"12. On evaporation, 25cc. of the spirit-solution gave 1·135 grammes of extractive matter dried at 100° C., or 2·270 grammes for 25cc. of your original fluid. On incineration the mass swelled up and formed an enormous balloon of coke, but the carbon burnt off readily with a strong sodium flame, and left 0·248grm. of fixed salts, = 0·496grm. on original fluid.

"13. Tested for uric acid = no result.

"14. Tested for allantoïn = no result.

"Hence, taking all the reactions into account, this fluid seems to contain a very large percentage of urea; but a change may have taken place since it was collected."

DESCRIPTION OF PLATE XIX.

Fig. 1. Uterine egg of *Mustelus antarcticus* removed from the uterus, and with the surrounding pseudamniotic membrane spread out (natural size).

Fig. 2. Ideal transverse section of the same.

ART. XXXIX.—*On a Specimen of the Great Ribbon-fish* (Regalecus argenteus) *taken in Nelson Harbour.*

By R. I. KINGSLEY.

[*Read before the Nelson Philosophical Society, 5th November, 1889.*]

Plate XX.

THE fact that a capture of a specimen of the genus *Regalecus* is of very rare occurrence—no doubt partly owing to their inhabiting the deep parts of the ocean,—and the fact also that it cannot be studied, like many other fish, in its native element, create more or less interest in every specimen that may by chance be secured—an interest that affects even such of the general public who care nothing for genera or species, whose first anxiety is, perhaps, "Is it good for food?" To any one, however, who is the least inclined towards natural history or science there should be additional interest in the fact that (I think I am correct in so saying) there has not yet been a single perfect specimen captured; consequently all existing descriptions are either more or less compiled from imperfect or mutilated examples. It therefore becomes a duty to watch for opportunities such as the one I have made the subject of this paper, in order not only to add to our stock of knowledge fresh items of information, but to check and, if need be, correct the published descriptions.

I need not enlarge upon the speculations as to the cause of its rare occurrence; but with regard to the difficulties in securing a perfect specimen I should say they arise from two causes—first, and mainly, to the peculiarity of its structure and its extreme fragility; secondly, to the avidity with which sharks and other voracious fish appear to attack it.

With regard to the first, by reference to the drawing (Plate XX.) one sees at a glance that it would be impossible for a fish with such peculiar long slender ventral fins to escape damage in shallow water, even if they were not—as they are—very brittle in texture. The same remark applies in a less degree to the elegant crest of the dorsal fin. The body of the fish itself is extremely fragile—so much so that it usually breaks into two or more pieces whilst being hauled into a boat.

It may perhaps be interesting to some of those present if I mention a few facts about the genus before I proceed to describe the present example.

In vol. xvi. of the "Transactions," p. 284, there is an interesting article by Professor T. Jeffery Parker, B.Sc., on a specimen obtained at Moeraki, Otago. In it he states that Günther (the great authority on fishes) gives sixteen as the total number of captures in England from 1759 to 1878, or considerably over a hundred years. Of these, eleven are assigned to one species—*R. banksii*.

In New Zealand a specimen was obtained in Nelson in the year 1860, and described by Mr. W. T. L. Travers, but not at all clearly enough to identify the species. Another was caught at New Brighton, near Christchurch, in 1876, and described by Dr. von Haast, and made by him the type of a new species. A third at Little Waimangaroa, South Island: of this no exact description is recorded. A fourth is said to have been cast ashore at Moeraki in 1881; a fifth, the one most fully and carefully described by Professor Parker; also a sixth was stranded in Otago Harbour, 3rd June, 1887, of which Professor Parker, in vol. xx. of the "Transactions," gives a detailed and very full description.

The present example would thus appear to be the seventh recorded specimen captured in New Zealand.

All the species of *Regalecus* are distinguished by their great length in proportion to their height and thickness, most of them being from 8ft. to 18ft. long, 6in. to 15in. high, and not more than 2in. to 3in. thick.

