

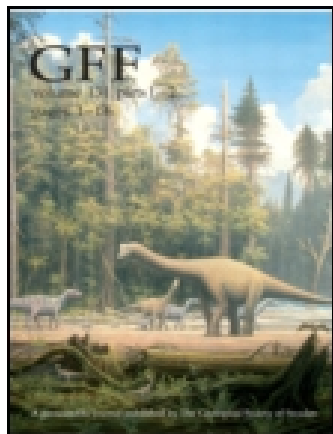
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Ptisanula limnæoides, a New Fossil and Recent Opisthobranchiate Molluse

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***Ptisanula limnæoides*,**

a New Fossil and Recent Opisthobranchiate Mollusc.

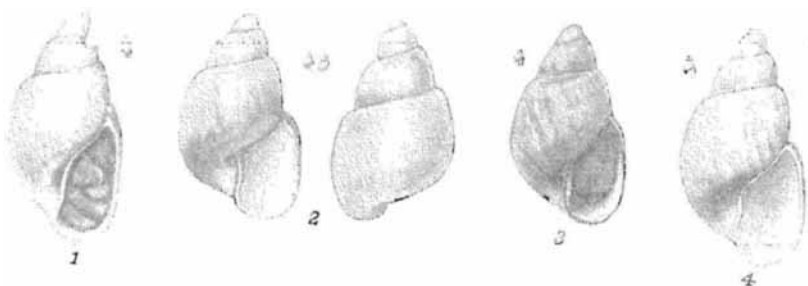
By

NILS HJ. ODINER.

In 1910 Professor G. DE GEER published a note on a fossil Gastropod from the Quaternary shell-deposits at *Kapellbacken, Uddevalla*. As it apparently belonged to a new genus, I decided upon giving a description of it later on and named it for the time being *Ptisanula limnæoides*.¹ It seemed to be identical with a recent species from Spitzbergen that I had already observed in the Riksmuseum collections, but I was unacquainted with its relations, they being only to be established by close investigation and research. The characters of the shell in evidence were not sufficient to enable me to state its systematical position, and the radula, obtained from the dried animals, which were fortunately present in the shells, exhibited a peculiar shape but afforded no basis for drawing conclusions on its affinities. In the Riksmuseum collections, however, I found some further specimens of the new form, preserved in alcohol, and they enabled me to make an examination of the exterior morphology of the soft parts as well as of the inner anatomy of one specimen cut into sections. From this examination it was evident that the new mollusc is an opisthobranchiate gastropod, most closely allied to the northern and arctic genus *Diaphana*.

¹ *Ptisanula limnæoides* in G. DE GEER, Quaternary Sea-bottoms in Western Sweden. G. F. F. 32 (1910): 1139.

Localities. The fossil shells of *Ptisanula limnæoides* from Kapellbacken were found in four different horizons of a layer belonging to »the finiglacial transgression». At 22, 24, 25, and 26 m above the sea, there were collected 1, 3, 3 and 1 specimens respectively. The recent specimens, belonging to the Riksmuseum, were dredged by TORELL in 1858, partly in Bel Sound at 5—12 fms, stones, algæ (6 specimens), at 30—40 fms, stones with Hydrozoids (1 sp., cut into sections), and at 30 fms, fine clay (1 sp.), and partly in Horn Sound, at 40—60 fms, clay, stones (1 sp.).



Ptisanula limnæoides n. gen. and sp.

Figs. 1 and 4 are fossil specimens from Kapellbacken, collected at 22 and 25 m above the sea. Fig. 2 is a recent specimen from Bel Sound seen from aperture and hind side. Fig. 3 a recent specimen from Horn Sound with the retracted animal visible in the aperture.

