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Research Article

Review of the tonguesoles of the Red Sea, with description of a new species (Teleostei: Cynoglossidae)

Ronald Fricke[8], Daniel Golani[2], Brenda Appelbaum-Golani[3]

[1]Staatliches Museum für Naturkunde in Stuttgart, Rosenstein 1, 70191 Stuttgart, Germany.
[2]National Natural History Collections and Department of Ecology, Evolution and Behavior, The Hebrew University of Jerusalem, 91904 Jerusalem, Israel.
[3]The Hebrew University of Jerusalem, 91905 Jerusalem, Israel
*Correspondence: ronald.fricke@smns-bw.de; ronfricke@web.de

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Abstract

The cynoglossid fishes of the Red Sea are reviewed. We distinguish 10 valid species in two genera: *Cynoglossus acutirostris* Norman 1939 from the Gulf of Aden, southern and central Red Sea; *C. cleopatridis* Chabanaud 1949 from the Gulf of Suez; C. *crepida* Fricke, Golani & Appelbaum-Golani 2017 from the Gulf of Aqaba; *C. dollfusi* (Chabanaud 1931) from the Gulf of Suez; *C. glotta* n. sp. from Eritrea, southern Red Sea; *C. lachneri* Menon 1977 from the Red Sea and the Indian Ocean; *C. pottii* Steindachner 1902 from the Gulf of Suez and southern Red Sea; *C. quadrilineatus* (Bleeker 1861) from the Red Sea and Indo-West Pacific; *C. sinusarabici* (Chabanaud 1931) from the Red Sea [the only Lessepsian migrant in the eastern Mediterranean of this family]; *Paraplagusia bilineata* (Bloch 1787) from the Red Sea and the Indo-West Pacific. All species are diagnosed, the new taxa are described in detail. A lectotype for *Cynoglossus sinusarabici* (Chabanaud 1931) is selected and described. Keys to the genera of Cynoglossidae, and to the species in the Red Sea, are provided.

Keywords: Cynoglossidae, tonguesole, new genus, new species, identification key, distribution

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Introduction

The tonguesoles of the family Cynoglossidae are small to medium sized benthic fishes, which are common in marine waters from tidal pools to the continental shelf and upper slope to a maximum depth of 1,500 m (Munroe, 2001). The family includes three valid genera. The osteology of the family was examined by Chapleau (1988). The largest genus, *Symphurus* Rafinesque, 1810, is superficially characterised by having a small mouth with strongly curved and toothed jaws, in having the caudal, dorsal and anal fins united, and in having lost pectoral fins, lateral line, and left-side pelvic fin, while the right-side pelvic fin is not connected with the anal fin (Munroe 1998). The genus was not yet revised on a worldwide basis, though local revisions of Atlantic and Western

Pacific species were published (Munroe 1990, 1998; Lee & Munroe 2021; Lee 2022); Fricke et al. (2023) distinguish a total of 86 valid species.

The second largest genus, *Cynoglossus* Hamilton, 1822, is characterised by the presence of 2-3 lateral lines on the ocular side of the body, the presence of a rostral hook covering part of the mouth, and the absence of fringes on the lips of the ocular side; it was revised by Menon (1977) who distinguished 49 valid species in 17 species complexes arranged in 4 species groups. Subsequently, *Cynoglossus ochiaii* Yokogawa, Endo and Sakaji 2008 was described from Japan and the East China Sea by Yokogawa et al. (2008), *C. nanhaiensis* Wang, Munroe and Kong 2016 from the South China Sea coast of China (Wang et al. 2016), *C. crepida* Fricke, Golani and Appelbaum-Golani 2017 from the Gulf of Aqaba, Red Sea (Fricke et al. 2017), *C. westraliensis* Fricke 2019 from Western Australia (Fricke 2019); *C. yokomaru* Naito & Endo 2019 from the East China Sea and Yellow Sea (Naito & Endo 2019); *C. quadriocellatus* Fricke 2021 from Western Australia (Fricke 2021). *Cynoglossus dollfusi* (Chabanaud, 1931) was recently reinstated, and *Cynoglossus cleopatridis* Chabanaud, 1949 was redefined by Munroe and Kong (2016); Munroe (2017) redescribed the rediscovered holotype and further discussed the taxonomic status and synonymy of *C. dollfusi*. The genus thus comprises 75 valid species; it is distributed in the Indo-West Pacific and the eastern Atlantic.

Finally, the genus *Paraplagusia* Bleeker, 1865 is characterised by the presence of a row of fringed tentacles on the lips, the presence of a rostral hook covering part of the mouth, the absence of pectoral fins and left-side pelvic fins but presence of 2-3 lateral lines (Menon 1980). The genus was revised by Menon (1980), who distinguished three valid species, *P. bilineata* (Bloch, 1787) which is widely distributed in the Indo-West Pacific, *P. blochii* (Bleeker, 1851) that occurs from Oman east to the Philippines, and *P. japonica* (Houttuyn, 1782) from the Western Pacific. Subsequently, two new species were described, *P. longirostris* Chapleau, Renaud and Kailola, 1991 by Chapleau et al. (1991), and *P. sinerama* Chapleau and Renaud, 1993 by Chapleau and Renaud (1993), both from northern Australia and New Guinea. In addition, *Paraplagusia guttata* (Macleay, 1878), distributed from Taiwan to northern Australia, was reinstated by Li and Wang (1995), and the reinstatement confirmed by several authors like Larson et al. (2013). Kottelat (2013a) proposed a new name *P. bleekeri* Kottelat, 2013 for *P. blochii* (Bleeker, 1851), but most subsequent authors failed to follow this line. *Paraplagusia japonica* was redescribed by Luo et al. (2019). Consequently, the actual number of valid species in *Paraplagusia* adds to a total of five.

During the present study, the cynoglossid fishes of the Red Sea are reviewed, and new taxa of the family are described.

Materials and Methods

Biometrical counts and measurements follow Hubbs and Lagler (1947), descriptive methods follow Menon (1977) and Krupp (1987); the genus and species classification follows Fricke et al. (2023), family classification follows Laan et al. (2014); the references follow Fricke (2023), and collection abbreviations follow Fricke and Eschmeyer (2023). The standard length is abbreviated SL, the head length is abbreviated HL. Distributions maps were produced with QGIS 3.30.2. As a new genus is described, we include diagnoses of all known cynoglossid genera; species diagnoses are only included when the species is known to occur in the Red Sea. Full descriptions are included for new taxa, and for lectotype descriptions.

Comparative materials

***Cynoglossus acaudatus* Gilchrist 1906**: BMNH 1904.11.4.85 (1), South Africa; BMNH 1908.3.23.149-152 (4), Cargados Carajos; BMNH 1922.3.27.18 (1 syntype of *Areliscus natalensis* Bonde 1922, 116.2 mm SL), KwaZulu-Natal, South Africa.

***Cynoglossus arel* (Bloch & Schneider 1801)**: BMNH 1860.3.19.433 (holotype of *Plagusia grandisquamis* Cantor 1849, 159.3 mm SL), Penang, Malaysia; HUJ 14739 (2, 183.4-209.3 mm SL), Hong Kong, China, South China Sea.

***Cynoglossus attenuatus* Gilchrist 1904**: BMNH 1903.12.31.10 (1 syntype, 196.9 mm SL), KwaZulu-Natal, South Africa.

***Cynoglossus broadhursti* Waite 1905**: BMNH 1925.7.22.83 (1), off mouth of Murray River, South Australia; WAM P.I.13258-001 (1 syntype), between Fremantle and Geraldton, Western Australia;

WAM P.33173-004 (1), Western Australia, Jurien Bay; WAM P.33816-001 (1), Western Australia, Jurien Bay.

***Cynoglossus browni* Chabanaud 1949**: MNHN 1949-0023 (holotype, 214.7 mm SL), Sierra Leone; BMNH 2011.10.18.3 (1), Liberia.

***Cynoglossus cadenati* Chabanaud 1947**: MNHN 1949-0020 (holotype, 114.7 mm SL), Senegal; MNHN B.2547 (1 paratype, 103.6 mm SL), Senegal; MNHN 1949-0021 (holotype of *Cynoglossus cadenati honoris* Chabanaud 1949, 105.5 mm SL), Sierra Leone.

***Cynoglossus canariensis* Steindachner 1882**: BMNH 1914.11.2.72 (lectotype of *Cynoglossus lagoensis* Regan 1915), Lagos Nigeria; BMNH 1914.11.2.71 (1 paralectotype of *Cynoglossus lagoensis* Regan 1915), Lagos Nigeria.

***Cynoglossus capensis* (Kaup 1858)**: BMNH 1904.11.4.4 (1, 84.1 mm SL), Cape Point, South Africa.

***Cynoglossus carpenteri* Alcock 1889**: BMNH 1890.7.31.10-12 (3, ca. 138.8-165.5 mm SL), Ganjam coast, India, leg. A. W. Alcock; BMNH 1890.11.28.27-29 (ca. 156.7-163.2 mm SL), Ganjam coast, India; BMNH 1925.3.20.75.77 (4), Bay of Bengal, India; MNHN 1890-0359 - 1890-0362 (4, 145.9-163.7 mm SL), India.

***Cynoglossus cynoglossus* (Hamilton 1822)**: BMNH 1862.6.3.9 (1), Sumatra, Indonesia, leg. P. Bleeker; BMNH 1862.6.3.17 (1 paralectotype of *Plagusia oxyrhynchos* Bleeker 1851), Indonesia; BMNH 1928.3.20.133 (1, paralectotype of *Cynoglossus deltae* Jenkins 1910, 62.3 mm SL), Sundarbans, Bangladesh.

***Cynoglossus dispar* Day 1877**: BMNH 1889.2.1.4061 (1 paralectotype, 201.1 mm SL), Madras, India; BMNH 1889.2.1.4062-4063 (2 paralectotypes, 123.7-167.8 mm SL), Madras, India.

***Cynoglossus dubius* Day 1873**: BMNH 1911.12.6.16 (1, 245.7 mm SL), Karachi, Pakistan; BMNH 1983.5.10.29-32 (4), Pakistan.

***Cynoglossus durbanensis* Regan 1921**: BMNH 1920.7.23.37 (lectotype), Durban, KwaZulu-Natal, South Africa; BMNH 1920.7.23.38 (paralectotype), Durban, KwaZulu-Natal, South Africa.

***Cynoglossus feldmanni* (Bleeker 1854)**: BMNH 1989.11.20.2 (1), Nakhon Sawan, Thailand; MNHN 1965-0466 (holotype of *Cynoglossus aubentoni* Stauch 1965, 107.4 mm SL), Cambodia.

***Cynoglossus gilchristi* Regan 1920**: BMNH 1903.9.29.2 (holotype, 132.0 mm SL), Kwa-Zulu Natal, South Africa; BMNH 1981.6.25.102-103 (2, 71.7-84.1 mm SL), Rufiji Delta, Tanzania.

***Cynoglossus gracilis* Günther 1873**: BMNH 1873.7.30.57-58(a-b) (3 syntypes, 80.9-210.0 mm SL), Shanghai, China.

***Cynoglossus hardenbergi* Norman 1931**: BMNH 1931.4.23.54 (holotype, 198.4 mm SL), Sumatra, Indonesia.

***Cynoglossus heterolepis* Weber 1910**: BMNH 1913.12.15.36 (1 syntype, ca. 182.1 mm SL), Lorentz River, Papua, Indonesia; BMNH 1937.3.17.1 (1, 181.2 mm SL), upper Fly River, Papua New Guinea.

***Cynoglossus interruptus* Günther 1880**: BMNH 1855.9.19.47 (1), China; BMNH 1879.5.14.92 (1 syntype, 133.6 mm SL), Yokohama, Japan; BMNH 1890.2.26.146 (1 syntype, 86.9 mm SL), Yokohama, Japan; BMNH 1923.2.26.650-659 (10), Tokyo, Japan.

***Cynoglossus itinus* (Snyder 1909)**: SMNS 24758 (7), Kueishan Island, Taiwan, western Pacific Ocean.

***Cynoglossus joyneri* Günther 1878**: BMNH 1858.4.15.94 (lectotype of Chabanaud 1951: 269), Yokei, Japan; BMNH 1858.4.15.95 (1 paralectotype), Yokei, Japan; BMNH 1892.12.12.32 (holotype of *Cynoglossus tshusanensis* Chabanaud 1951), Tshusan Archipelago, China; BMNH 1892.12.12.33-34 (2 paratypes of *Cynoglossus tshusanensis* Chabanaud 1951), Tshusan Archipelago, China; BMNH 1924.12.15.870 (lectotype of *Cynoglossus lighti* Norman 1925), Wenshow, China; BMNH 1924.12.15.88-89 (2 paralectotypes of *Cynoglossus lighti* Norman 1925), Wenshow, China; BMNH 1924.12.15.90 (1 paralectotype of *Cynoglossus lighti* Norman 1925, 113.8 mm SL), Wenshow, China.

***Cynoglossus kopsii* (Bleeker 1851)**: BMNH 1879.5.14.81 (132.3 mm SL), Arafura Sea; BMNH 1890.2.26.147 (1 syntype of *Cynoglossus kopsi digramma* Chabanaud 1951, ca. 109.6 mm SL), Arafura Sea; BMNH 1890.2.26.148 (1 syntype of *Cynoglossus kopsi digramma* Chabanaud 1951, ca. 83.4 mm SL), Arafura Sea; BMNH 1908.3.23.148 (1 syntype of *Cynoglossus kopsi digramma* Chabanaud 1951, 97.9 mm SL), Almirantes, Seychelles; MNNH 1890-0134 (1 syntype of *Cynoglossus kopsi digramma* Chabanaud 1951, 109.8 mm SL), Arafura Sea; HUJ 20554 (1, 135.7 mm SL), Hong Kong, China, South

China Sea; SMNS 12517 (2), Phetchaburi, Thailand, South China Sea; SMNS 23771 (1), Singapore; WAM P.33975-015 (3), Indonesia, West Papua, Pisang Bay.

***Cynoglossus lida* (Bleeker 1851)**: BMNH 1919.9.12.50 (1, 149.5 mm SL), Durban, KwaZulu-Natal, South Africa; WAM P.33708-002 (1), Indonesia, West Papua, Raja Ampat Islands.

***Cynoglossus luctuosus* Chabanaud 1948**: BMNH 1932.2.6.1 (holotype, 129.4 mm SL), Madras, India; BMNH 1932.2.6.2-9 (8 paratypes, 117.7-137.2 mm SL), Madras, India.

***Cynoglossus maccullochi* Norman 1926**: AMS E.2693 (holotype), 7-10 miles northwest of Hummocky Island, Queensland, Australia; WAM P.25846-001 (1), Western Australia, Houtman Abrolhos, 28º24'24''S 113 º44'42''E; WAM P.31704-001 (1), Western Australia, Shark Bay; WAM P.32275-003 (1), Western Australia, Shark Bay; WAM P.32276-002 (1), Western Australia, Shark Bay; WAM P.32302-002 (1), Western Australia, Dirk Hartog Island; WAM P.32497-001 (1), Western Australia, Shark Bay.

***Cynoglossus macrolepidotus* (Bleeker 1851)**: SMNS 10586 (1 paralectotype), Jakarta, Java, Indonesia.

***Cynoglossus macrophthalmus* Norman 1926**: AMS E.1978 (holotype), 20 miles off Bustard Head Light, Queensland, Australia; SMNS 14298 (2), Exmouth Gulf, Western Australia, southeastern Indian Ocean.

***Cynoglossus macrostomus* Norman 1928**: BMNH 1889.2.1.4076 (1 paratype, 118.3 mm SL), China; SMF 790 (1), India, Mumbai; SMF 28811 (2), Indonesia, Sumatra Barat, north of Airbangis.

***Cynoglossus maculipinnis* Rendahl 1921**: BMNH 1933.8.14.24 (1), northwestern Australia; WAM P.31838-001 (1), Dampier Archipelago, Western Australia; WAM P.31841-003 (1), Dampier Archipelago, Western Australia; WAM P.31846-004 (1), Dampier Archipelago, Western Australia; WAM P.31848-003 (1), Dampier Archipelago, Western Australia; WAM P.31849-002 (1), Dampier Archipelago, Western Australia; WAM P.31853-008 (1), Dampier Archipelago, Western Australia; WAM P.31856-004 (1), Dampier Archipelago, Western Australia; WAM P.31861-005 (1), Dampier Archipelago, Western Australia; WAM P.31863-003 (1), Dampier Archipelago, Western Australia; WAM P.32169-014 (2), Western Australia, Quondong Point north of Broome.

***Cynoglossus marleyi* Regan 1921**: BMNH 1921.3.1.21 (holotype, ca. 317.7 mm SL), Kwa-Zulu Natal, South Africa.

***Cynoglossus melanopterus* (Bleeker 1851)**: BMNH 1862.6.3.13 (1 paralectotype), Indonesia.

***Cynoglossus microlepis* (Bleeker 1851)**: BMNH 1984.1.13.248 (1, 86.2 mm SL), Singapore; MNHN 0000-0399 (5 paralectotypes of *Cynoglossus solum* Sauvage 1878, 191.0-222.8 mm SL), Mekong River, Vietnam; MNHN 0000-9516 (lectotype of *Cynoglossus solum* Sauvage 1878, 191.9 mm SL), MNHN 0000-9640 (5 paralectotypes of *Cynoglossus solum* Sauvage 1878, 203.0-231.7 mm SL), Mekong River, Vietnam.

