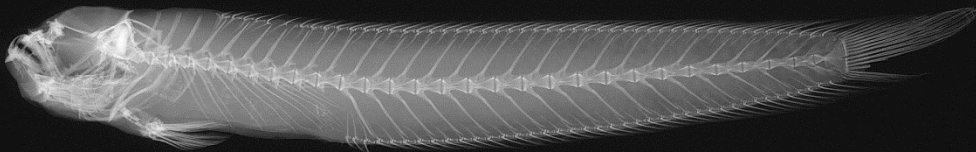
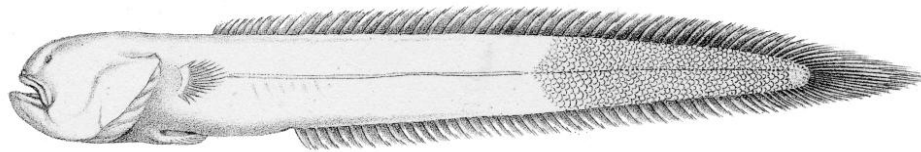




Systematics & Diversity of Amblyopine gobies

Edward O. Murdy & Koichi Shibukawa
IPFC9



Amblyopinae

Composition:

“Trypauchen” Group: *Amblyotrypauchen*, *Caragobius*, *Ctenotrypauchen*, *Karsten*, *Paratrypauchen*, *Trypauchen*, *Trypauchenichthys*

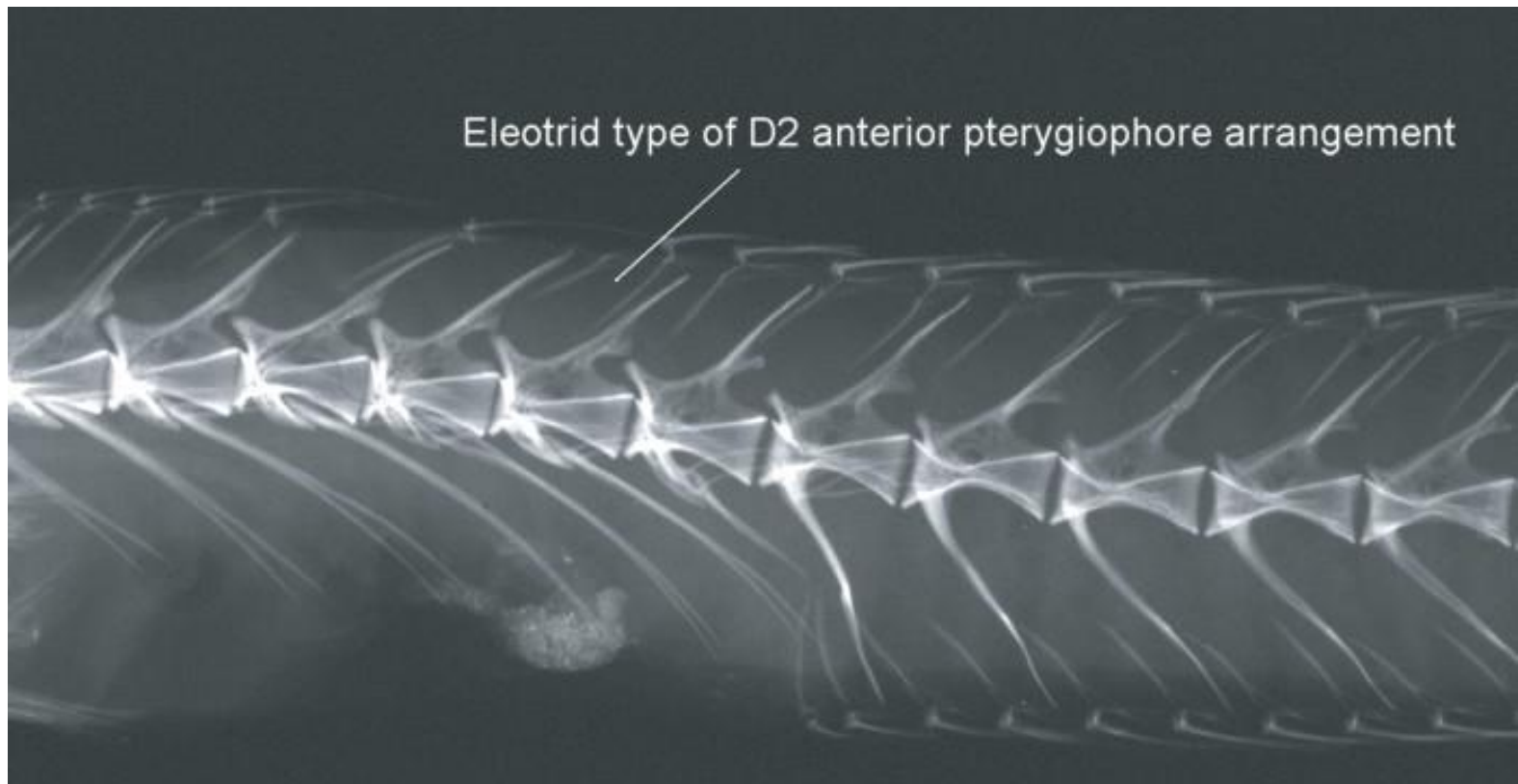
“Taenioides” Group: *Brachyamblyopus*, *Gymnoamblyopus*, *Odontamblyopus*, *Pseudotrypauchen*, *Taenioides*, *Trypauchenopsis*, **four** new genera