The number of rays in the dorsal fin is very considerable, varying from 134 in *R. glesne* to 406 in *R. grillii*. Of these from 8 to 15 of the anterior rays are elongated into a beautiful crest. There are a variety of descriptions of this crest, facts and imagination appearing to be woven together. The most

peculiar is Travers's description: "From the back of the head rose several rigid circular spines about 18in. long, ¾in. in diameter at the base, tapering to a point, curving slightly backwards, hollow, and bristling along their whole surface with small spines directed upwards. These long spines appeared to be very brittle, as they broke off short when the fish struck the rock." He then goes on to say that the person who saw the fish run ashore described "these spines *as appearing like three small masts to a boat, through the whole length of the fish, disposed in pairs as follows: one pair just below the back and the other pairs immediately above.*" How he makes the first and last part agree, or what he wished us to understand by the latter part, I cannot comprehend.

The peculiar ventral fins are represented in all known species each by a single long ray terminating in a lobe, and in some cases with a posterior fringe of membrane, whilst the ray itself varies from 2ft. to 3ft. in length.

Günther and Yarrell state two species possess teeth, but all the remaining species are quite edentulous.

None of the species of *Regalecus* possess scales except upon the lateral line, but the skin in several species is studded with bony tubercles, in others raised into a kind of soft warts, all more or less arranged in three or four longitudinal bands.

In the fifteenth decade of the "Prodromus of the Zoology of Victoria," Professor McCoy gives a coloured sketch and also a description of a *Regalecus* caught between Australia and Tasmania.

I may here state that the name *Regalecus* is derived from *rex*=king, and *halec*=herring, in allusion to an old name given to this fish by the fishermen on the coast of Britain, who first saw it near that part of the ocean frequented by herring, and hence called it the king of the herrings.

I now proceed to the more direct subject of the paper. The specimen under review was caught on the 23rd September last by Astle—strangely enough, the same individual who captured the specimen described by Mr. Travers in 1860. I heard of it on the 24th, and as soon as possible I paid a visit to it. I found it, unfortunately, incomplete, a large portion of the posterior part being missing. Astle told me that he saw it swimming up the harbour, and, on nearing it, struck it several times with an oar, and eventually secured it with a noose on a rope; but in hauling it aboard the boat it broke in two parts, and also knocked itself about considerably in the bottom of the boat, damaging the ventral and dorsal fins. I made sundry measurements and took several notes in the hope that they might be interesting

to some of our members. I also made a sketch from which I have produced the one before you (Plate XX.). I was sorry to find, on my second visit, that the fishermen had cut it up, and thus prevented a photograph being taken.

From what I could see of it, it was very different in appearance from the sketch given of Sir Julius von Haast's *R. pacificus*, in vol. x., p. 248, and differed widely from his written description, but very nearly coincided with that given by Professor Parker in vol. xvi., p. 295.

The dark anterior stripes, however, shown by Von Haast were very similarly present, and, as shown on Plate XX., were elongate and irregular both in length and direction, and in no case posterior to the anus; the last elongated stripe occurring at almost exactly 36in. from the base of the ventral fin, and thus 21in. anterior to the anus. From this point posteriorly there were above the lateral line numerous more or less circular patches of moderately dark colour, while underneath the lateral line was a series of slightly elongated patches. This is worthy of note, since Professor Parker calls attention to this grouping of the patches in Professor McCoy's description, and calls them peculiar. Fortunately I had been very careful in taking particular note of the position of these markings.