Description of the Shell. It is of an elongate ovate shape with an elevated blunt-tipped spire and high, slightly convex whorls, tabulated at the oblique, channel-shaped sutures. The colour is semi-hyaline white with a shining surface, covered, in a fresh state, by a thin, straw-coloured, feebly gleaming cuticula with some longitudinal stripes of darker brown. The aperture contains half the length of the shell and has an oblong or rounded rectangular form with an obtuse upper angle; the outer margin issues at right angles from the body-whorl, bends immediately down, is in its middle-part somewhat concave or else feebly convex, strongly and uniformly bowed below, and then directly passing into the columellar margin; the pillar is in its lower part sinuous and furnished

in the middle with a distinct convexity that is not sharply marked as a fold; in its upper part again it is slightly concave or nearly straight. The columellar and outer margins are connected on the parietal wall by a fine calcareous lamella. The columellar margin is reflected in its whole length, thus forming a narrow but deeply protruding umbilicus. The apex is twisted regularly with a somewhat depressed nuclear whorl. The surface is smooth with the exception of fine irregularly placed lines of increase. Besides them very feeble traces of a few distant opaque spiral lines are observable on the middle-part of the whorls. No special apical sculpture is present.

Measurements in millimetres. The largest specimen from Kapellbacken (Fig. 4): height 3.1; breadth 1.7; height of the aperture 1.5; breadth of the aperture 0.9; height of the last whorl 2.4; number of whorls 4; another shell (Fig. 1): h. 3; br. 1.5; h. of ap. 1.5; br. of ap. 0.7; h. of last whorl 2.3; number of whorls $3\frac{3}{4}$. The largest specimen from Bel Sound (Fig. 2): h. 2.7; br. 1.6; h. of ap. 1.3; br. of ap. 0.7; h. of last whorl 2.1; number of whorls $3\frac{2}{3}$. The specimen from Horn Sound (Fig. 3): h. 2.6; br. 1.5; h. of ap. 1.4; br. of ap. 0.7; h. of last whorl 2; number of whorls $3\frac{1}{2}$.

Variation of the Shell. The dimensions given above and the Figures 1—4 denote a formal variation, that finds expression in a stretched or a somewhat inflated body-whorl, owing to which the aperture is lengthened or somewhat wider while the umbilicus is narrow or more conspicuous. Such variations are present in both the fossil and the recent shells. Besides this, there seems to be a constant difference between the recent form from Bel Sound and the fossil shells, the apical whorls of the first-named being somewhat more depressed and broad, those of the last-named comparatively high and narrow. The post-nuclear whorls are a little higher and broader in the recent shells than in the fossil ones. This circumstance produces a somewhat smaller size in the fossil shell, compared with a recent one with the same number of whorls. The speci-

men from Horn Sound approaches in this respect the fossil ones. In the sculpture no difference can be observed, the fossil shells too exhibiting indistinct opaque spiral lines and fine lines of increase; in other parts they are smooth.

The difference in size named is too slight to be stated as a phenomenon of dwarfing of the fossil specimens, such as I have shown to exist in other forms, *c. g.* *Margarita helicina* and *Natica clausa* from Bohuslän and in *Velutina undata* from Finnmark,¹ as well as in terrestrial molluscs, *c. g.* *Pupa arctica* in Sweden.² It leaves however the question open, whether the fossil specimens lived in a more arctic or a more temperate climate than that prevailing nowadays in Bel Sound. The presence of *Mytilus* in the same layer might perhaps indicate a somewhat warmer sea, but the fact of the presence alone of one species must be used with caution when conclusions as to the climate are to be drawn; often it is only a more detailed examination of the stage of development attained and of the variation of the fauna or of some characteristic portions of it, that can give us certain criteria for judging in such problems. The small or young forms present in the *Ptisanula*-bearing layer were not suitable for a comparison with recent ones, but perhaps it might be possible, from further collections, definitely to solve this question.

For more detailed information about the organization and systematic position of *Ptisanula* I refer the reader to the anatomical account which will be published in »Arkiv för Zoologi» (K. Sv. Vet. Akad.).

¹ N. ODHNER, Northern and Arctic Invertebrates. Prosobranchia. 1 Diotocardia and 2 Semiproboscifera. K. Sv. Vet. Akad. Handl. 1912 and 1913.

² N. ODHNER, Die Entwicklung der Molluskenfauna in dem Kalktuffe bei Skultorp in Västergötland. G. F. F. 32 (1910).