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Differences in shell morphology between fossil and Recent Gibbula ditropis (Wood, 1848), a marine gastropod from the Coralline Crag in England, and the coasts of S. Spain and NW. Africa

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INTRODUCTION

The Recent occurrence of *Gibbula*[1] *ditropis*[2] (Wood, 1848) has first been mentioned by Jeffreys (1883: 104). Pallary (1901: 315), obviously not being aware of the preceding literature, described Recent *G. ditropis* as a new species, *G. tingitana*. Most subsequent authors used the name *G. ditropis*.

MATERIAL EXAMINED

A sample of 49 fossil shells in the British Museum (Natural History), London, labelled "Trochus ditropis S.V. Wood/Coralline Crag/Sutton, Suffolk/B.M.(N.H.) Palaeont. Dept.

1 Van Regteren Altena, Bloklander & Pouderoyen (1954: 58) assigned the fossil form to the genus *Margarites* Leach (in Gray, 1847). I cannot accept this view, because according to both Wenz (1938: 269) and Thiele (1929: 45), the shells of representatives of the subfamilia Margaritinae should be nacreous. The recent form of *G. ditropis*, however, is not nacreous at the outer side, but pleasantly and variegatedly coloured in a way which in particular resembles a sample of *G. turbinoides* (Deshayes, 1832) from Trapani, Sicilia (my colln. No. 0009), but which is generally not unusual among the genus *Gibbula* Risso, 1826.

2 In Jeffreys' (1883: 104) opinion, *Gibbula ditropis* (Wood) is not identical with *Trochus biangulatus* Eichwald. Jeffreys, however, refers to a paper from 1853, while Eichwald described his species in 1830. According to Carus (1893: 253), Monterosato did not share Jeffreys' opinion. As I have no opinion in this matter myself, I prefer to maintain the name introduced by Wood.

G 2038 f1-49". It includes two specimens which are supposed to be the syntypes.

A smaller sample in the British Museum, similarly labelled except for the registration number G 3845.

A sample of 84 Recent shells from Getarès, a few km S. of Algeciras, S. Spain; 74 shells in my colln. No. 0051, and 10 in the British Museum with reg. no. Z.D. 19781.

A sample of many juvenile Recent shells (< 2.4 mm) from the same locality in the collection of Dr. J.J. van Aartsen, No. 9873.

A sample of four fine Recent shells from Cala Burras, about 30 km SW. of Málaga, S. Spain, in the collection of Dr. J.J. van Aartsen, No. 3781.

A sample of four shells, collected alive, in the Dautzenberg collection, Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussels, labelled "Gibbula tingitana Pallary/ Tanger 2^{m}/Pallary leg. & ded. XII 05".

A similar sample of five shells in the Dautzenberg collection, labelled "Gibbula tingitana Pallary/Tanger/Pallary 23.2.05".

A sample of eight juvenile Recent shells (< 1.0 mm) from Sidi Ferruch, about 25 km W. of Alger, Algeria, in the collection of Dr. J.J. van Aartsen, No. 11027.

A sample of 24 juvenile Recent shells (< 2.0 mm) from El Djemila (La Madrague), about 10 km W. of Alger, in the collection of Dr. J.J. van Aartsen, No. 10571.

A sample of three Recent shells from Agadir, Morocco, in my colln. No. 0007.

OBSERVATIONS

The fossil shells examined are in complete agreement with the original description and figure of *Gibbula ditropis* (Wood, 1848). Likewise, the Recent shells agree very satisfactory with the original description of *Gibbula tingitana* Pallary, 1901, and with other descriptions and figures of *G. tingitana* or Recent *G. ditropis*. See Carus (1893: 253), Pallary (1902: 25; 1912: 66), Hidalgo (1917: 331), Pasteur-Humbert (1962: 31), Schirò (1971: 10), and Ghisotti & Melone (1972: 138).

Though the fossil and Recent shells are very similar indeed, and though both show some variability as regards measurements and sculpture, they clearly differ in the following aspects:

(1) Recent shells grow larger. Height and width of the largest fossil shell are 2.25 mm and 2.55 mm respectively, those of the largest Recent shell (from Cala Burras) are 4.45 mm and 3.95 mm.

