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New record of *Paphia textile* (Gmelin, 1791) (Family: Veneridae Rafinesque, 1815) in the waters of the Iraqi coast

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Abstract: *Through studying the environment of the Iraqi coastal waters, northwest of the Arabian Gulf, the oyster Paphia textile (Gmelin, 1791) (Family: Veneridae) was first recorded in Iraqi territorial waters, and it is considered part of monitoring the biodiversity resulting from climate change in recent years.*

Key Words: *Biodiversity, Climate change, Coastal water.*

I. Introduction

Family Veneridae was first established by Rafinesque (1815) and it was included in the order Veneracea (Adams and Adams, 1856). The early classifications by the previous authors such as Adams and Adams (1857); Chenu (1862), Gill (1871), Tryon (1884) and Fischer (1887) had grouped Veneridae with Petricolidae and Glauconomidae (Mikkelsen *et al*., 2006).

Family Veneridae is known as Venus clams. It is the largest marine family of bivalves and the richest species family of heterodont bivalve mollusks (Oliver, 1992; Da Costa, 2012). The members of this heterodont group are typified by characters such as three cardinal teeth in each valve, feeble or wanting lateral teeth and well-developed lunule and escutcheon (Keen 1969). Many species of Veneridae are economically important and ecologically crucial due to their huge abundance in benthic environments (Vine, 1986; Mastellar, 1987; Oliver, 1992).

In the current systematic position, family Veneridae includes more than 800 extant species, distributed within about 14 subfamilies (Keen 1969; Habe 1977; Da Costa, 2012), in approximately 170 genera (Mikkelsen *et al*., 2006; Da Costa, 2012).

This study is one of more than 12 previous studies in which we recorded new species in the waters of the Iraqi coast, including: (Al-Khafaji *et al.,* 2017; Al-Khafaji *et al.,* 2019; Al-Maliky *et al.,* 2020a ; Al-Maliky *et al.,* 2020b ; Al-Maliky *et al.,* 2023 ; Al-Maliky *et al.,* 2024).

II. Materials and Methods

Samples were collected from *P. textile* in the waters of the Arabian Gulf (Fig.1), and by trawling nets with fishing for fish, shrimp, and other organisms. Samples of oysters were collected and preserved in plastic containers with alcohol at 70-80% concentration. Upon their arrival at the laboratory, tests were conducted on them and they were diagnosed based on many taxonomic keys on; Hasan (1994) & El Mekawy *et al.* (2019).

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Figure 1. Map showing *Paphia textile* collection area in the Iraqi coastal waters.

III. Results and Discussion

Systematic account

Kingdom: Animalia Linnaeus, 1758
Phylum: Mollusca Cuvier, 1795
Class: Bivalvia Linnaeus, 1758
Subclass: Heterodonta Neumayr, 1884
Infraclass: Euheterodonta Giribet & Distel, 2003
Order: Veneroida Gray, 1854
Superfamily: Veneroidea Rafinesque, 1815
Family: Veneridae Rafinesque, 1815
Subfamily: Tapetinae Adams & Adams, 1857
Genus: *Paphia* Röding, 1798
Paphia textile (Gmelin, 1791)
(Plate: II; shell length, 1.7-2.6 cm).

Identification key:

Hinge heterodont with 3 cardinal teeth in each valve; ligament external. Outline rectangular to ovate, sculpture with fine concentric lines. Outline elongate; pallial sinus ascending, short, rectangular…….. ***Paphia textile*** (Gmelin, 1791) (Fig. 2).

Figure 2. *Paphia textile*, A: Ventral view; B: Dorsal view, (MSC), Basrah, Iraq, (scale: 2.6 cm).

Synonyms

Venus textile Gmelin, 1791, Syst. Nat., (éd. XIII), p. 3280.

Paphia textile - Crichton, 1941, 42, no. 2: 325; Ray, 1950, XLVI: 119; Satyanlurti, 1956, N.S., I, no. 2: 129, pl. 20; Shikama, 1964, D: 81, pl. 47; Kundu, 1965, 62 (2): 211, pl. XVI; Fischer-Piette et Metivier 1971b, N.S., Zool., LXXI: 51; Fischer-Piette, 1974, 5(2-3): 296; Dekker & Orlin, 2000, P. 15; Rusmore-Villaume, 2008, 278-279.

