1-38	4-2	10-6	11-4	13-15	16-15	20-7	21-9	24-6	14	16	3+16	3+13	122	○ vi	2+30	55
762	1-55	5-0	12-3	13-2	15-3	18-6	23-9	25-15	28-05	14	17	3+16	3+14	162	○ v	1+31	55
763	1-45	4-5	11-35	12-4	14-1	17-3	22-4	23-55	26-4	15	17	3+17	3+13	151	○ vi	1+32	55
764	1-43	4-5	11-7	12-3	14-4	17-45	22-7	23-95	26-6	15	16	3+16	3+14	154	○ v	†0+33	56
765	1-7	5-1	12-65	13-5	15-85	18-65	24-1	25-45	28-3	16	17	3+17	3+14	179	○ vi	1+33	56
766	1-64	4-9	12-5	13-0	15-35	18-55	23-7	25-05	27-9	16	17	3+16	3+14	167	○ vi	1+33	56
767	1-7	5-1	12-3	13-9	15-5	18-8	24-3	25-6	28-3	15	17	3+17	1+14	181	○ vi	2+32	55*
768	1-55	4-6	11-75	13-0	14-6	17-7	23-0	24-3	26-85	14	17	3+15	4+14	151	○ vi	1+0+33	56
769	1-55	4-8	11-75	12-65	14-8	18-1	23-4	24-7	27-25	14	16	3+17	3+14	162	○ vi	0+33	55
770	1-42	4-57	11-4	12-1	14-2	17-25	22-05	23-25	25-85	16	17	3+16	3+14	151	○ v	†0+32	56
771	1-6	4-64	11-75	12-5	14-45	17-5	22-9	24-2	26-95	14	16	3+16	3+15	159	○ vi	1+33	56
772	1-6	4-83	11-95	12-2	14-8	17-8	22-8	24-0	26-8	16	16	3+17	4+13	162	○ vi	0+32	55
773	1-62	4-72	11-7	12-85	14-65	17-85	23-05	24-25	26-7	15	16	3+16	3+13	160	○ iv-v	0+33	56
774	1-57	4-66	11-6	12-25	14-2	17-25	22-5	23-8	26-3	14	17	3+16	3+14	136	○ v	†1+31	55
775	1-56	4-78	11-4	12-7	14-1	17-3	22-55	23-75	26-3	14	16	3+16	3+13	120	○ vi-iii	1+33	56
776	1-52	4-6	11-8	12-3	14-6	17-55	22-7	23-95	26-4	16	17	3+17	3+15	141	○ iv	2+32	56

No. of fish.	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18
777	1:52	4:88	11:5	12:4	14:4	17:45	22:6	23:75	26:3	15	17	3+15	4+13	125	♂ iv	2+32	56
778	1:5	4:56	10:95	11:6	13:45	16:3	21:2	22:4	24:9	15	17	3+17	3+15	119	♂ iv-v	0+32	56
779	1:3	4:08	9:85	10:35	12:35	14:5	19:25	20:35	22:65	15	18	3+17	3+15	80	♂ vi-iii	1+32	56
780	1:65	4:9	11:9	12:6	14:8	17:85	22:95	24:3	27:05	15	17	4+16	4+14	154	♂ vi	†0+34	57
781	1:48	4:53	11:25	12:05	13:9	16:95	22:15	23:3	26:0	15	17	3+16	3+16	131	♂ vi	1+33	56
782	1:52	5:0	12:1	13:1	14:9	17:9	23:2	24:55	27:35	14	17	2+17	3+15	141	♂ vii	†0+31*	54
783	1:45	4:45	10:7	11:4	13:3	16:15	21:3	22:5	24:05	15	17	3+15	3+14	124	♂ vi-v	1+32	55
784	1:5	4:6	11:45	12:2	14:4	17:2	22:4	23:6	26:2	15	17	3+16	3+15	146	♂ vi	†0×[*1+1+31]	55
785	1:4	4:32	10:8	11:6	13:6	16:1	21:25	22:45	25:1	16	17	3+16	3+15	125	♂ vi-iv	1+31	55
786	1:72	5:1	12:8	13:9	15:9	19:1	24:6	25:95	28:8	15	17	3+17	4+15	184	♂ vi	2+31	56
787	1:65	4:9	12:15	13:0	15:0	18:1	23:25	24:4	27:0	15	17	3+16	3+15	157	♂ vi	2+32	56
788	1:5	4:5	11:25	12:4	14:15	16:9	22:15	23:35	25:85	13	17	3+17	4+15	138	♂ v	0+33	56
789	1:5	4:6	11:3	12:25	14:0	16:8	21:9	23:05	25:65	15	17	3+16	3+15	136	♂ vi	0+32	55
790	1:57	5:1	12:5	13:2	15:55	18:55	24:05	25:35	28:25	4+0+9	16	3+16	3+14	165	♂ vi	2+31	56
791	1:5	4:45	11:0	11:85	13:95	16:8	21:7	22:9	25:5	14	17	4+17	3+14	136	♂ vi	2+31	55
792	1:34	4:16	10:55	11:5	13:2	15:95	20:8	21:9	24:5	15	17	3+17	3+15	113	♂ vi	1+32	56
793	1:5	4:74	11:65	12:8	14:35	17:5	22:8	24:1	26:9	13	16	3+15	3+13	161	♂ v	1+32	55
794	1:44	4:45	11:1	12:3	14:2	16:95	22:05	23:2	25:75	15	17	3+16	3+16	139	♂ vi	†2+31	56
795	1:47	4:72	11:8	13:15	14:7	18:3	23:25	24:45	27:35	16	17	3+17	3+14	153	♂ vi	1+32	56
796	1:6	5:07	12:0	13:2	15:25	18:15	23:5	24:8	27:6	14	17	3+17	3+15	153	♂ i-ii	1+31	55
797	1:42	4:44	11:4	11:9	14:05	17:05	22:3	23:4	26:1	15	17	3+16	3+16	138	♂ vi	†1+32	56
798	1:46	4:77	12:1	12:9	14:8	17:95	23:05	24:3	26:9	15	17	3+16	3+13	152	♂ vi	1+32	55
799	1:6	5:0	12:35	13:8	15:4	18:7	24:2	25:6	28:4	14	18	3+17	3+15	146	♂ vii	†0+32	56
800	1:46	4:7	11:1	12:3	14:05	16:8	21:85	23:0	25:85	15	17	3+17	3+14	133	♂ vi	1+32	56
801	1:56	4:75	11:4	12:4	14:0	16:95	22:1	23:25	25:85	14	16	3+16	4+14	127	♂ vi	0+32	55
802	1:55	4:6	11:6	12:35	14:55	17:7	22:6	23:8	26:5	15	16	3+16	3+14	147	♂ vi	1+31	54
803	1:5	4:65	11:95	12:8	14:8	17:65	22:85	24:15	26:55	15	16	3+16	3+13	161	♂ vi	†0+33*	56
804	1:5	4:52	10:9	11:75	13:7	16:05	21:55	22:7	25:35	14	17	3+16	3+15	122	♂ vi	0+32	56
805	1:34	4:36	10:7	11:7	13:3	16:1	21:1	22:25	24:7	14	17	3+17	3+15	116	♂ vi	2+32	56
806	1:6	4:8	12:2	13:2	15:2	18:1	23:5	24:75	27:7	15	17	3+16	3+15	155	♂ iv-v	0+32	55
807	1:5	4:58	11:5	12:35	14:65	17:2	22:35	23:5	26:2	15	15	3+17	3+14	126	♂ vi-iii	1+32	56
808	1:5	4:7	11:65	12:2	14:35	17:0	22:6	23:8	26:45	15	16	4+15	4+14	138	♂ vi	0+32	55
809	1:53	4:55	11:35	12:35	14:0	17:1	22:0	23:35	25:75	14	16	3+16	1+3+14	133	♂ vi	1+32	57
810	1:5	4:8	11:3	11:6	14:1	16:7	22:0	23:2	25:85	16	17	4+16	3+14	101	♂ vii	2+32	56
811	1:55	4:82	11:3	12:1	14:25	16:8	22:2	23:55	26:25	14	17	3+17	1+3+15	133	♂ vi	2+32	55
812	1:52	4:8	11:8	12:5	14:75	17:35	22:8	23:95	26:55	15	17	3+16	3+15	164	♂ v-vi	0+33	55
813	1:4	4:54	11:1	12:15	13:85	16:75	22:05	23:3	26:0	15	17	3+17	3+15	135	♂ vi	†0+33	56
814	1:7	4:93	11:8	12:65	14:55	17:6	22:85	24:05	26:7	15	16	3+17	3+13	151	♂ vi	†0+32	56
815	1:52	4:84	12:2	13:1	14:9	18:4	23:4	24:65	27:4	11+0+4	17	3+16	1+3+14	176	♂ v	1+32	56