***Cynoglossus microphthalmus* (Bonde 1922)**: BMNH 1922.3.27.17 (holotype, 166.0 mm SL), KwaZulu-Natal, South Africa.

***Cynoglossus monodi* Chabanaud 1949**: MNHN 1949-0018 (holotype, 318.6 mm SL), Benin; BMNH 1949.4.30.4 (1 paratype, 236.4 mm SL), Benin.

***Cynoglossus monopus* (Bleeker 1849)**: HUJ 14764 (1, 142.5 mm SL), Hong Kong, China, South China Sea; MNHN 0000-0174 (1 syntype of *Arelia ceratophrys* Kaup 1858), Indonesia.

***Cynoglossus nigropinnatus* Ochiai 1963**: SMNS 24645 (1), Kueishan Island, Taiwan, western Pacific Ocean; SMNS 24757 (1), Kueishan Island, Taiwan, western Pacific Ocean.

***Cynoglossus ogilbyi* Norman 1926**: AMS E.2796 (holotype), southern Queensland, Australia; WAM P.33909-001 (1), Western Australia, North Kimberley, 13.85048213ºS 127.2886759ºE - 13.85244789ºS 127.2876071ºE, 44.7-45.2 m depth; WAM P.34715-001 (1), Western Australia, Eclipse Islands, 13º29'37.615''S 125º51'05.878''E - 13º29'35.828''S 125º51'08.352''E, 41.7-42.5 m depth.

***Cynoglossus oligolepis* (Bleeker 1855)**: BMNH 1862.6.3.2 (1, ca. 279.5 mm SL), Jakarta, Java Indonesia, leg. P. Bleeker.

***Cynoglossus puncticeps* (Richardson 1846)**: BMNH 1855.12.26.602 (holotype of *Cynoglossus brevis* Günther 1862, 93.5 mm SL), Ganges, India; BMNH 1862. 6.3.15 (1, ca. 102.9 mm SL), Indonesia, leg. P. Bleeker; HUJ 14701 (4, 89.2-116.1 mm SL), Hong Kong, China, South China Sea.

***Cynoglossus purpureomaculatus* Regan 1905**: BMNH 1908.6.6.247 (holotype, 194.5 mm SL), Inland Sea, Japan.

***Cynoglossus quadriocellatus* Fricke 2021**: WAM P.31854-004 (holotype, 152.3 mm SL), Western Australia, Dampier Archipelago; WAM P.31013-041 (1 paratype, 24.3 mm SL), Western Australia, Exmouth Gulf; WAM P.31841-012 (1 paratype, 103.8 mm SL), Western Australia, Dampier Archipelago; WAM P.31843-005 (1 paratype, 85.2 mm SL), Western Australia, Dampier Archipelago; WAM P.31857-010 (1 paratype, 96.1 mm SL), Western Australia, Dampier Archipelago; WAM P.32569-001 (1 paratype, 165.3 mm SL), Western Australia, 6.91 west-southwest of Point Quobba; WAM P.33816.002 (1 paratype, 190.7 mm SL), Western Australia, Jurien Bay); WAM P.34058-003 (1 paratype, 168.3 mm SL), Western Australia, Pilbara; WAM P.34128-001 (1 paratype, 133.7 mm SL), Western Australia, Pilbara; WAM P.31835.003 (1, 173.0 mm SL), Western Australia, Dampier Archipelago; WAM P.31850.002 (1, 121.6 mm SL), Western Australia, Dampier Archipelago; WAM P.32506-001 (1, 167.5 mm SL), Western Australia, Carnarvon; WAM P.32568.002 (1, 139.8 mm SL), Western Australia, Point Quobba; WAM P.32576.002 (1, 146.7 mm SL), Western Australia, Shark Bay; WAM P.32627.002 (1, 118.3 mm SL), Western Australia, Exmouth Gulf.

***Cynoglossus robustus* Günther 1873**: BMNH 1873.7.30.61 (holotype, 293.0 mm SL), Shanghai, China; BMNH 1905.6.6.248 (holotype of *Cynoglossus brunneus* Regan 1905, ca. 176.8 mm SL), Inland Sea, Japan.

***Cynoglossus roulei* Wu 1932**: BMNH 1924.12.15.64 (1, 253.5 mm SL), Amoy, China.

***Cynoglossus sealarki* Regan 1908**: BMNH 1908.3.23.153 (lectotype), Saya de Malha Bank; BMNH 1908.3.23.154-156 (3 paralectotypes), Saya de Malha Bank.

***Cynoglossus semilaevis* Günther 1873**: BMNH 1898.2.28.9 (1, 405.0 mm SL), Liao-hu, China.

***Cynoglossus senegalensis* (Kaup 1858)**: MNHN B.2671 (1 syntype, ca. 270 mm SL), Dakar, Senegal; MNHN 1999-049 (1 syntype, ca. 535 mm SL), Dakar, Senegal; BMNH 1949.4.30.3 (1), Badougbe, Togo; MNHN 1949-0022 (holotype of *Cynoglossus senegalensis simulator* Chabanaud 1949, ca. 386 mm SL), Dakar, Senegal.

***Cynoglossus trigrammus* Günther 1862**: BMNH 1855.9.19.1215 (lectotype, 180.1 mm SL), China; BMNH 1851.12.27.169 (1 paralectotype), China. *Cynoglossus trulla* (Cantor 1849): BMNH 1862.11.1.225 (1), Borneo, Indonesia; BMNH 1933.7.31.28-29 (2), Singapore.

***Cynoglossus waandersii* (Bleeker 1854)**: SMNS 3754 (1), Singapore.

***Cynoglossus westraliensis* Fricke 2019**: WAM P.31802-008 (holotype), off North-West Cape, Western Australia; WAM P.31801-002 (1 paratype), off North-West Cape, Western Australia.

***Cynoglossus xiphoideus* Günther 1862**: BMNH 1859.7.1.52 (lectotype), Thailand; BMNH 1859.7.1.53 (1 paralectotype), Thailand; BMNH 1898.4.2.130-134 (5, 159.3-238.2 mm SL), Mae Nam Chao Phraya River, Thailand.

***Cynoglossus zanzibarensis* Norman 1939**: BMNH 1939.5.24.1813 (holotype, 144.6 mm SL), Zanzibar, Tanzania; BMNH 1939.5.24.1810-11 1814 (2 paratypes, 143.4-165.0 mm SL), Zanzibar, Tanzania; BMNH 1939.5.24.1812 and 1814 (2 paratypes, 120.0-142.7 mm SL), Zanzibar, Tanzania.

***Paraplagusia blochii* (Bleeker 1851)**: SMNS 18644 (1), Sri Lanka.

***Paraplagusia guttata* (Macleay 1878)**: BMNH 1925.9.21.5 (1), Moreton Bay, Queensland, Australia; BMNH 1925.7.22.80-81 (2), southern Queensland, Australia.

***Paraplagusia japonica* (Temminck & Schlegel 1846)**: HUJ 17158 (1), Japan, Wakasa Bay.

***Symphurus ginsburgi* Menezes & Benvegnú 1976**: MNHN 1975-0270 (2 paratypes, 83.8-87.8 mm SL), Argentina Basin, Rio Grande do Sul, Brazil.

***Symphurus insularis* Munroe, Brito & Hernández 2000**: SMNS 12336 (4 paratypes), Madeira; SMNS 21374 (2), Sao Tiago, Cape Verde Islands; SMNS 25485 (2), Sal, Cape Verde Islands.

***Symphurus ligulatus* (Cocco 1844)**: HUJ 20595 (1), N of Menorca, Balearic Islands; HUJ 20630 (4), NW of Menorca, Balearic Islands; HUJ 20639 (7), NW of Mallorca, Balearic Islands.

***Symphurus maldivensis* Chabanaud 1955**: BMNH 1939.5.24.1815 (holotype), Maldives.

***Symphurus nigrescens* (Rafinesque 1810)**: HUJ 7445 (1), Israel, Mediterranean coast; HUJ 7446 (1), Israel, Givat Olga; HUJ 10946 (2), Israel, Tel-Aviv; HUJ 13884 (2), Israel, between Haifa and Nahariya; HUJ 20628 (1), NW of Menorca, Balearic Islands; MNHN 1989-1208 [neotype designated by Munroe (1990: 503), 94.3 mm SL], Naples, Italy; SMNS 2359 (3), Naples, Italy; SMNS 15429 (1), Tenerife, Canary Islands; SMNS 19387 (1), Faial, Azores; SMNS 27509 (1), Balearic Islands, southwest of Cabrera.

***Symphurus plagusia* (Bloch & Schneider [ex Browne] 1801)**: SMNS 2916 (1), Rio de Janeiro, Brazil; SMNS 16383 (1), São Paulo, Brazil.

***Symphurus sayademalhensis* Chabanaud 1955**: BMNH 1908.3.23.157 (holotype), Saya de Malha Bank; BMNH 1908.3.23.158 (1 paratype), Saya de Malha Bank.

***Symphurus septemstriatus* (Alcock 1891)**: BMNH 1928.3.20.72 (1), Sri Lanka.

***Symphurus strictus* Gilbert, 1905**: SMNS 24759 (1), Kueishan Island, Taiwan.

***Symphurus trifasciatus* (Alcock 1894)**: BMNH 1928.3.20.67-71 (4), Madras, India.

Results

Systematics

The present paper follows the classifications provided by Nelson et al. (2016) and Laan et al. (2014):

Superclass Gnathostomata
Subclass Neopterygii
Division Teleostei
Order Pleuronectiformes
Family Cynoglossidae Jordan 1888

Genus *Cynoglossus* Hamilton 1822

Synonymys:

Cynoglossus Hamilton 1822: 32, 365 (masculine; type species: *Cynoglossus lingua* Hamilton 1822; type by monotypy).

Arelia Kaup 1858: 107 [feminine; type species: *Pleuronectes arel* Bloch & Schneider 1801; type by subsequent designation; earliest subsequent designation not researched; *arel* listed as type by Jordan (1919: 282)].

Icania Kaup 1858: 109 (feminine; type species: *Achirus cynoglossus* Hamilton 1822; type by monotypy).

Trulla Kaup 1858: 109 (feminine; type species: *Plagusia trulla* Cantor 1849; type by absolute tautonymy; two included species: one is *Trulla cantori* Kaup, an unneeded replacement for *P. trulla* Cantor; the latter is the type).

Areliscus Jordan & Snyder 1900: 380 (masculine; type species: *Cynoglossus joyneri* Günther 1878; type by monotypy).

Cynoglossoides Bonde 1922: 23 (masculine; type species: *Cynoglossus attenuatus* Gilchrist 1904; type by monotypy).

Dollfusichthys Chabanaud 1931: 304 (masculine; type species: *Dollfusichthys sinusarabici* Chabanaud 1931; type by monotypy).

Cantorusia Whitley 1940: 242 (feminine; type species: *Cantoria pinanganensis* Kaup 1858; type by being a replacement name; replacement for *Cantoria* Kaup 1858, preoccupied by *Cantoria* Girard 1858).

Dexiourius Chabanaud 1947: 443 [masculine; type species: *Cynoglossus semilaevis* Günther 1873; type by original designation (also monotypic)].

Cynoglossoides Smith 1949: 165 (masculine; type species: *Cynoglossus acaudatus* Gilchrist 1906; type by original designation; objectively invalid; preoccupied by *Cynoglossoides* von Bonde 1922 in same family, replaced by *Notrullus* Whitley 1951).

Notrullus Whitley 1951: 67 (masculine; type species: *Cynoglossus acaudatus* Gilchrist 1906; type by being a replacement name; replacement for *Cynoglossoides* Smith 1949, preoccupied by *Cynoglossoides* von Bonde 1922 in same family).

Diagnosis: Mouth large, jaws with or without weak teeth, rostral hook present; lips smooth, without tentacles; at least one lateral line present on ocular side, lateral line often also present on blind side; dorsal-fin rays more than 95; right (blind-side) pelvic fin connected to anal fin; tail narrow, pointed, hypurals narrow; opercle distally rounded (may be slightly bilobed in some species); pelvic fin connected with anal fin.

Remarks: Pellegrin (1912: 9) recorded *Cynoglossus brachyrhynchus* (non Bleeker 1851) from Eritrea, based on 6 young specimens, with some doubt about his identification; this is apparently based on a misidentification (see also Golani & Bogorodsky 2010: 85).

Bayoumi (1972: 163) recorded *Cynoglossus gilchristi* (non Regan 1920) from Egypt, Red Sea; this record was apparently based on a misidentification of another species of *Cynoglossus* (sea Golani & Bogorodsky 2010: 84). *Cynoglossus gilchristi* is distributed in the southwestern Indian Ocean. Missing any positive evidence of its occurrence, we here do not include *C. gilchristi* in the cynoglossid fauna of the Red Sea.

Munroe (2022: 375) indicated that '?*Cynoglossus itinus* (Snyder 1909)' might be present in the Red Sea, but stated that 'the taxonomic status of most populations currently identified as *C. itinus* requires research.' This record is probably based on USNM 286911 (1) from the Gulf of Suez, Egypt, Red Sea. We had no access to this specimen, so cannot verify its identity. Therefore, this taxon is not included in the present review.

***Cynoglossus acutirostris* Norman 1939** (Figures 1-2)
Vernacular name: Beaked tonguesole
Synonymys:
Cynoglossus (Areliscus) acutirostris Norman 1939: 104, fig. 35 (Gulf of Aden, northwestern Indian Ocean, station 194, depth 220 m; holotype: BMNH 2016.5.1.1).
Cynoglossus acutirostris Norman 1939: Menon 1977: 84, fig. 41, pl. 17 (Gulf of Aden). Krupp 1987: 249 (northern and central Red Sea, 700-1,400 m depth). Klausewitz 1994: 466 (Red Sea). Goren & Dor 1994: 72 (Red Sea). Desoutter et al. 2001: 330 (type catalogue). Manilo & Bogorodsky 2003: S123 (Gulf of Aden). Golani & Bogorodsky 2010: 54. Wang et al. 2016: 138. Fricke et al. 2017: 83. Golani & Fricke 2018: 175. Fricke 2019: 39. Munroe 2022: 370.

Figure 1. *Cynoglossus acutirostris* Norman 1939, BMNH 2016.5.1.1 (holotype, 211 mm SL), Gulf of Aden. **Upper**: View of orbital side. **Lower**: View of blind side. Photographs: Lucie Goodayle (BMNH).

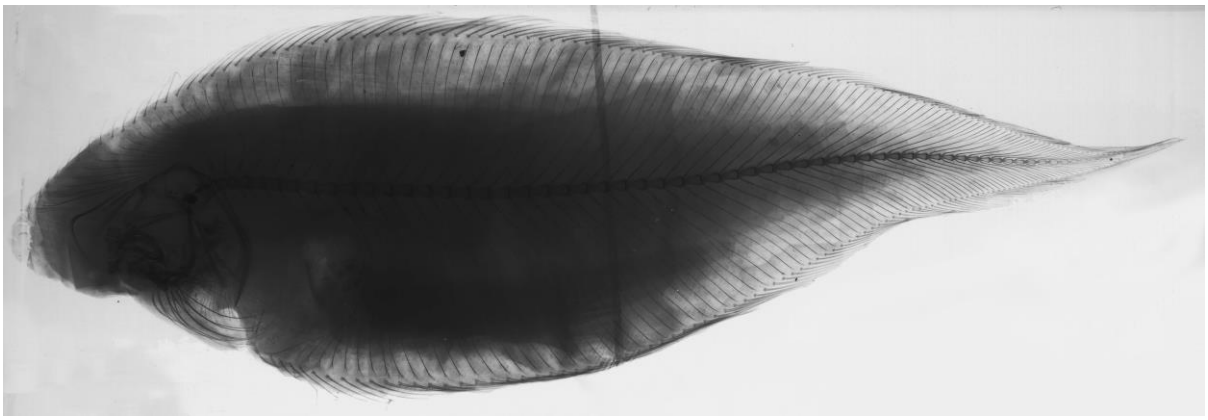

Figure 2. *Cynoglossus acutirostris* Norman 1939, BMNH 2016.5.1.1 (holotype, 211 mm SL), Gulf of Aden. X-ray. Photograph: James Maclaine (BMNH).