Tapes sumatranus - Jaeckel& Thiele, 1931, 21 (1932): 235, pl. IV, fig. 109.

Tapes textrix - Deshayes, 1853, Cat. Conch. Brit. Mus., I, Veneridae, etc., p. 171.

Venus textrix -Schroter, 1788, X, Namen. Register: 112; Pfeiffer, 1869, cd. II, XI (1): 169, pl. 15, fig. 7.

Tapes textrix - Reeve, 1864, XIV, pl. II, fig. 3; Mitchell, 1867: 66; Romer, 1870, D: 19, pl. V, fig. la, Ib, lc; Melvill et Abercrombie, 1893, sere 4, VB: 46; Standen et Leicester, 1906, V: 293.

Venus reticulina - Bory de Saint-Vincent, 1827, P. 154, Pl. 283

Venus undulata - Dillwyn, 1817, Descr. Cat. Rec. Sh., I. no. 106, P.204 avec fig.

Material examined: Two specimens only.

Measurements: Shell length from 1.7 to 2.6 cm.

Localities: Arabian gulf: 2 specimens: Basrah, 29°47’56°N48°58’48°E.

Description:

Shells are compressed medium-sized, solid, equivalve, and subequilateral. The outline is strongly elongated transversely, elliptical-ovate, almost twice as long as high. Umbo lies in the anterior part of the shell. The anterodorsal and posterodorsal margins are gently sloping, while both anterior and posterior margins are rounded. The ventral margin is broadly rounded. The surface of shells has a glossy and shining appearance ornamented with circular smooth sculptures and obvious growth lines without oblique sculpture. Lunule is slightly depressed. Escutcheon is obvious and takes a lanceolate shape. A ligament is external. The hinge is narrow, concentrated under the umbo of each valve, with 3 radiating cardinal teeth but no lateral teeth. The pallial sinus is shallow and rounded. The internal margins of shells are smooth.

Color

Shells have externally a characteristic color pattern and are white internally. The outside of the shell is highly glossy, beige, pale yellow, cream to pinkish-brown, with a netted pattern of darker tan to greyish brown

zigzag lines dorsal margins are dark purplish-brown, short and transverse lines anterior and posterior to the umbones; the outer shell rims whitish.

Habitat

This species lives in sandy and muddy intertidal habitats.

Distribution

Indo-West Pacific regions from East Africa to Papua New Guinea, north to the South China Sea, and south to Indonesia (Drivas and Jay, 1987).