816	1.38	4.2	9.8	10.7	12.2	14.85	19.24	20.3	22.5	15	17	3+17	1+3+15	72	♂ vii	†0+33	56
817	1.36	4.47	11.35	12.05	14.2	16.6	21.85	23.13	25.75	15	17	2+17	3+15	126	♂ vi-iv	0+33	56
818	1.6	4.9	12.3	12.65	15.3	18.0	23.7	24.9	27.15*	13	Rt. broken, l. 17.	3+16	3+14	127	♀ i-ii	1+33	57
819	1.32	4.3	10.7	11.4	13.3	15.9	20.85	22.0	24.45	15	16	3+16	3+15	113	♂ vi	1+32	55
820	1.58	5.1	11.85	13.2	15.1	17.95	23.2	24.45	27.25	16	16	3+17	3+13	126	♂ vii	3+30	56
821	1.5	4.38	10.65	11.55	13.15	16.0	20.75	21.9	24.45	15	17	2+17	3+14	105	♂ vii	†0+33	56
822	1.5	4.7	11.6	12.5	14.4	17.1	22.15	23.45	26.2	15	17	3+17	3+14	118	♂ vi-iv	2+31	56
823	1.6	4.95	11.95	12.3	14.9	17.25	22.9	24.05	26.9	15	17	3+16	3+15	139	♂ vi	1+32	55
824	1.47	4.4	10.75	11.7	13.55	15.85	21.0	22.15	24.7	14	17	3+16	1+2+16	114	♂ vi	†1+31	55
825	1.4	4.47	10.95	11.4	13.9	16.4	21.2	22.35	24.75	16	16	4+17	3+15	116	♂ vii	1+32	56
826	1.34	4.24	10.45	11.45	13.4	16.1	21.2	22.35	24.95	15	17	3+17	3+14	122	♂ vi	2+31	56
827	1.5	4.65	11.4	12.2	14.25	16.95	22.1	23.45	26.05	15	17	4+16	3+15	127	♂ vi	1+32	56
828	1.6	4.65	11.85	12.7	14.65	17.7	23.0	24.3	26.95	15	17	3+16	3+14	152	v-vi	0+33	56
829	1.6	4.85	12.5	13.45	15.40	18.7	24.1	25.4	28.2	15	17	3+17	3+14	167	♂ vi	0+33	56
830	1.45	4.7	11.6	12.6	14.55	17.4	22.1	23.5	26.2	15	16	3+16	1+3+14	152	♂ vi	2+31	55
831	1.4	4.42	11.7	12.4	14.65	17.5	22.8	24.0	26.5	15	17	2+16	3+13	153	v	†0+32	55
832	1.36	4.34	11.1	12.05	13.9	16.3	21.6	22.8	25.35	13	16	3+17	1+3+15	139	♂ vi	†0+32	56
833	1.5	4.75	11.75	12.85	14.64	17.9	23.1	24.3	27.0	16	17	3+17	3+14	149	♂ vi	2+30	55
834	1.37	4.3	10.55	11.15	13.05	15.8	20.55	21.8	24.3	15	18	4+15	1+3+14	122	♂ vi	1+32	55
835	1.4	4.38	11.1	11.7	13.9	16.65	21.9	23.1	25.7	15	17	3+16	1+3+14*	138	♂ vi	3+31	56
836	1.3	4.1	10.1	11.1	12.75	15.4	20.2	21.4	24.0	13	17	3+17	3+15	121	♂ vi	1+31	55
837	1.45	4.3	10.8	11.5	13.55	16.15	21.0	22.3	24.9	15	17	3+17	3+16	123	♂ vi	1+32	55
838	1.37	4.53	11.05	11.75	13.75	16.5	21.5	22.75	25.3	13	16	2+17	3+15	110	♂ vii	1+32	55
839	1.43	4.8	11.65	12.55	14.75	17.55	22.9	24.2	26.9	16	17	3+16	3+14	130	♂ vi	3+31	55
840	1.7	5.0	12.25	13.55	15.6	18.75	24.0	25.25	28.0*	14	16	3+17	3+14	191	♂ vi	2+31	55
841	1.7	5.12	12.3	12.9	15.15	18.4	23.85	25.1	27.85	15	16	3+16	1+3+15	188	v	†0+33	58*
842	1.4	4.52	11.0	11.73	13.75	16.6	21.65	22.7	25.05	15	16	3+17	3+15	111	♂ i-ii	0+32	55
843	1.6	4.74	11.85	12.8	14.95	18.0	23.25	24.5	27.05	15	18	3+16	1+2+15	153	♂ vii	0+34*	56
844	1.56	5.03	12.85	13.85	16.0	19.0	24.55	25.8	28.65	15	16	3+17	2+14	178	♂ vi	1+32	56
845	1.45	4.44	11.0	12.05	13.9	16.7	21.65	22.85	25.3	15	17	3+16	3+14	111	♂ vi-iv	0+32	56
846	1.5	4.5	10.75	11.55	13.55	16.0	20.9	22.1	24.55	14	17	3+17	3+15	122	♂ vi	1+32	56
847	1.56	4.85	12.3	12.9	14.95	18.5	23.6	24.95	27.35	16	17	3+16	3+14	168	♂ vi	1+33	56
848	1.5	4.65	11.65	12.5	14.3	17.5	22.8	24.0	26.65	15	17	3+15	3+14	144	♂ vi	0+33	56
849	1.58	5.08	12.55	13.0	15.5	18.4	24.0	25.3	28.45	15	17	4+16	1+2+14	162	♂ vi-iv	0+32	55
850	1.4	4.4	11.05	11.65	13.9	16.7	21.8	23.1	25.75	15	16	3+17	3+14	133	♂ v	1+32	56
851	1.6	4.9	11.75	12.4	14.85	17.5	22.8	24.2	26.75	15	16	3+17	3+14	170	♂ v	†0+33	56
852	1.68	4.92	12.55	13.45	15.85	19.05	24.45	25.75	28.55	14	17	3+17	1+3+15	204	♂ vi	0+33	56
853	1.6	4.8	11.55	12.95	14.55	17.85	23.1	24.35	27.2	14	17	3+17	1+2+16	172	v-vi	1+33	57
854	1.52	4.46	11.15	12.25	14.0	17.15	22.25	23.5	25.95	14	17	3+16	3+15	159	♂ vi	4+30	56
855	1.5	4.67	11.7	12.55	14.6	17.65	22.65	23.9	26.35	15	16	3+17	3+14	164	♂ vi	0+32	55
856	1.4	4.58	11.5	12.4	14.2	17.4	22.4	23.6	25.75*	14	16	3+16	3+13	128	♂ iv-v	3+31	56