Red Sea material: SMF 17376 (1); SMF 17377 (2); SMF 19907 (1); SMF 32041 (4).
Other material: BMNH 2016.5.1.1 (holotype, 211 mm SL), Gulf of Aden (Figures 1, 2); BMNH 1939.5.24.1800-1809 (10 paratypes, including lectotype of Menon 1977), Gulf of Aden; BMNH 2016.5.1.2 (1 paratype), Gulf of Aden; MNNH 1939-0268 (1 paratype, ca. 195.3 mm SL), Gulf of Aden.
Diagnosis: A relatively large species of *Cynoglossus* with the snout relatively long, acutely pointed; head length 26-38% of SL, snout length 11-22% of SL; opercle slightly bilobed; eyes not contiguous; corner of mouth nearer to posterior edge of opercle than to tip of snout; ocular side with 3 lateral lines, lateral-line scales 94-112, scale rows between midlateral and dorsolateral lines 16-21, blind side without lateral lines; ctenoid scales on both ocular and blind sides; dorsal-fin-rays 117-129; anal-fin rays 98-108; caudal-fin rays 7-10; vertebrae 8-10 + 47-50; gill chamber black, peritoneum pale.
Distribution: This species is known only from deep water of the Red Sea and the Gulf of Aden (Figure 3); it was collected at depths of 220-1,400 m.

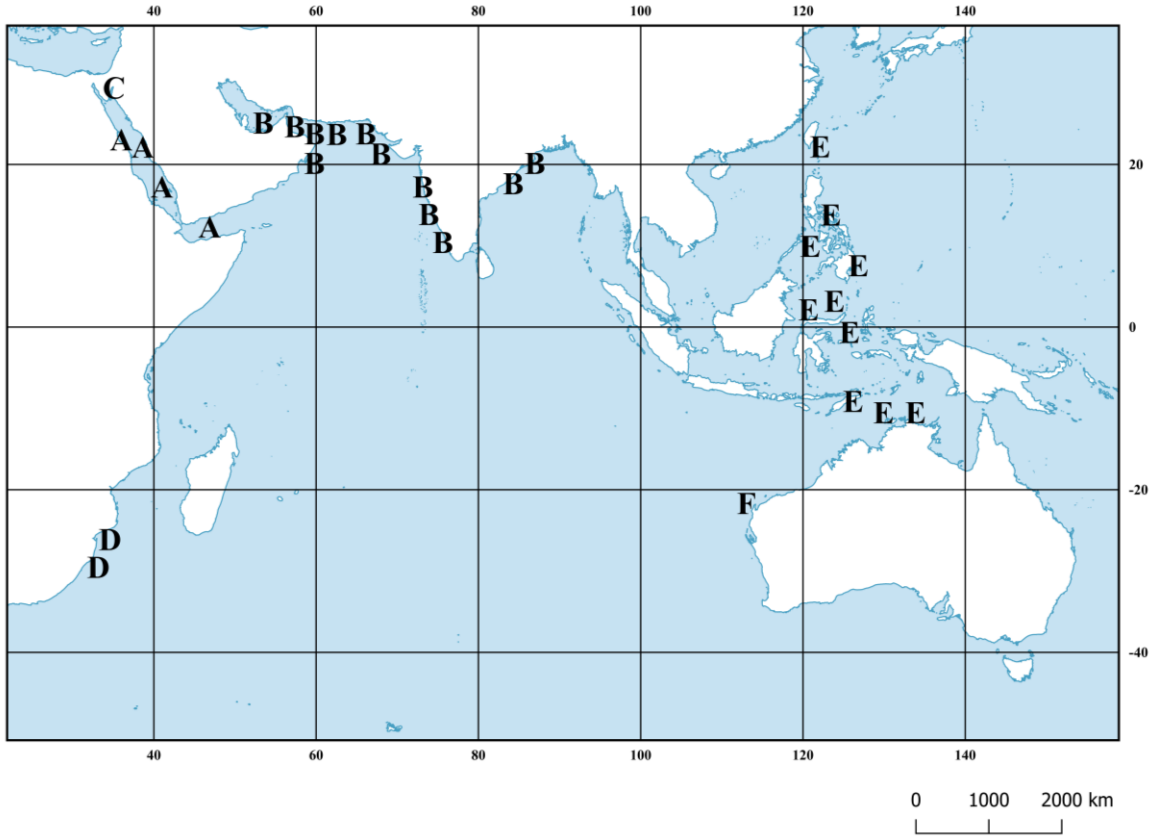

Figure 3. Geographical distribution of the *Cynoglossus-carpenteri* species group in the Red Sea and Indo-West Pacific. **A** *Cynoglossus acutirostris* Norman 1939. **B** *C. carpenteri* Alcock 1889. **C** *C. crepida* Fricke, Golani & Appelbaum-Golani 2017. **D** *C. marleyi* Regan 1921. **E** *C. suyeni* Fowler 1934. **F** *C. westraliensis* Fricke 2019.

Remarks: This species is a member of the long-snouted *Cynoglossus-carpenteri* species group, together with *C. carpenteri* Alcock 1889, *C. crepida* Fricke, Golani & Appelbaum-Golani 2017, *C. marleyi* Regan 1921, *C. suyeni* Fowler 1934, and *C. westraliensis* Fricke 2019. Members of this species group are found in the Red Sea, Indian Ocean, and western Pacific. It is interesting that *C. acutirostris* is distributed in the Gulf of Aden and most of the Red Sea, while it is replaced by *C. crepida* only in the Gulf of Aqaba.

A lectotype was selected by Menon (1977: 85) (BMNH 1939.5.24.1800), but a holotype was established in the original publication [BMNH 2016.5.1.1 (holotype, 211 mm SL), Gulf of Aden (Figures 1, 2)], so the lectotype is currently not needed.

***Cynoglossus cleopatridis* Chabanaud 1949**

Vernacular name: Suez tonguesole

Synonymys:

Dollfusichthys sinusarabici Chabanaud 1931: 304 [part: Gulf of Suez, Egypt, Red Sea; syntype: MNHN 1966-0747 (1)].

Cynoglossus cleopatridis Chabanaud 1949: Chabanaud 1949: 146 (Gulf of Suez, Egypt, Red Sea, 28°54'-28°49'N, 32°44'-32°47'E; holotype: MNHN 1949-0024). Desoutter et al. 2001: 330 (MNHN type catalogue). Munroe & Kong 2016: 22. Fricke et al. 2017: 84. Munroe 2017: 31. Bogorodsky & Randall 2018: [7] 245. Golani & Fricke 2018: 176.

Red Sea material: MNHN 1949-0024 (holotype, 127.7 mm SL), Gulf of Suez, Egypt; MNNH 1966-0747 (1 syntype of *Cynoglossus sinusarabici*, 112.7 mm SL), Gulf of Suez, Egypt.

Diagnosis: A small species of *Cynoglossus* with the snout short, rounded; head length ca. 18% of SL, snout length ca. 8% of SL; nostrils on ocular side 2; ocular side with 2 lateral lines, lateral-line scales ca. 80, scale rows between midlateral and dorsolateral lines 12, blind side without lateral lines; ctenoid scales on ocular side; cycloid scales on blind side; dorsal-fin-rays ca. 120; anal-fin rays ca. 90; caudal-fin rays unknown; vertebrae ca. 9 + 45; gill chamber pale, peritoneum pale.

Distribution: Northern Red Sea: Gulf of Suez endemic (Figure 4). Found on sand bottom, at 25-30 m depth.

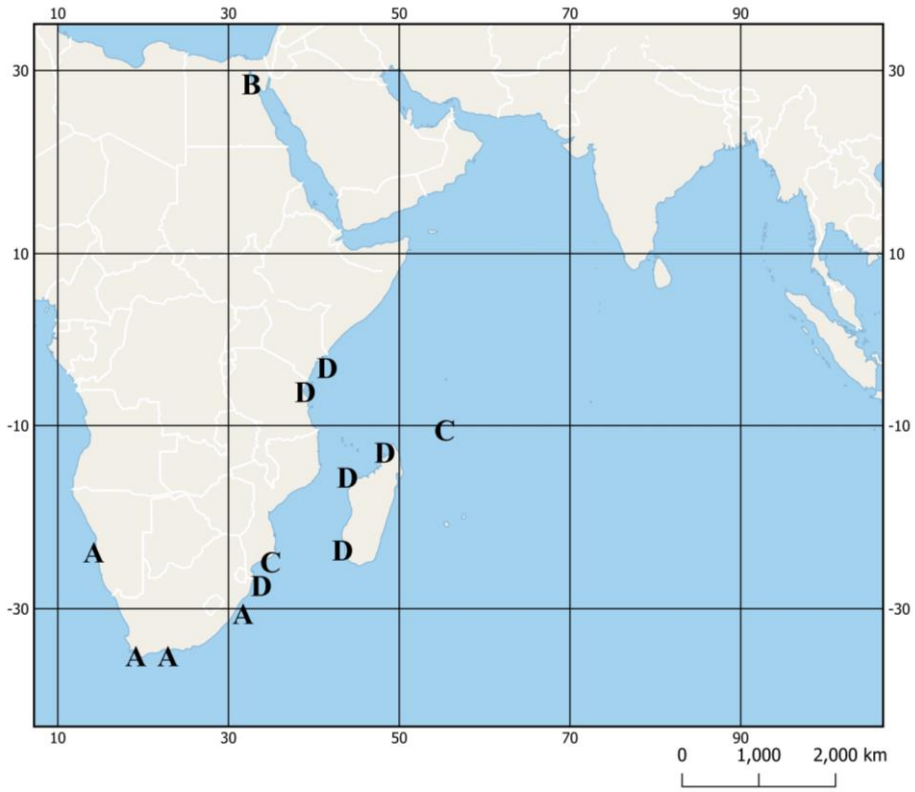

Figure 4. Geographical distribution of the *Cynoglossus-sealarki* species group in the Red Sea and the western Indian Ocean. **A** *Cynoglossus capensis* (Kaup 1858). **B** *C. cleopatridis* Chabanaud 1949. **C** *C. sealarki* Regan 1908. **D** *C. zanzibarensis* Norman 1939.

Remarks: This taxon is known only from the holotype, a faded and damaged specimen from the Gulf of Suez (collected with the holotype of *C. dollfusi*), with the caudal fin lacking. Dorsal- and anal-fin ray numbers, lateral-line scales and vertebrae were estimated by Chabanaud (1949). It was synonymized with *Cynoglossus dollfusi* (Chabanaud 1931) by some authors (Menon 1977: 54; Dor 1984:271), but resurrected as a separate, valid species by Munroe & Kong (2016: 22; Munroe 2017). The uncertainties concerning several characters do not allow to provide a complete diagnosis. The absence of the posterior nostril, together with other characters, would accomodate *C. cleopatridis* in Menon's (1977) *Cynoglossus sealarki* species-group, that now includes *Cynoglossus capensis* (Kaup 1858) [with *C. microphthalmus* (Bonde 1922) as a probable junior synonym following Munroe (2022: 371)], *C. cleopatridis* Chabanaud 1949, *C. sealarki* Regan 1908, and *C. zanzibarensis* Norman 1939.

According to Chabanaud (1949), this species was named after the Roman name of the city of Suez (Cleopatris or Arsinoites), so we here use the vernacular name Suez tonguesole.

***Cynoglossus crepida* Fricke, Golani & Appelbaum-Golani 2017**
Vernacular name: Northern tonguesole (Figure 5)
Synonymys:
Cynoglossus crepida Fricke, Golani & Appelbaum-Golani 2017: Fricke et al. 2017: 79, figs. 1-2 (Red Sea, Gulf of Aqaba, Israel, vicinity of Eilat, ca. 29°30'N, 34°56'30"E, depth 440 metres; holotype: HUJ 18063).
Red Sea material: HUJ 18063 (holotype, 202.9 mm SL), Israel, Eilat (Figure 5).

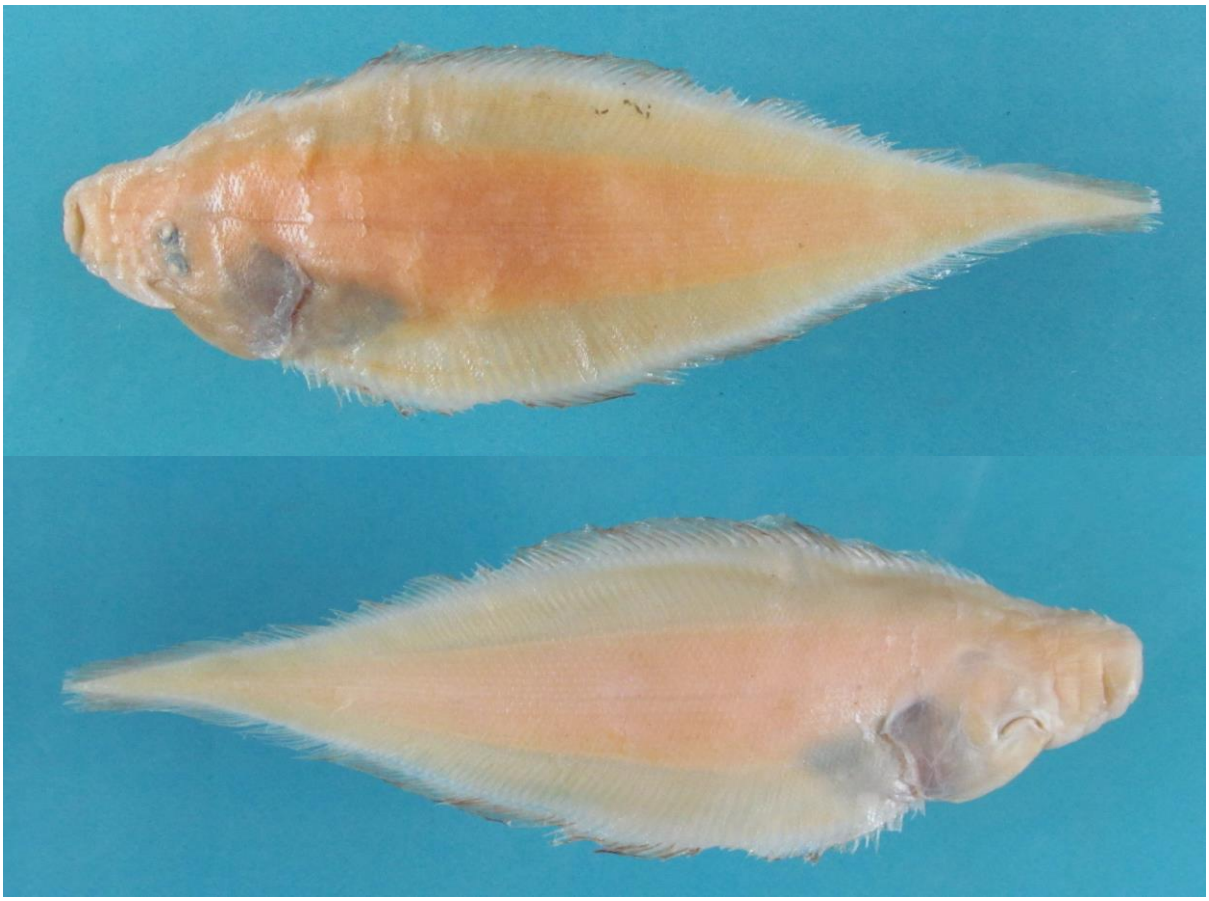

Figure 5. *Cynoglossus crepida* Fricke, Golani & Appelbaum-Golani 2017, HUJ 18063 (holotype, 202.9 mm SL), Israel, Eilat. **Upper**: View of orbital side. **Lower**: View of blind side. Photographs: Daniel Golani (from Fricke et al. 2017).

Diagnosis: A relatively large species of *Cynoglossus* with the snout relatively long, bluntly rounded; head length 25% of SL, snout length 10.1% of SL (40.4% of HL); opercle slightly bilobed; eyes not contiguous; corner of mouth nearer to posterior edge of opercle than to tip of snout; ocular side with 3 lateral lines, lateral-line scales 104, scale rows between midlateral and dorsolateral lines 17, blind side without lateral lines; ctenoid scales on both ocular and blind sides; dorsal-fin-rays 115; anal-fin rays 103; caudal-fin rays 8; vertebrae 8 + 47; gill chamber and peritoneum black.

Distribution: Red Sea: Gulf of Aqaba endemic (Figure 3). Known only from the holotype that was collected at 440 m depth.
Remarks: This species is a member of the long-snouted *Cynoglossus-carpenteri* species group, together with *C. acutirostris* Norman 1939, *C. carpenteri* Alcock 1889, *C. marleyi* Regan 1921, *C. suyeni* Fowler 1934, and *C. westraliensis* Fricke 2019. Members of this species group are found in the Red Sea, Indian Ocean and western Pacific (Figure 3). It is interesting that *C. acutirostris* is distributed in the Gulf of Aden and most of the Red Sea, while it is replaced by *C. crepida* only in the Gulf of Aqaba.