Unique features:

- * Fin element to vertebra ratio of 2:1
- * Ultimate dorsal- and anal-fin pterygiophores support only a single ray
- * Dorsal fin continuous
- * 1st two pterygiophores of D2 inserting in the same interneural space (except in *Pseudotrypauchen* and two undescribed genera)

Amblyopinae

- * 1st two pterygiophores of D2 inserting in the same interneural space (except in *Pseudotrypauchen*)



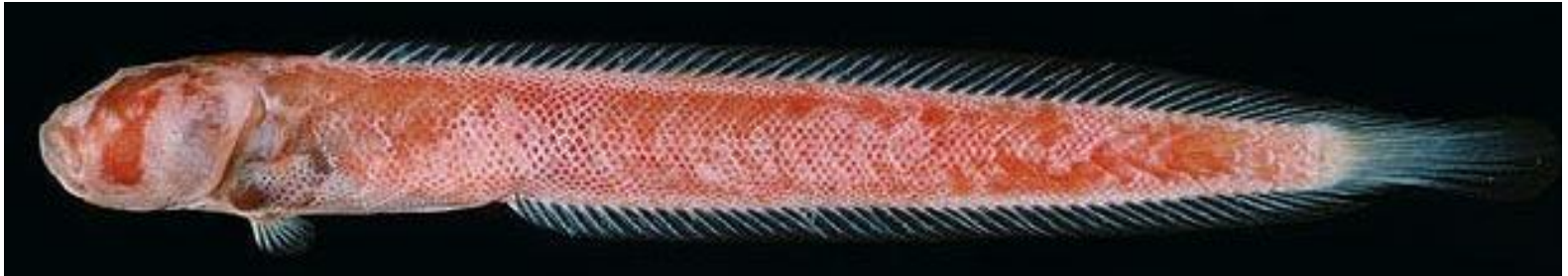
Trypauchen Group

Composition: 11 species in 7 genera

“Trypauchen” Group: *Amblyotrypauchen*, *Caragobius*, *Ctenotrypauchen*, *Karsten*, *Paratrypauchen*, *Trypauchen*, *Trypauchenichthys*

Unique features:

- * Pterygiophore formula 3-1221 (P/V 3/I II II I/7-8)
- * No interneural gap
- * All but *Caragobius* and *Karsten* possess “pouch” at dorsal surface of operculum

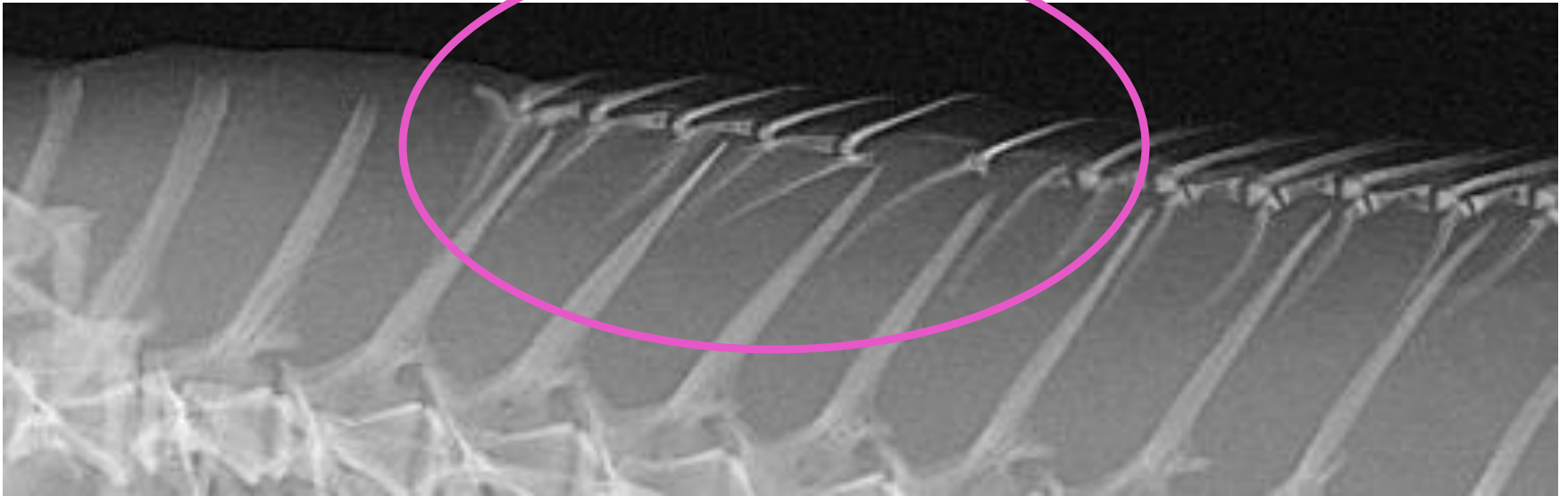


Trypauchen vagina

Trypauchen Group

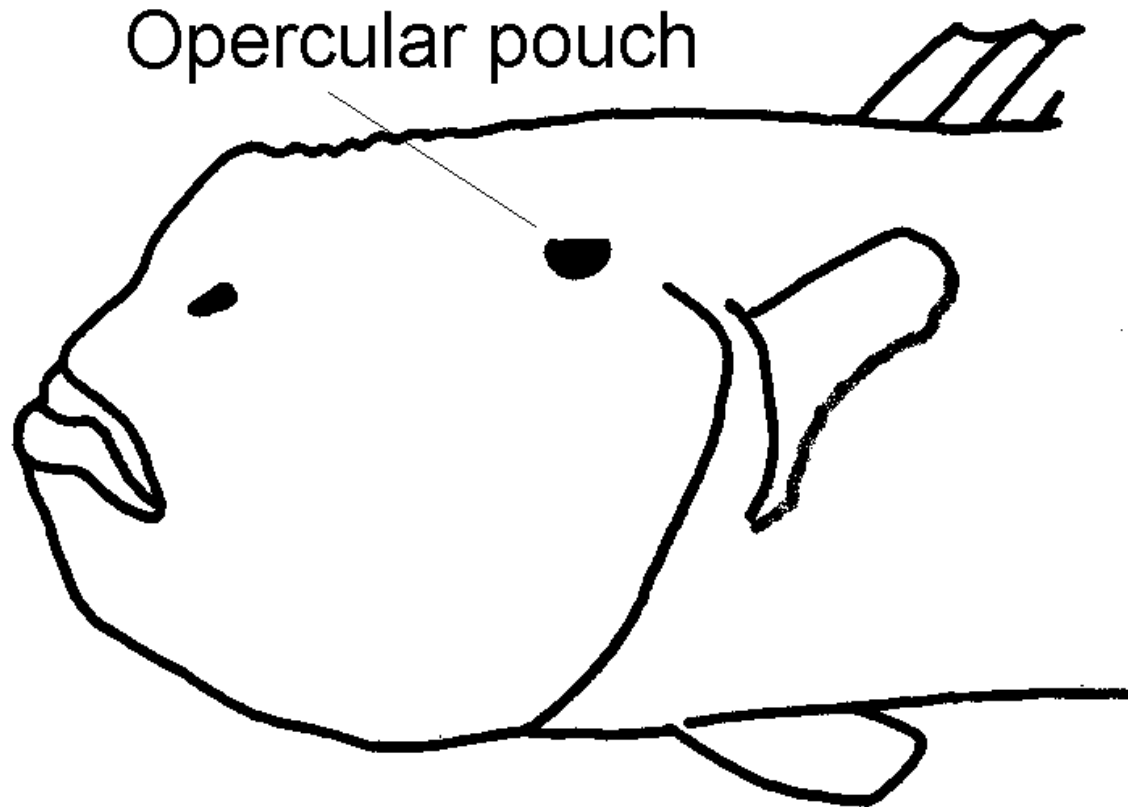
Unique features:

- * Pterygiophore formula 3-1221 (or P/V 3/I II II I/7-8)
- * No interneural gap



Trypauchen Group

* All but *Caragobius* and *Karsten* possess “pouch” at dorsal surface of operculum



Taenioides Group

Composition: At least 20 species in 10 genera

“Taenioides” Group: *Brachyamblyopus*, *Gymnoamblyopus*,
