

Colour (in spirit) uniform brown, with a bright silver patch on the opercles and expanded maxillaries.

Locality.—Waimarama, East Coast, Wellington. Collected by E. Meinertzhagen, Esq., and entrusted to me for description by Professor von Haast, F.R.S.

This remarkable little fish is closely allied to a form from the Falkland Islands, described by the Rev. L. Jenyns, in "Zoology of the Voyage of H.M.S. Beagle," under the generic name of *Illocates*, which he places with the Blennidæ. Dr. Günther has however removed that fish to the genus *Lycodes*, which he places with the Gadidæ, or cod-tribe of soft-rayed fishes. The fish now described, although possessing characters sufficient to require a separate genus, clearly supports the systematic position assigned to the *Lycodidæ* by Günther.

ART. XXI.—Description of a new Species of Trachypterus.—By F. E. CLARKE.

[Read before the Westland Institute, 11th August, 1880.]

THE fish I have the pleasure of bringing under your notice this evening is doubly interesting, not only on account of its being a new species of a rare genus—a genus which (as far as I am at present able to discover) has, as yet, been represented in the seas of the southern hemisphere by one specimen only,* which was captured near Valparaiso, and is now, according to Dr. Albt. Günther, in the Vienna Museum;—but also from its having been taken in a living state and existing some short time in captivity. This has enabled us to obtain a *perfect* specimen of a genus notable for the excessive fragility of its members, so much so, that I think I can safely say it is "the most perfect" specimen yet procured, and thus possesses one or two distinctive points as yet undescribed or unnoticed in other members of its genus, but which, at the same time, I may add, do not seem to entitle its classification as a new genus—as these peculiarities may only obtain from its not having reached an adult state—although other members of the genus almost as small (from the Mediterranean and around Madeira) have been described.

To give some idea as to the general occurrence and condition of these rare fish, I cannot do better than extract in full Dr. Günther's description of habitat, etc.,† of the family Trachypteridæ, to one of the genera of which family the fish now under your observation belongs:—"Deep-sea fishes, found at present on the shores of the Atlantic and Mediterranean, one species in the East Indies, another on the West Coast of South America, a third from New Zealand. Probably they have a wider range, but their being so rarely thrown on shore, and their speedy decomposi-

* [The author has overlooked the occurrence of another specimen of this species, *T. altivelis*, Kner. (Hutton in "Trans. N.Z. Inst.," Vol. V., p. 264), in the Auckland Museum; and other specimens, since collected, are in the Wellington and Dunedin Museums.—Ed.]

† Cat. Fish. Brit. Mus., Vol. III., p. 300.

tion, have prevented naturalists from observing them. It is very difficult to obtain specimens, and nearly impossible to find perfect ones. Nothing is known of their development and of the changes they undergo with age. Only a few specimens have been carefully examined."

The "third species from New Zealand" to which Dr. Günther refers, is one of another genus to the one now in question, *i. e.* *Regalecus*, three specimens of which have been observed during the last twenty years on the coasts of New Zealand, one of which 15 ft. 10 in. in length, ran ashore near the entrance of Nelson harbour, in October, 1860, and was described by W. T. L. Travers, Esq., in the *Nelson Colonist*, and a transcript of which description appeared in an early volume of the "Transactions of the New Zealand Institute." The second, 12 ft. 5 in. in length, was found on the beach at New Brighton, Canterbury, and is described and figured by Dr. Haast and Dr. Powell, in the *Transactions*.* The third, as noted by Dr. Haast in one of the papers last alluded to appears to have been stranded on the West Coast, near the Waimangaroa river, Taramea district, July, 1877, and was 14 feet 4 inches in length. We can add undoubtedly a fourth occurrence of *Regalecus*, near the locale from which the fish I am about to describe was obtained, namely, Hominy Cove, about three or four miles south from Jackson's Bay. Mr. James Teer in February, 1874, found a fish freshly washed up on the beach there, which fully answered to the description of *Regalecus*. He had no means at the time of preserving it, as he was prospecting for gold, but hung the fish, which he stated to have been about 14 ft. in length, over the branches of a small tree, intending to take some portion of it back with him; when he returned to it he found it almost completely destroyed by the rats. Portions of the backbone and skull of this specimen you can see among the varieties of our local museum.†

