Article XIII.—A KEY TO THE SPECIES OF TRACHURUS

By John Treadwell Nichols

Trachurus is one of the most sharply marked genera of Caranz-like fishes. The species which comprise it, on the other hand, are closely related and difficult to differentiate.

Cuvier and Valenciennes (1833)\(^1\) recognize but a single, wide-ranging species, more or less variable geographically. Lütken (1880)\(^2\) differentiates four species: (1) a North-European, (2) South-European, (3) one occurring at the islands of the eastern Atlantic and also on the western coast of South America, and (4) one in Chinese and Australian waters. Jordan and Evermann (1896)\(^3\) synonymize the Californian form with Lütken’s third. Later American writers, in using the name Trachurus symmetricus Ayres, with type locality San Francisco, for the Californian fish, as also for the one from the western coast of South America, imply that these are identical and differ from the one with which Lütken placed them. In an Australian Fisheries report (1915),\(^4\) two species from those waters are figured as declivis and novæ-zelandiae, differing from the Japanese japonicus. The above gives seven current species. There is also reference of Trachurus from the Cape of Good Hope, said to resemble the North-European fish, curve of lateral line less abrupt, scutes 65 to 75. Whereas recent authors do not recognize this form as distinct, it should be so, geographically, and has been described as capensis.

Six species of Trachurus are represented in the collections of The American Museum of Natural History. We have two from Naples. One of these is Lütken’s South-European species, which he refers to mediterraneus Steind. The other resembles his North-European species, but is more slender. Californian material is referable to symmetricus, and Japanese to japonicus. Material from Peru has been recently received; as also grown material from the Atlantic United States, which is rare.

In differentiating the species of this genus, Lütken does not make use of depth of body as a criterion, perhaps because he found it subject to such great age-variation in other carangin genera. It seems here, however, to be a reliable character and one of the most convenient, and,

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although Lütken’s characters may give a more reliable idea of the inter-
relation of the species, depth is used in this paper, as by Jordan and
Evermann, in separating them.

Lütken records his North-European fish, which he calls linnei, from
the Mediterranean also, enabling Jordan and Evermann to retain
Trachurus trachurus, with type locality the Mediterranean, for that
species. In all probability it was the similar, slenderer form which
Linneus had from the Mediterranean. This should, then, stand as
trachurus, and the northern one become semispinosus. One of the
current species is thus divided. Furthermore, on examination of three
American fish from Orient, Long Island, recently submitted by Mr. Roy
Latham (92, 95 and 125 mm. to base of caudal; taken August 28,
September 19 and November 1, 1919), it is found that their accessory
lateral line stops under the front of soft dorsal instead of continuing
farther back, as emphasized by Lütken for the North-European form,
with which they otherwise agree. Trachurus lathami is, therefore,
proposed for this American form.

Lacking material from the western coast of South America, the
figure of a fish from there (Evermann and Radcliffe, 1917, U.S. Nat.
Mus., Bull. No. 95, Pl. v) was studied. This was at once seen to differ
from Californian symmetricus, in which the anterior scutes are very narrow.
Furthermore, it was difficult to find characters to differentiate it from
Lütken’s description of his third species, which he calls cuvieri and which,
following Jordan and Evermann, is here synonymized with picturatus.
This leaves picturatus with an anomalous range. Examination of two
specimens of picturatus from Fayal, kindly loaned by the Museum of
Comparative Zoology, Cambridge, led to the conclusion that the Per-
vian fish was less slender, with perhaps other slight differences, a con-
clusion since confirmed by two specimens brought from Peru by Mr.
Murphy, one of which is made the type of murphyi, here proposed.

We are, again, without material of the two species figured from
Australia (1915); the deeper of these identified with declivis, the more
slender called nova-zelandiae, reviving an old name credited to Hutton.
Comparison with the excellent type figure of declivis, however, shows that
it is nova-zelandiae, which should have been referred to it. The deeper is
the one left without a name, and for which the name Trachurus mccul-
lochi is here proposed. It is close to, possibly identical with, japonicus.

The following list epitomizes the writer’s views on the synonymy of
the eleven species1 of Trachurus, now recognized.

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1The material at hand is insufficient to determine whether they should all stand as full species
or some or all be reduced to subspecies.
Trachurus semispinosus (Nilsson)
Range.—Abundant on the coasts of northern Europe.

Trachurus trachurus (Linnaeus)
Range.—Mediterranean.

Trachurus lathami, new species
Accessory lateral line ending under front of soft dorsal. Depth to base of caudal 3.65; arc of curve of lateral line 1½ in straight part. Scutes about 75. Scutes about six times as high as broad in the center of the straight part of lateral line. Dorsal soft rays 25 to 30. Anal soft rays 24 to 26.
Type.—No. 7351, The American Museum of Natural History; 95 mm. to base caudal; Orient, Long Island; Roy Latham; September 19, 1919.
Range.—Atlantic coast of America. Rare. Young numerous in the Gulf Stream, off the Florida Keys (February 23, 1910).

