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REMARKS CONCERNING *TURBO PUSTULATUS*, *TURBO PYROPUS* AND  
*COLLONIA GESTROI*, WITH THE DESCRIPTION OF *YARONIA*:  
A NEW GENUS FOR A SMALL TURBINID SPECIES FROM THE RED SEA  
(MOLLUSCA, GASTROPODA, TURBINIDAE)

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**Abstract:** The nomenclatural status of various species named *Turbo pustulatus* in printed and electronic sources is discussed. *Turbo pustulatus* Brocchi, 1821 is the oldest available name but its identity is somewhat obscure due to the fact that the original material was never figured and the whereabouts of the type material is unknown. Possible synonyms of *Turbo pustulatus*: *Turbo pyropus* Reeve, 1848 and *Collonia gestroi* Caramagna, 1888 are briefly discussed too. Only the identity of *Collonia gestroi* turned out to be well established. The new genus *Yaronia* is introduced based on unique morphological characters of the interior of the outer (palatal) lip of the aperture of *Collonia gestroi*, the type species of the new genus.

**Key words:** Mollusca, Gastropoda, Turbinidae, shell morphology, nomenclature, systematics, *Yaronia*.

### Introduction

Throughout the Red Sea, including the Gulfs of Suez and Aqaba, and part of the Gulf of Aden occurs a small, rather attractive Turbinid species of a brownish-red colour. Fully adult specimens may reach a height of approximately 15 mm (Plate 1). Good colour pictures of it were also published by Sharabati (1984: pl. 3, figs. 12-12a, as *Turbo* species) and Coulombel (1994: 24, text-figs., as *Turbo pustulatus*). Without doubt this species is the same as that described by Caramagna (1888: 132, pl. 8, fig. 10) as *Collonia gestroi* from Buja, a tiny port near Ras Buja in Assab, Eritrea (13° 00' 36" N, 42° 44' 53" E.); in the extreme southern part of the Red Sea.

*Collonia gestroi* has been placed in the synonymy of *Turbo pustulatus* Brocchi, 1821, of which also *Turbo pyropus* Reeve, 1848 has been considered a synonym (Dekker & Orlin, 2000: 18). In addition the species was transferred to the genus *Homalopoma* Carpenter, 1864. The question is whether all these changes have been carried out correctly.

### The *Turbo pustulatus* question

The name *Turbo pustulatus* occurs in the printed and electronic malacological information sources accompanied by four different authors and dates of publication.

***Turbo pustulatus* Helbling, 1779.** This name has been used recently for an American *Turbo* species on a website ([www.gastropods.com/3/Shell\\_8563.shtml](http://www.gastropods.com/3/Shell_8563.shtml)). A check of the original paper (Helbling, 1779) revealed that it contains the descriptions of *Turbo attenuatus* and *Turbo reticulatus*, both now belonging to the Epitoniidae, but there is not a trace of a *Turbo pustulatus*.

***Turbo pustulatus* Röding, 1798.** This name was followed in Röding (1798: 88) only by its German name: "Der schagrinirte Knopf", without any further description or reference to a previously published description or figure. It has therefore to be considered a nomen nudum.

***Turbo pustulatus* Brocchi, 1821.** This species was described from material collected by G. Nardi on the African side of the "Golfo Arabico" between 21° and 24.5° N. No further indication is given concerning a more precise locality, however, according to the given latitudes this had to be the area somewhat between Port Sudan in Sudan and Ras Banas in Egypt (Yaron, 1981: 365). This location agrees with what we know about the collector Giuseppe Forni, a Milanese chemist, who was employed as the manager of a nitrate factory at Bedrashen near Cairo. In 1819 he made a trip along the Red Sea in order to study geological features along the route taken by another Italian Giovanni Battista Belzoni a year earlier, when searching for the lost city of Berenice.