***Cynoglossus dollfusi* (Chabanaud 1931)**
Vernacular name: Dollfus's tonguesole (Figure 6)
Synonymys:
Paraplagusia dollfusi Chabanaud 1931: 303 (Gulf of Suez, Red Sea, 28°54'-28°49'N, 32°44'-32°47'E; holotype: MNHN 1950-0077). Desoutter et al. 2001: 349 (MNHN type catalogue).
Cynoglossus (Trulla) dollfusi Chabanaud in Gruvel & Chabanaud 1937: 8, figs. 9-12 [Suez, Gulf of Suez, Egypt; holotype: MNHN (not found)]. Desoutter et al. 2001: 348 (MNHN type catalogue).
Cynoglossus (Cynoglossus) brachycephalus (non Bleeker 1870): Chabanaud 1951: 77.
Trulla dollfusi: Fowler 1956: 183.
Cynoglossus dollfusi: Menon 1977: 54. Dor 1984: 271. Goren & Dor 1994: 72. Golani & Bogorodsky 2010: 54. Munroe & Kong 2016: 21. Wang et al. 2016: 139. Munroe 2017: 12. Bogorodsky & Randall 2018: [7] 245. Golani & Fricke 2018: 176. Munroe 2022: 373.
Cynoglossus sealarki (non Regan 1908): Chabanaud 1947: 156 (Gulf of Suez).
Cynoglossus macrolepidotus (non Bleeker 1851): Chabanaud 1947: 157 (Gulf of Suez).
Cynoglossus lingua (non Hamilton 1822): Menon 1977: 54. Dor 1984: 272. Goren & Dor 1994: 72. Desoutter et al. 2001: 330. Golani & Bogorodsky 2010: 54.
Cynoglossus arel (non Bloch & Schneider 1801): Dor 1984: 271 [based on *Cynoglossus macrolepidotus* (non Bleeker 1851) of Chabanaud 1947].
Cynoglossus kopsi (non Bleeker 1851): Dor 1984: 272 [based on *Cynoglossus (Cynoglossus) brachycephalus* (non Bleeker 1870) of Chabanaud 1951]

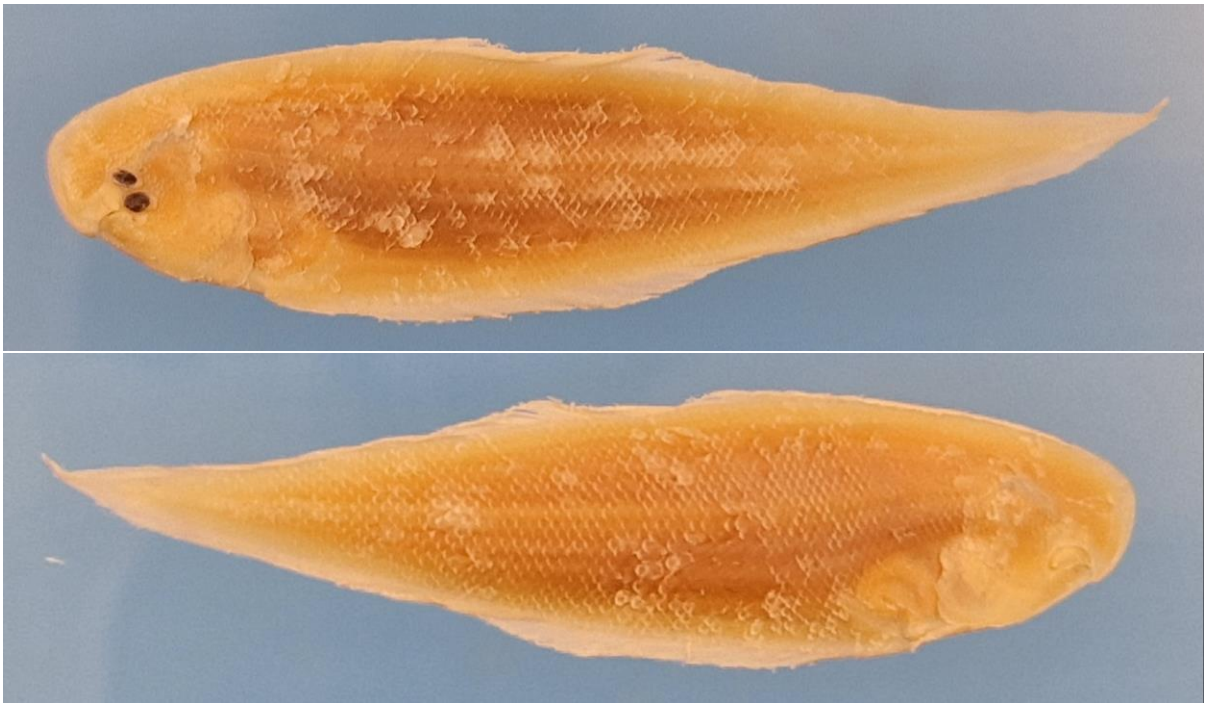

Figure 6. *Cynoglossus dollfusi* (Chabanaud 1931), HUJ 11389 (larger specimen of 2, 42.0 mm SL), Gulf of Suez, Egypt, El Bilaiyim. **Upper**: View of orbital side. **Lower**: View of blind side. Photographs: Ronald Fricke.

Red Sea material: HUJ 11389 (2), Gulf of Suez, Egypt, El Bilaiyim.

Diagnosis: A small species of *Cynoglossus* with the snout short, obtusely pointed; head length 16-18% of SL, snout length 33-36% of HL; nostrils on ocular side 1; opercle bilobed; eyes not contiguous, separated by a narrow interorbital space; corner of mouth slightly closer to tip of snout than to posterior edge of opercle; ocular side with 3 lateral lines, lateral-line scales 67-70, scale rows between midlateral and dorsolateral lines 11-12, blind side without lateral lines; ctenoid scales on ocular side, scales on blind side weakly ctenoid; dorsal-fin-rays 100-106; anal-fin rays 84-85; caudal-fin rays 8; vertebrae 9 + 56-62; gill chamber pale, peritoneum pale.
Distribution: Red Sea (Gulf of Suez endemic) (Figure 7). Found on sand bottom at 25-30 m depth.
Remarks: *Cynoglossus (Trulla) dollfusi* Chabanaud in Gruvel & Chabanaud 1937 was regarded by some authors as independent of *Paraplagusia dollfusi* Chabanaud 1931 (see Desoutter et al. 2001: 348). But, on the contrary, it is now considered as a new combination for *Paraplagusia dollfusi* Chabanaud 1931 according to Munroe & Kong (2016: 21).

Menon (1977) classified *Cynoglossus dollfusi* in the *Cynoglossus-acaudatus* species group, that comprises *Cynoglossus acaudatus* Gilchrist 1906, *C. cadenati* Chabanaud 1947, *C. dollfusi* (Chabanaud 1931) and *C. sinusarabici* (Chabanaud 1931). This species complex is found in the eastern Atlantic, the western Indian Ocean and the Red Sea (Figure 7).

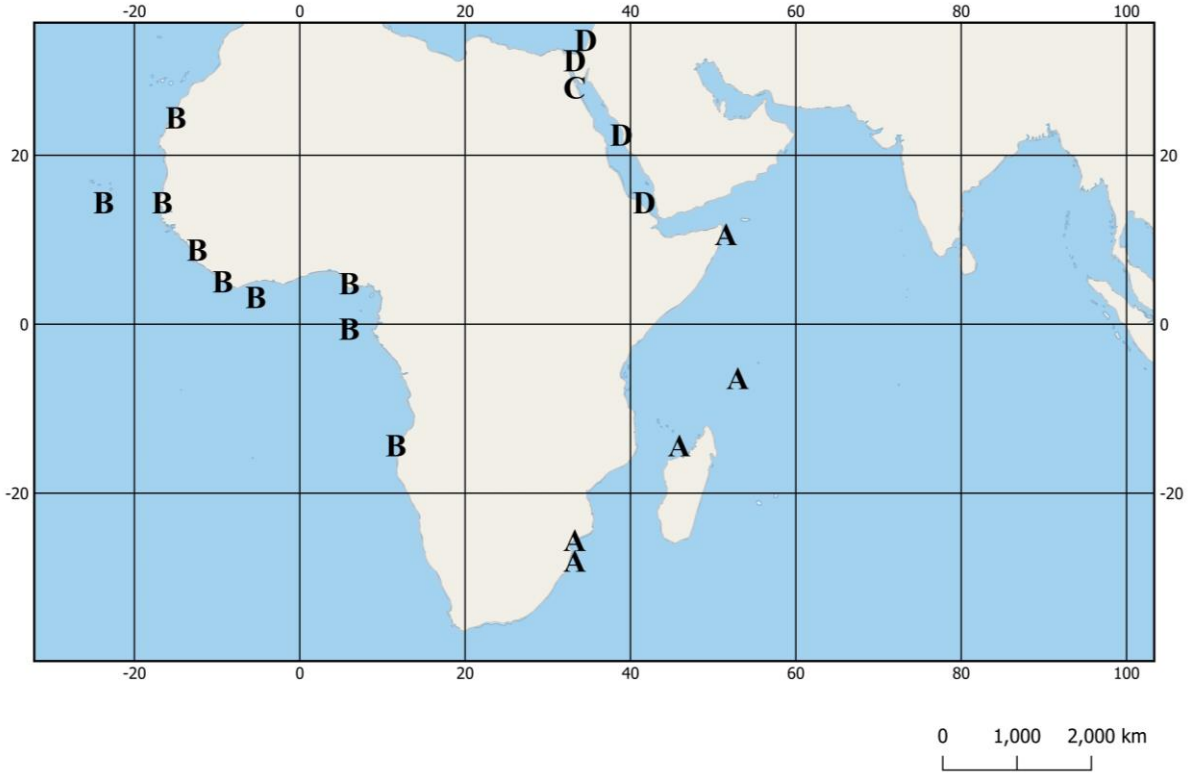

Figure 7. Geographical distribution of the *Cynoglossus-acaudatus* species group in the eastern Atlantic and western Indian Ocean. **A** *Cynoglossus acaudatus* Gilchrist 1906. **B** *C. cadenati* Chabanaud 1947. **C** *C. dollfusi* (Chabanaud 1931). **D** *C. sinusarabici* (Chabanaud 1931).

Cynoglossus glotta new species

Vernacular name: Glotta tonguesole (Figures 8-10, Tables 1-2)
ZooBank: urn:lsid:zoobank.org:pub:73EB7C3D-723C-4A31-A72C-9C2D0D271B1E
Holotype: HUJ 18161, 100.1 mm SL, north shore, Entaentor Island, Dahlak Archipelago, Eritrea, Red Sea, 16°20'37.7"N 40°14'30.9"E, beach seine, 0-1 m depth, D. Golani, 26 May 1995, 18:30 h.
Paratype: HUJ 21280, 1 specimen, 86.9 mm SL, same data as the holotype.
Diagnosis: A small species of *Cynoglossus* with the snout relatively short, rounded; head length 21-22% of SL, snout length 6.7-7.4% of SL; ocular side with two nostrils; opercle slightly bilobed; eyes close together but not contiguous; corner of mouth distinctly nearer to tip of snout than to posterior edge of opercle; ocular side with 2 lateral lines, lateral-line scales 105-106, scale rows between midlateral and dorsolateral lines 16-18, blind side with one lateral line; ctenoid scales on both ocular and blind sides;

dorsal-fin-rays 109; anal-fin rays 75-78; caudal-fin rays 10; vertebrae 9 + 49; gill chamber and peritoneum pale.

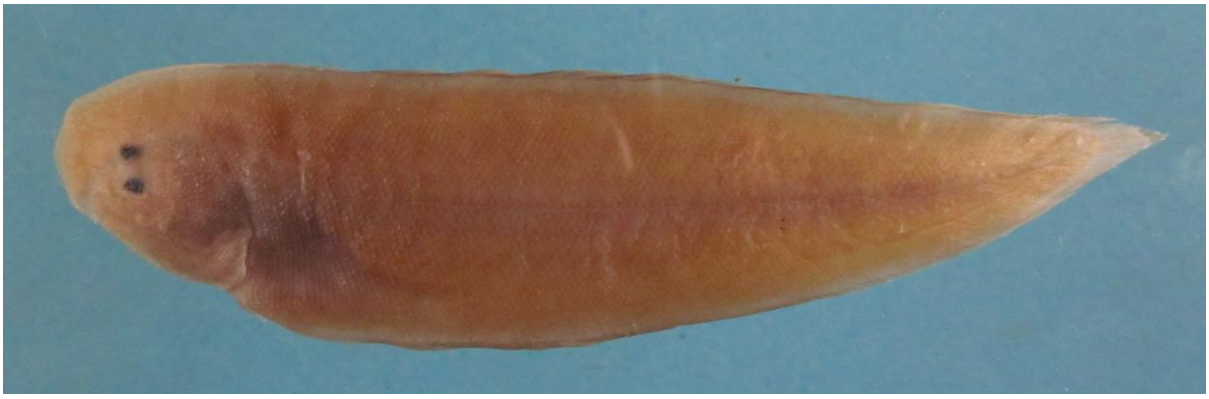

Figure 8. *Cynoglossus glotta* new species, HUJ 18161, 100.1 mm SL, north shore, Entaentor Island, Dahlak Archipelago, Eritrea, Red Sea: Ocular side. Photograph by D. Golani.

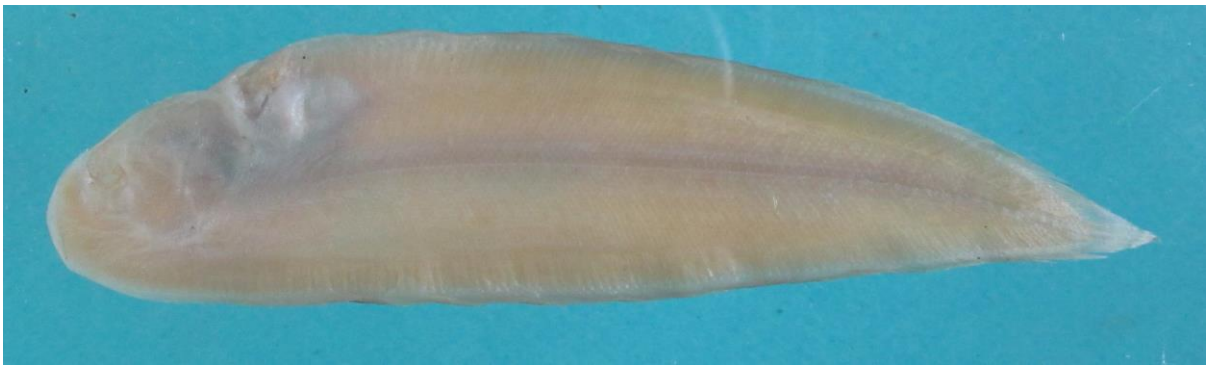

Figure 9. *Cynoglossus glotta* new species, HUJ 18161, 100.1 mm SL, north shore, Entaentor Island, Dahlak Archipelago, Eritrea, Red Sea: Blind side. Photograph by D. Golani.

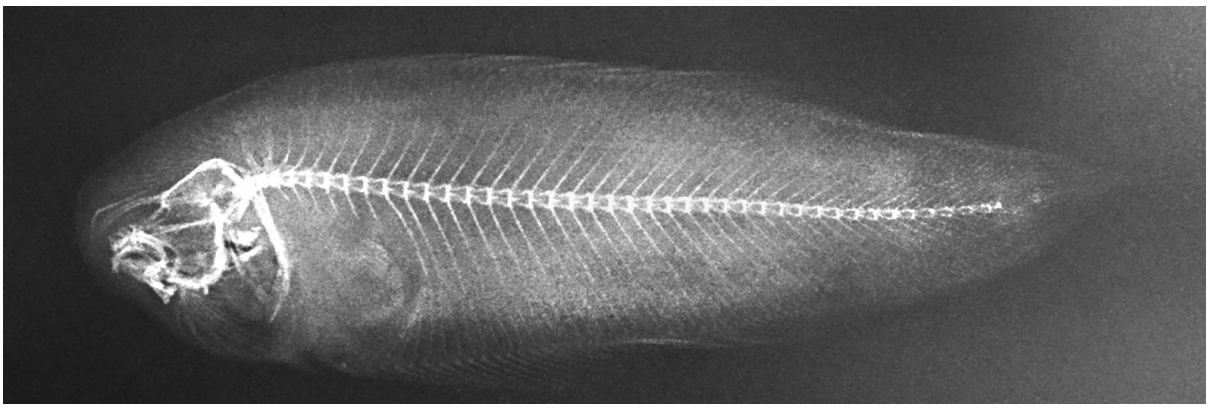

Figure 10. *Cynoglossus glotta* new species, HUJ 18161, 100.1 mm SL, north shore, Entaentor Island, Dahlak Archipelago, Eritrea, Red Sea: x-ray. Photograph by I. Aizenberg.

Description: Proportions (Tables 1-2) are part of this description.

Body lanceolate, snout relatively short, rounded. Eyes close together but not contiguous, situated on left side of body, the migratory eye situated in advance of the fixed eye. Two nostrils on ocular side, the anterior tubular, situated in advance of the fixed eye near the upper jaw, the second a round pore in the anterior interorbital space. Corner of mouth distinctly nearer to tip of snout than to posterior edge of opercle. Rostral hook short, its posterior margin not reaching to level of anterior nostril; mouth cleft reaches far below anterior half of pupil of fixed eye. Lips smooth. Ocular side with two lateral lines which are interconnected in the postorbital region, the connection extending ventrally to throat, blind side with one median lateral line. Scales on ocular side ctenoid, on blind side cycloid. Lateral-line scales 105 (ca. 106). Scale rows between midlateral and dorsolateral lines (counted at level of 30th scale behind

origin of midlateral line) 18 (ca. 16), between midlateral line and anal-fin base 36 (ca. 34). Caudal-fin base narrow.