No. of fish.	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18
857	1.47	4.95	12.4	13.45	15.15	18.45	24.15	25.4	28.15	Fused. 4+(1+1)+8 =13 or 14.	16	3+16	3+14	141	♀ i-ii	2+31	56
858	1.68	5.03	12.05	12.55	14.95	17.4	23.05	24.3	27.15	15	17	3+16	3+14	171	♂ vi	0+34	56
859	1.63	5.07	13.05	14.2	16.1	19.75	25.3	26.6	29.55	15	17	3+16	3+14	186	♂ vi-iv	2+31	56
860	1.62	4.9	11.9	12.95	14.75	17.9	23.3	24.65	27.5	15	17	3+16	3+15	150	♂ vi	1+32	56
861	1.52	4.62	11.7	12.75	14.5	17.9	23.1	24.3	26.9	15	16	3+16	1+3+14	150	♂ iv-v	1+33	56
862	1.58	5.0	12.55	13.2	15.25	18.4	23.9	25.3	28.05	16	17	4+16	3+14	163	♂ vi	2+31	56
863	1.54	4.78	11.9	12.65	14.8	17.85	23.05	24.35	27.0	14	17	3+17	1+3+12	138	♂ vi-iii	2+31	55
864	1.55	4.43	10.95	11.8	13.4	16.4	21.2	22.4	24.8	14	16	3+15	3+14	124	♂ v	1+31	55
865	1.47	4.5	11.35	12.45	14.3	17.5	22.45	23.7	26.25	15	17	3+16	3+15	156	♂ v	1+32	56
866	1.44	4.5	11.2	11.85	14.1	16.75	21.85	23.05	25.5	15	17	4+16	3+14	123	♂ vi	1+32	56
867	1.63	4.85	11.3	11.95	14.1	16.9	22.05	23.2	25.8	14	17	3+16	3+15	124	♂ vii	0+33	56
868	1.63	5.07	12.1	13.35	15.0	18.35	23.95	25.35	28.15	15	17	3+15	3+14	142	♀ i-ii	1+32	56
869	1.5	4.66	12.15	12.75	15.1	17.95	22.9	24.3	26.85	14	16	3+16	1+3+14	162	♂ v	0+32	55
870	1.55	4.62	12.0	12.95	14.75	17.75	23.2	24.4	27.08	15	17	3+16	1+3+14	164	♂ v	0+32	56
871	1.74	4.9	11.8	12.7	14.85	18.0	23.35	24.7	27.5	15	16	3+16	2+16	154	♂ vi	0+32	56
872	1.42	4.52	11.4	12.2	14.25	17.15	22.25	23.5	26.1	15	17	3+16	3+14	126	♂ vi-iv	1+33	56
873	1.37	4.36	11.35	11.9	14.3	16.95	22.2	23.45	26.05	15	16	3+17	3+16	168	♂ vi	1+33	57
874	1.6	4.8	11.8	12.2	14.55	17.4	22.4	23.75	26.25	14	16	3+17	3+13	134	♂ v	1+33	56
875	1.5	4.85	12.1	12.95	14.95	17.85	23.15	24.4	27.1	14	16	3+16	3+14	149	♂ vi-iii	1+32	56
876	1.6	4.86	12.1	12.7	15.1	17.95	23.25	24.5	27.1	15	17	2+17	3+14	175	♂ vi	1+31	56
877	1.5	4.4	11.1	12.1	13.95	16.9	22.0	23.3	26.0	16	16	3+16	4+14	150	♂ v-vi	1+32	55
878	1.35	4.2	10.4	11.25	13.0	15.6	20.4	21.5	24.0	14	18	3+17	3+14	118	♂ vi	1+31	54
879	1.52	4.7	11.55	12.15	14.4	17.1	22.3	23.5	26.2	15	17	3+16	3+15	136	♂ vi	2+32	56
880	1.5	4.34	10.85	12.2	13.5	16.4	21.25	22.4	24.85	14	17	3+16	3+15	128	♂ vi	1+32	56
881	1.65	5.2	12.7	13.35	15.6	18.85	24.3	25.55	28.5	15	17	2+17	3+14	182	♂ vi	0+33	56
882	1.4	4.46	11.2	12.0	14.0	16.75	21.95	23.15	25.7	14	17	3+16	3+15	127	♂ v-vi	0+33	56
883	1.55	5.0	12.1	13.2	15.05	18.35	23.75	25.1	27.7	15	18	3+16	3+14	164	♂ vi	1+33	57
884	1.6	4.7	12.1	12.7	15.0	17.7	23.05	24.35	27.0	15	17	3+16	2+14	142	♂ vi	1+32	56
885	1.57	4.7	11.85	12.65	14.55	17.9	23.0	24.25	27.1	1+14	16	3+16	3+12	155	♂ vi	3+31	55
886	1.5	4.64	11.25	12.0	14.15	16.95	22.1	23.2	25.75	14	16	3+15	4+13	127	♀ i-ii	0+32	55
887	1.45	4.4	10.7	11.5	13.5	16.05	20.9	22.0	24.6	14	17	3+17	3+14	119	♂ v	2+31	55
888	1.5	4.76	11.9	12.8	14.7	17.8	22.85	24.1	26.8	15	18	3+16	3+14	135	♂ vi-iii	1+32	56
889	1.57	4.8	11.7	12.7	14.25	17.7	22.85	24.0	26.55	16	17	3+15	2+15	137	♂ vi-iii	0+33	56
890	1.58	4.84	11.85	13.2	14.6	18.0	23.25	24.45	27.1	13	17	3+15	3+14	155	♂ iv-v	1+32	56
891	1.6	4.9	12.0	12.8	15.05	18.2	23.45	24.75	27.4	16	18	3+17	3+14	164	♂ v	1+34	57
892	1.64	4.73	11.6	12.8	14.55	17.6	22.9	24.1	26.9	15	16	3+17	3+16	151	♂ vi-iv	0+33	56
893	1.7	5.4	13.1	14.05	16.3	19.45	25.35	26.75	29.85	15	18	3+16	3+15	173	♂ vii-ii	2+31	55
894	1.52	4.6	11.8	12.65	14.55	17.5	23.1	24.35	26.95	15	16	3+16	3+14	157	♂ iv-v	2+32	56