IV. Reference

1. Adams, H. & Adams, A. (1853–1858) The genera of Recent Mollusca; arranged according to their organization. John van Voorst, Paternoster Row, London, Vol. 2, 661 pp.
2. Al-Khafaji, K.K., Al-Maliky, T.H.Y., Al-Maliky , A.M.J. (2019). First record of the crab, *Droippe quadridens* (Fabricius, 1793) (Brachyura: Dorippidae), from the Iraqi coastal waters of the NW Arabian Gulf, with notes on the occurrence of seven species of crabs in the region. Arthropods 8(4): 118-126.
3. Al-Khafaji, K.K., Al-Waeli, A.A., Al-Maliky, T.H. (2017). New records of xanthid crabs Atergatis roseus (Rüppell, 1830) (Crustacea: Decapoda: Brachyura) from Iraqi coast, south of Basrah city, Iraq. Arthropods 6(2): 54-58.
4. Al-Maliky, A.M.J. Al-Khafaji KK, and Al-Maliky, T.H.Y. (2021). First record of Octopus vulgaris(Cuvier, 1797) (Octopodidae) in the Iraqi coastal waters, NW Arabian Gulf.Journal of Applied and Natural Science, 13(3), 1048 -1051. https://doi.org/10.31018/jans.v13i3.2815.
5. Al-Maliky, T.H.Y., Shakir, Z.K., Intisar MA Jabbar, I.MA. and Salbok, A.Z. (2024). New record of a gastropod *Nassarius gayii* Kiener 1834 in the Northwest Arabian Gulf. Int. j. adv. multidisc. res. stud. 4(4):1312-1313.
6. Al-Maliky, T.H.Y., Raghad Zaidan Khalaf, R.Z. and Adib H Zeini, A.H. (2023). First record of peregrine shrimp *Metapenaeus stebbingi* Nobili, 1904 (Crustacea, Decapoda: Penaeidae) in the Iraqi waters, North-West Arabian Gulf. Baghdad Science Journal. 20(4): 1194-1199.
7. Al-Maliky, T.H.Y. 2020. New records of Leucosiid crabs Lyphira perplexa Galil, 2009 (Crustacea; Decapoda; Leucosiidae) in the northwestof the Arabian Gulf, Iraq. OCEAN LIFE, 3 (2): 1-3.
8. Al-Maliky, T.H.Y., Ukash, A.W., Al-Maliky, A.M.J., Zeini, A. and Pereira, R.l. 2020. First record of Hiplyra elegans (Gravier, 1920), (Crustacea; Decapoda; Leucosiidae) in the northwestof the Arabian Gulf, Iraq. Revista Meio Ambiente e Sustentabilidade, 9(19): 8 p.
9. Da Costa, F. (2012): Clam fisheries and aquaculture. Published by Nova Science Publishers, Inc. † New York. ISBN: 978-1-62257-518-3
10. El Mekawy, H.A., El-Sayed, A.A.M., Amer, M.A. and Sarhan, M.M.H. (2019). Revision of Families Veneridae and Mactridae (Mollusca: Bivalvia) From the Suez Gulf, Egypt. Egypt. Acad. J. Biolog. Sci., 11(2): 65- 97.
11. Hasan, A.K. (1994). A Taxonomic Teview of the Bivalve and Gastropod Mollusk Founa along the Saudi Intertidal Zone of the Arabian Gulf. J. KAU. Mar. Sci. 7: 245-253.
12. Fischer, P. (1887): Manuel de *Conchyliologie et de Paleontologie Conchyliologique ou Historie Naturelle des Mollusques Vivants et Fossiles suivi* d'un Appendice sur les Brachiopodes par D. P. Oehlert, fasc. 11. Librairie F Savy, Paris. 1009-1369.
13. Habe, T. (1977): Systematics of Mollusca in Japan, Bivalvia and Scaphopoda. Zukan-No- Hokuryukan, Tokyo, 244-275 pp.
14. Keen, A.M. (1969): Superfamily Mactracea Lamarck, 1809. In: Cox L. R et al. (Eds), Part N [Bivalvia], Mollusca 6, vols. 1 and 2: xxxvii + 952 p. In: Moore, R. C. (Ed) Treatise on Invertebrate Paleontology. Geological Society of America and Uni-versity of Kansas Press, Lawrence, Kansas. pp. N595–N610.
15. Mastaller, M. (1987): Molluscs of the Red Sea. In: Edwards A. J., and Head, S.M. (eds) Red Sea Key Environments. Pergamon Press, Mienis H.K., (2000c): First records of Mactra lilacea Lamarck, 1818 from the Eastern Mediterranean. Triton, 2: 16.

16. Mikkelsen, P.M., Bieler, R., Kappner, I. and Rawlings, T.A. (2006): Phylogeny of Veneroidea (Mollusca: Bivalvia) based on morphology and molecules. Zool. J. Linn. Soc.-Lond. 148, 439-521.
17. Oliver, P.G. (1992): Bivalved seashells of the Red Sea. Cardiff, Hemmen, Wiesbaden and National Museum of Wales, 330 p.
18. Tryon, G.W. (1884): Structural and systematic conchology: An introduction to the study of Mollusca. Academy of Sciences of Philadelphia, Philadelphia. 3, 128-134.
19. Vine, P. (1986): Red Sea Invertebrates. Immel Publishing, London. 224 pp.