Dorsal-fin rays 107+ (109). Anal-fin rays 75 (78). Dorsal and anal fins confluent with caudal fin. Pectoral fin missing on ocular side, but present on blind side, with ca. 4 fused rays (this is very much reduced in the paratype). Pelvic fin present on blind side, connected to anal fin. Caudal-fin rays 10 (10). Vertebrae 9 + 49 (9 + 49).

Table 1. *Cynoglossus glotta* new species, HUJ 18161, holotype, 100.1 mm SL, Entaetor Island, Dahlak Archipelago, Eritrea, Red Sea. Meristic data and proportions.

	Measurement in mm	Percentage of SL
Standard length	100.1	
Head length	21.2	21.2
Maximum body depth	24.9	24.9
Snout length	6.7	6.7
Mouth cleft to end of opercle	11.2	11.2
Tip of snout to inside corner of mouth	9.7	9.7
Horizontal eye diameter	2.0	2.0
Interorbital width	1.6	1.6

Table 2. *Cynoglossus glotta* new species, HUJ 21280, paratype, 86.9 mm SL, Entaetor Island, Dahlak Archipelago, Eritrea, Red Sea. Meristic data and proportions.

	Measurement in mm	Percentage of SL
Standard length	86.9	
Head length	19.3	2.2
Maximum body depth	22.7	26.1
Snout length	6.4	7.4
Mouth cleft to end of opercle	10.7	12.2
Tip of snout to inside corner of mouth	9.3	10.7
Horizontal eye diameter	2.3	2.6
Interorbital width	1.3	1.5

Colour in preservative (Figures 8, 9): Head and body light brown on ocular side, pale yellowish on blind side; eyes dark grey; gill chamber and peritoneum pale; fins light brown, distally whitish.

Etymology: "γλῶττα" (Greek) means tongue. The name refers to the tongue-shaped body of the new species. The name is applied as a noun in apposition.

Distribution (Figure 11): Known only from the type locality in the Dahlak Archipelago, Eritrea, southern Red Sea; the species was collected in very shallow water, at 0-1 m depth.

Comparisons: The new species is a member of the *Cynoglossus-attenuatus* species group, as it has 2 lateral lines on the ocular side of the body and 10 rays in the caudal fin. Other species in this group include *Cynoglossus attenuatus* Gilchrist 1904, *C. dispar* Day 1877, *C. lachneri* Menon 1977, and *C. pottii* Steindachner 1902. They are found in the Indian Ocean and Red Sea (Fig. G4). *Cynoglossus glotta* n. sp. is compared with the other species of the group in Table 3; it differs from all other species in the group by its single lateral line on the blind side (other species with 2 lateral lines on blind side), and the opercle slightly bilobed (vs. rounded), and from *C. attenuatus* in its 105-106 lateral-line scales (vs. 74-88 in *C. attenuatus*), 16-18 scale rows between the dorsal and mid-lateral lines (vs. 10-12), 107-109 dorsal-fin rays (vs. 110-120), 75-78 anal-fin rays (vs. 87-95), and 9+49 vertebrae (vs. 9+45-47); it is distinguished from *C. dispar* by its 75-78 anal-fin rays (vs. 88-95 in *C. dispar*), and 9 + 49 vertebrae (vs. 9+44-45); it finally differs from *C. lachneri* in its rounded snout (vs. bluntly rounded in *C. lachneri*), 107-109 dorsal-fin rays (vs. 113-121), and 75-78 anal-fin rays (vs. 92-98).

Remarks: This new species seems closest to *Cynoglossus dispar* from India and Pakistan. It is interesting that it co-occurs with *C. lachneri* in the Red Sea.

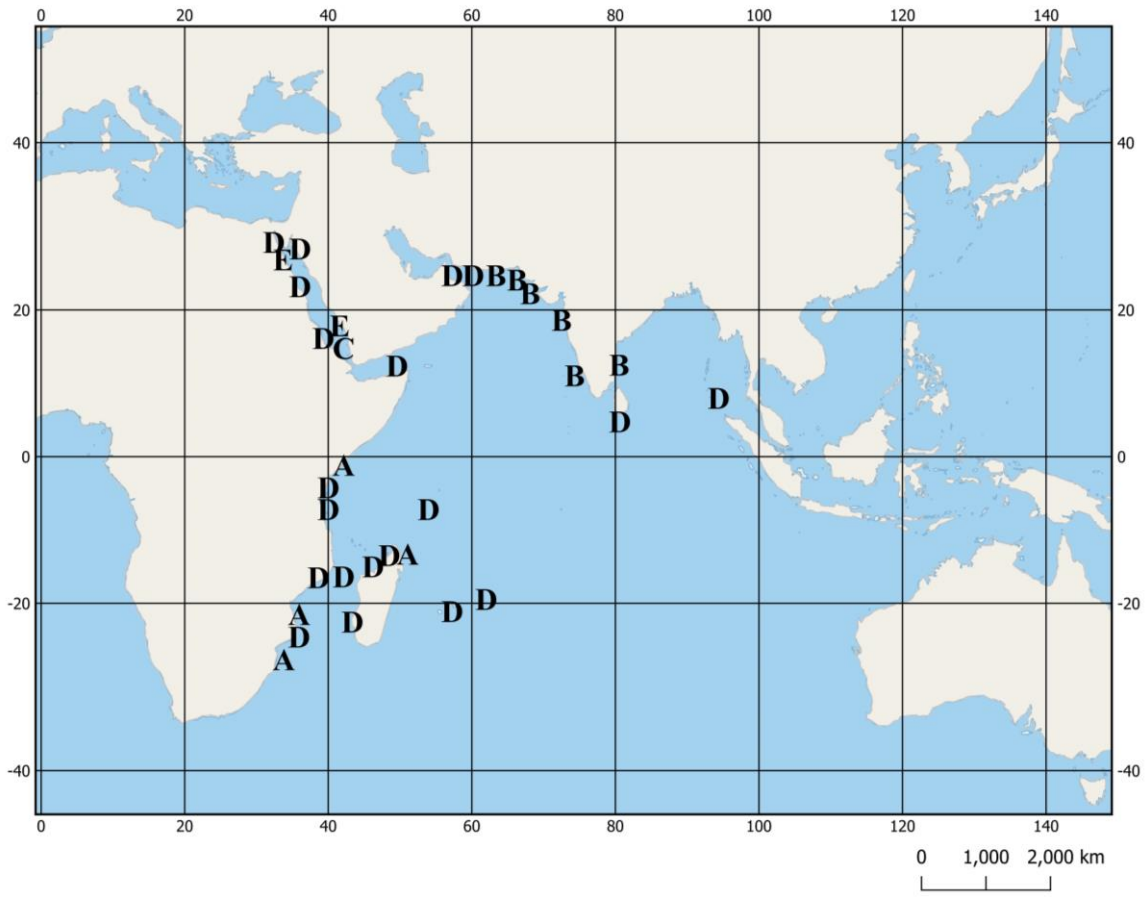

Figure 11. Geographical distribution of the *Cynoglossus attenuatus* species group in the Red Sea and Indian Ocean. **A** *Cynoglossus attenuatus* Gilchrist 1904. **B** *C. dispar* Day 1877. **C** *C. glotta* new species. **D** *C. lachneri* Menon 1977. **E** *C. pottii* Steindachner 1902.

Table 3. Comparison of the species in the *Cynoglossus-attenuatus* species group. Character states different from *C. glotta* n. sp. are printed in **bold face**.

	C. glotta n.sp.	*C. attenuatus*	*C. dispar*	*C. lachneri*
Head length (% SL)	21-22	20-22	18-21	17-23
Snout length (% SL)	6-8	7-9	2-6	5-7
Snout	rounded	rounded	rounded	**bluntly rounded**
Eyes	nearly contiguous	nearly contiguous	nearly contiguous	nearly contiguous
Lateral lines/ocular side	2	2	2	2
Lateral lines/blind side	1	**2**	**2**	**2**
Lateral-line scales	105-106	**74-88**	102-119	100-117
Scales between dorsal and midlateral lines	16-18	**10-12**	18-20	16-18
Scales/ocular side	ctenoid	ctenoid	ctenoid	ctenoid
Scales/blind side	cycloid	cycloid	cycloid	cycloid
Dorsal-fin rays	107-109	**110-120**	108-114	**113-121**
Anal-fin rays	75-78	**87-95**	**88-95**	**92-98**
Caudal-fin rays	10	10	10	10
Vertebrae	9 + 49	9 + **45-47**	9 + **44-45**	9 + 46-49
Opercle	slightly bilobed	**rounded**	**rounded**	**rounded**
Gill chamber	pale	pale	pale	pale
Peritoneum	pale	pale	pale	pale
Depth range (m)	0-1	2-5	5	0-20
Distribution range	Southern Red Sea	South Africa	Pakistan, India	Red Sea, W Indian Ocean

***Cynoglossus lachneri* Menon 1977**

Vernacular name: Lachner's tonguesole

Synonymys:

Cynoglossus lachneri Menon 1977: 40, pl. 5 (Mombasa fish market, Kenya, western Indian Ocean; holotype: USNM 201852). Dor 1984: 272. Heemstra 1986: 866. Manilo 1992: 24 [134]. Goren & Dor 1994: 72. Randall 1995: 364. Quéro 1997: 327. Fricke 1999: 575. Manilo & Bogorodsky 2003: S123. Fricke et al.

2009: 115. Golani & Bogorodsky 2010: 54. Psomadakis et al. 2015: 330. Fricke et al. 2018: 374. Golani & Fricke 2018: 176. Munroe 2022: 375.
Red Sea material: SMF 368 (1), Eritrea, Massaua.
Other material: SMF 15437 (1), Seychelles, La Digue; SMF 28567 (1), India, Nicobar Islands, Castle Bay.
Diagnosis: A moderately large species of *Cynoglossus* with the snout short, bluntly rounded; head length 17-24% of SL, snout length 5-7% of SL; opercle rounded; eyes nearly contiguous; corner of mouth nearer to tip of snout than to posterior edge of opercle; ocular side with 2 lateral lines, lateral-line scales 100-117, scale rows between midlateral and dorsolateral lines 16-18, blind side with 2 lateral lines; ctenoid scales on ocular side, cycloid scales on blind side; dorsal-fin-rays 113-121; anal-fin rays 92-98; caudal-fin rays 10; gill chamber pale, peritoneum pale.
Distribution: Red Sea; western Indian Ocean: East Africa, Socotra (Yemen), Seychelles, Madagascar, and western Mascarenes east to Pakistan, Sri Lanka, and Nicobar Islands (India) (Figure 11). Found on shallow sand bottoms, at 0-20 m depth.
Remarks: Menon (1977) classified *Cynoglossus lachneri* in the *Cynoglossus-attenuatus* species group, that includes *Cynoglossus attenuatus* Gilchrist 1904, *C. dispar* Day 1877, *C. glotta* new species, *C. lachneri* Menon 1977, and *C. pottii* Steindachner 1902. They are found in the Indian Ocean and the Red Sea (Fig. 11).

***Cynoglossus pottii* Steindachner 1902**
Vernacular name: Potti's tonguesole
Synonymys:
Cynoglossus pottii Steindachner 1902: 306 [Harmil/Eritrea; Et Tur/Egypt: syntypes: NMW (2, missing)]. Dor 1984: 272. Goren & Dor 1994: 72. Golani & Bogorodsky 2010: 54. Golani & Fricke 2018: 176.
Red Sea material: None extant.
Diagnosis: A relatively large species of *Cynoglossus* with the snout relatively short, probably rounded; head length 16-17% of SL, snout length 5-7% of SL; eyes not contiguous; ocular side with two nostrils; corner of mouth nearer to tip of snout than to posterior edge of opercle; ocular side with 2 lateral lines, lateral-line scales 114-126, scale rows between midlateral and dorsolateral lines 18-20, blind side with 2 lateral lines, scale rows in between 14-15; ctenoid scales on ocular side, cycloid on blind side; dorsal-fin-rays 118-129; anal-fin rays 101-104; caudal-fin ray number unknown; gill chamber pale, peritoneum pale.
Distribution: Red Sea endemic (Gulf of Suez, Egypt; southern Red Sea, Eritrea) (Figure 11).
Remarks: The species was based on two specimens described by Steindachner (1902), one from Et Tur (Gulf of Suez), the other from Harmil Island (Eritrea). The specimens were fairly large, 30.5 and 33.5 cm TL. Unfortunately, Steindachner did not illustrate this species, and there are no types found at NMW. We could not detect any specimens of *C. pottii* in fish collections. The species was not treated by subsequent authors, and not mentioned in the revision of Menon (1977). It was only mentioned in three checklists of Red Sea fishes (Dor 1984; Goren & Dor 1994; Golani & Fricke 2018: 176). Munroe (2022: 367) stated: "Most of these meristics partially overlap with those of *C. dispar* Day 1877 and *C. lachneri* Menon 1977, also found in the region, and which also have 2 lateral lines on each side of the body (*C. dispar* has not been recorded from the Red Sea, but *C. lachneri* has: Goren & Dor 1994). Thus, it is not possible to resolve the status of *C. pottii* at this time."

Although there are no specimens of *C. pottii* available, and no illustration was provided by Steindachner (1902), we consider the description as sufficiently accurate to classify this species in the *Cynoglossus-attenuatus* species group, which also includes *Cynoglossus attenuatus* Gilchrist 1904, *C. dispar* Day 1877, *C. glotta* new species, and *C. lachneri* Menon 1977. They are found in the Indian Ocean and the Red Sea (Figure 11).

***Cynoglossus quadrilineatus* (Bleeker 1861)**
Vernacular name: Twoline tonguesole (Figure 12)
Synonymys:
Achirus bilineatus Lacepède 1802: 659, 663 [China; East Indies (Indonesia); new combination for *Pleuronectes bilineatus* Bloch 1787, which is now *Paraplagusia bilineata*; syntypes: whereabouts unknown].

Plagusia bilineata: Rüppell 1830: 123 (Massawa, Eritrea).
Plagusia quadrilineata Bleeker (ex Kuhl & van Hasselt) 1851: 412 [Jakarta, Java, Indonesia; western Sumatra; Muntok, Bangka, Indonesia; syntypes: (18) RMNH 6789 (some of 9)].
Arelia bilineata (non Bloch 1787): Ochiai in Masuda et al. 1984: 355. Nakabo 2000: 1389. Nakabo 2002: 1389. Ohashi & Motomura 2011: 109.
Cynoglossus bilineatus (non Bloch 1787): Menon 1977: 36. Kyushin et al. 1982: 268. Lindberg & Fedorov 1993: 208. Lindberg & Fedorov 1993: 223. Li & Wang 1995: 355. Randall 1995: 363. Mohsin & Ambak 1996: 600. Rainboth 1996: 223. Larson & Williams 1997: 374. Carpenter et al. 1997: 232. Evseenko 1998: 61. Johnson 1999: 753. Munroe in Randall & Lim 2000: 646. Hutchins 2001: 47. Munroe 2001: 3897. Manilo & Bogorodsky 2003: S123. Hoese & Bray 2006: 1854. Ho et al. 2009: 13. Kimura in Matsuura & Kimura 2009: 323. Golani & Bogorodsky 2010: 54. Ho & Shao 2011: 62. Larson et al. 2013: 228. Yoshida et al. 2013: 222. Fricke 2015: 7. Imamura in Kimura et al. 2015: 96. Fricke et al. 2017: 83. Motomura et al. 2017: 226. Ali et al. 2018: 346. Fricke et al. 2018: 374. Golani & Fricke 2018: 176. Imamura in Kimura et al. 2018: 300. Eagderi et al. 2019: 122. Habib & Islam 2020: Supplementary table p. 12. Tashiro 2022: 8.
Cynoglossus quadrilineatus: Goren & Dor 1994: 72. Psomadakis et al. 2015: 328. Voronina et al. 2016: 404. Psomadakis et al. 2020: 600. Taki et al. 2021: 496. Munroe 2022: 378.
Red Sea material: HUJ 5840 (1, ca. 440 mm SL), Eilat, Israel, Gulf of Aqaba; HUJ 9019 (1, 395.0 mm SL), Eilat, Israel, Gulf of Aqaba; HUJ 9046 (1, 332.5 mm SL), Dahab, Egypt, Gulf of Aqaba; HUJ 9178 (1, 426.3 mm SL), Gulf of Aqaba; HUJ 11404 (1, 259.4 mm SL), Et-Tur, Egypt, Gulf of Suez; SMNS 1767 (1), Al-Qusayr, Egypt.