Brocchi (1821: 224) described this Turbinid species in a curious way: "*Turbo (pustulatus) testa ovata griseo-fusca, anfractibus pustularum ordinibus cinctis, pustulis albidis, apertura intus castanea: nob.*". The most important item is that we know for sure that it came from the Red Sea. The description is however rather brief, the species was not illustrated and the whereabouts of the type material is unknown (Yaron, 1981: 367). Later interpretations of its identity are purely based on speculations. As a matter of fact Brocchi's publication was such a rare item even in Italy that Issel (1869: 7) had to admit in the first monograph ever written about the molluscs of the Red Sea that the copy in his possession was lacking not only page numbers but also a date of publication. In his opinion Brocchi's work had been published after 1819, the year in which the material had been collected, but before 1823 when Brocchi joined Forni in Egypt. As a matter of fact Brocchi's work was published in two instalments in the 24th volume of the "Biblioteca Italiana o sia Giornale di Letteratura, Scienze ed Arti" in Milano. The first part appeared on the pages 73-86, the second part covered the pages 209-226. The general opinion is that both parts were published in 1821. Whatever hides behind the name *Turbo pustulatus* Brocchi, 1821 has to be revealed through a study of the type material or a selection of a neotype, nevertheless it forms the first available description of *Turbo pustulatus*.

*Turbo pustulatus* Reeve, 1848. A true *Turbo* species of unknown origin was described and figured by Reeve (1848: plt. 12, fig. 59) as *Turbo pustulatus*. As this name was preoccupied Pilsbry (1888: 204) introduced the new name *Turbo subcastaneus*. Both names are now considered junior synonyms of *Turbo squamiger* Reeve, 1843, which occurs on the west coast of tropical Central America from the Gulf of California down to Peru (Alf & Kreipl, 2003).

#### **What about the status of *Turbo pyropus* Reeve, 1848?**

This is another species described by Reeve (1848: plt. 12, fig. 61) of unknown origin.

In shell characters it seems to be related to *Collonia gestroi*, however, the shell is relatively much wider, the whorls are much more convex and the sutures are deeper. Unfortunately Reeve wrote nothing about any particular sculpture on the inner part of the outer (palatal) lip of the aperture.

All shells of *Collonia gestroi* which we could study so far from the Gulf of Aqaba and the Red Sea proper are very similar in shell characters, only showing some variation in the colour pattern. According to the original figure of *Turbo pyropus* it might belong to the same genus as *Collonia gestroi*, but does not seem to be conspecific.

#### **The *pustulatus-gestroi* complex: one or two species?**

As mentioned above Dekker & Orlin (2000: 18) consider *Turbo pustulatus* Brocchi, 1821, *Turbo pyropus* Reeve, 1848 and *Collonia gestroi* Caramagna, 1888 as one and the same species and placed it in the genus *Homalopoma*.

A look at the various published figures shows us two different morphological types. Type A is characterized by shells with a round entire aperture and a very thick, blunt, furrowed and granulated white inner lip of the aperture, while the exterior of the shells is of a beautiful brownish-red colour. The operculum is very small.

Type B is characterized by shells with an incomplete aperture i.e. the columella area forms not a part of the aperture; the lip of the aperture is thin, sharp and the inner lip is smooth bordered usually by a greenish-brown rim while the exterior of the shells is often of a greenish-brownish-greyish colour. The operculum is relatively large.

Type A is typical for *Collonia gestroi* and shells showing such characters have been figured by Savigny (1817: plt. 5, fig. 26), Caramagna (1888: plt. 8, figs. 10-10a), Pilsbry (1888: plt. 44, fig. 80 – copy of Savigny; plt. 69, figs. 29-30 – copy of Caramagna), Selli (1973: plt. 13, figs. 7a-7b), Sharabati (1984: plt. 3, figs. 12-12a), Coulombel (1994: 28, text-figs.) and here on plate 1.

Type B has been pictured by Sharabati (1984: plt. 3, figs. 11-11a) and Zuschin et al. (2009: plt. 15, figs. 3a-3d). It is possible that these greyish-green shells represent true *Turbo pustulatus* of Brocchi, but without a check of his type material there is no proof.