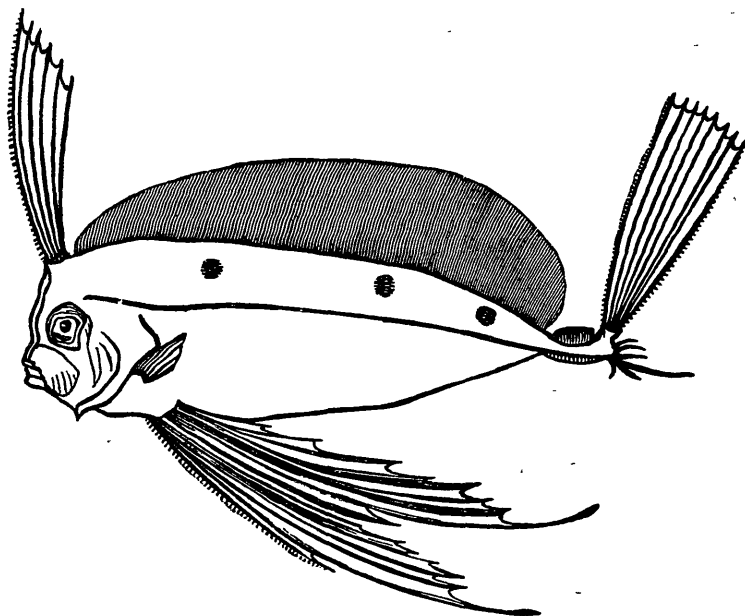
Altogether the family Trachypteridæ contains, without exception, the most singular specimens of the finny tribe, which consequently, from their appearance, attract the fullest attention and observation from even the most casual classes of enquirers. In shape, they are usually long, deep, and very much compressed and flattened on the sides, so much so that their local appellations always embody some idea of these peculiarities—such as ribband-fish, lath or deal-fish, band-fish or blade-fish, and also oar-fish. They are all covered with brilliant silvery skin or scales, and their fins are described in most cases to be of vivid scarlet or red hues; and in addition are generally of the two extremes as far as size is concerned—either very large or very small. Our member of the family is unfortunately of the latter extreme, as you may perceive from the individual now before us

* "Trans. N.Z. Inst.," Vol. X., p. 246, and Vol. XI., p. 269.

† [See also, for specimen from Cape Farewell Sand Spit, "Trans. N.Z. Inst.," Vol. X. p. 533.—Ed.]

“embalmed in alcohol,” and from the coloured drawing taken when it first reached me. This fact, however, does not detract much from the grotesqueness of its physique. The fish was obtained by Mr. Charles Robinson, of Arawata, Jackson’s Bay, in a pool at high-water mark, which he had constructed as a store-pond for the purpose of keeping mussel-bait alive for fishing, and had evidently been embayed in the pool on the tide retiring. Mr. Robinson placed the fish in a tin full of sea-water, in which it lived for some short time, giving ample opportunity for the full appreciation of its beauty. After it died it was handed to Mr. Macfarlane, R.M., for me, who placed it in a weak solution of carbolic acid and forwarded it by Mr. Marks of the Haast, who was opportunely proceeding to Hokitika. I must express my thanks to these gentlemen for their kindness and attention in the matter, as we were thus enabled to get the fish in a complete state of preservation and perfectly fresh, the only damage accruing to it being a deterioration and change in the colour of the fins, which were described to me by Mr. Robinson as being, when the fish was alive, “like brilliant red feathers more than fins, this, coupled with the bright silver sides, made it gorgeous in the extreme.” How much more so would the larger varieties of the family appear to one enabled to view them in their pristine elegance of form and colour, undulating among the vast undisturbed ocean depths and caverns they no doubt inhabit.

I now proceed to give as full a description as I am enabled to make without injuring the specimen before you.



Trachypterus arawata, n.s.

D.6—122, and 1 low rudimentary adipose fin.

P.9, V.1+5, A. low rudimentary adipose fin.

C₉ upper soft portion.
C₆ lower spiny do.