Figure 12. *Cynoglossus quadrilineatus* (Bleeker 1851), HUJ 11404 (1, 259.4 mm SL), Et-Tur, Egypt, Gulf of Suez. **Upper**: View of orbital side. **Lower**: View of blind side. Photographs: Ronald Fricke.

Other material: SMNS 2270 (1), Townsville, Queensland, Australia; SMNS 25208 (4), Kuwait, Persian Gulf.
Diagnosis: A large species of *Cynoglossus* with the snout moderately long, rounded; head length 19-25% of SL, snout length 7-13% of SL; ocular side with 2 nostrils; opercle rounded; eyes not contiguous;

corner of mouth slightly nearer to tip of snout than to posterior edge of opercle; ocular side with 2 lateral lines, lateral-line scales 84-96, scale rows between midlateral and dorsolateral lines 13-16, blind side with 2 lateral lines; ctenoid scales on ocular side, cycloid scales on blind side; dorsal-fin-rays 104-114; anal-fin rays 80-88; caudal-fin rays 12; gill chamber pale, peritoneum pale.

Distribution. Red Sea; Indo-West Pacific: East Africa, Seychelles, Madagascar, and Persian Gulf east to Philippines and Papua New Guinea, north to southern Sea of Japan and Pacific coast of southern Japan, south to northern Australia (Figure 13). Found on mud and sandy bottom, at 5-400 m depth, also entering transitional water of river mouths.

Remarks: Menon (1977) considered this species (which he named *C. bilineatus*) as a species complex of its own, which would now be named *Cynoglossus-quadrilineatus* species group. The only species, *C. quadrilineatus*, is widespread in the Red Sea and the Indo-West Pacific (Figure 13).

Kottelat (2013a: 764) indicated that *Achirus bilineatus* Lacepède 1802 was based on *Pleuronectes bilineatus* Bloch 1787, being a misidentification and new combination; the latter taxon is now treated as valid as *Paraplagusia bilineata* (Bloch 1787). Kottelat pointed out that *Cynoglossus quadrilineatus* (Bleeker 1851) should be the valid name of this species. This was followed by Munroe (2022). We agree with Kottelat's conclusions, and here use the name *C. quadrilineatus*.

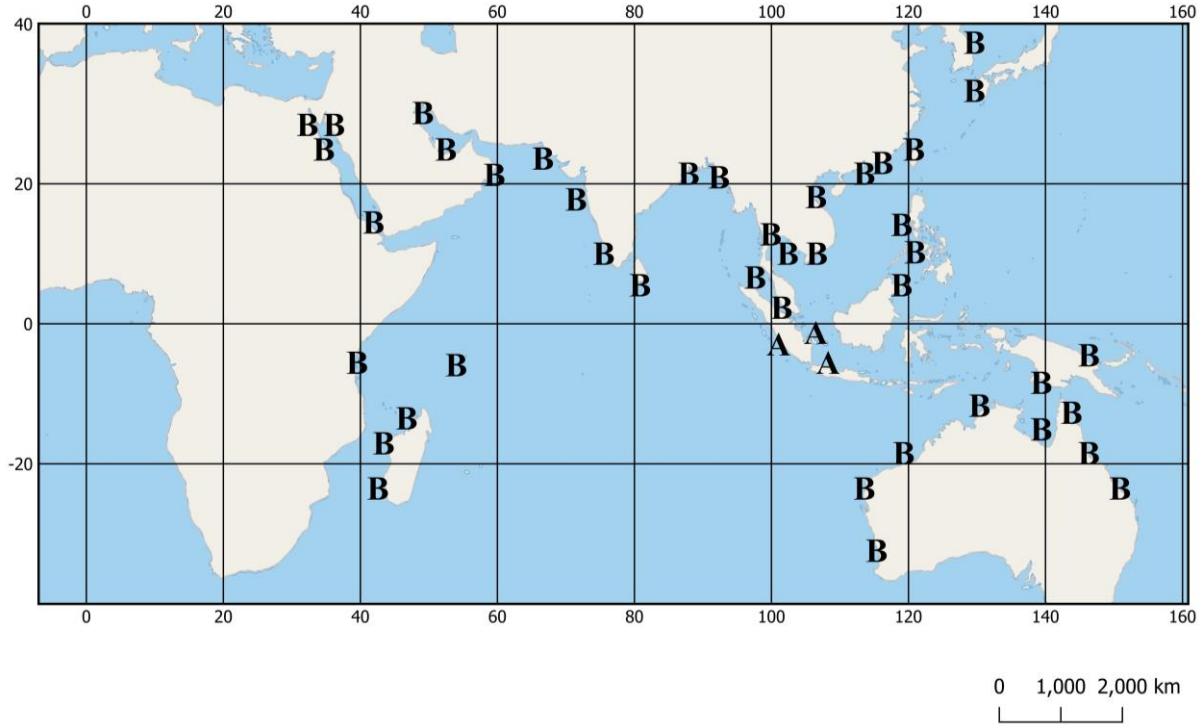

Figure 13. Geographical distribution of *Cynoglossus quadrilineatus* (Bleeker 1851) in the Indo-West Pacific Ocean. **A** Syntype localities. **B** Other records.

***Cynoglossus sinusarabici* (Chabanaud 1931)**

Vernacular name: Northern tonguesole (Figures 14-18)

Synonymys:

Dollfusichthys sinusarabici Chabanaud 1931: 304 [part: Gulf of Suez, Egypt, Red Sea; syntypes: BMNH 1938.10.7.1 (1); FMNH 33731 (1); MNHN 1967-0601 (3), 1967-0602 (5), 1967-0603 (2)]. Ben-Tuvia 1953: 13.

Dollfusichthys sinus arabici: Gruvel 1936: 151.

Cynoglossus sinusarabici: Torchio 1973: 635. Quéro et al. in Whitehead et al. 1986: 1326. Menon 1977: 55. Goren & Dor 1994: 72. Desoutter et al. 2001: 332. Bilecenoğlu et al. 2002: 155. Golani 2005: 63. Fricke et al. 2007: 117. Golani & Bogorodsky 2010: 54. Bogorodsky et al. 2014: 433. Fricke et al. 2017: 85. Bogorodsky & Randall 2018: [7] 245. Golani & Fricke 2018: 176. Bariche & Fricke 2020: 143. Golani 2021: 87. Kovačić et al. 2021: 47. Munroe 2022: 379.

Figure 14. *Cynoglossus sinusarabici* (Chabanaud 1931), BMNH 1938.10.7.1 (lectotype as designated herein, 100.5 mm SL), Great Bitter Lake, Suez Canal, Egypt. **Upper**: View of orbital side. **Lower**: View of blind side. Photographs: Lucie Goodayle (BMNH).

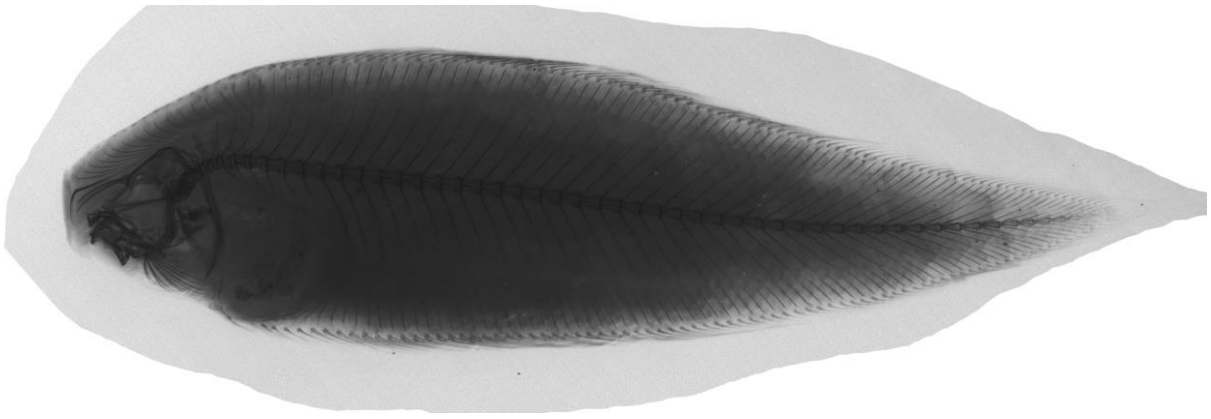

Figure 15. *Cynoglossus sinusarabici* (Chabanaud 1931), BMNH 1938.10.7.1 (lectotype as designated herein, 100.5 mm SL), Great Bitter Lake, Suez Canal, Egypt. X-ray. Photograph: James Maclaine (BMNH).

Figure 16. *Cynoglossus sinusarabici* (Chabanaud 1931), HUJ 13672 (larger specimen of 2, 91.3 mm SL), Massawa, Eritrea. **Upper**: View of orbital side. **Lower**: View of blind side. Photographs: Ronald Fricke.

Figure 17. *Cynoglossus sinusarabici* (Chabanaud 1931), HUJ 13176 (81.4 mm SL), Gaza, Mediterranean Sea. **Upper**: View of orbital side. **Lower**: View of blind side. Photographs: Ronald Fricke.

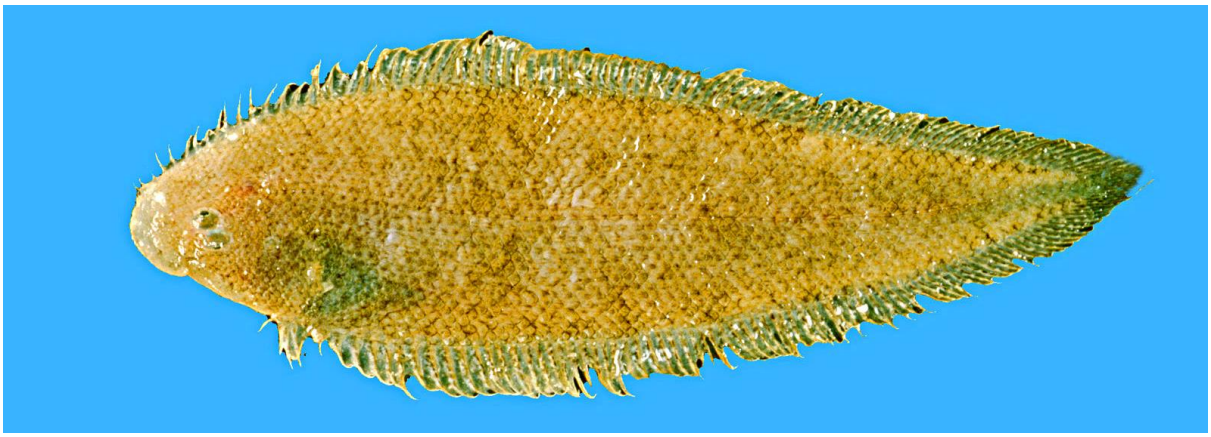

Figure 18. *Cynoglossus sinusarabici* (Chabanaud 1931), HUJ 13670 (101.0 mm SL), Jaffa, Israel, Mediterranean Sea. Fresh colouration. Photograph: David Darom.

Red Sea material: HUJ 13672 (2, 85.7-91.3 mm SL), Massawa, Eritrea; MNHN 1967-0601 (3 syntypes, 88.1-98.3 mm SL), Gulf of Suez, Egypt; MNHN 1967-0602 (5 syntypes, 98.2-120.0 mm SL), Gulf of Suez, Egypt; MNHN 1967-0603 (2 syntypes, 88.6-90.6 mm SL), Gulf of Suez, Egypt.
Mediterranean and Suez Canal material: BMNH 1938.10.7.1 (lectotype as designated below, 100.5 mm SL), Great Bitter Lake, Suez Canal, Egypt; HUJ 13176 (81.4 mm SL), Gaza, Mediterranean Sea; HUJ 20073 (4, 109.7-116.2 mm SL), Jaffo, Israel, Mediterranean Sea; HUJ 20553 (1, 81.4), Hertzeliya, Israel, Mediterranean Sea.
Diagnosis: A small species of *Cynoglossus* with the snout short, bluntly rounded; head length 19-21% of SL, snout length 14-18% of HL; opercle slightly bilobed; eyes contiguous; corner of mouth nearer to tip of snout than to posterior edge of opercle; ocular side with a single lateral line, lateral-line scales 54-67, scale rows above midlateral line 11-13, blind side without lateral lines; ctenoid scales on both ocular and blind sides; dorsal-fin-rays 99-101; anal-fin rays 78-79; caudal-fin rays 8; vertebrae 9 + 39-42; gill chamber pale, peritoneum pale.
Description of lectotype (BMNH 1938.10.7.1) (Figures 14, 15): Body lanceolate, snout short, bluntly rounded. Eyes contiguous, situated on left side of body, the migratory eye situated in advance of the fixed eye. Two nostrils on ocular side, the anterior tubular, situated in advance of the fixed eye near the upper jaw, the second a round pore in the anterior interorbital space. Corner of mouth distinctly nearer to tip of snout than to posterior edge of opercle. Rostral hook short, its posterior margin not reaching to level of anterior nostril; mouth cleft reaches to below anterior half of pupil of fixed eye. Lips smooth. Ocular side with a single lateral line, blind without lateral lines. Scales ctenoid on both ocular and blind sides. Lateral-line scales 67. Scale rows above mid-lateral line 13. Caudal-fin base narrow.

Dorsal-fin rays 101. Anal-fin rays 78. Dorsal and anal fins confluent with caudal fin. Pectoral fin missing on both ocular and blind sides. Pelvic fin present on blind side, connected to anal fin. Caudal-fin rays 8. Vertebrae 9 + 42.
Colour in preservative (Figure 14): Head, body, and fins yellowish, eyes dark gray.
Distribution: Red Sea endemic (Egypt, Saudi Arabia, Eritrea); Mediterranean Sea (Red Sea immigrant) (Figure 7).
Remarks: Menon (1977) classified *Cynoglossus sinusarabici* in the *Cynoglossus-acaudatus* species group, that comprises *Cynoglossus acaudatus* Gilchrist 1906, *C. cadenati* Chabanaud 1947, *C. dollfusi* (Chabanaud 1931) and *C. sinusarabici* (Chabanaud 1931). This species complex is found in the eastern Atlantic, the western Indian Ocean and the Red Sea (Figure 7).

The syntype MNHN 1966-0747 (1) is not this species, but a misidentified specimen of another species of *Cynoglossus* (see Fricke et al. 2017: 84). Menon (1977: 56) selected the specimen MNHN 1967-0600a as a lectotype of *Cynoglossus sinusarabici*; however, as pointed out by Desoutter et al. (2001: 332), it is invalid as it was not part of the syntype series. Yet, as the syntype series consists of more than one species (Fricke et al. 2023), we feel the need to select a valid lectotype to stabilize the usage of the name of this taxon. We hereby select the specimen BMNH 1938.10.7.1 (100.5 mm SL) (Figures 14, 15) from the Great Bitter Lake (Suez Canal, Egypt) as the lectotype of *Dollfusichthys sinusarabici* Chabanaud 1931.

The natural occurrence of this species was known only from the Gulf of Suez and Suez Canal (Egypt) (Chabanaud 1931: 304), and Saudi Arabia (Bogorodsky et al. 2014); it was first reported as a Lessepsian migrant into eastern Mediterranean (see Ben-Tuvia 1966, as *Dollfusichthys sinusarabici*). In the present paper, it is also reported from Eritrea (based on HUJ 13672), which represents a new record for the southern Red Sea (Figure 16). So far, this is the only species of cynoglossid that is known to have entered the Mediterranean Sea through Suez Canal. It may be locally common in the southeastern Mediterranean.

Genus *Paraplagusia* Bleeker 1865

Synonymys:

Paraplagusia Bleeker 1865: 274 [feminine; type species: *Pleuronectes bilineatus* Bloch 1787; type by subsequent designation; two included species, earliest subsequent type designation not researched; *bilineata* listed by Jordan (1919: 336) as type].

Rhinoplagusia (subgenus of *Paraplagusia*) Bleeker 1870: 27 (feminine; type species: *Plagusia japonica* Temminck & Schlegel 1846; type by monotypy).

Usinostia Jordan & Snyder 1900: 380 (feminine; type species: *Plagusia japonica* Temminck & Schlegel 1846; type by monotypy).

Diagnosis: Mouth large, jaws with or without weak teeth, rostral hook present; a row of fringed tentacles present on the lips; at least one lateral line present on ocular side, lateral line often also present on blind side; dorsal fin with 77-115 rays, anal fin with 72-94 rays; tail narrow, pointed, hypurals narrow.

***Paraplagusia bilineata* (Bloch 1787)**

Vernacular name: Fringelip tonguesole (Figures 19, 20)

Pleuronectes bilineatus Bloch 1787: 29, pl. 188 [China; lectotype: ZMB 2432; lectotype selected by Paepke (1999: 68).

Plagusia dipterigia Rüppell 1830: 123, pl. 31, fig. 3 (northern Red Sea; holotype: SMF 3455).

Plagusia marmorata Bleeker 1851: 411 [Jakarta, Java, Indonesia; syntypes:?NMV 46253 (1), RMNH 8501 (11), SMNS 10587 (2)].