As mentioned above *Turbo pyropus* Reeve is probably congeneric, but not conspecific with *Collonia gestroi*.

#### **The systematic position of *Collonia gestroi***

Until now shells of types A and B have been identified both as representing *Turbo pustulatus* and placed in the genus *Homalopoma* by Dekker & Orlin (2000: 18). Since we have no exact information concerning the identity of true *Turbo pustulatus* Brocchi, 1821 the following discussion concerning the systematic position of this species complex remains confined to that of *Collonia gestroi*.

In the same year that Caramagna described his *Collonia gestroi*, Pilsbry (1888: 262) placed that species in the genus *Leptothyra* Pease 1869. However, Caramagna's taxon is quite different from the type species of *Collonia* (*Delphinula marginata* Lamarck, 1804), *Leptothyra* (*Leptothyra costata* Pease, 1869) and *Homalopoma* (*Turbo sanguineus* Linnaeus, 1758), or any other species placed in these genera. Since no other currently recognized genus in the Turbinidae in general and the Homalopomatinae in particular seems to fit *Collonia gestroi* a new genus is here proposed:

#### ***Yaronia* new genus**

Type species: *Collonia gestroi* Caramagna, 1888

Definition: A genus belonging to the subfamily Homalopomatinae characterized by a relatively small imperforate turbiniform shell with a height of up to 17 mm, showing an entire aperture, of which the outer (palatal) lip is rather thick and blunt, of a pure white colour; the interior of the lip is initially irregularly furrowed, followed by a granulose (pustulose) area.