895	1.54	4.58	11.15	12.05	13.7	16.9	21.85	23.05	25.75	14	18	2+16	3+14	125	♂ vi-iv	1+33	56
896	1.4	4.7	12.1	13.1	15.15	18.15	23.5	24.8	27.6	14	17	3+16	3+13	165	♂ vi	1+32	56
897	1.5	4.52	11.25	12.2	13.95	17.35	22.45	23.65	26.25	17	17	3+15	3+14	149	♂ v	1+32*	57
898	1.35	4.42	10.8	11.8	13.4	16.4	21.0	22.25	24.75	15	17	3+15	3+14	131	♂ vi-iii	1+31	55
899	1.55	4.54	11.0	12.3	13.75	17.15	22.2	23.4	25.95	14	16	3+15	3+14	136	♂ iii-iv	2+31*	55
900	1.82	5.35	12.95	14.0	16.05	19.4	24.95	26.3	29.3	15	17	3+16	4+13	190	♂ vi-iii	1+32	56
901	1.5	4.5	11.2	12.1	13.9	17.0	22.0	23.2	25.8	14	17	3+15	3+12	135	♀ vi	1+32	56
902	1.5	4.5	11.1	12.0	13.9	16.85	21.55	22.7	25.2	15	18	3+17	3+14	153	♂ v	†0+32	55
903	1.47	4.66	11.15	12.4	13.85	16.85	22.2	23.4	26.05	14	17	3+15	3+13	128	♂ vi-iv	0+33	56
904	1.42	4.42	11.15	11.75	13.55	16.65	22.05	23.2	25.65	15	17	3+16	3+15	129	♂ vi	1+33	57
905	1.33	4.3	11.0	11.85	13.5	16.35	21.5	22.65	25.15	15	17	3+16	3+14	125	♂ iv-v	†0+32	55
906	1.5	4.67	12.0	13.05	15.0	17.07	22.95	24.2	26.9	15	16	3+16	4+14	159	♂ v	1+32	56
907	1.3	4.25	10.7	11.3	13.5	15.8	20.8	21.9	24.3	14	16	3+16	3+14	114	♂ vi	1+32	55
908	1.62	4.76	11.8	12.75	14.55	17.5	22.55	23.9	26.55	14	16	3+16	3+15	150	♂ vi	†1+32	56
909	1.54	4.6	12.2	12.6	15.1	17.85	23.0	24.3	27.45	15	17	3+16	3+15	154	♂ vi-iv	0+33	56
910	1.56	4.8	11.65	12.55	14.6	17.5	22.65	23.9	26.65	15	17	3+16	3+14	133	♂ v	0+32	55
911	1.55	4.6	12.0	13.15	15.35	18.2	23.45	25.04	27.3	15	17	3+17	4+13	184	♂ vi	0+32*	55
912	1.52	4.8	11.65	12.7	14.4	18.1	22.9	24.15	26.9	15	17	3+16	4+14	135	♂ vi-iv	0+32	55
913	1.56	4.6	11.95	12.9	14.8	17.75	23.1	24.4	27.0	16	17	3+16	4+14	171	♂ vi	1+32	56
914	1.43	4.27	10.4	11.65	13.1	16.15	20.75	21.9	24.45	15	16	3+17	3+14	115	♂ vi-iv	2+32	56
915	1.55	4.75	12.1	13.41	15.1	18.2	23.6	24.8	27.55	14	16	3+16	4+15	177	♂ v	1+32	55
916	1.52	4.77	11.5	12.4	14.4	17.25	22.5	23.75	26.35	14	17	3+17	4+15	131	♂ vi-iii	1+33	56
917	1.36	4.46	11.4	12.35	14.15	16.9	22.05	23.2	25.8	15	17	3+16	3+15	120	♂ vi	†2+31	56
918	1.5	4.6	11.45	12.45	14.25	17.4	22.5	23.75	26.25	15	16	3+16	4+14	142	♂ v	0+33	56
919	1.65	5.1	12.7	13.6	15.9	19.1	24.85	26.25	28.9	15	16	3+17	3+15	180	♂ vi	1+33	56
920	1.48	4.56	10.95	11.55	13.65	16.5	21.45	22.6	25.05	15	16	3+16	3+15	129	♂ vi	†1+32	55
921	1.46	4.26	10.15	11.25	12.7	15.75	20.0	21.15	23.45	16	18	3+16	3+14	95	♂ vi-iii	1+31*	55
922	1.45	4.7	11.45	12.4	14.45	17.5	22.55	23.8	26.45	15	18	3+17	3+14	151	♂ vi	0+33	56
923	1.58	4.65	11.75	12.3	14.6	17.9	22.95	24.3	27.0	16	17	3+15	2+13	163	♂ v-vi	2+32	56
924	1.6	5.07	12.2	13.0	15.2	18.2	23.6	24.9	27.8	16	16	2+16	4+14	182	♂ vi	1+33	56
925	1.58	4.72	11.65	12.5	14.55	17.6	22.6	23.8	26.2	14	16	3+16	3+15	145	♂ vi	0+33	56
926	1.46	4.5	11.5	12.2	14.15	16.9	22.05	23.25	25.9	14	17	3+16	3+15	128	♂ vi-iv	0+33	56
927	1.5	4.52	11.3	12.2	13.9	16.8	21.55	22.8	25.25	14	18	4+15	4+13	118	♂ vii	†1+32	55
928	1.52	4.9	12.7	13.5	15.75	18.7	24.1	25.45	28.15	15	17	3+16	2+15	195	♀ v	1+32	56
929	1.6	5.0	12.0	13.0	15.25	18.2	23.5	24.75	27.55	3+0+11	17	3+16	3+16	168	♂ v	1+32	56
930	1.6	4.8	11.4	12.4	14.2	17.5	22.6	23.8	26.5	15	18	3+16	3+14	147	♂ vi	3+30	55
931	1.72	5.1	12.45	13.4	15.45	18.7	24.1	25.35	28.0	15	16	3+16	3+14	153	♂ iii-iv	2+31	56
932	1.5	4.55	11.25	12.0	13.9	16.6	21.5	22.65	25.1	16	17	3+16	3+14	125	♂ vi	†0+32	55
933	1.4	4.26	10.45	11.15	13.0	15.6	20.2	21.35	23.37	15	16	4+16	3+14	101	♂ vi-iii	†0+32	55
934	1.48	4.48	11.3	12.4	14.2	17.2	22.6	23.83	26.35	15	17	3+17	3+15	137	♂ vi-iv	0+34	57
935	1.55	4.58	11.15	11.95	14.05	16.75	21.9	23.1	25.8	15	17	3+17	3+14	128	♂ vi-iv	1+32	56

3+12+several
broken away.

No. of Fish.	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18
936	1-42	4-3	10-7	11-1	13-3	16-0	20-4	21-65	23-8	14	16	3+15	3+15	122	♂ vi	1+32	55
937	1-5	4-7	12-0	12-4	15-05	17-8	23-15	24-3	26-93	16	17	3+16	18 fin broken.	161	♂ iv-v	2+30	55
938	1-78	5-34	13-3	14-35	16-6	19-4	25-4	26-8	29-8	14	17	3+16	3+15	190	♂ vi	3+32	56
939	1-46	4-7	12-4	13-3	15-05	18-6	24-0	25-3	27-8	14	16	3+15	1+3+13	152	♂ vi-iii	2+31	56
940	1-48	4-75	11-8	12-8	14-65	17-7	22-9	24-25	26-85	14	18	3+17	3+14	146	♂ vi	0+32	55
941	1-55	4-72	11-2	12-0	14-0	17-0	22-2	23-55	26-1	16	17	3+16	3+14	137	♂ vii	1+34	57
942	1-6	4-94	12-0	12-9	15-0	18-3	23-4	24-65	27-4	15	17	3+16	3+13	172	♂ v-vi	1+32	55
943	1-53	4-85	11-65	12-85	14-9	17-7	23-25	24-55	27-15	14	17	3+17	3+14	138	♂ vii	0+32	54*
944	1-5	4-86	12-05	12-55	15-05	17-6	22-75	23-9	26-5	15	17	3+16	3+16	137	♂ vi-iii	2+32	57
945	1-5	4-86	12-5	13-4	15-6	18-8	24-35	25-65	28-4	14	16	3+17	3+16	199	♂ vi	0+32	56
946	1-68	5-18	12-55	13-3	15-65	18-9	23-9	25-25	28-05	15	17	3+17	3+14	176	♂ v	2+33	56
947	1-52	4-5	11-2	12-0	14-05	16-8	22-1	23-3	25-85	15	17	3+16	4+15	138	♂ v	†1+31	55
948	1-5	4-6	11-4	12-85	14-25	17-6	22-7	23-95	26-25*	15	16	3+15	3+14	155	♂ vi	1+32	56
949	1-46	4-6	11-7	12-1	14-4	17-3	22-73	23-9	26-45	15	16	3+16	4+14	138	♂ vi-iv	Missing 1+0+31	55
950	1-55	5-0	12-7	13-3	15-55	18-2	24-1	25-35	28-1	13	17	3+16	4+15	168	♂ vi-iv	1+32	55
951	1-48	4-5	11-1	12-2	13-9	16-65	21-85	23-05	25-7	13	17	3+16	3+15	132	♂ vi-iv	2+31	55
952	1-47	4-82	11-7	12-5	14-8	17-85	23-05	24-2	26-85	18	16	3+17	3+15	171	♂ vi	0+34	57
953	1-65	4-86	12-0	12-85	14-9	17-55	22-8	24-05	26-8	14	17	3+16	3+14	135	♂ vi	2+31	56
954	1-55	4-62	11-2	12-45	14-0	17-3	22-15	23-3	25-95	15	17	3+17	3+14	149	♂ vi	1+31	56
955	1-38	4-48	11-2	11-75	13-7	16-95	21-8	23-05	25-7	14	17	2+16	3+15	153	♂ v	1+33	56
956	1-67	5-0	12-25	13-3	15-2	18-4	23-95	25-15	27-75	14	17	3+16	3+15	171	♂ vi	0+32	56
957	1-5	4-65	11-5	12-8	14-5	17-6	22-7	23-9	26-65	14	17	2+17	3+14	171	♂ vi	0+32	56
958	1-56	4-78	11-7	12-6	14-65	17-5	22-8	23-95	26-6	15	16	2+17	3+14	175	♂ v	0+33	56
959	1-52	4-75	11-95	12-7	15-0	17-85	23-25	24-5	27-05	14	18	3+16	2+14	168	♂ vi	0+34	56
960	1-38	4-3	11-2	11-45	13-95	16-5	21-6	22-75	25-4	14	15	3+17	3+14	127	♂ vi	1+32	55
961	1-52	4-45	10-7	11-65	13-55	16-38	21-25	22-35	25-05	15	17	3+17	3+14	132	♂ vi	2+31	56
962	1-44	4-57	10-95	11-0	13-65	15-8	20-65	21-85	24-45	15	18	3+17	4+14	116	♂ vi-iv	1+31	55*
963	1-33	4-57	11-6	12-0	14-25	16-6	22-1	23-3	25-9	14	17	3+16	3+16	128	♂ vii	1+32	55
964	1-62	4-88	12-15	12-85	15-0	17-9	23-1	24-3	27-1	16	16	3+17	4+15	155	♂ iv-v	0+32	55
965	1-3	4-28	10-25	11-05	12-9	15-45	20-05	21-15	23-65	14	17	2+17	3+15	118	♂ vi	2+31	55
966	1-42	4-4	10-9	11-85	13-9	16-1	21-2	22-35	24-85	14	16	2+17	3+15	107	♂ vi-iii	†0+33	57
967	1-5	4-86	12-2	12-95	15-05	18-35	23-7	24-95	27-8	14	17	3+15	4+13	146	♂ vi	0+32	56
968	1-3	4-22	10-5	11-2	12-9	15-35	20-05	21-1	23-5	14	16	3+16	3+15	106	♂ vi	†0+33	56
969	1-4	4-46	10-9	11-35	13-65	16-6	21-4	22-55	25-05	16	16	3+17	3+15	133	♂ vi	1+32	56
970	1-56	5-04	12-4	13-15	15-4	18-3	23-5	24-8	27-6	16	17	3+15	3+13	158	♂ vi	1+33	56
971	1-54	4-68	11-45	12-35	14-1	17-4	22-55	23-75	26-2	15	17	2+17	3+14	145	♂ vi	0+33	55
972	1-45	4-57	11-6	12-6	14-45	17-6	22-9	24-1	26-7	15	17	3+16	3+16	147	♂ vi	1+32	55
973	1-58	4-7	11-25	12-3	14-1	17-15	22-35	23-6	26-25	15	17	3+17	3+16	131	♂ vi	0+33	56