Paraplagusia macrocephalus Bleeker 1865: 28, pl. 246, fig. 3 (Padang, Sumatra, Indonesia; holotype: RMNH 6779).

Plagusia acuminata Castelnau 1875: 44 [Fremantle, Western Australia, Australia; syntypes: MNHN A-5189 (1)].

Plagusia unicolor Macleay 1881: 138 [Port Jackson, New South Wales, Australia; syntypes: AMS I.16284.001 (originally 2, now 1)].

Plagusia notata De Vis 1883: 288 (Moreton Bay, Queensland, Australia; holotype: QM I.107).

Plagusia robinsoni Regan 1919: 203, fig. 6 (Durban, KwaZulu-Natal, South Africa, southwestern Indian Ocean; holotype: BMNH 1919.4.1.34).

Rhinoplagusia australis Rendahl 1922: 190 [Roebuck Bay, northwestern Australia. Holotype: whereabouts unknown; specimen ZMUO J5232 is labeled holotype but is not a type according to Pethon (1969: 1, 6)].

Paraplagusia formosana Oshima 1927: 200 [Taihoku fish market (Taipei), Taiwan; holotype: whereabouts unknown (probably lost)].

Paraplagusia bilineata: Dor 1984: 273. Ochiai in Masuda et al. 1984: 355. Desoutter 1986: 433. Heemstra 1986: 867. Allen & Swainston 1988: 146. Quéro & Maugé 1989: 393. Ataur Rahman 1989: 31. Talwar & Jhingran 1991: 1044. Chapleau & Renaud 1993: 801. Kottelat et al. 1993: 170. Goren & Dor 1994: 72. Krishnan & Mishra 1994: 301. Poll & Gosse 1995: 79. Kottelat & Lim 1996: 250. Li & Wang 1995: 326. Mohsin & Ambak 1996: 602. Allen 1997: 234. Larson & Williams 1997: 374. Fricke 1999: 575. Johnson 1999: 753. Munroe in Randall & Lim 2000: 646. Nakabo 2000: 1388. Bijukumar & Sushama 2000: 188. Matsuura & Peristiwady in Matsuura & Peristiwady 2000: 30. Hutchins 2001: 47. Munroe 2001: 3901. Nakabo 2002: 1388. Manilo & Bogorodsky 2003: S123. Ataur Rahman 2003: 46. Heemstra et al. 2004: 3331. Heemstra & Heemstra 2004: 436. Hoese & Bray 2006: 1856. Ho et al. 2009: 14. Golani & Bogorodsky 2010: 54. Ho & Shao 2011: 62. Larson et al. 2013: 229. Kottelat 2013b: 468. Psomadakis et al. 2015: 330. Voronina et al. 2016: 405. Fricke et al. 2018: 374. Golani & Fricke 2018: 176. Jeong in Kimura et al. 2018:

302. Eagderi et al. 2019: 122. Fricke et al. 2019: 319. Hoschke et al. 2019: 160. Habib & Islam 2020: Supplementary table p. 12. Psomadakis et al. 2020: 601. Taki et al. 2021: 497. Munroe 2022: 380.
Paraplagusia acumineata: Hutchins 2001: 47. Hoese & Bray 2006: 1856.

Red Sea material: None.

Other material: BMNH 1919.4.1.34 (holotype of *Plagusia robinsoni* Regan 1919), Durban, KwaZulu-Natal, South Africa; BMNH 1925.7.22.79 (1), southern Queensland, Australia; SMNS 1080 (1), Cape Province, South Africa [probably KwaZulu-Natal]; SMNS 2520 (2), Darwin, Northern Territory, Australia; SMNS 10587 (2 syntypes of *Plagusia marmorata* Bleeker 1851), Java, Indonesia.

Diagnosis: A large species of *Paraplagusia* with the snout short, rounded; head length 19-26% of SL, snout length 8-12% of SL; eyes not contiguous; corner of mouth below lower eye, in the middle between posterior edge of opercle than to tip of snout; opercle slightly bilobed; ocular side with 2 lateral lines, lateral-line scales 75-117, scale rows between midlateral and dorsolateral lines 16-19, blind side without lateral lines; ctenoid scales on both ocular and blind sides; dorsal-fin-rays 99-114; anal-fin rays 72-89; caudal-fin rays 8; gill chamber light, peritoneum pale.

Distribution: Red Sea; Indo-West Pacific: East Africa, South Africa, Persian Gulf, Seychelles, Madagascar, and Mascarenes (Mauritius, Rodrigues) east to Vietnam, the Philippines, New Ireland (Papua New Guinea), Solomon Islands and Vanuatu, north to southern Japan, south to Geographe Bay (Western Australia), Sydney (New South Wales, Australia) and Lord Howe Island (Figure 21). Found on sand or mud bottoms in shallow water, at 1-35 m depth, including transitional water of estuaries.

Remarks: This may represent a species complex that needs further study. In case the Red Sea populations belong to a distinct species, *Plagusia dipterigia* Rüppell 1830 would be the oldest available name.

Figure 19. *Paraplagusia bilineata* (Bloch 1787), BMNH 1919.4.1.34 (holotype of *Plagusia robinsoni* Regan, 1919), Durban, KwaZulu-Natal, South Africa. **Upper**: View of orbital side. **Lower**: View of blind side. Photographs: Lucie Goodayle (BMNH).

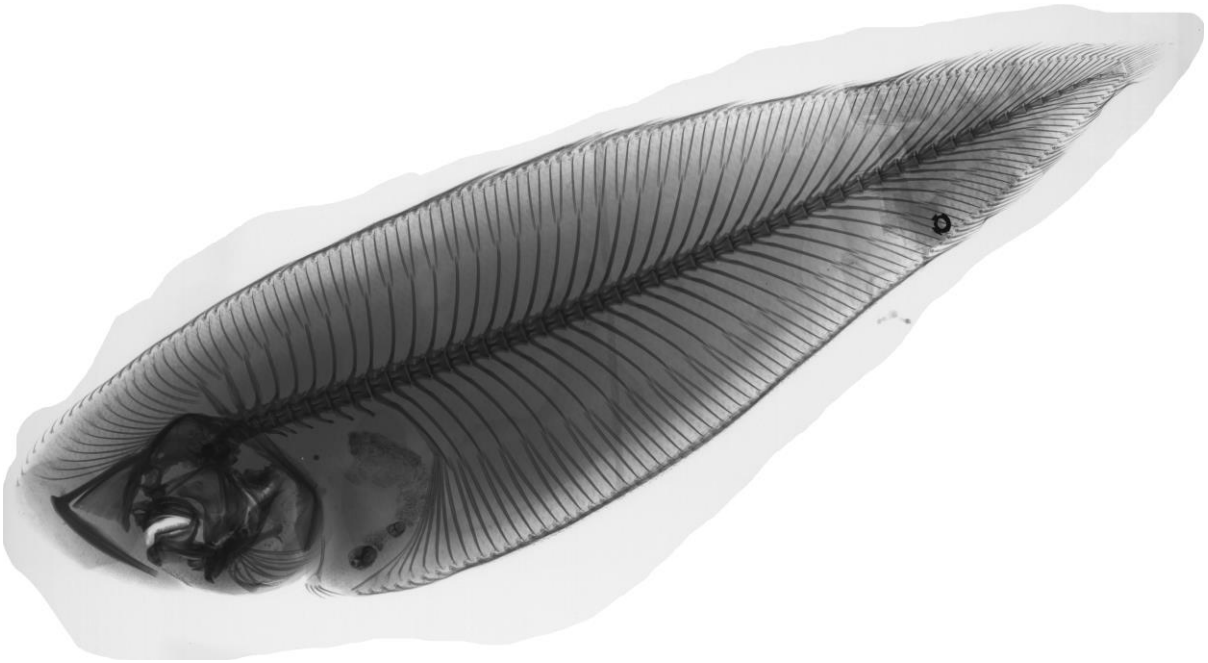

Figure 20. *Paraplagusia bilineata* (Bloch 1787), BMNH 1919.4.1.34 (holotype of *Plagusia robinsoni* Regan, 1919), Durban, KwaZulu-Natal, South Africa. X-ray. Photograph: James Maclaine (BMNH).

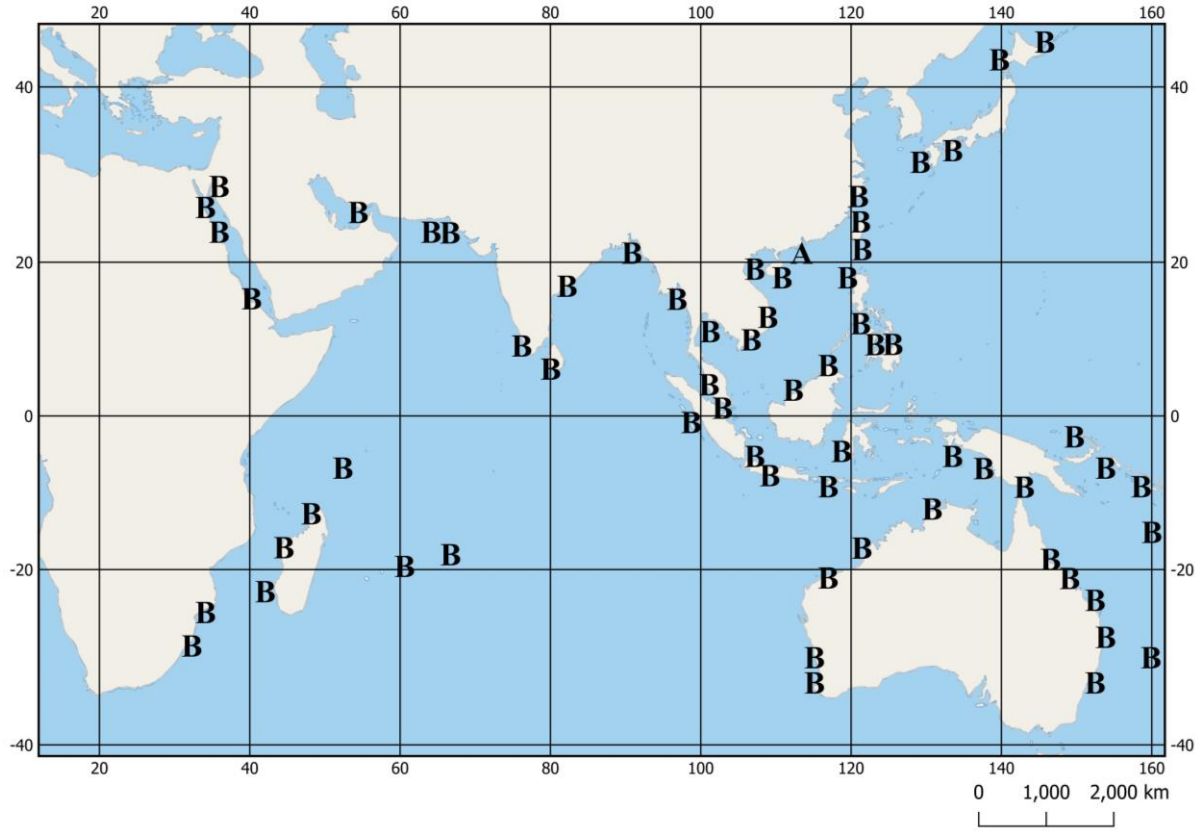

Figure 21. Distribution of *Paraplagusia bilineata* (Bloch 1787) in the Red Sea and the Indo-West Pacific. **A** Lectotype locality. **B** Other records.

Genus *Symphurus* Rafinesque 1810

Synonymys:

Plagusia Browne 1789: 445 [feminine; not available, published in rejected work on Official Index (Opinion 89); based on Browne (1756: 445)].

Symphurus Rafinesque 1810: 13, 52 (masculine; type species: *Symphurus nigrescens* Rafinesque 1810; type by monotypy).

Odontolepis Fischer 1813: 74, 86 [feminine; no included species; Jordan (1917: 95) says type may be assumed as *Symphurus nigrescens* Rafinesque 1810; first technical addition of species not researched].
Plagiusa Rafinesque 1815: 83 [feminine; as "*Plagiusa* R. sp. do.," meaning a new name for a species of the preceding genus (*Pleuronectes*); not available, name only (apparently intended for *Pleuronectes plagusia* Linnaeus)].
Plagusia Cuvier (ex Browne) 1816: 224 [feminine; type species: *Pleuronectes plagusia* of Bloch & Schneider (not Linnaeus) 1801; type not fully researched; objectively invalid, preoccupied by *Plagusia* Latreille 1804 in Crustacea].
Plagusia Bonaparte 1833: puntata 27 [feminine; type species: *Plagusia lactea* Bonaparte 1833; type by original designation; described on unnumbered pp. 7-8 in puntata 27, which apparently can be regarded as an original description; objectively invalid, preoccupied by *Plagusia* Latreille 1804 in Crustacea].
Bibronia Cocco 1844: 25 (feminine; type species: *Bibronia liculata* Cocco 1844; type by monotypy).
Eupnoea Gistel 1848: 105 (feminine; type species: *Plagusia lactea* Bonaparte 1833; type by monotypy).
Euporista Gistel 1848: X (feminine; type species: *Pleuronectes plagiusa* Linnaeus 1766; type by being a replacement name; replacement for *Plagusia* Bonaparte, preoccupied).
Aphoristia Kaup 1858: 106 (feminine; type species: *Achirus ornatus* Lacepède 1802; type by monotypy).
Glossichthys Gill 1861: 51 [masculine; type species: *Glossichthys plagiusa* Gill 1861 (= *Pleuronectes plagiusa* Linnaeus 1766); type by monotypy; single included species given as "*Glossichthys plagiusa* Gill" with *Plagusia fasciata* Storer in synonymy; species apparently is *Pleuronectes plagiusa* Linnaeus].
Ammopleurops Günther 1862: 490 (masculine; type species: *Plagusia lactea* Bonaparte 1833; type by monotypy).
Acedia (subgenus of *Symphurus*) Jordan in Jordan & Goss 1889: 321, 327 (feminine; type species: *Aphoristia nebulosa* Goode & Bean 1883; type by original designation).
Diagnosis: Mouth small, with strongly curved and toothed jaws, no rostral hook; lips smooth, without tentacles; opercle distally rounded; lateral lines absent on both ocular and blind sides; tail narrow, pointed, hypurals narrow.

Key to the genera of the family Cynoglossidae

1a. Mouth small, with strongly curved and toothed jaws, no rostral hook; lateral lines absent on both ocular and blind sides ..... *Symphurus*
1b. Mouth larger, jaws with or without weak teeth, rostral hook present; at least one lateral line present on ocular side, lateral line often also present on blind side 2
2a. A row of fringed tentacles present on the lips ..... *Paraplagusia*
2b. Lips smooth, without tentacles ..... *Cynoglossus*

Key to the species of the family Cynoglossidae in the Red Sea

1a. A row of fringed tentacles present on the lips. *Paraplagusia;* Red Sea species: ..... *Paraplagusia bilineata* (Bloch 1787)
1b. Lips smooth, without tentacles ..... *Cynoglossus*; 2
2a. Dorsal-fin rays more than 95; tail narrow, pointed, hypurals narrow; opercle distally rounded; pelvic fin connected with anal fin. 3
2b. Dorsal-fin rays less than 90; tail wide, hypurals expanded, fan-shaped; opercle bilobed; pelvic fin not connected with anal fin. *Meguroglossus* gen. nov.; only species 4
3a. Snout acutely pointed; dorsal-fin rays 117-129; vertebrae 9 + 49-50; peritoneum light ... *Cynoglossus acutirostris* Norman 1939
3b. Snout bluntly rounded; dorsal-fin rays 115; vertebrae 9 + 36; peritoneum black ..... *Cynoglossus crepida* Fricke, Golani & Appelbaum-Golani 2017
4a. Lateral lines on ocular side 2; more than 80 scales in the mid-lateral line of ocular side 5
4b. Lateral lines on ocular side 1 or 3; less than 75 scales in the mid-lateral line of ocular side 9
5a. Lateral lines on blind side 2 or none; scales on blind side cycloid 6
5b. Lateral line on blind side 1; scales on blind side ctenoid ..... *Cynoglossus glotta* **n. sp.**
6a. Lateral line on blind side missing ..... *Cynoglossus cleopatridis* Chabanaud 1949
6b. Lateral lines on blind side 2 7
7a. Scales in mid-lateral line of ocular side less than 97; scales between dorsal and mid-lateral lines of ocular side 13-16 ..... *Cynoglossus quadrilineatus* (Bleeker 1851)

7b. Scales in mid-lateral line of ocular side more than 99; scales between dorsal and mid-lateral lines of ocular side 16-20 9
8a. Anal-fin rays 92-98; scale rows in mid-lateral line 100-117; scales between dorsal and mid-lateral lines of ocular side 16-18; doesal-fin rays 113-121 ..... *Cynoglossus lachneri* Menon 1977
8b. Anal-fin rays 100-104; scale rows in mid-lateral line 114-126; scales between dorsal and mid-lateral lines of ocular side 18-20; dorsal-fin rays 118-129 ..... *Cynoglossus pottii* Steindachner 1902
9a. Lateral lines on ocular side 1; scales of mid-lateral line 54-67; anal-fin rays 78-79; vertebrae 9 + 39-42 ..... *Cynoglossus sinusarabici* (Chabanaud 1931)
9b. Lateral lines on ocular side 3; scales of mid-lateral line 67-70; anal-fin rays 84-85; vertebrae 9 + 56-62 ..... *Cynoglossus dollfusi* (Chabanaud 1931)

Discussion

The Red Sea harbours several species of cynoglossids. The first two species were reported as *Plagusia bilineata* by Rüppell (1830: 123) from Eritrea (now *Cynoglossus quadrilineatus*), and *Plagusia dipterigia* by Rüppell (1830: 123) from the northern Red Sea (now *Paraplagusia bilineata*).