All the fins very fragile indeed; the first portion of the dorsal fin very high, perched on the summit of the forehead, and very distinctly divided from the second portion; the first, second, and third rays of almost equal length; the front of first ray evenly serrated with very minute spines. Second portion of the dorsal with regular rounded margin, reaching its greatest altitude at about the centre of the fin, and carrying this altitude to the second third from beginning of fin. *The rays of this fin are distinctly articulated.* The little rudimentary dorsal, which forms another of the distinctive characters between this and other specimens, commences immediately in the rear of the second part of dorsal, and terminates $\frac{1}{20}$ of an inch from the base of the upper portion of caudal fin. The upper portion of the caudal fin is almost rectangular to body; its base is very narrow; first and last rays slightly thicker than the others, and also finely serrated with very minute spines; the centre rays are the longest. The lower spinous portion of caudal fin runs generally in the longitudinal axis of the fish, but the three upper and three lower spines are recurved inferiorly and superiorly respectively; the first spine is minute, and at the anterior base of this portion of the fin; the third ray is much produced (more than twice the length of the second ray), and is slightly spatulate at tip.

Now comes the greatest point of difference between other specimens and the one under consideration:—The low rudimentary adipose anal fin, which starts immediately at the base of the spinous lower portion of caudal fin, and terminates slightly in front of the vertical from end of second part of dorsal fin; it is gently rounded, and like the adipose dorsal is highest in the centre. The ventrals are very long, and commence a little behind the vertical from posterior base of pectorals; the second ray is the longest and is also slightly spatulate at tip; the first ray is serrated along margin with spines a trifle less fine than those along margins of first dorsal and upper portion of caudal fins. The pectoral fins are minute, commence close to margin of free portion of operculum, and are low down on sides.

The eyes are large; upper front and lower margin round, posterior margin flattened, pupil small, round, and bead-like; they are situated close to margin of profile, and a little above midway between summit of head and chin. Profile of head almost vertical, becoming positively so on the specimen being subjected to the action of the alcoholic solution which coagulated the albuminous portions of the head and slightly altered the proportions from the fresh state. Before immersing in the solution before mentioned, the anterior portion of the face and forehead was soft, rounded, slightly projecting, and semi-transparent, the marginal bones on each side in low ridges. Nostrils single, simple aperture; close in front of eyes. Lateral line commences over top of eyes, runs back in gentle curve over top of gill-opening, thence proceeds straight along side to near tail, then

bending quickly downwards, in vertical from end of second part of dorsal fin, reaches the lower margin of body at tail, along which it runs on each side of the rudimentary anal fin, to its termination; it is armed with minute spines along almost the whole of its length; spaced further apart towards anterior portion, growing closer and slightly larger towards tail; they are *not confluent* where they reach the lower margin of body at tail. Gill-openings large; posterior terminating portion of inferior maxillaries armed with blunt spine; free portions of superior maxillaries wide; mouth small. Dentition, internal economy of mouth, verification of gill-rays and arches, and intestines, etc., I have not fully examined and described at present, as doing so would entail partial destruction of the specimen, which has already slightly suffered from the examination and handling necessary on copying, etc. Vent situated under two-thirds of the length of body from snout. Thickest part of fish behind eyes $\frac{3}{20}$ of an inch; back a trifle sharper than belly; sides flat; body high, tail very attenuated.

MEASUREMENTS.

	Inches.
Length of fish, (body and tail not including caudal fins) ..	2.53
" head	0.58
" upper portion of caudal fin	1.05
Extreme length of lower portion of caudal fin	0.35
Length of rudimentary anal fin	0.30
Height	0.03
Length of rudimentary 3rd portion dorsal fin	0.20
Height	0.05
Direct length of 2nd portion of dorsal fin	2.05
Height	0.44
Width of base of 1st portion of dorsal fin	0.12
Height of 1st do. do.	1.05
Extreme length of pectoral fins	0.24
Width of base	0.07
Extreme length of ventral fins	1.95
Width at base	0.08
Greatest diameter of eye	0.18
" depth of body (a little behind pectoral fins)	0.80
Distance from snout to pectoral fins	0.60

Colour.—As immersed in weak carbolic solution, was uniformly bright silver, with three circular dark greyish spots arranged along and close to upper margin of back; fins brownish; eyes silver; pupil black; lateral line yellowish.

Received from Mr. Macfarlane, 29th January, 1880.

Type specimen to be forwarded to Colonial Museum at Wellington.