Check List 8(4): 754–755, 2012

ISSN 1809-127X (available at *www.checklist.org.br*)

Check List
Journal of species lists and distribution

NOTES ON GEOGRAPHIC DISTRIBUTION

First record of *Baseodiscus mexicanus* (Bürger, 1893) (Nemertea: Heteronemertea) from Japanese waters

Hiroshi Kajihara [1*], Ryuta Yoshida [2] and Daisuke Uyeno [2]

1 Hokkaido University, Faculty of Science, Department of Natural History Sciences. Kita-ku, N10, W8. 060-0810. Sapporo, Hokkaido, Japan.
2 University of the Ryukyus, Graduate School of Engineering and Science. Senbaru 1, Nishihara, Nakagami. 903-0213. Okinawa, Japan.
* Corresponding author. E-mail: *kazi@mail.sci.hokudai.ac.jp*

ABSTRACT: The heteronemertean *Baseodiscus mexicanus* (Bürger, 1893) was previously known exclusively from the eastern Pacific, except for fragmentary records from Palau and Indonesia, which suggested a possible amphi-Pacific tropical distribution. A single specimen of *B. mexicanus* collected in Okinawa, Japan, represents the first record of this species from Japanese waters and provides additional evidence for the occurrence of the species in the western Pacific. *Baseodiscus mexicanus* is strikingly similar in appearance to a sympatric moray eel, *Gymnomuraena zebra* (Shaw, 1797) (Actinopterygii: Anguilliformes: Muraenidae), possibly indicating a relationship of mimicry between them.

Baseodiscus mexicanus (Bürger, 1893) is a large heteronemertean in the family Valenciniidae (or Baseodiscidae). Its known distribution is largely restricted to the eastern Pacific: west coast of Mexico (Bürger 1893; Joubin 1905; Coe 1940; Salcedo Martínez *et al.* 1988; Hochberg and Lunianski 1998), Panama (Coe 1905; 1940; 1944), Colombia (Hochberg and Lunianski 1998), Galapagos Islands (Coe 1944; Hochberg and Lunianski 1998), and Chile (Friedrich 1970). Reports from the western Pacific are confined to a field guide by Colin and Arneson (1995) containing a photograph taken in a seagrass bed at Lighthouse Reef, Palau, and a museum catalogue by Chernyshev and Volvenko (2008), listing a specimen collected in 1975 from Batu Moncho Bay, Komodo Island, Indonesia (Figure 1).

Individuals of *B. mexicanus* are usually 20–80 cm, but occasionally up to 2–4 m, in length and are readily identifiable by a distinctive coloration pattern consisting of a brownish-green, maroon, deep red, mahogany, or brownish-violet background with numerous white rings encircling the body at irregular intervals (Coe 1940). Living among shells and corals (Coe 1944), it is apparently the largest and most abundant nemertean found in the tropical eastern Pacific (Coe 1905).

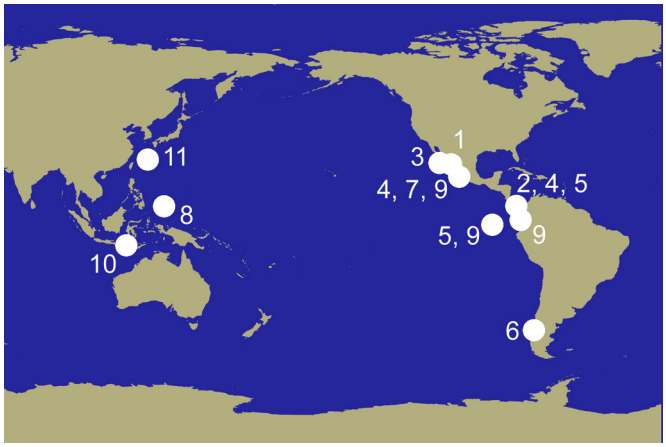

FIGURE 1. Map showing the known distribution of *Baseodiscus mexicanus* (Bürger, 1893). 1, Bürger (1893); 2, Coe (1905); 3, Joubin (1905); 4, Coe (1940); 5, Coe (1944); 6, Friedrich (1970); 7, Salcedo Martínez *et al.* (1988); 8, Colin and Arneson (1995); 9, Hochberg and Lunianski (1998); 10, Chernyshev and Volvenko (2008); 11, present study.