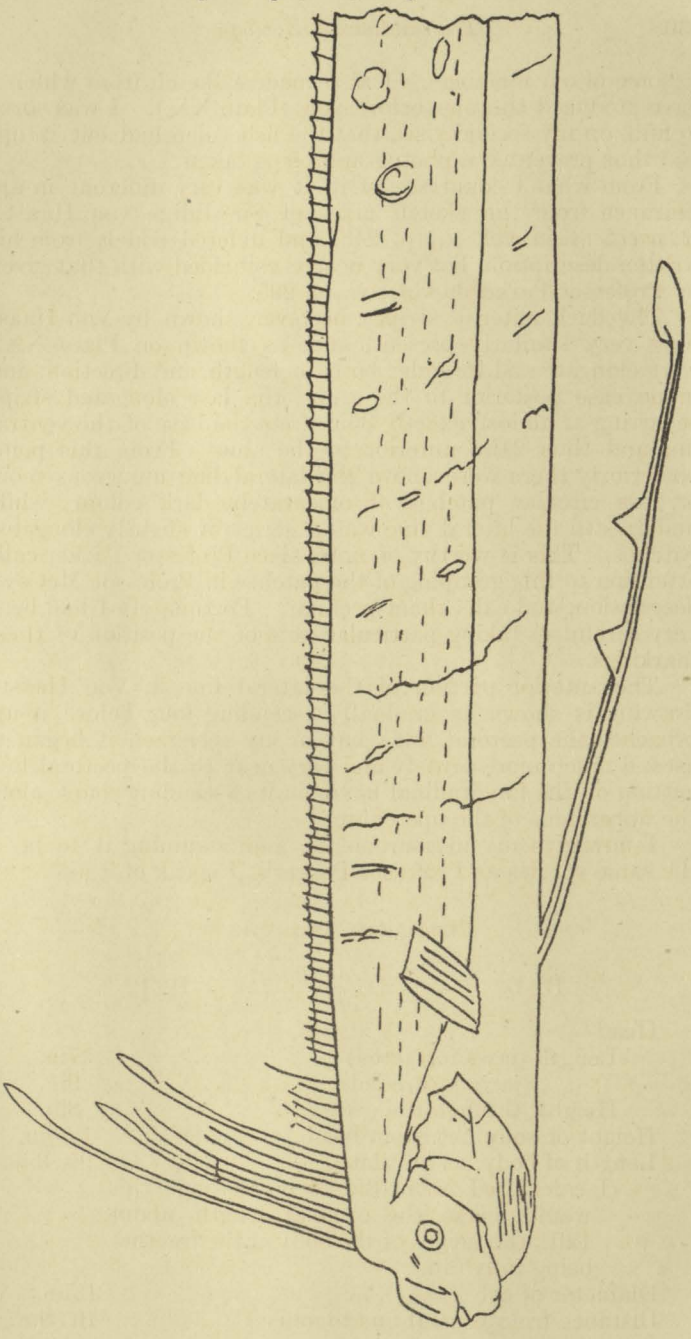
The anterior portion of the lateral line in Von Haast's drawing is shown as gradually ascending long before it approaches the pectoral fins; but in my specimen it began to ascend much more acutely and very near to the pectoral fins, cutting off the longitudinal bands in its ascending course along the upper edge of the operculum.

I now give my measurements, and, assuming it to be of the same species as Professor Parker's, I speak of it as

REGALECUS ARGENTEUS.

B., 6. D., $\frac{15\ (?)}{175+}$. P., 12.

Head—	
Length (jaws retracted)	7in.
" (jaws protruded)	9in.
Height, through the eye	8in.
Height of body, 2ft. from head	12·5in.
Length of body, as mutilated	9ft. 3in.
(I calculated about 3ft. to be missing: this would make the original length about 12ft., the height of the body at the fracture being fully 6in.)	
Diameter of eye	1·5in.
Distance from ventral fins to anus	4ft. 9in.



R.J.K. delt. — General features of Regalecus Argenteus. — C.P. lith.

Dorsal rays—

1st, broken	... ...	part left $2\frac{7}{8}$in.
2nd, damaged	... ...	... 19in.
3rd, complete	... ...	... 21in.
4th, 5th damaged	... ...	... 19in.
6th, 7th broken.		
8th, complete ...	... ...	... 17in.
9th, complete ...	... ...	... 16in.