Trachurus capensis Castelnau
Trachurus capensis Castelnau, 1861, Mémoire sur les poissons de l’Afrique australe, p. 43.
Range.—Cape Region of Africa. Abundant.

Trachurus japonicus (Temminck and Schlegel)
Caranx trachurus japonicus TEMMINCK AND SCHLEGEL, 1844, Pisces, in Fauna Japonica, p. 109, Pl. LIX, fig. 1.
Range.—Japanese and adjacent seas.

Trachurus mcullochi, new name
Range.—Australian seas.

Trachurus mediterraneus (Steindachner)
Range.—Mediterranean, occasional in the Atlantic.

Trachurus murphyi, new species
Accessory lateral line ending under front of soft dorsal. Depth to base of caudal 3.87 to 4.48. Arc of curve of lateral line 1.0 to 1.1 in straight part. Scutes 94 to 101
(usually about 95). Scutes about seven times as high as broad in the center of straight part of lateral line. The anterior scutes from ¾ as high to as high as the posterior. Dorsal soft rays 32 to 33. Anal soft rays 27 to 29.

Type.—No. 7259, The American Museum of Natural History; Central Island of the Chinchas, Peru; R. C. Murphy; October 27, 1919.

Range.—Western coast of South America.

**Trachurus declivis** (Jenyns)

*Caranx declivis* Jenyns, 1842, Zoology of the 'Beagle,' Fishes, p. 68, Pl. xiv. Australia.


Range.—Australian seas.

**Trachurus picturatus** (Bowdich)

*Seriola picturata* Bowdich, 1825, Excursion to Madeira, p. 123, fig. 27. Madeira.

Range.—Islands of the eastern Atlantic; coast of southwest Europe (Lütken).

**Trachurus symmetricus** (Ayres)


Range.—Off the southwest coast of North America, north to San Francisco.

**KEY**

1. Body comparatively deep and compressed, the depth 3⅓ to 4⅗ in length to base of caudal. ................................................ 2.
   Body elongate, little compressed, the depth 4½ or more in length .......... 7.

2. Scutes 70 or 80 (68 to 92) in number ........................................ 3.
   Scutes 94 to 101 in number ...................................... *murphyi*.

3. Chord of curve of lateral line 1⅛ to 1⅞ in straight part .................. 4.
   Chord of curve of lateral line 1.2 in straight part; depth 4.1; upper accessory lateral line to front of soft dorsal only; scutes 79 to 92; height 4 or 5 times their length; dorsal with about 28, anal with about 26 soft rays .... *mediterraneus*.

4. Depth about 3.6 or 3.7; scutes about 75 to 77, about 6 or 7 times as high as long in center of straight part of lateral line; dorsal with 25 to 30, anal 24 to 28 soft rays ............................................................... 5.
   Depth 3.8 to 4.2; upper, accessory, lateral line to front of soft dorsal only (not described in *mccullochi*); height of scutes 4 or 5 times their length; dorsal with 30 to 34 soft rays, anal with 26 to 31 ........................................ 6.

5. Accessory lateral line continuous under soft dorsal ............... *semispinosus*.
   Accessory lateral line to under front of soft dorsal only ............. *lathami*.

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*Capensis* probably comes here. Flexure of lateral line less abrupt; scutes 65 to 75.
6. Bend in lateral line abrupt, scutes 68 to 75. \textit{mccullochi}.
Bend in lateral line not particularly abrupt, scutes 72 to 80. \textit{japonicus}.

7. Chord of curve of lateral line $1\frac{1}{2}$ in straight part; upper, accessory, lateral line continuous under soft dorsal; height of central-posterior scutes 6 or 7 times their length; depth about 4.7; scutes about 75; dorsal with about 29, anal about 28 soft rays. \textit{trachurus}.
Chord of curve of lateral line scarcely if at all shorter than straight part; upper, accessory, lateral line to front of soft dorsal only (not described for \textit{declivis}). 8.

8. Scutes 81 or 82 (74 to 85); anterior and posterior portions of lateral line horizontal, connected by a short oblique portion; depth about 4.5; dorsal with 30 to 35, anal 28 to 30 soft rays; height central-posterior scutes 6 or 7 times their length. \textit{declivis}.
Scutes 96 or 99 (90 to 108); depth 4.5 to 4.7; dorsal with 31 to 33, anal 27 to 29 soft rays. \textit{9}.

9. Anterior scutes $\frac{3}{4}$ as high to as high as posterior, the height of which (centrally) is 5 to 7 times their length. \textit{10}.
Anterior scutes narrow, $\frac{1}{2}$ or less as high as posterior, the height of which (centrally) is 4 or 5 times their length. \textit{symmetricus}.

10. Slender. Depth 4.5 or more. \textit{picturatus}.
Less slender. Depth less than 4.5. \textit{murphyi}