Odontamblyopus, *Pseudotrypauchen*, *Taenioides*, *Trypauchenopsis*,
four new genera

Unique features:

* None



Taenioides gracilis from Kochi Prefecture, Japan

Taenioides Group

“Taenioides” Group: *Brachyamblyopus*, *Gymnoamblyopus*, *Odontamblyopus*, *Pseudotrypauchen*, *Taenioides*, *Trypauchenopsis*, **four** new genera

Reviewed/Revised:

Gymnoamblyopus – Murdy and Ferraris, 2003

Odontamblyopus – Murdy and Shibukawa, 2001; Murdy and Shibukawa, 2004

Pseudotrypauchen – Murdy and Shibukawa, 2002

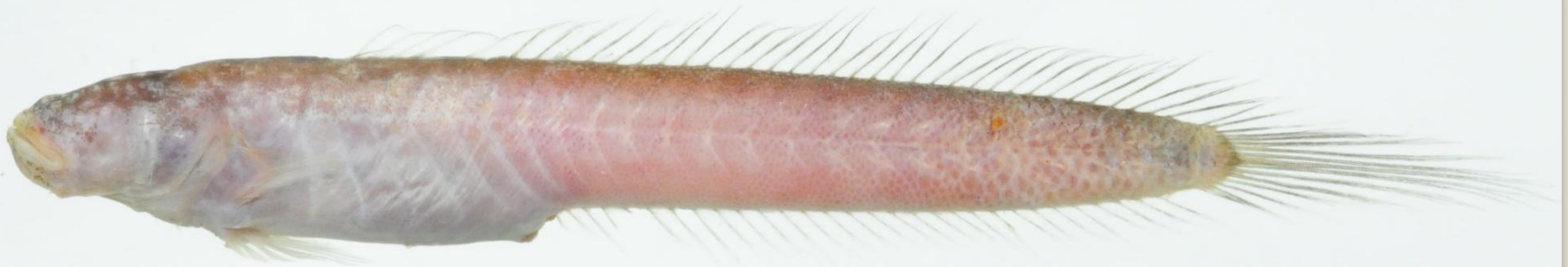
Trypauchenopsis – Shibukawa and Murdy, 2012



Taenioides sp.