During fieldwork conducted by SCUBA diving off Cape Manza, On'na-son, west coast of Okinawa-jima, Japan, a specimen of *B. mexicanus* (Figure 2A) was collected from a crevice in coral growing on a rock mass (26°30'16" N, 127°50'39" E) at a depth of 3–4 m, on 31 March 2012. The specimen was fixed in 95% ethanol and deposited in the Ryukyu University Museum, Fujukan, in Okinawa, Japan (voucher RUMF-ZN-00001).

In life, the fully extended specimen was about 4 m long. The background body color was dark brownish purple, with numerous white bands (Figure 2A). In our specimen, the rounded head is demarcated from the body by a transverse cephalic furrow encircling the neck, from the entire part of which numerous secondary furrows extend anteriorly. Numerous, small, black ocelli are distributed along the lateral sides of the head. There are neither horizontal cephalic slits nor a caudal cirrus. The mouth opens mid-ventrally just posterior to the first white band on the trunk (Figure 2B).

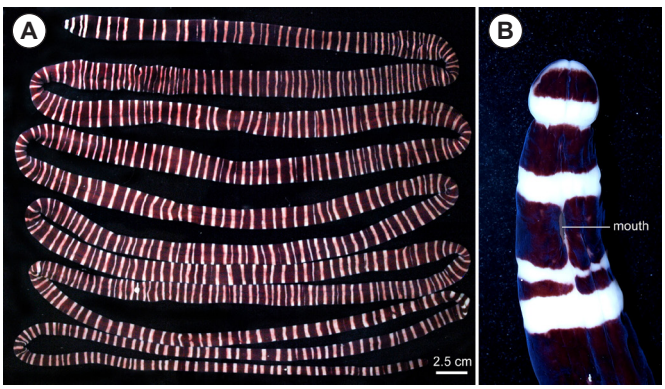

FIGURE 2. *Baseodiscus mexicanus* (Bürger, 1893), RUMF-ZN-00001, photographs of living specimen (anaesthetized). A. General appearance. B. Magnification of head, ventral view.

This is the first record of *B. mexicanus* from Japanese waters (new Japanese name: *zebura-himomushi* [= "zebra ribbon-worm"]), providing further evidence for an amphi-Pacific tropical distribution. Although there are no reports from the central Pacific, a similar, banded species, *B. cingulatus* (Coe, 1906), has been described and reported from Hawaii (Coe 1906; 1934; 1947). *Baseodiscus cingulatus*, however, differs from *B. mexicanus* in having a light-colored body with many narrow, reddish-brown rings.

Baseodiscus mexicanus exhibits a remarkable resemblance to the zebra moray eel, *Gymnomuraena zebra* (Shaw in Shaw and Nodder, 1797) (Actinopterygii: Anguilliformes: Muraenidae) (Figure 3), possibly indicating a relationship of mimicry. Near Cape Manza in Okinawa, *B. mexicanus* and *G. zebra* occur in exactly the same habitat, with the latter species much more abundant (Uyeno, pers. obs.). The distributions of these two species broadly overlap; the moray eel is distributed from the Red Sea and eastern African coast to the Society Islands, north to the Ryukyu and Hawaiian Islands, and south to the Great Barrier Reef (Fricke 1999); it also occurs in the central eastern Pacific: along southern Baja California, Mexico; and from Guatemala to northern Colombia, including the Galapagos (McCosker and Rosenblatt 1995). Future investigations of the ecology and toxicology of these animals may shed light on a possible coevolutionary relationship between them.

Figure 3. Moray eel *Gymnomuraena zebra* (Shaw, 1797), photograph of a dead specimen before fixation, collected from the same locality and habitat in Okinawa, Japan, as RUMF-ZN-00001, here identified as *Baseodiscus mexicanus* (Bürger, 1893). This specimen of *G. zebra* was dissected and processed during another study, and no voucher remains.