974	1.5	4.68	11.6	12.55	14.4	17.25	22.6	23.9	26.5	14	17	3+16	3+14	136	♂ vi	1+32	56
975	1.35	4.35	11.0	11.5	13.65	16.6	21.5	22.65	25.15	15	16	3+16	3+14	127	♀ v-vi	0+31	55*
976	1.5	4.6	11.55	12.05	14.65	17.2	22.5	24.0	26.7	14	16	3+17	3+16	136	♂ vii	1+32	56
977	1.48	4.63	11.0	11.65	13.75	16.3	21.1	22.28	24.7	15	16	3+17	3+13	106	♂ vi-iii	1+32	56
978	1.4	4.4	11.05	11.65	13.8	16.25	21.4	22.5	25.1	14	17	3+16	3+15	126	♂ vi	2+31	56
979	1.52	4.7	11.4	12.4	14.05	17.1	22.35	23.5	26.05	14	17	3+15	3+13	137	♂ v	2+31	56
980	1.52	4.66	11.75	12.65	14.8	17.5	22.8	23.95	26.7	15	16	2+17	3+13	157	♂ vi	0+33	56*
981	1.43	4.5	11.0	11.85	13.7	16.65	21.45	22.6	25.35	15	16	3+16	3+13	143	♂ vi	0+32	55
982	1.57	4.77	11.35	11.55	14.2	16.45	21.95	23.2	25.8	15	17	2+17	3+14	126	♂ vii	1+33	57
983	1.3	4.26	10.55	11.2	13.1	15.6	20.45	21.55	24.0	15	18	3+15	3+15	103	♂ vi-iv	2+33	57
984	1.66	5.15	12.55	13.7	15.45	18.85	24.05	25.4	28.3	14	16	3+15	3+13	152	♂ i-ii	2+30	55
985	1.42	4.72	12.0	13.2	15.2	18.65	24.05	25.3	28.35	16	16	4+16	3+14	185	♀ v-vi	1+32	56
986	1.53	4.4	11.4	12.0	14.0	17.0	22.1	23.25	25.9	15	17	3+16	3+14	132	♂ vi	1+32	56
987	1.42	4.26	10.56	11.4	13.15	16.4	21.25	22.4	24.75	16	17	3+16	4+13	117	♀ iv-v	1+33	57
988	1.54	4.66	11.6	12.4	14.3	17.55	22.9	24.05	26.7	15	16	3+15	3+13	145	♂ vi	†1+33	57
989	1.65	5.0	12.5	13.75	15.2	18.6	24.3	25.55	28.25	15	18	3+16	3+16	156	♂ vi	2+32	56
990	1.72	5.03	12.15	13.4	15.25	18.55	23.85	25.1	27.95	15	16	3+17	3+14	171	♂ vi	1+32	56
991	1.52	4.75	11.9	12.8	14.8	18.1	23.35	24.7	27.5*	14	17	3+16	1+3+14	171	♂ vi	0+32	55
992	1.68	5.05	12.35	13.15	15.3	18.35	24.0	25.3	28.15	14	17	3+16	4+14	147	♂ i-ii	2+31	55
993	1.47	4.67	11.45	12.4	14.15	17.65	22.6	23.85	26.45	15	17	3+16	3+13	149	♀ iv-v	1+33	56
994	1.48	4.53	11.0	11.6	13.95	16.4	21.45	22.6	25.05	14	17	3+17	4+14	134	♂ vi	†0 or 1+33	56
995	1.5	4.52	11.35	12.35	14.0	17.4	22.15	23.35	25.9	14	17	3+16	18 ray broken.	123	♂ vii	2+32	56
996	1.65	4.96	12.6	13.45	15.6	18.9	24.15	25.5	28.4	15	Fnsed. 9+(1+1)+5	3+15	4+14	191	♂ v	1+31	55
997	1.62	4.83	12.2	12.8	14.85	18.2	23.6	24.95	27.8	15	16	3+16	3+13	164	♂ vi	1+32	56
998	1.47	4.8	11.35	12.35	14.15	17.2	22.5	23.75	26.25	15	16	3+17	3+14	124	♀ vi-iv	1+33	57
999	1.6	4.8	12.1	12.9	15.0	18.15	23.3	24.6	27.3	14	17	2+15	3+14	173	♂ vi	1+33	57
1000	1.66	4.8	11.75	12.0	14.9	17.3	22.6	23.95	26.55	15	17	3+16	2+15	143	♂ v	1+32	54
1001	1.4	4.58	11.74	12.6	14.65	17.95	23.05	24.35	27.0	14	17	2+17	3+15	163	♀ vi-iii	1+32	56
1002	1.7	5.0	12.2	12.95	15.1	17.8	23.0	24.3	26.95	14	16	3+16	3+13	157	♂ v	2+31	56
1003	1.52	4.97	11.85	12.55	14.5	17.4	23.05	24.4	26.95	14	17	3+15	3+14	163	♂ vi	1+32	55
1004	1.4	4.7	11.8	12.15	14.7	17.45	22.65	23.85	26.55	14	17	3+16	3+15	152	♂ v	2+32	56
1005	1.9	5.74	14.1	14.77	17.45	20.6	26.7	28.1	31.2	15	17	3+16	3+14	218	♂ vi	2+31	57
1006	1.72	5.0	12.5	13.1	15.6	18.2	23.8	25.03	27.6	15	16	3+16	2+15	175	♂ vi	1+33	56
1007	1.6	5.0	12.65	14.0	15.75	18.9	24.35	25.7	28.6	14	17	3+17	3+14	184	♂ vi	1+32	56
1008	1.6	4.9	11.95	12.5	14.8	17.65	22.8	24.1	26.9	15	18	3+16	3+14	150	♂ vi	1+31	55
1009	1.65	5.0	12.0	12.55	14.9	17.55	22.9	24.2	27.1	15	18	3+17	3+15	159	♂ vi	1+32	56
1010	1.4	4.6	11.7	12.2	14.25	17.4	22.7	23.85	26.5	16	16	3+15	3+14	154	♂ vi	3+30	55*
1011	1.55	5.12	12.6	13.45	15.45	18.5	24.0	25.35	28.2	14	17	3+16	3+15	159	♂ vi-iii	0+33	56
1012	1.5	4.77	11.4	12.65	14.05	17.4	22.2	23.35	26.05	15	17	3+15	3+14	134	♂ vi	2+31	56
1013	1.52	4.75	11.7	12.87	14.7	17.8	23.2	24.5	27.15	15	16	Total 19. 3+16	3+16	151	♀ vi-iii	1+32	56
1014	1.63	4.9	12.0	13.2	15.05	18.15	23.45	24.7	27.55	14	16	3+16	2+15	167	♀ vi	1+33	56

