BASTERIA

TIJDSCHRIFT VAN DE NEDERLANDSE
MALACOLOGISCHE VERENIGING

Vol. 36, No. 1, pp. 1–30 19–V–1972

Atlanta tokiokai, a new heteropod (Gastropoda)

by

S. VAN DER SPOEL and D.G. TROOST

Institute for Taxonomical Zoology, Amsterdam

Souleyet (1852) described three species, *Atlanta gibbosa*, *A. inclinata* and *A. lamanoni*, which have been frequently confused. Tesch (1908) created the new genus *Protatlanta* for the species *lamanoni* which should be named *souleyeti* according to Smith (1888) as *lamanoni* was preoccupied. Tesch (1949) gives *A. gibbosa* as a synonym of *A. inclinata*. As intermediate forms between *A. gibbosa* and *A. inclinata* are frequently found, we agree with Tesch. There are, however, specimens which resemble *A. gibbosa* very closely but which do not show intermediates with this species. Whether Souleyet based *A. gibbosa* merely on specimens which now have to be considered as belonging to *A. inclinata*, is dubious. Tokioka (1961, fig. 35) figured such a *gibbosa*-like specimen but considered it as probably representing *Protatlanta souleyeti*, while he discussed the resemblance of his specimen with *A. inclinata* and *A. helicinoides* (Souleyet, 1852). Among material collected by the Cicar project in the Caribbean Sea the second author found a specimen closely resembling the specimen figured by Tokioka (1961) which enabled us to describe it as a new species. The name *Atlanta tokiokai* is proposed in honour of Dr. T. Tokioka who was the first to draw attention to this heteropod.

Atlanta tokiokai nov. spec.
(figs. 1-3)

Protatlanta souleyeti Tokioka, 1961: 318, figs. 35-36.
Atlanta gibbosa (part)? Souleyet, 1852: 386, Pl. 21 figs. 1-6.

Description.

The axis of the spire is slightly inclined which is effected chiefly by the curving of the last whorl towards the apical side. The peristome is discontinuous, the part of the penultimate whorl inside the aperture is covered by a thin callus. The upper margin of the aperture is connected with the upper side of the penultimate whorl (in the specimen figured by Tokioka) or with the last but two whorls in the larger (= holotype) specimen. The last whorl is not oval in shape but rounded triangular with a shoulder at a little distance from the suture. The keel surrounds only the posterior half of the last whorl. When the shell is viewed from below, the continuation of the keel is seen as a faint ridge. The base of the shell is very flat, which, together with the discontinuous peristome distinguishes the species from all other Atlantidae. The umbilicus is rather large and deep. The base of the shell is smooth; the whorls except for the last whorl below the periphery show a sculpture of distinct spiral lines and transversal ribs. Tokioka (1961) described no sculpture but the pattern is only visible under good illumination so that he may have overlooked this character. The suture is well-marked but shallow, this gives the spire in profile view a rather smooth pyramidal shape without inflated whorls. The apex is truncate; the rear angle is about 80°. Operculum and animal were not separated from the shell to preserve the type specimen in the best possible condition. Tokioka (1961) gives a description of the operculum.

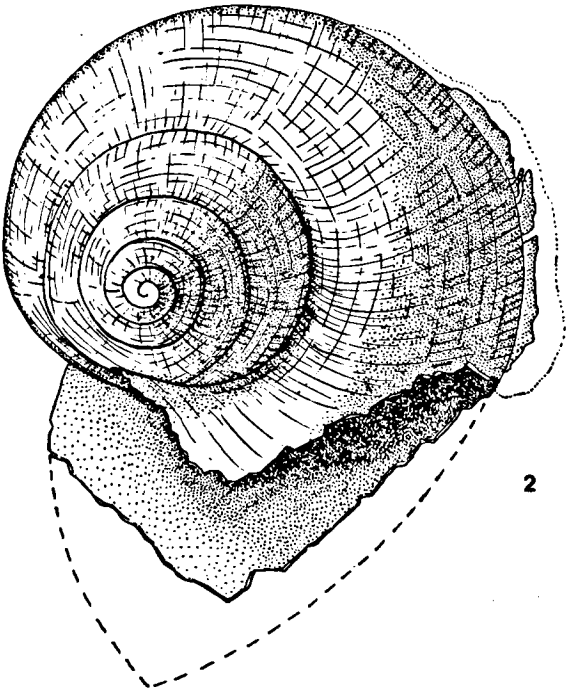
meristic data

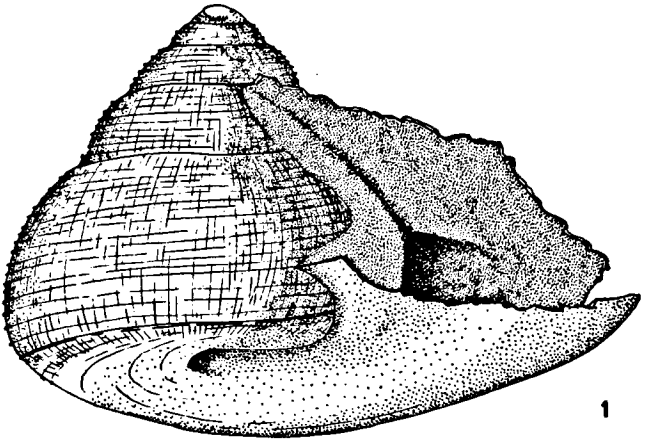
shell diam.	shell height	whorl formula	number of whorls	do. from below	particulars
2.3 mm	1.8 mm	1 : 0.46 : 0.32	6	2	holotype
1.5 mm	0.7 mm	1 : 0.42 : 0.29	6½	2	specimens figured by Tokioka
2.0 mm		1 : 0.31 : 0.19	5¼		*A. inclinata* (cf. Tokioka, 1961)
1.6 mm		1 : 0.34 : 0.19	4½		*A. inclinata* (cf. Tokioka, 1961)
2.7 mm		1 : 0.34 : 0.22	7½		*A. helicinoides* (cf. Tokioka, 1961)
1.5 mm		1 : 0.37 : 0.22	4½		*A. helicinoides* (cf. Tokioka, 1955)