Acknowledgments: We thank Takeshi Sasaki and Tohru Naruse for keeping the voucher specimen at RUMF; and Matthew H. Dick for reviewing the English.

Literature Cited

Bürger, O. 1893. Südgeorgische und andere exotische Nemertinen. *Zoologische Jahrbücher, Abteilung für Systematik, Ökologie und Geographie der Tiere* 7(1): 207–240.

Chernyshev, A.V. and I.E. Volvenko. 2008. Catalogue of the nemerteans (Nemertini) of the Zoological Museum of FESU; p. 104–117 *In* B.K. Starostin (ed.). *Trudy Uchebno-nauchnogo Muzeya Dal'nevostochnogo Gosudarstvennogo Univesiteta. Vol. 4.* Vladivostok: FESU Press.

Coe, W.R. 1905. Nemerteans of the west and northwest coasts of America. *Bulletin of the Museum of Comparative Zoölogy at Harvard College* 47: 1–318.

Coe, W.R. 1906. Nemerteans of the Hawaiian Islands collected by the Steamer Albatross in 1902. *Bulletin of the United States Fish Commission for 1903* 23(3): 975–986.

Coe, W.R. 1934. New nemerteans from Hawaii. *Occasional Papers of the Bernice P. Bishop Museum* 10(8): 1–9.

Coe, W.R. 1940. Revision of the nemertean fauna of the Pacific coasts of North, Central, and northern South America. *Allan Hancock Pacific Expeditions* 2(13): 247–322.

Coe, W.R. 1944. Geographical distribution of the nemerteans of the Pacific coast of North America, with descriptions of two new species. *Journal of the Washington Academy of Sciences* 34(2): 27–32.

Coe, W.R. 1947. Nemerteans of the Hawaiian and Marshall Islands. *Occasional Papers of the Bernice P. Bishop Museum* 19(3): 101–106.

Colin, P.L. and C. Arneson. 1995. *Tropical Pacific invertebrates: A field guide to the marine invertebrates occurring on tropical Pacific coral reefs, seagrass beds and mangroves*. Beverly Hills: Coral Reef Press. 296 p.

Fricke, R. 1999. *Fishes of the Mascarene Islands (Réunion, Mauritius, Rodriguez): an annotated checklist, with descriptions of new species*. Königstein: Koeltz Scientific Books. 759 p.

Friedrich, H. 1970. Nemertinen aus Chile. *Sarsia* 40(1): 1–80.

Hochberg, F.G. and D.N. Lunianski. 1998. Nemertean collections at the Santa Barbara Museum of Natural History: type specimens and vouchers for Wesley R. Coe's 1940 publication. *Hydrobiologia* 365(1–3): 291–300.

Joubin, L. 1905. Note sur quelques némertiens recueillis en Basse-Californie par M. Diguet. *Bulletin du Muséum National d'Histoire Naturelle, Paris* 11(5): 309–315.

McCosker, J.E. and R.H. Rosenblatt. 1995. Muraenidae. Morenas; p. 1303–1315 *In* W. Fischer, F. Krupp, W. Schneider, C. Sommer, K.E. Carpenter and V. Niem (ed.). *Guia FAO para Identification de Especies para lo Fines de la Pesca. Pacifico Centro-Oriental*. Rome: FAO.

Salcedo-Martínez, S., G. Green, A. Gamboa Contreras and P. Gómez. 1988. Inventario de macroalgas y macroinvertebrados bénticos, presentes en áreas rocosas de la región de Zihuatanejo, Guerrero, México. *Anales del Instituto Ciencias del Mar y Limnología Universidad Nacional Autónoma de México* 15(1): 73–96.

Shaw, G. and F.P. Nodder. 1797. *The naturalist's miscellany: or coloured figures of natural objects; drawn and described immediately from nature*. Volume 9. London: Nodder [No pagination; text about 150 p., pls. 301–348]

Received: June 2012
Accepted: July 2012
Published online: August 2012
Editorial responsibility: Luis Ernesto Arruda Bezerra