Dor (1984: 271-273) was the first author who summarized the knowledge on Red Sea fish species; he distinguished 11 nominal species; However, he included *Cynoglossus arel* (non Bloch & Schneider 1801), *C. kopsi* (non Bleeker 1851), *C. lingua* (non Hamilton-Bunanan 1822) and *C. sealarki* (non Regan 1908) that were all based on *C. dollfusi*, and synonymized *C. cleopatridis* with *C. dollfusi* (but the former species was shown to be separate by Munroe 2017). Dor (1984: 272) also included *C. gilchristi* (non Regan 1920), and *Plagusia puncticeps* (non Richardson 1846), both based on misidentifications. Therefore, only 6 of the currently recognized species are in Dor's (1984) list. Goren & Dor (1994: 72) updated the Red Sea fish checklist, but the cynoglossid list was just copied from Dor (1984).

Golani & Bogorodsky (2010: 54) listed 8 species of the family, although they included both *Cynoglossus dollfusi* and *C. lingua* (non Hamilton 1822), which was based on a misidentified specimen of *C. dollfusi* according to Munroe (2017). Golani & Bogorodsky (2010: 84-85) excluded 6 previously recorded cynoglossid species from the Red Sea fauna; we here agree with all those exclusions except *Cynoglossus quadrilineatus*, which is now considered as the valid name for *C. bilineatus*. Summarizing these corrections, they included 7 of the currently recognized valid species of Red Sea cynoglossids.

Golani & Fricke (2018: 175-177) provided the most recent checklist of Red Sea fishes. They listed 9 valid species of cynoglossids, with 5 species being endemic to the Red Sea (*C. cleopatridis*, *C. crepida*, *C. dollfusi*, *C. pottii*, *C. sinusarabici*). Two of the latter species are endemic to the Gulf of Suez and to the Gulf of Aqaba, the other two to the whole Red Sea basin. They treated *C. bilineatus* as a valid name (which is now named *C. quadrilineatus*).

In the current review, we treat 10 species of cynoglossids as valid in the Red Sea, that are classified in three genera. Besides *Cynoglossus* and *Paraplagusia*, there is a very unusual specimen collected off Eritrea in the southern Red Sea, with an atypical caudal fin, a bilobed opercle, and a large anal opening (Figures 22-29). We here decide that it is a teratological condition, probably based on a specimen of *Cynoglossus* with the caudal fin damaged and regrown from dorsal-fin rays; it may belong to an undescribed species, but for the time being cannot be classified based on the single specimen we have available.

The third cynoglossid genus, *Symphurus*, is not known from the Red Sea. The current review also includes descriptions of a new species, endemic to the southern Red Sea.

In general, the sand bottom fauna of the Red Sea is still poorly known due to lack of scientific collecting. This is especially true for the Gulf of Suez and the sand bottoms off Saudi Arabia, Yemen, and Eritrea. We expect to find additional species of cynoglossids if additional research effort is performed.

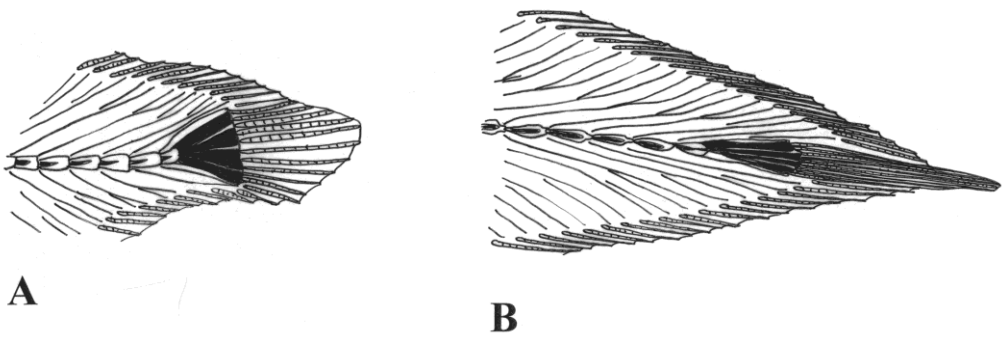

Figure 22. Caudal skeleton in a specimen of Cynoglossidae indet. from Eritrea and *Cynoglossus*, family Cynoglossidae. Hypural bones shown in black. **A** Cynoglossidae indet., HUJ 13673. **B** *Cynoglossus carpenteri*, BMNH 1890.7.31.10 (1).

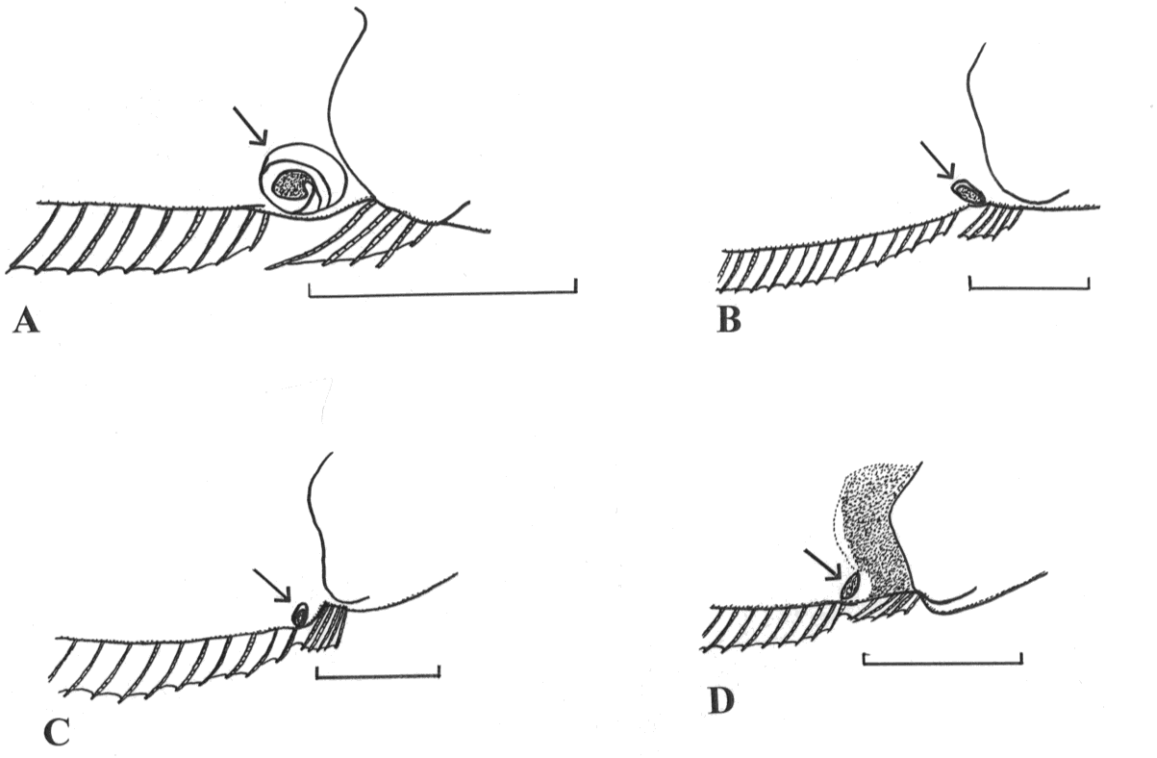

Figure 23. Anal opening in different genera of Cynoglossidae, seen from the blind side (scales: 10 mm). **A** Cynoglossidae indet., HUJ 13673 (76.7 mm SL), Red Sea, Eritrea. **B** *Cynoglossus crepida* Fricke, Golani & Appelbaum-Golani, 2017, HUJ 18063 (holotype, 202.9 mm SL), Red Sea, Gulf of Aqaba, Eilat. **C** *Paraplagusia blochii* (Bleeker, 1851), HUJ 14702 (1, 155.2 mm SL), China, Hong Kong. **D** *Symphurus ligulatus* (Cocco, 1844), HUJ 20639 (spec. 1, 88.0 mm SL), Balearic Islands, northwest of Mallorca.

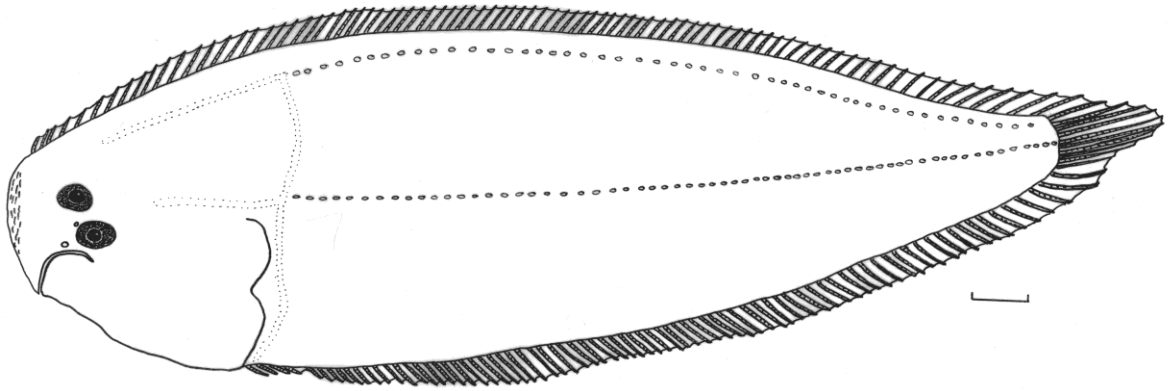

Figure 24. Cynoglossidae indet., HUJ 13673, 76.7 mm SL, northeastern Massawa Channel, Eritrea, Red Sea: Drawing of ocular side. Photograph by Daniel Golani.

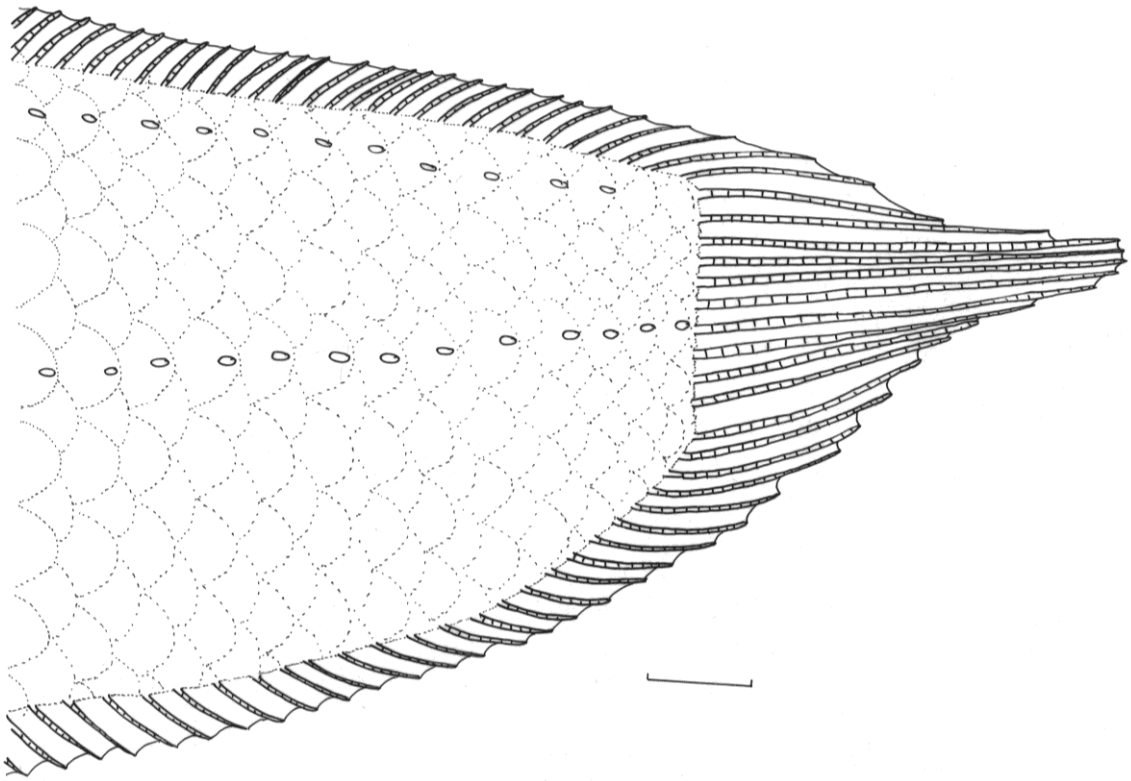

Figure 25. Cynoglossidae indet., HUJ 13673, 76.7 mm SL, northeastern Massawa Channel, Eritrea, Red Sea: Ocular side: detail of tail and caudal fin. Scale indicates 2 mm.

Figure 26. Cynoglossidae indet., HUJ 13673, 76.7 mm SL, northeastern Massawa Channel, Eritrea, Red Sea: Ocular side. Photograph by Daniel Golani.

Figure 27. Cynoglossidae indet., HUJ 13673, 76.7 mm SL, northeastern Massawa Channel, Eritrea, Red Sea: Blind side. Photograph by Daniel Golani.

Figure 28. Cynoglossidae indet., HUJ 13673, 76.7 mm SL, northeastern Massawa Channel, Eritrea, Red Sea: Blind side, detail of anal opening and opercle. Photograph by Daniel Golani.

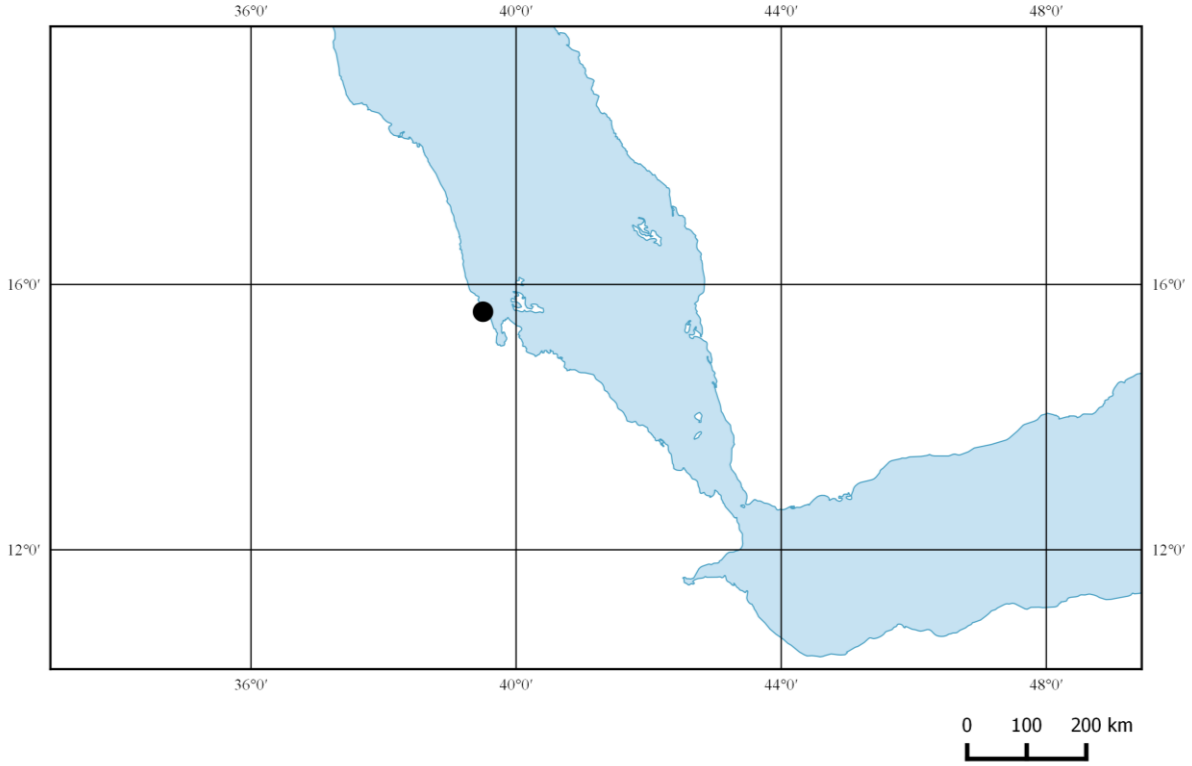

Figure 29. Distribution of Cynoglossidae indet., in the southern Red Sea.

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