Brachyamblyopus

Bleeker, 1874



- A single species, *B. brachysoma*
- No unique features
- Limited number of specimens (fewer than 12)

Taenioides

Lacepède, 1800



Unique features:

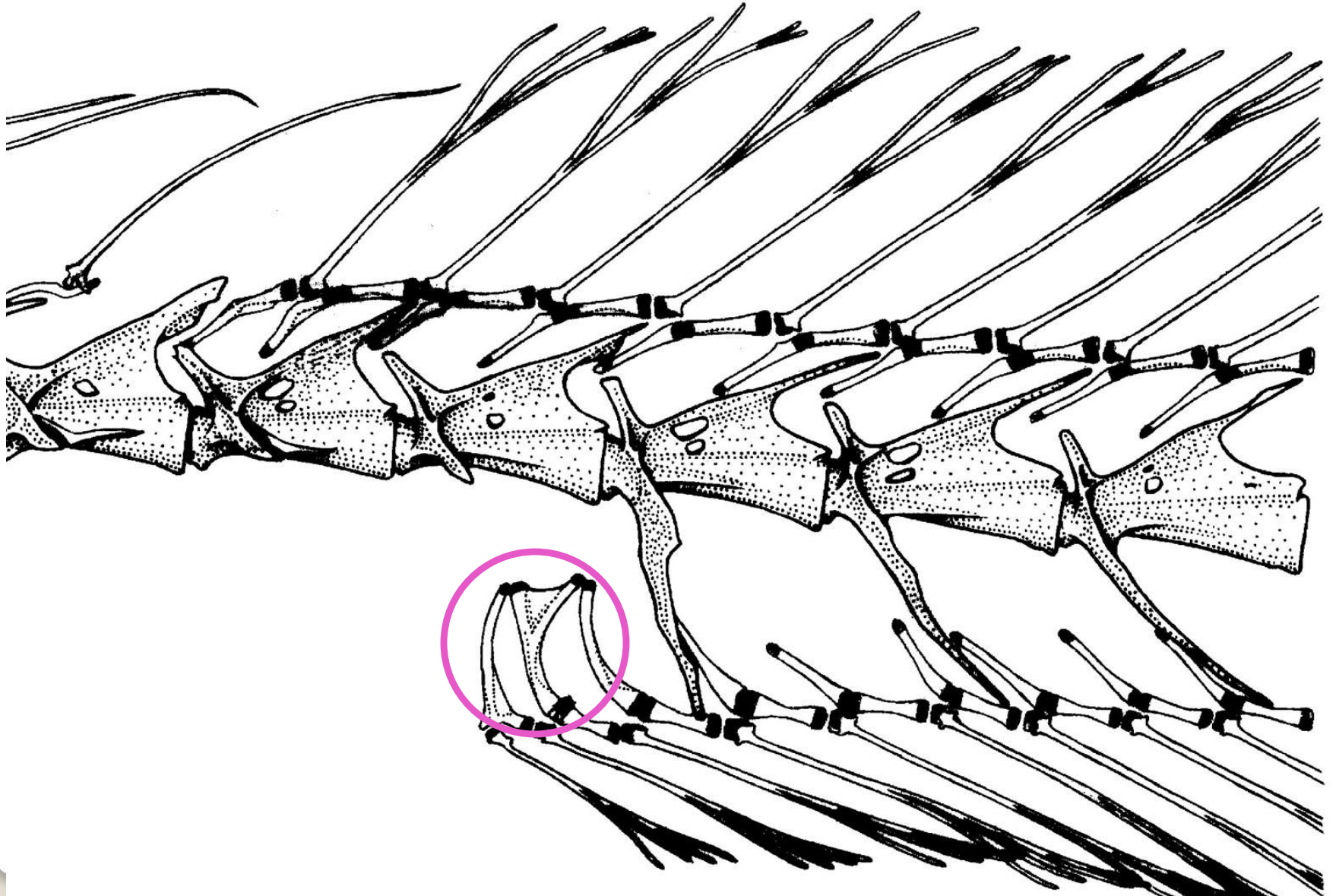
- distinct cutaneous ridges with sensory papillae
- second anal-fin pterygiophore spatulate