No. of Fish.	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18
1015	1-43	4-5	11-15	11-7	13-9	16-3	21-35	22-65	25-1	13	15	3+15	3+14	128	♂ vi	2+32	56
1016	1-44	4-4	10-5	11-55	13-2	15-8	20-95	22-05	24-55	14	17	3+16	3+15	112	♂ vi	2+31	56
1017	1-5	4-66	12-35	13-15	15-45	18-5	23-8	25-05	27-85	14	17	3+16	3+14	167	♂ vi	†1+32	56
1018	1-55	4-5	11-95	12-55	14-7	17-95	22-75	24-0	26-55	15	17	3+16	3+13	159	♂ v	2+32	55
1019	1-35	4-63	11-45	12-4	14-25	17-45	22-6	23-7	26-5	15	17	3+16	3+15	116	♂ ii	1+34	57
1020	1-57	4-7	11-2	12-4	14-0	17-35	22-3	23-45	25-9	15	18	3+15	3+14	143	♂ vi	†1+32	56
1021	1-5	4-6	11-3	12-35	14-2	16-95	22-25	23-55	26-15	14	16	3+16	3+14	143	♂ vi	0+32	55
1022	1-6	4-8	11-95	12-45	14-7	17-3	22-9	24-1	26-8	12+0+2	16	3+16	3+15	160	♂ v	2+31	55
1023	1-5	4-56	11-35	12-25	14-3	17-4	22-3	23-5	26-2	15	16	3+17	3+15	143	♂ v-vi	2+31	56
1024	1-48	4-66	11-95	12-8	15-1	17-65	23-1	24-5	27-35	15	17	3+17	3+14	166	♂ vi	2+32	56
1025	1-5	4-6	11-75	12-15	14-6	16-9	22-05	23-3	25-8	16	18	3+16	4+15	148	♂ vi	1+32	56
1026	1-46	4-74	11-75	12-2	14-65	17-5	22-9	24-15	26-9	16	17	3+17	3+16	143	♂ v	2+33	56
1027	1-48	4-47	11-9	12-6	14-5	17-65	22-8	24-1	26-6	15	16	3+15	3+15	150	♂ v-vi	2+32	56
1028	1-45	4-58	11-35	12-45	14-2	17-15	22-5	23-7	26-3	14	17	3+16	3+16	124	♂ vii	†0+33	56
1029	1-55	4-9	11-75	12-6	14-9	17-55	23-05	24-35	27-15	14	17	3+17	3+15	150	♂ vi	0+33	56
1030	1-37	4-47	11-0	12-1	13-8	16-8	21-8	23-0	25-6	14	18	3+17	3+14	132	♂ vi	1+32	56
1031	1-34	4-27	10-8	11-8	13-55	16-65	21-4	22-5	24-85	15	16	3+16	3+14	121	♂ vi	1+32	56
1032	1-4	4-43	11-65	12-5	14-55	17-2	22-5	23-75	26-35	14	16	3+16	3+14	158	♂ v-vi	1+32	56
1033	1-5	4-86	12-15	13-05	14-8	18-1	23-2	24-45	27-3	15	17	3+15	3+14	140	♂ vi	1+32	56
1034	1-3	4-4	11-15	12-3	13-9	17-1	22-2	23-4	26-2	15	16	3+16	3+14	143	♂ v-vi	2+32	56
1035	1-5	4-78	11-9	13-0	15-0	17-75	23-3	24-6	27-3	15	16	3+16	3+14	146	♂ vi-iv	2+32	56
1036	1-48	4-3	10-9	11-9	13-6	16-3	21-0	22-2	24-75	15	17	3+15	3+14	129	♂ v	†0+33	56
1037	1-43	4-4	10-4	11-6	13-05	15-9	20-9	22-0	24-5	14	17	3+16	4+13	111	♂ vi	1+32	55
1038	1-4	4-3	10-3	11-0	12-7	15-5	20-3	21-3	23-6	16	17	3+15	3+14	108	♂ vi	0+34	57
1039	1-43	4-78	11-5	12-6	14-35	17-4	22-4	23-65	26-35	15	16	3+17	4+13	145	♂ v	†1+32	56
1040	1-45	4-3	11-4	12-5	14-1	17-25	22-45	23-65	26-3	14	17	3+16	3+15	154	♂ vi	0+33	56
1041	1-62	5-0	11-85	12-6	14-85	17-9	22-9	24-2	26-7	15	17	3+16	3+13	136	♂ vi-iii	1+32	56
1042	1-5	4-8	12-1	12-8	14-9	18-05	23-2	24-5	27-05	16	17	3+16	3+14	144	♂ vi	1+33	56
1043	1-67	5-15	12-5	12-95	15-45	18-1	23-9	25-2	28-2	15	17	3+17	3+15	153	♂ vii	1+33	57
1044	1-6	5-07	12-65	13-2	15-75	18-75	24-4	25-8	28-6	16	17	3+16	3+13	159	♂ vi-iii	3+31	57
1045	1-62	4-9	11-85	12-5	14-6	17-55	22-45	23-85	26-65	14	17	3+16	3+16	175	♂ v-vi	0+32	55
1046	1-56	4-8	12-55	13-3	15-65	18-75	24-15	25-33	28-3	14	16	3+17	3+14	173	♂ v	0+33	55
1047	1-53	4-85	12-1	12-4	15-05	17-6	22-95	24-2	26-9	15	18	3+17	3+14	153	♂ iv-v	0+33	56
1048	1-45	4-3	10-5	11-35	13-2	16-05	21-05	22-3	25-0	15	17	3+16	3+15	130	♂ vi	2+31	55
1049	1-3	4-18	10-75	11-5	13-35	16-15	20-95	22-0	24-45	15	17	3+16	3+14	116	♂ vi	1+32	56
1050	1-67	4-87	11-8	12-85	14-6	17-7	22-7	23-95	26-95	14	16	2+16	3+14	171	♂ v-vi	3+30	56
1051	1-67	5-1	11-95	12-7	14-8	17-8	23-05	24-3	27-05	14	18	3+16	3+14	158	♂ v-vi	3+31	55
1052	1-4	4-6	11-75	12-35	14-2	17-1	22-6	23-7	26-2	15	17	3+15	2+15	134	♂ vi-iii	0+33	56
1053	1-42	4-47	11-5	12-25	14-4	17-0	22-0	23-2	25-7	15	17	2+18	3+15	139	♂ v	1+31	57