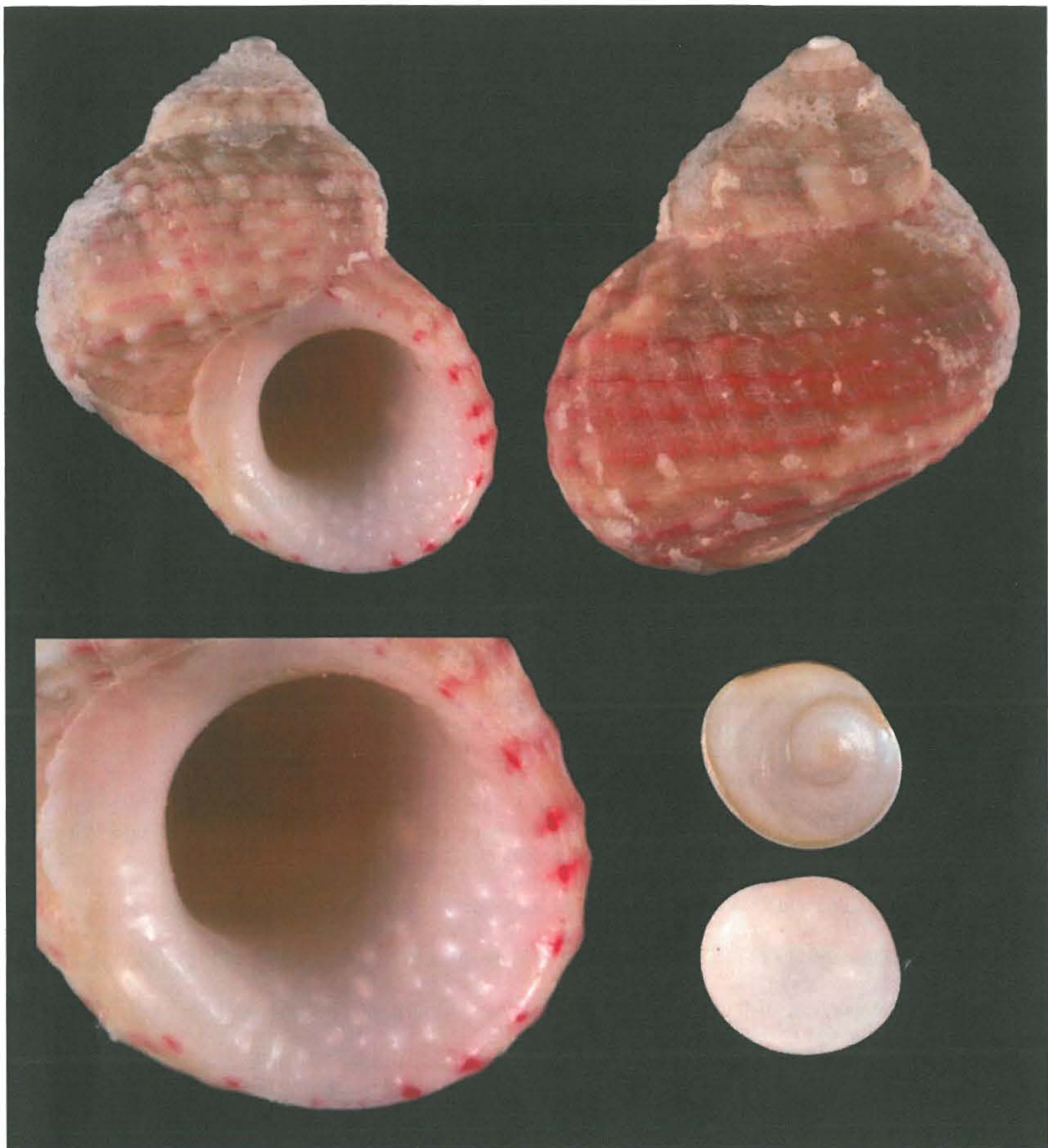


Plate 1. *Yaronia gestroi* (Caramanga, 1888) from the Gulf of Aqaba, Egypt, off Devils Head, depth 12-25m, leg. D. Korkos, April 1990. Shell height 13.78 mm, dimensions of the operculum 4.30 x 4.03 mm. (TAU MO 72283).

Description based on the type species: Shell relatively small, up to 17 mm height, turbiniform, imperforate, whorls convex, shallow suture, the 2.5 apical whorls with four spiral ridges, the following 3.5 whorls with dense fine spiral sculpture, some of them form raised spiral lirae, the spiral lirae are crossed by broad, weakly raised axial ribs running parallel the lip of the aperture, giving the spiral ribs a tubular appearance of which about 12 are present on the body whorl, each spiral rib is indicated with a rose dot on the blunt edge of the aperture, the latter is entire, the interior of the outer lip is furrowed and followed inwards by numerous granules, some furrows are also present on the columellar callous of the aperture. The apical whorls are of a white colour, the base colour of the following whorls is of a very light brown with some white axially arranged irregular blots near the suture. The raised tubular spiral lirae are coloured rose to red, the aperture is completely white except for the fine rose to red dots on the rim of the aperture.

The spirally operculum is slightly oval in form, calcareous, with a very thin organic layer at the interior, the central part of the interior is slightly raised, the exterior is smooth and of a dull white colour.



The new genus *Yaronia* differs from all other genera belonging to the Turbinidae by the unique sculpture of the interior of the outer (palatal) lip of the aperture which consists initially of furrows on the relatively thick lip, followed by the well developed granules (pustules) more interiorly.

In the case that *Turbo pustulatus* turns out to be indeed a senior synonym of *Yaronia gestroi*, then of course the correct denomination should read *Yaronia pustulata* (Brocchi, 1822). In addition *Turbo pyropus* most probably belongs to this new genus.

**Etymology:** The new genus is named after the late Isaac (Jitzchak) Yaron (1934-1985) in honour of all the work he carried out for a better understanding of the mollusc fauna of the Red Sea.

**Postscriptum:** It is still interesting to note that Dautzenberg (1929: 325 [531] & 327 [533]) listed both the *Turbo pustulatus* of Brocchi and *Leptothyra gestroi* as two different species from Madagascar. Both records are rather doubtful from the zoogeographical point of view and the correct identification of the material should be rechecked.