Unique features of *Taenioides*



- distinct cutaneous ridges with sensory papillae on head and body

2nd anal-fin pterygiophore of *Taenioides*



1. ***anguillaris***
Linnaeus 1758
2. *hermannii* Lacepède
1800
3. *coecula* Bloch &
Schneider 1801
4. ***gracilis***
Valenciennes 1837
5. *rugosus* Richardson
1846
6. *eruptionis* Bleeker
1849
7. *cirratus* Blyth 1860
8. *brachygaster*
Günther 1861
9. *mordax* DeVis 1883
10. ***purpurascens***
DeVis 1884
11. ***snyderi*** Jordan &
Hubbs 1925
12. *caniscapulus* Roxas
& Alban 1938
13. *esquivel* Smith 1947
14. ***kentalleni*** Murdy &
Randall 2002

Nominal species of *Taenioides*

- ***Taenioides anguillaris*** (Linnaeus, 1758)
 - Thailand, Indonesia, Brunei, Philippines, Australia, Taiwan, China, Okinawa
- ***Taenioides gracilis*** (Valenciennes, 1837)
 - South Africa, Mozambique, Madagascar, India, Myanmar, Thailand, Indonesia, Vietnam, Philippines, Australia, Taiwan, southern Japan
- ***Taenioides kentalleni*** Murdy & Randall, 2002
 - Okinawa (?), Oman (?), Saudi Arabia
- ***Taenioides purpurascens*** (DeVis, 1884)
 - Australia (NSW), Dumaguete (Philippines) (?)
- ***Taenioides snyderi*** (Jordan and Hubbs, 1925)
 - Hong Kong, Taiwan, Saga and Wakayama Prefectures (Japan)