The remaining rays, 10th to 15th, inclusive, were broken and very much damaged. The remainder of the second dorsal fin contained 175 rays; and, as Professor Parker gives his number as 190, Von Haast 223, and McCoy 406, we may safely infer that the missing portion measured at least 3ft.

The 2nd, 3rd, 4th, and 5th rays were connected with a membrane for $7\frac{1}{2}$in. of their length. This would appear to coincide with Professor Parker's description of the first five rays being distinct from the remainder, and forming thus two portions, or "nuchal fins." I also noticed distinctly the spots upon the membrane of the first nuchal fin; they were, as stated by Professor Parker, very dark crimson. The 1st ray was stronger than any of the others, and a greater space existed between it and No. 2 than between any of the other rays. The 8th and 9th still retained their lobes in good condition.

The pectoral rays were, as stated, 12 in number, and $2\frac{1}{2}$in. long, width at base $1\frac{1}{2}$in., and nearly horizontal, as in Professor Parker's specimen, but far larger than those shown in McCoy's sketch.

The ventral rays were both missing, broken off at 5in., but I have since seen one of them. Its full length would be $30\frac{5}{8}$in., with a curve inwards at the extreme end, and with a delicate membrane along the posterior edge, and two triangular lobes at $8\frac{7}{8}$in. and $18\frac{1}{8}$in. from the base. The terminal lobe was oval, $2\frac{5}{8}$in. x $1\frac{1}{8}$in.; the whole in colour a deep bright red, the terminal lobe approaching to a dark crimson.

The branchiostegal rays and general features were so very similar to those so well described by Professor Parker that they need not be recapitulated.

There is, however, one other point to be noted. The specimen I found to be a *male*, whereas Professor Parker states (vol. xx., p. 21), "It is remarkable that all those previously captured, whose sex was ascertained, have been females."

It was surprising to me how few persons availed themselves of the opportunity of seeing it. A more strikingly handsome fish is seldom cast on our shores, and one would have supposed that its beauty, if not their curiosity, would have attracted more persons to view it.

I notice Professor McCoy makes a suggestion which appears to me very probable—namely, that this fish is the "sea-serpent" of newspaper accounts of observations made far out at sea by captains of ships, who, although perfectly trustworthy, may not be sufficiently instructed in zoology to enable them to give a good description of what they have seen. When we consider that one cast on the shore at Redcar in 1850 was 24ft. long, we may fairly suppose there are still larger ones in the depths of the ocean. Its great rarity renders it a most unfamiliar object to sea-faring men, and it does not require a very great stretch of imagination to see in a huge fish of this kind, with its peculiar and mysterious-looking crest elevated above the surface of the water, and its long body and undulating motion, an apparition which to ordinary people could be explained in no other way than by the supposition that it was the "veritable sea-serpent."

I was glad that I was not prevented by apathy—the Nelson epidemic—from viewing so interesting and elegant a denizen of the ocean-depths.

Art. XL.—*On the Occurrence of the Black Vine Weevil* (Otiorhynchus sulcatus) *in Nelson.*

By R. I. Kingsley.

[*Read before the Nelson Philosophical Society, 5th November, 1889.*]

I am not aware whether or no the *Otiorhynchus sulcatus* is common in New Zealand. I should not at all be surprised to find that it is far more common than is generally supposed, from the simple fact that the insect in its perfect form commits its ravages when the owners of the food-plants are, or ought to be, retiring for the night—*i.e.*, after 9 or 10 o'clock at night. In the daytime they are invisible unless the cracks and crannies of walls or the clods of earth are examined, when they will be found reposing with a very harmless and innocent aspect.

From the destructive nature of this species of insect—destructive in both its larva and imago states—it is most desirable to make the public aware of its presence in the colony, since it is said to be not indigenous, but one of the imported European pests.

On the 20th of last October Mr. Burford, who has recently commenced cultivating grapes, and has at considerable expense erected two glass houses, each some 80ft. long, called