(2) Recent shells are more slender, and adult Recent shells have a slightly different profile of the whorls. The ratio height/width varies between 0.76 and 0.93 among the 25 fossil shells measured, and between 0.98 and 1.17 among the about 40 Recent shells measured. The differences between the profiles of the whorls are illustrated in fig. 3. The same differences appear in the figures in the literature. Yet, the profile of juvenile Recent shells may be remarkably similar to that of fossil ones.

(3) The axial striae tend to be slightly more widely spaced in fossil shells than in Recent ones. Though not mentioned by Wood, this sculpture is definitely present in the fossil shells. It has probably been overlooked, because quite a large percentage of the fossil shells, i.e. about 45%, are too poorly preserved to show axial sculpture. There are indications of such sculpture in another 45%, where it is visible in protected areas such as

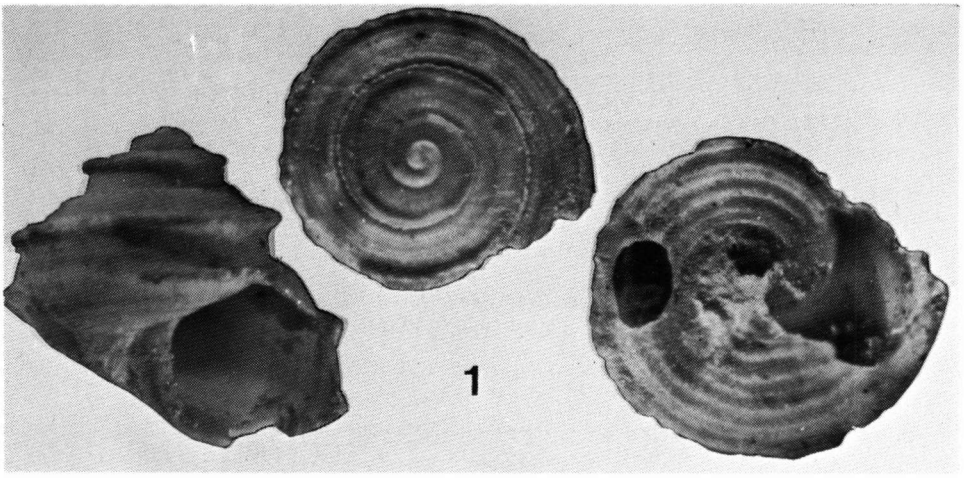

Fig. 1. *Gibbula ditropis ditropis* (Wood, 1848), fossil from the Coralline Crag, England, 20 x.