Revised Taxonomy and Distribution

- Nominal Species

Taenioides cirratus

Leme mordax

Taenioides esquivel

Taenioides limicola

Taenioides jacksoni

Taenioides buchanani

Taenioides nigrimarginatus

Taenioides sumatranus

- Valid Species

Taenioides anguillaris

Taenioides gracilis

Taenioides gracilis

Trypauchenopsis intermedia

Trypauchenopsis intermedia

New genus "E" *buchanani*

New genus "E" *nigrimarginatus*

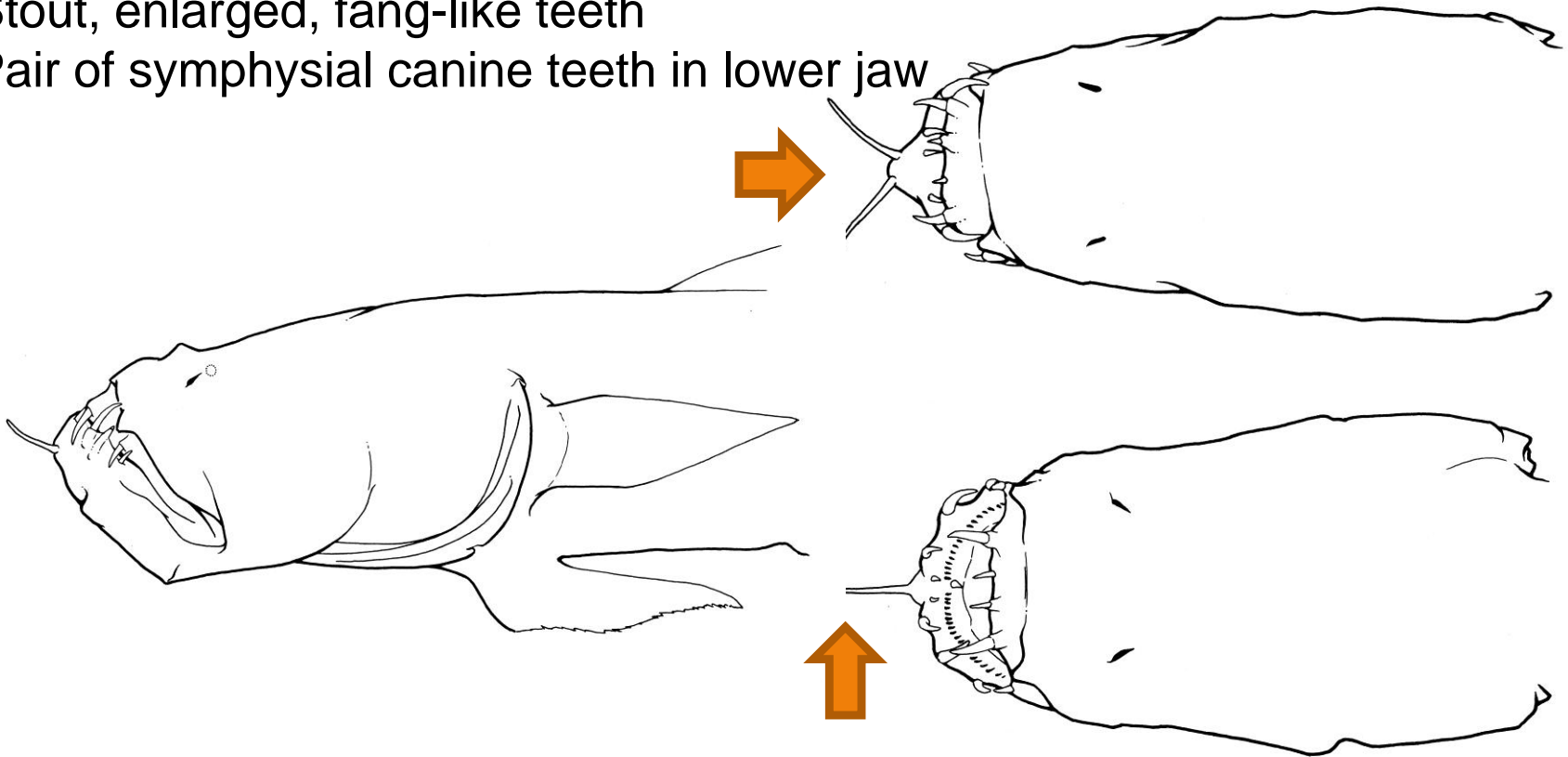
New genus "S" *sumatranus*

Revised taxonomy

New Genus "S"

Diagnosis:

- A single or pair of long, filamentous barbels at tip of chin
- Ventral projection of dentary prominent
- Almost all pectoral-fin rays simple
- Stout, enlarged, fang-like teeth
- Pair of symphyseal canine teeth in lower jaw