1054	1-65	4-77	11-75	12-45	14-7	17-4	22-7	23-95	26-7	15	17	3+17	3+14	161	♂ v	1+32	55
1055	1-53	4-78	12-35	13-35	15-25	18-45	23-95	25-15	27-95	14	17	3+15	3+14	192	♂+♂ v	†0+33	56
1056	1-66	4-98	12-05	13-4	15-05	17-9	23-25	24-55	27-25	14	16	3+17	3+14	163	♂ v	1+32	56
1057	1-4	4-3	10-9	11-7	13-5	16-15	21-35	22-5	25-05	14	17	3+17	3+14	129	♂ vi	2+31	56
1058	1-57	4-65	11-2	12-05	14-0	16-7	22-0	23-1	25-85	14	17	3+17	3+14	136	♂+♂ v	2+31	55
1059	1-53	4-57	11-5	12-05	14-3	17-15	22-55	23-75	26-45	14	17	3+16	3+16	171	♂ v	1+32	55
1060	1-47	4-5	11-55	12-2	14-25	17-15	22-3	23-55	26-25	14	16	3+16	3+14	144	♂+♂ vi	1+32	55
1061	1-4	4-48	11-4	11-75	14-25	17-0	22-15	23-35	25-85	15	18	3+16	3+13	134	♂+♂ v	0+32	56
1062	1-57	4-6	11-0	11-3	13-85	15-95	21-0	22-2	24-6	14	17	2+17	4+13	128	♂ v-vi	2+33	56
1063	1-5	4-93	12-2	13-3	15-0	18-05	23-5	24-8	27-6	13	16	3+16	3+15	146	♂ vi	2+32	56
1064	1-6	4-8	11-8	12-2	14-5	17-3	22-6	23-8	26-2	13	16	3+17	4+15	139	♂+♂ vi 1	1+[1+1*+30]	55
1065	1-55	4-62	11-15	12-2	14-3	17-05	22-25	23-5	26-15	15	16	3+17	3+15	152	♂ vi	1+32	56
1066	1-43	4-4	11-05	11-9	14-05	16-95	21-9	23-0	25-5	15	16	3+17	3+14	116	♂+♂ vi-iii	1+32	56
1067	1-7	5-08	12-5	13-2	15-5	18-6	23-85	25-2	28-1	14	16	3+17	3+14	154	♂+♂ iv-v	3+31	56*
1068	1-54	4-6	11-35	12-45	14-35	17-1	22-1	23-3	25-75	14	15	3+16	3+14	129	♂+♂ vi-v	0+33	56
1069	1-5	4-44	10-45	11-1	13-0	15-75	20-6	21-7	24-2	14	16	3+16	3+15	113	♂+♂ vii	1+31	54
1070	1-42	4-37	10-95	11-35	13-4	16-2	21-1	22-2	24-55	16	17	3+16	3+14	129	♂+♂ vi	†2+31	56
1071	1-45	4-2	10-3	10-85	12-7	15-45	20-2	21-25	23-75	15	16	3+16	3+15	117	♂+♂ vi	1+31	54
1072	1-7	5-1	12-7	13-7	15-8	18-8	24-2	25-63	28-65	15	16	3+16	2+15	182	♂+♂ vi	1+32	56
1073	1-3	4-2	10-6	11-35	13-3	15-9	20-9	22-05	24-6	14	17	3+16	2+15	127	♂+♂ v-vi	0+33	55
1074	1-5	4-72	11-7	12-35	14-45	17-5	22-6	23-85	26-6	15	16	3+16	2+14	121	♂+♂ ii	3+31	56
1075	1-47	4-7	11-8	12-55	14-45	17-7	22-55	23-75	26-55	15	16	3+15	3+14	147	♂+♂ v	†0+32*	55

1054. 1-65. 4-77. 11-75. 12-45. 14-7. 17-4. 22-7. 23-95. 26-7. 15. 17. 3+17. 3+14. 161. ♂ v. 1+32. 55.
 1055. 1-53. 4-78. 12-35. 13-35. 15-25. 18-45. 23-95. 25-15. 27-95. 14. 17. 3+15. 3+14. 192. ♂+♂ v. †0+33. 56.
 1056. 1-66. 4-98. 12-05. 13-4. 15-05. 17-9. 23-25. 24-55. 27-25. 14. 16. 3+17. 3+14. 163. ♂ v. 1+32. 56.
 1057. 1-4. 4-3. 10-9. 11-7. 13-5. 16-15. 21-35. 22-5. 25-05. 14. 17. 3+17. 3+14. 129. ♂ vi. 2+31. 56.
 1058. 1-57. 4-65. 11-2. 12-05. 14-0. 16-7. 22-0. 23-1. 25-85. 14. 17. 3+17. 3+14. 136. ♂+♂ v. 2+31. 55.
 1059. 1-53. 4-57. 11-5. 12-05. 14-3. 17-15. 22-55. 23-75. 26-45. 14. 17. 3+16. 3+16. 171. ♂ v. 1+32. 55.
 1060. 1-47. 4-5. 11-55. 12-2. 14-25. 17-15. 22-3. 23-55. 26-25. 14. 16. 3+16. 3+14. 144. ♂+♂ vi. 1+32. 55.
 1061. 1-4. 4-48. 11-4. 11-75. 14-25. 17-0. 22-15. 23-35. 25-85. 15. 18. 3+16. 3+13. 134. ♂+♂ v. 0+32. 56.
 1062. 1-57. 4-6. 11-0. 11-3. 13-85. 15-95. 21-0. 22-2. 24-6. 14. 17. 2+17. 4+13. 128. ♂ v-vi. 2+33. 56.
 1063. 1-5. 4-93. 12-2. 13-3. 15-0. 18-05. 23-5. 24-8. 27-6. 13. 16. 3+16. 3+15. 146. ♂ vi. 2+32. 56.
 1064. 1-6. 4-8. 11-8. 12-2. 14-5. 17-3. 22-6. 23-8. 26-2. 13. 16. 3+17. 4+15. 139. ♂+♂ vi 1. 1+[1+1*+30]. 55.
 1065. 1-55. 4-62. 11-15. 12-2. 14-3. 17-05. 22-25. 23-5. 26-15. 15. 16. 3+17. 3+15. 152. ♂ vi. 1+32. 56.
 1066. 1-43. 4-4. 11-05. 11-9. 14-05. 16-95. 21-9. 23-0. 25-5. 15. 16. 3+17. 3+14. 116. ♂+♂ vi-iii. 1+32. 56.
 1067. 1-7. 5-08. 12-5. 13-2. 15-5. 18-6. 23-85. 25-2. 28-1. 14. 16. 3+17. 3+14. 154. ♂+♂ iv-v. 3+31. 56*.
 1068. 1-54. 4-6. 11-35. 12-45. 14-35. 17-1. 22-1. 23-3. 25-75. 14. 15. 3+16. 3+14. 129. ♂+♂ vi-v. 0+33. 56.
 1069. 1-5. 4-44. 10-45. 11-1. 13-0. 15-75. 20-6. 21-7. 24-2. 14. 16. 3+16. 3+15. 113. ♂+♂ vii. 1+31. 54.
 1070. 1-42. 4-37. 10-95. 11-35. 13-4. 16-2. 21-1. 22-2. 24-55. 16. 17. 3+16. 3+14. 129. ♂+♂ vi. †2+31. 56.
 1071. 1-45. 4-2. 10-3. 10-85. 12-7. 15-45. 20-2. 21-25. 23-75. 15. 16. 3+16. 3+15. 117. ♂+♂ vi. 1+31. 54.
 1072. 1-7. 5-1. 12-7. 13-7. 15-8. 18-8. 24-2. 25-63. 28-65. 15. 16. 3+16. 2+15. 182. ♂+♂ vi. 1+32. 56.
 1073. 1-3. 4-2. 10-6. 11-35. 13-3. 15-9. 20-9. 22-05. 24-6. 14. 17. 3+16. 2+15. 127. ♂+♂ v-vi. 0+33. 55.
 1074. 1-5. 4-72. 11-7. 12-35. 14-45. 17-5. 22-6. 23-85. 26-6. 15. 16. 3+16. 2+14. 121. ♂+♂ ii. 3+31. 56.
 1075. 1-47. 4-7. 11-8. 12-55. 14-45. 17-7. 22-55. 23-75. 26-55. 15. 16. 3+15. 3+14. 147. ♂+♂ v. †0+32*. 55.

APPENDIX TO TABLES.

† This sign in all cases indicates that no lateral processes are present in the vertebræ immediately preceding the 1st vertebra with complete hæmal arch or the most anterior incomplete arch denoted in the records. The processes in these cases have been cleaned away.

* This sign on the measurements (Columns 1 to 9) indicates that the character is slightly abnormal in some way or that the part measured is slightly damaged. In columns 17 and 18 the asterisks refer to the following:—

Sample III.

