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THE SECOND OCCURRENCE OF A RARE FISH (*LUVARUS*) IN AUSTRALIA.

By

GILBERT WHITLEY.

Ichthyologist, The Australian Museum.

A very rare and interesting fish was caught at South-west Rocks, northern New South Wales, in June 1939 by Mr. T. Egstein. It came to the Sydney Fish Markets, where it was recognized as *Luvarus imperialis* by Mr. T. C. Roughley, and Mr. George Koutalis purchased the specimen and generously presented it to the Australian Museum. I was away in Western Australia at the time, so regret that I did not see the fresh fish. Mr. H. S. Grant, taxidermist of the Museum, however, obtained particulars of its occurrence and checked its measurements; but the specimen was considered to be too damaged about the body¹ and fins for casting or even preservation, so only the head was kept. The fish was 6 feet 4 inches long, a record size, and weighed 225 lb.; depth about 18 inches. The body was silvery and the tail reddish. Photographs appeared in the papers, and Miss Lily Cook, of South-west Rocks, has sent me a snapshot and some notes, but these do not enable any fin-formulae or other details to be gleaned. This is only the second time the genus *Luvarus* has come to light in Australia, so that it is a pity that the fish was so damaged; the head is registered Austr.Mus.No.IB.2.

Luvarus imperialis was first described by Rafinesque in 1810 from a Sicilian example. The genus and species has received many names since, because it undergoes a remarkable metamorphosis in its larval and half-grown stages. The fish is now regarded as an extremely modified Scombroid. There is a great deal of literature concerning European specimens and the synonymy is complex. It is difficult to compare Australasian specimens with European ones on account of insufficient material here and the known variability of the latter forms, but if ours be distinct, it will require a new specific name.

The following synonymy of the genus *Luvarus* and list of records from Australia and New Zealand will, it is hoped, assist future students to determine the status of the local form, when further specimens may come to light.

Order PERCOMORPHI.

Series LUVARIFORMES.

Family LUVARIDAE.

Genus *Luvarus* Rafinesque, 1810.

Luvarus Rafinesque, Carat. n. gen. Sicil., 1810, p. 22. Haplotype, *L. imperialis* Raf., figured in Ind. Ittiol. Sicil., 1810, pl. i, fig. 1.

Diana Risso, Hist. Nat. Eur. Mérid., iii, 1826, pp. 106 and 267. Haplotype, *D. semilunata* Risso.

Ausonia Risso, Hist. Nat. Eur. Mérid., iii, 1826, p. 341. Haplotype, *A. cuvieri* Risso.

Astrodermus Cuvier, Règne Anim., ed. 2, ii, April 1829, p. 216, ex Bonelli, MS.

Haplotype, *A. guttatus* Cuvier, equals *Diana* Risso. Variants: *Astrodermes* Swainson, 1838; *Asterodermus* Agassiz, 1843; *Astroderma* Lowe, Dec. 1843.

Proctostegus Nardo, Diario Chem. et H.N. Ticino, i, 1827, pp. 18 and 42—*fide* Nomencl. Anim., but Sherborn gives: Giorn. di Fisica, (2) x, 1827, p. 27,

¹ Steaks had been removed for food.

n. nud.; Isis (Oken), 1827, pp. 477 and 484; and De Proctostego, 1827, p. 7. Tautotype, *P. proctostegus* Nardo.

Scrofaria Gistel, Nat. Thierr. höh. Schul., 1848, p. viii. Substitute for *Ausonia* Risso. Haplotype, *A. cuvieri* Risso.

"*Hystricinella*", "*Astrodermella*", and "*Luvarella*" Roule, Ann. Inst. Oceanogr., (n.s.) i, 4, 1924, p. 123. Biological terms (not, in my opinion, generic names) given to stages in the metamorphosis of *Luvarus imperialis* Raf. *Id.*, Roule, Bull. Soc. Zool. France, xlix, 1924, p. 102 (*vide* Zool. Record).

The genus is regarded as containing one species to which many names have been applied under the above genera. *Coryphaena elegans* Risso is another synonym. I have seen Rafinesque's original account in the British Museum (Natural History) library, and a specimen in the Museum at the Naples Aquarium.

It is useful to have terms to indicate larval stages of fishes when these are markedly different from their adults. Thus we refer to the *Leptocephalus* of an eel, the *Tholichthys* of a *Chaetodon* or *Scatophagus*, the *Molacanthus* of sunfishes, and such forms as *Goodella*, *Atopichthys*, etc. The proposal of new terms when old generic synonyms are available seems, however, uneconomical. Roule's term "*Hystricinella*" for the recently discovered pre-larva of *Luvarus* may be adopted, but, on the grounds of priority, it is suggested that *Diana* would be preferable to *Astrodermella*, and *Ausonia* to *Luvarella*, for the larval and post-larval ("hémilarve") stages respectively.

Australasian Records of Luvarus.

Luvarus imperialis was first discovered in Australia by Waite, who published an account of its skeleton in the "Records of the Australian Museum" some 37 years ago. We now have four Australasian records:

- (1) Bermagui, southern New South Wales; cast ashore 500 yards up river, August 1901 (Waite, Records of the Australian Museum, Vol. iv, Aug. 1902, p. 292, pls. xlv-xlvi and fig. 22).
- (2) Cast on beach near North Cape, North Island of New Zealand, in 1887 (drawing reproduced by Waite, Records of the Canterbury Museum, Vol. ii, No. 1, Dec. 23, 1913, p. 20, pl. vi).
- (3) Motutara, near Auckland, North Island of New Zealand, Dec. 1921 (Griffin, New Zealand Journal of Science and Technology, Vol. iv, No. 6, 1922, p. 318, and Annual Report of Auckland Museum, 1921-2 (1922), p. 23).
- (4) South-west Rocks, Trial Bay, northern New South Wales, June 1939.

Evidently *Luvarus* is pelagic, probably drifting in the open sea far from land, and rarely becoming washed ashore when senile or diseased. All the Australasian records are from between 30° and 37° S. Lat., on the fringes of the east Australian current in the Tasman Sea.

Luvarus has been recorded from Norway (evidently carried there on the Gulf Stream), S.W. England, Eire (Cork, Donegal), Guernsey, France, Spain, Mediterranean Sea, Madeira, Tunis, Mozambique, California, New South Wales, and the North Island of New Zealand. Since the typical *L. imperialis* breeds in the Mediterranean, it seems likely that the Pacific form may be at least racially distinct.

The vernacular name Luvaru has been used for this fish by some authors, but "Silver King", invented by the Californians, seems to me preferable to the sobriquet "Loo" suggested by the Sydney newspapers.