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#### References

- Alf. A., Kreipl, K. & Poppe, G.T., 2003. The family Turbinidae. Subfamily Turbininae, Genus *Turbo*. A Conchological Iconography, 68, pp., 95 pls. ConchBooks, Hackenheim.
- Brocchi, G.B., 1821a. Catalogo di una serie di conchiglie raccolte presso la costa Africana del golfo Arabico dal sig. G. Forni ed illustrate dal sig. Brocchi. Biblioteca Italiana o sia Giornale di Letteratura, Scienze ed Arti compilato da vari letterati, 24: 73-86.
- Brocchi, G.B., 1821b. Continuazione e fine del catalogo delle conchiglie raccolte dal sig. G. Forni nel seno Arabico ed illustrate dal sig. Brocchi. Biblioteca Italiana o sia Giornale di Letteratura, Scienze ed Arti compilato da vari letterati, 24, 209-226.
- Caramagna, G., 1888. Catalogo delle conchiglie Assabesi. Bollettino della Società Malacologica Italiana, 8: 113-149, plt. 8.
- Coulombel, A., 1994. Coquillages de Djibouti. 143 pp. Edisud, Aix-en-Provence.
- Dautzenberg, Ph., 1929. Mollusques testacés marins de Madagascar. Faune des Colonies Françaises, 3: 321-636 [115-430], pls. 4-7. Société d'Éditions Géographiques, Maritimes et Coloniales, Paris.
- Dekker, H. & Orlin, Z., 2000. Check-list of Red Sea Mollusca. Spirula, 47 (Supplement): 1-46.
- Helbling [von Hirzenfeld], G.S., 1779. Beiträge zur Kenntniss neuer und seltener Konchylien. Aus einigen Wienerischen Sammlungen. Abhandlungen einer Privatgesellschaft in Böhmen zur Aufnahme der Mathematik des vaterländische Geschichte und der Naturgeschichte, 4: 102-131, 4 pls.
- Issel, A., 1869. Malacologia del Mar Rosso. Ricerche Zoologiche e Paleontologiche. XI + 388, 5 pls. Biblioteca Malacologica, Pisa.
- Pilsbry, H.A., 1888. Monographs of the Turbinidae and Trochidae. Manual of Conchology 10(2):161-290, 311-323, plt.37-69.
- Reeve, L.A., 1848. Monograph of the genus *Turbo*. Conchologia Iconica, or illustrations of the shells of molluscos animals, 4: 13 plates. London.
- Röding, P.F., 1798. Museum Boltinianum sive Catalogus Cimeliorum e tribus regnis naturae quae olim collegerat Joa. Fried Bolten, M.D.p.d. per XL. Annos Proto physicus Hamburgensis. Pars Secunda continens Conchylia sive Testacea univalvia, bivalvia & multivalvia. VIII + 199 pp. Hamburgi.
- Savigny, J.C., 1817. Description de l'Égypte, ou recueil des observations et des recherches qui ont été faites en Égypte pendant l'Expédition de l'armée française, publiée par ordre du gouvernement. Histoire Naturelle. Planches, 2: 125 pls. Imprimerie Royale, Paris.
- Selli, R., 1973. Molluschi quaternari di Massaua e di Gibuti. In: Missione Geologica A.G.I.P. nella Danalia meridionale e sugli altopiani Hararini (1936-1938). Documentazione Paleontologica, 4 (2): 151-444, pls. 1-30. Accademia Nazionale dei Lincei, Roma.
- Sharabati, D., 1984. Red Sea Shells. 128 pp. KPI, London, Boston, Melbourne & Henley.
- Yaron, I., 1981. Brocchi's catalog of Red Sea Mollusca collected by Forni. Levantina, 31: 365-371.
- Zuschin, M., Janssen, R. & Baal, Ch., 2009. Gastropods and their habitats from the northern Red Sea (Egypt: Safaga) Part 1: Patellogastropoda, Vetigastropoda and Cycloneritimorpha. Annalen des Naturhistorischen Museums in Wien, 111A: 73-158.
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