Fish No.

- 3 * 12th vertebra with complete hæmal arch has two pairs of hæmal arches, but only one extra neural process on the right, which is attached to the 11th neural arch. The vertebra itself is slightly longer than adjacent ones, but has been counted as and appears to be only one. The left hæmal process of the 15th vertebra with complete hæmal arch is attached to the 14th hæmal arch and its fellow is free. The hæmal processes of the next vertebra, the 16th, are also free.
- 9 * Right portion of 11 and 12 hæmal arches fused with left division of 11th hæmal spine. 12th, left portion of hæmal arch free.
- 34 * 19th vertebra is very long and carries two pairs of neural and hæmal arches, the extra arches arising from the middle. It is recorded as one, but is apparently made up of two fused.
- 98 * 9th and 10th vertebræ (with complete hæmal arch) have each two pairs of neural spines, the 10th has also two pairs of hæmal spines, the abnormal pair having one limb (the left) arising from the middle of the centrum, but the other arising near the origin of the right member of the 11th hæmal arch. These vertebræ are each recorded as one; they are of normal size, and neither appears to be composed of two vertebræ fused, as is undoubtedly the case in other skeletons.
- 125 * 2nd vertebra with well-developed ventrolateral processes (paired).
- 139 * 6th hæmal arch with extra spine arising from junction of processes.
- 157 * Processes missing almost entirely one side and entirely on other side.
- 161 * Anterior group of vertebræ lost.
- 241 * 1st hæmal arch has a supernumerary hæmal process in the middle of the vertebra on the left side.
- 243 * 1st hæmal arch broken, but still attached to vertebra.
- 267 * Incomplete arch, although nearly complete. The vertebra preceding had a complete hæmal arch as noted in the record.
- 270 * Transverse bars nearly joined. The right-hand figure of Fig. 3 is drawn from this vertebra.
- 277 * 10th and 11th hæmal arches are joined by a bony cross-piece.

- 288 * 14th and 15th vertebræ have each two pairs of hæmal spines, the subsidiary pair being in the middle, but only the 14th pair has also a corresponding neural arch.
- 291 * 19th neural spines quite free.
- 299 * 24th hæmal spines free ; no loop formed.
- 310 * 5th neural spines are separate, and there is an extra free neural spine on the right, and the 5th, 7th, and 8th hæmal arch processes are bifurcated at the tip, and three of the 7th are not joined together at all, that is both spines are free.
- 316 * 15th and 16th left rays of hæmal arches are joined up with the 15th right hæmal arch ray. The 16th right ray is free.
- 351 * In the case of high numbers as 33 and 34 the first hæmal arch is generally without the lateral processes.
- 352 * 11th hæmal arch, processes not fused, and right one bifurcated.
- 401 * Atlas with pair of well-developed dorso-lateral spines.
- 416 * Extra spine on 16th hæmal arch, arising from junction of processes of arch.
- 427 * Last vertebra but two is peculiar, being unusually small, and being somewhat fenestrated on the left side but normal on the right side. Otherwise the skeleton is quite normal.
- 435 * The eleventh vertebra bears on the left a hæmal spine showing a slight bifurcation at the tip ; the hæmal spines in the anterior region in this fish were very well developed.
- 453 * 1st arch broken, but still attached to vertebra.
- 462 * Less well developed than processes of anterior vertebra.
- 529 * The last vertebra but two is apparently made up of two fused, being almost twice as long as adjacent ones ; it bears two pairs of hæmal and neural spines, but has only an anterior and posterior articulation ; the centre is distinctly fused. This is only counted as one.
- 546 * 1st vertebra with complete hæmal arch has a supernumerary hæmal process on the left side, and the 14th vertebra with complete hæmal arch has a supernumerary pair of hæmal and neural spines arising from middle of vertebra ; both pairs of hæmal spines are joined by a cross-piece on the right side.

Sample IV.

- 552 * 1st hæmal arch broken off centrum, but still attached.
- 580 * Extra spine from junction of hæmal spines of 23rd vertebra from posterior end.
- 582 * On some posterior hæmal arches are spherical concretions which appear like little beads of melted metal. This phenomenon has been noticed on other skeletons also.
- 588 * Atlas, 1st, and axis, 2nd, vertebræ fused together ; counted as two.

- 631 * This one incomplete, but with an internal process on the right hæmal process. The arch of the vertebra anterior to it is complete.
- 664 * 7th vertebra from posterior end has two pairs of hæmal and neural spines, is longer than normal and apparently equal to two fused vertebræ. It is counted, however, as one.
- 667 * 4th, 5th, and 6th vertebræ from posterior end have been broken and recovered at some period of life of the fish.
- 687 * The last vertebra bears three pairs of neural and two pairs of hæmal spines, it is nearly twice as long as a normal one, and has a thickening in the middle of the centrum where apparently two vertebræ have fused. It is undoubtedly two vertebræ fused. It is, however, only counted as one in the table.
- 709 * 3rd complete arch has a tiny extra connecting hæmal process on the left.
- 711 * Middle tips of hæmal arches with curious concretionary appearance, just as though the arches were of metal and had been melted in parts.
- 740 * The right hæmal process of 28th vertebra is joined to junction of hæmal processes of 27th vertebra; the left process of the 28th vertebra being free.
- 746 * 13th vertebra from anterior end is about half as long again as normal, and has ridges around its middle indicating fusion of two vertebræ. It is, however, counted as one.
There is no normal articulation in the middle, but complete fusion.
- 767 * 9th vertebra very long and apparently two vertebræ fused, similar to 704. It is counted, however, as one.
- 782 * It is quite possible that one or more arches are missing here; possibly too well cleaned.
- 784 * Arch incomplete, though the one anterior to it is complete (broken, but still attached to centrum).
- 803 * 1st hæmal arch broken, but still attached to vertebra.
- 841 * There is nothing unusual in the appearance of this skeleton.
- 843 * 1st hæmal arch with a rib attached.
- 855 * 2nd, 3rd, 4th, 5th, and 6th rays of anal fin anastomising.
- 897 * In the region two-thirds from anterior end the hæmal and neural arches arise from abnormal positions and there are a few extra spines.
- 899 * Several hæmal arches with processes interchanged, i.e. processes on opposite sides not joined up with fellow, but with those anterior or posterior to them.
- 911 * 3rd hæmal arch broken, but was undoubtedly complete.
- 921 * 46th vertebra from anterior end, 3 pairs of hæmal and $2\frac{1}{2}$ pairs of neural spines. The centrum is abnormally long, nearly twice normal length, and is apparently equal to at least 2 vertebræ fused. It is counted as one.

- 925 * In Character 17 the "a" portion is recorded hence first in order to avoid any bias towards making up the number to the apparent total of 33 or 34 potential arches.
- 943 * 35th vertebra with two pairs of neural and hæmal spines, nearly twice as long as normal, and apparently equals two fused. Counted as one.
- 962 * Arches about middle of skeleton a little abnormal.
- 975 * 12th vertebra nearly twice as long as normal, and apparently equal to two fused, but only counted as one. Also 30th vertebra with $1\frac{1}{2}$ hæmal arches and spines, but otherwise of normal size. 32nd also with abnormal hæmal arch processes.
- 980 * 39th vertebra with one hæmal arch attached to arch of 38th vertebra.
- 1010 * 37th vertebra has one extra neural and one extra hæmal spine, but is otherwise normal.
- 1064 * Vertebra behind 1st complete arch carries an incomplete but well-developed arch; it is counted with those having complete arch.
- 1067 * Left process of 44th hæmal arch is joined up with junction of 43rd hæmal arch.
- 1075 * 1st hæmal arch broken, but still attached to centrum.

Note.—The lateral processes of the vertebræ preceding those with complete hæmal arch are sometimes long without internal processes, and at other times shorter with the internal process developing. Nevertheless, the arbitrary character chosen has been adhered to as closely as possible. There are, however, doubtful cases.

Very frequently the 4th, 5th, and 6th vertebræ from posterior end have the base of the hæmal arch passing diagonally across the ventral anterior half of the centrum, and in this respect are unlike the other vertebræ.