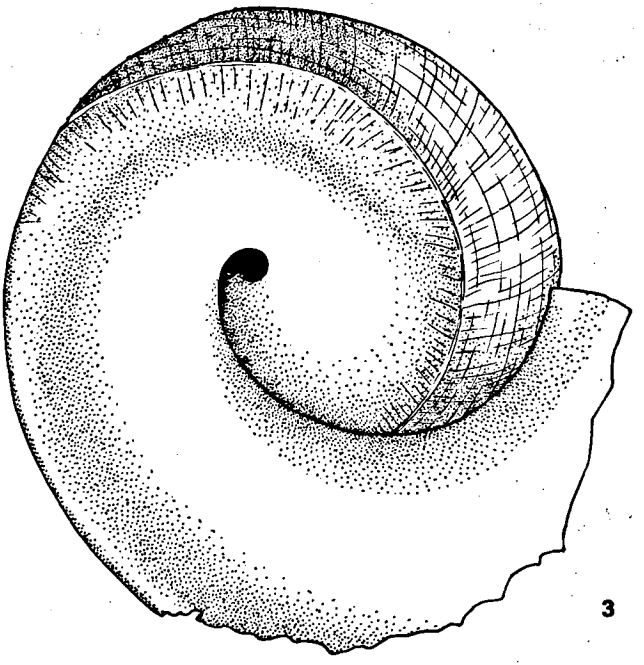
The holotype is preserved in the Institute of Taxonomical Zoology (Zoological Museum), Amsterdam.

Type locality: Caribbean Sea, Cicar project, cruise 13, Stat. 60 : 12°01.6′ – 12°02.3′N 68°22.3′ – 68°25.0′W, 18 m depth, bottom depth ± 1000 m, water temperature 27.3°C, 23 June, 1970, 03^{45} – 05^{45} hours. Other species found in this sample are *A. inclinata* and *A. lesueuri* Souleyet, 1852. The specimen described by Tokioka was found in the North Pacific by the Shellback Expedition at Stat. 115.

The operculum of the present species is smaller than in *A. helicinoides* and *A. inclinata*, it most resembles that of *A. peroni* Lesueur, 1852 (Tokioka, 1961). The shell of *A. peroni* is, however, quite different from the shell described above. The spire of the shell somewhat resembles that of *A. inclinata*, especially that of the *gibbosa*-form but the shape is still quite different, the number of whorls is higher, and the bottom of the shell is flat and not convex like in *A. inclinata*. Only specimens of *A. inclinata* smaller than 1 mm can be taken for the new species. *A. tokiokai* differs from all *Atlanta* species, except *A. inclinata*, in having a narrow penultimate whorl, and the attachment of the upper border of the aperture to the preceding whorl or near the suture. All *Atlanta* species differ from the new species in showing a continuous peristome. The shape of the keel resembles that in *Oxygyrus keraudreni* (Lesueur, 1817) and *Protatlanta souleyeti*, but it is composed nearly completely of calcareous material. This resemblance in shape induced Tokioka to compare his specimen with *P. souleyeti*. The shell of *P. souleyeti* is much more depressed and the last whorl touches only the


2


1



Figs. 1-3. *Atlanta tokiokai* n. sp., holotype from three different aspects Highly enlarged: diameter 2.3 mm, height 1.8 mm.

penultimate one. The reticulate surface sculpture is unknown in other *Atlanta* species; a pattern of punctation as found in many Atlantidae is not found in *A. tokiokai*. Confusion with *A. peroni, A. gaudichaudi, A. lesueuri, A. turriculata, A. inflata,* and *A. fusca* is excluded by the shape of the spire and shell diameter which differ completely from those of *A. tokiokai.*

The specimen figured by Tokioka (1961) is smaller than the specimen described above and has half a whorl more, while the upper aperture border is attached at a lower level. The upper aperture border would have reached a higher position when the specimen of Tokioka would have grown older, up to the size of the present specimen for example. Still, a difference in the number of whorls would have existed if the North Pacific specimen would have

shown seven whorls when 2.3 mm in diameter, while the Atlantic specimen shows six whorls at this size. But such variability is not abnormal in Atlantidae as is demonstrated by Tokioka (1961, tables 5 and 7).

LITERATURE

SMITH, E.A., 1888. Report on the Heteropoda collected by H.M.S. Challenger during the years 1873-1876. Rep. Voy. Challenger 1873-76 Zool. 23: 1-51.

SOULEYET, F.L.A., 1852. Voyage autour du monde exécuté pendant les années 1836 et 1837 sur la corvette "La Bonite".-Zool. 2: 1-664. Paris.

TESCH, J.J., 1908. Systematic monograph of the Atlantidae (Heteropoda) with enumeration of the species in the Leyden Museum. Notes Leyden Mus. 30: 1-30.

———, 1949. Heteropoda. Dana Rep. 34: 1-53.

TOKIOKA, T., 1955. Shells of Atlantidae (Heteropoda) collected by the Sôyô-Maru in the Southern waters of Japan. Publ. Seto Mar. Biol. Lab. 4: 237-250.

———, 1961. The structure of the operculum of the species of Atlantidae (Gastropoda, Heteropoda) as a taxonomic criterion, with records of some pelagic mollusks in the Northern Pacific. Publ. Seto Mar. Biol. Lab. 9: 267-332.