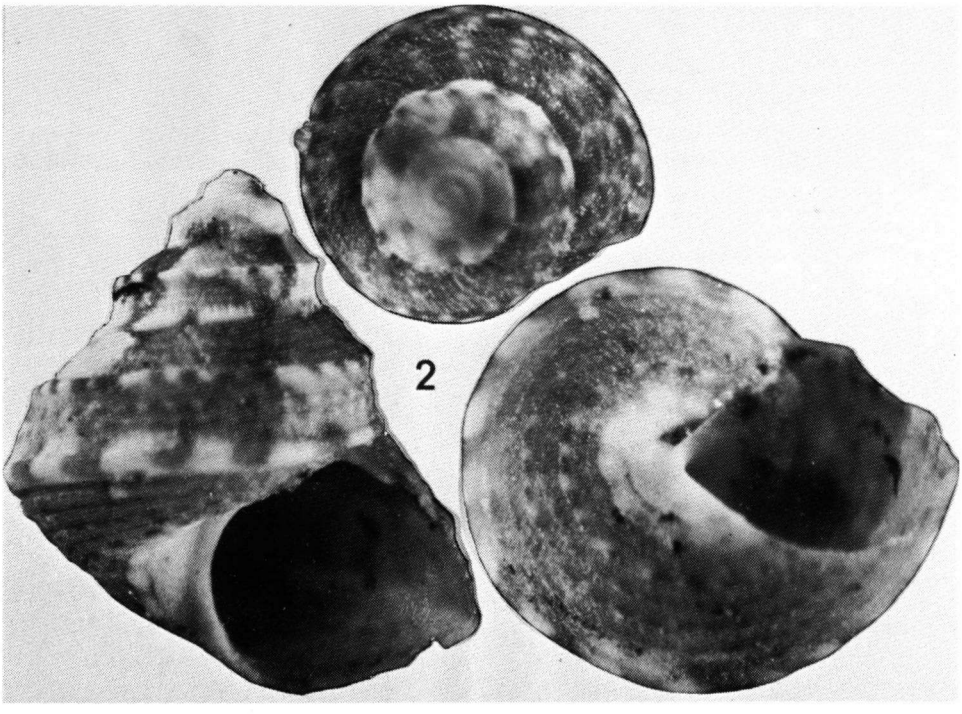

Fig. 2. *Gibbula ditropis tingitana* Pallary, 1901, Recent from Getarès, a few km S. of Algeciras, S. Spain, 20 x.

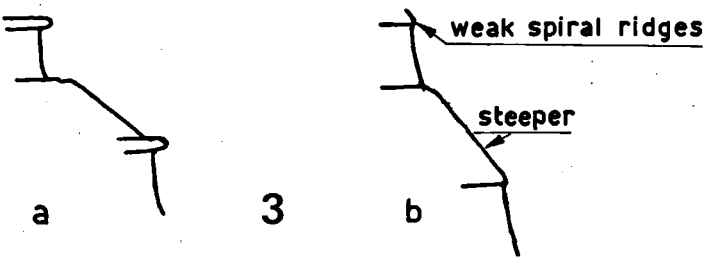

Fig. 3. Profile of the whorls of (a) *Gibbula ditropis ditropis* (Wood) and (b) *G. ditropis tingitana* Pallary. Differences exaggerated, in particular with regard to juvenile Recent shells.

in the umbilicus or between strong spiral ridges. In about 10% of the specimens the axial sculpture is fairly easily visible. It is about as weak in fossil shells as it is in Recent ones, and quite clearly the ribs are not as strong nor as widely spaced as in the shell depicted by Van Regteren Altena, Bloklander & Poudeyroyen (1954: No. 10), named *Margarites* aff. *ditropis* (S.V. Wood, 1848).

CONCLUSION

The differences between fossil and Recent shells of *Gibbula ditropis* (Wood) are such, that it is recommended to distinguish the Recent form as *G. ditropis tingitana* Pallary, 1901.

DISTRIBUTION

G. ditropis tingitana is known from Algeciras and Cala Burras, 30 km SW. of Málaga, both in S. Spain; from Tangier, Mogador and Agadir, all in Morocco; from a few localities between Cherchel, 80 km W. of Alger, and Alger, Algeria; from Palermo, Sicilia (Monterosato, 1890: 144). At least in Getarès, a few km S. of Algeciras, it is not rare among material washed ashore.

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SAMENVATTING

Verschillen in de vorm van de schelpen van fossiele en recente Gibbula ditropis (Wood, 1848), een zeeslak uit het Coralline Crag in Engeland en van de kusten van Z. Spanje en NW. Afrika.

Recente schelpen bereiken een diameter van 3,95 mm, fossiele van slechts 2,55 mm. De verhouding hoogte/diameter is 0,98 tot 1,17 bij recente schelpen, en 0,76 tot 0,93 bij fossiele schelpen. In samenhang daarmee vertonen de profielen kleine verschillen, zoals geïllustreerd in fig. 3 voor volwassen schelpen. Op grond van deze verschillen wordt voorgesteld de recente vorm *G. ditropis tingitana* Pallary, 1901, te noemen.

Goed geconserveerde fossiele schelpen vertonen een, niet door Wood vermelde, fijne axiale sculptuur, welke niet helemaal zo dicht opeenstaat als die van recente schelpen. Deze sculptuur is duidelijk minder fors en minder ver uiteenstaand dan bij de door Van Regteren Altena, Bloklander & Pouderoyen (1954: No. 10) onder de naam *Margarites* aff. *ditropis* (S.V. Wood, 1848) afgebeelde schelp.