

A new species of *Pronoella* Fischer (Bivalvia) from the Bathonian (Middle Jurassic) rocks of Kaladongar, Pachchham Island, Kachchh

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Abstract

Pronoella (*Pronoella*, *cuneiformis* n. sp., a new bivalve species characterised by a cuneate outline and an almost horizontal posterior area has been described from the Bathonian (Middle Jurassic) rocks of Kaladongar Hills, Pachchham Island, Kachchh. No published record of the genus in Kachchh exists till date.

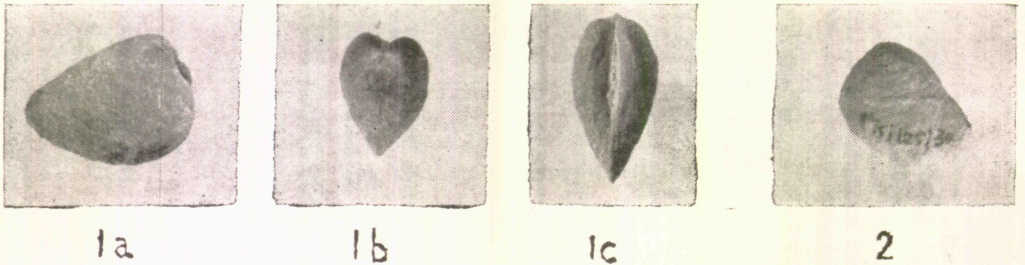
Introduction

The present note concerns the occurrence of a new bivalve species of the genus *Pronoella* Fischer, from the Bathonian beds of Kaladongar Hills.

Systematic description

- Class : BIVALVIA Linné, 1758
Subclass : HETERODONTA Neumayr, 1884
Order : VENEROIDA Adams and Adams, 1856.
Superfamily : ARCTICACEA Newton, 1891
Family : ARCTICIDAE Newton, 1891
Genus : *Pronoella* Fischer, 1887
Type Species : *Venulites trigonellaris* Schlotheim, 1820
Subgenus : *Pronoella* s.s.

Pronoella (*Pronoella*) *cuneiformis* n. sp.
(Figs. 1-2)



Figures 1-2. *Pronoella* (*Pronoella*) *cuneiformis* n. sp.

Sp. No. PK/125/7 (Holotype) from Bed No. 30 ($\times 1.25$)

1a - Right valve exterior.

1b - Anterior view.

1c - Dorsal view.

2 - Sp. No. PK/125/30 (Paratype) from Bed No. 30, external view of left valve showing surface ornamentation. ($\times 1.25$).

Etymology : Due to cuneiform shell-outline the present species has been so-named.

Diagnosis : Shell trigonal cuneiform, highly inequilateral with an oblique umbonal ridge, posterior area almost horizontal; umbones placed at anterior-fifth; lunule well demarcated and deep, escutcheon poorly defined.

Material : Eleven specimens.

Horizon and Locality : Bed No. 30 (Bathonian)—1 km and 1.5 km S and W of Jatara Talab, Kaladongar Hills, Pachchham Island.

Description : The shell small, strongly inequilateral, moderately to strongly inflated, trigonal and cuneiform, height about three-fourths of the length. Umbones pointed, prosogyrous, incurved and situated at about anterior-fifth of the shell-length. The postero-dorsal margin is long and straight, meeting the small posterior one in acute curve; antero-dorsal one small, concave and merging with strongly convex anterior margin smoothly. Posterior area almost flat, more or less at right angles to the commissure. Ventral margin straight to gently arched. Maximum shell-inflation at about dorsal-third of the height. Lunule well impressed, heart-shaped and demarcated by umbonal ridges; escutcheon poorly demarcated; ligament opisthodontic, in a small, narrow pit.

Shell-surface bears fine concentric threads separated by interspaces wider than their own width.

Dimensions :

	Sp. No.	Length	Height	Inflation (Both valves)
Holotype	PK/125/7	17.5 mm	13.5 mm (77.1%)	9.0 mm (51.4%)
Paratype	PK/125/10	16.5 mm	11.75 mm (71.2%)	10.0 mm (60.6%)
Paratype	PK/129/4	23.0 mm	17.0 mm (73.9%)	13.0 mm (56.5%)

Remarks : This species differs from its nearest ally *Pronoella bidugalloensis* Cox (1965, p. 109, Pl. 18, figs. 10 a and b) from Tanzania by its more anteriorly placed umbones, less produced anterior margin and absence of sinuosity in the ventral margin. In addition, the Tanzanian specimens come from a lower horizon i.e. Bajocian. The other species from the same locality *Pronoella pindorensis* Cox (1965, p. 108, Pl. 17, figs. 12-17) also shows some resemblance, but in both of these Tanzanian species the posterior area is, at least, partly seen, whereas in the Kachchh examples, here discussed, the same is not visible in the lateral view. Such a character is not found in any of the previously known taxon of the genus *Pronoella*.

It is the first record of *Pronoella* s.s. from Kachchh.

Discussion : The genus *Pronoella* has been earlier recorded by Rai (1972) and Agrawal and Tripathi (1980). Rai reported *Pronoella* (*Pronoella*) *shrutiae* (1972, p. 254) from his Bed No. 11 of the Western Bela Island which is from the 'Middle or shaly zone' of 'Lower Bela Formation' of Bathonian age (Singh and Rai, 1980 Table 1, p. 72). Besides, another taxon, namely *Pronoella* (*Gythemon*) sp. was collected by Rai (1972, p. 256) from Bed Nos. 23 and 26 which are of Callovian age (Singh and Rai, 1980, Table 1, p. 72). Agrawal and Tripathi found *Pronoella* (*Gythemon*) sp. a new species from Bed No. 2 in Khadir Island, which according to them is of Bathonian age (1980, Table 1, p. 45). None of the above authors published their *Pronoella* taxa.

Pronoella s.s. occurs throughout the Jurassic while *Pronoella* (*Gythemon*) comes from Bajocian (Middle Jurassic) of several European countries (Moore and others, 1969, p. N648). However, Rai (1972) has extended the range of *Gythemon* up to Callovian.

The present materials from Bed No. 30 of argillaceous limestone have been collected in association with *Palaeonucula*, *Arca*, *Entolium*, *Chlamys*, *Lopha*,

Trigonia, *Astarte*, *Neocrassina*, *Protocardia*, etc. The Beds in question have also yielded two ammonoids—*Gracilisphinctes* and *Micromphalites*, which infer a Middle Bathonian age and about 320 m above the *Leptosphinctes* (ammonoid) bearing horizon of Bajocian age (Singh *et al* 1982): It can be, therefore, inferred that the age of present materials is broadly Bathonian and likely from an earlier part of it.

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