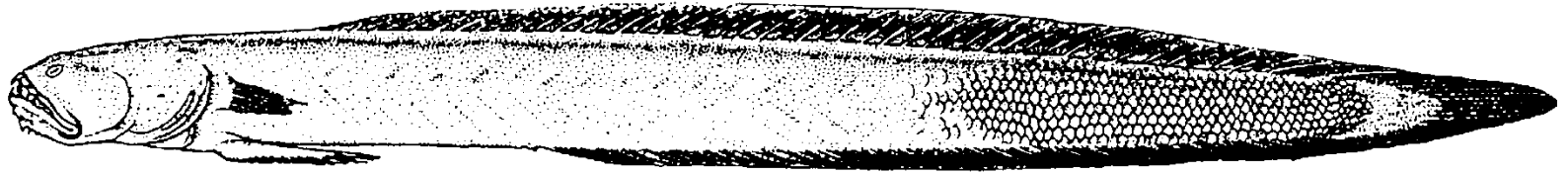
New Genus "S" *sumatranus* (Volz, 1903)
Sarawak, Sumatra (NMBE 1021651, 2 syntypes)



New Genus "S" new species *bicirrhosus*
Malaysia (NTM-S13893)



New Genus “E”



Diagnosis:

- 11 precaudal vertebrae
- 4-6 anal-fin pterygiophores precede 1st hemal spine
- Enlarged fang-like teeth
- Pair of symphyseal canine teeth in lower jaw
- Pectoral fin very short

New Genus “E”

New Genus “E” *nigrimarginatus* (Hora, 1924)
Cambodia (?), Thailand, Malaysia, Vietnam



New Genus “E” *buchanani* (Day, 1873)
India, Myanmar



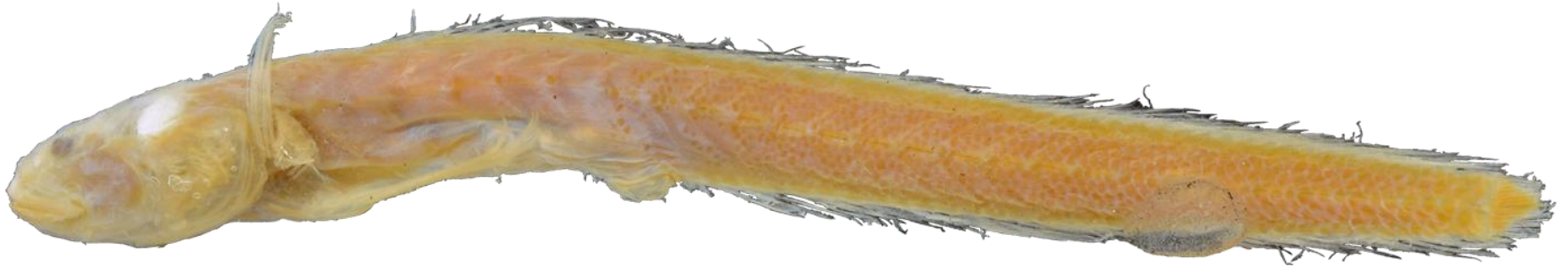
New Genus “A”

Two species

Queensland, Australia

AMS I.24495 (44.6 mm SL)

Collected at a depth of 46 M!



Diagnosis:

- eye relatively large (!)
- has gobiid-type of D2 anterior pterygiophore arrangement (!!)

New Genus "A"

Penang, Malaysia

USNM 346546 (87.9 mm SL)



Papua New Guinea

AMS I.17188-001 (55.2 mm SL)



New Genus “B”

New Genus “B” new species *fundicola*

Samar Sea, Philippines (50 fathoms)

USNM 357731 (2, 59.6-65.3 mm SL)



Diagnosis. Similar to *Brachyamblyopus* in general appearance, but differs as follows:

- 1-3 pairs of fang-like teeth in each jaw
- gobiid-type of D2 anterior pterygiophore arrangement
- single anal-fin pterygiophore anterior to first haemal spine

Summary of Challenges remaining

- Revise *Taenioides*
- Redescribe *Brachyamblyopus*
- Describe four new genera
 - Describe four new species
- Genus "A" -----two species
- Genus "B" -----one species
- Genus "E"
- Genus "S" -----one species

