

A New Species of Indoculana Kanjilal & Singh (Bivalvia) from the Lower Callovian (Jurassic) of Gora Doonger, in Pachchham Island, District Kachchh (Gujarat, India) Author(s): D. K. Pandey and C. S. P. Singh Reviewed work(s): Source: Journal of Paleontology, Vol. 55, No. 6 (Nov., 1981), pp. 1296-1297 Published by: <u>SEPM Society for Sedimentary Geology</u> Stable URL: <u>http://www.jstor.org/stable/1304557</u> Accessed: 14/11/2011 06:08

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PALEONTOLOGICAL NOTES

A NEW SPECIES OF *INDOCULANA* KANJILAL & SINGH (BIVALVIA) FROM THE LOWER CALLOVIAN (JURASSIC) OF GORA DOONGER, IN PACHCHHAM ISLAND, DISTRICT KACHCHH (GUJARAT, INDIA)

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ABSTRACT—A new species of the bivalve genus *Indoculana* (*I. sadharaensis* n. sp.) from the Lower Callovian of Gora Doonger in Pachchham¹ Island, Kachchh¹ District is described and illustrated.

INTRODUCTION

UNTIL now the bivalve family Nuculanidae Adams & Adams has been recognized in the Jurassic of Kachchh only on the basis of four species belonging to the genera *Nuculana* Link, *Rollieria* Cossman and *Indoculana* Kanjilal & Singh. Until recently, *Indoculana* Kanjilal & Singh was represented only by the type species, and the present find is an additional record of its occurrence in the Jurassic of Kachchh. The material described here has been collected from a ferruginous argillaceous flagstone bed (*Nucula* Flags) which is full of nuculids and which has, in addition, yielded several species of the ammonite *Macrocephalites* Zittel.

The material described here is reposited in the Department of Geology, Banaras Hindu University, Varanasi 221005, India.

SYSTEMATIC DESCRIPTION

Class BIVALVIA Linné, 1758 Order NUCULOIDA Dall, 1889 Superfamily NUCULANACEA Adams & Adams, 1858

Family NUCULANIDAE Adams & Adams, 1858 Genus INDOCULANA Kanjilal & Singh, 1980

Type species.—Reticulana calloviensis Kanjilal & Singh, 1973, p. 469, Pl. 1, figs. a-b.

Remarks.—The genus name *Reticulana* was proposed by Kanjilal & Singh in 1973 with *R. calloviensis* as its type species. Subsequently the name was found to be preoccupied by *Reticulana* Bethune-Baker, 1906—a

lepidopteran. Hence Kanjilal & Singh proposed a new name Indoculana (1980, p. 490).

> INDOCULANA SADHARAENSIS n. sp. (Text-figs. 1a-d)

Etymology.—The specific name is derived from the type locality, the village of Sadhara.

Material.—Holotype (BHU PG/235/1) and several paratypes; all are disarticulated left and right values.

Horizon and locality.—'Nucula Flags' (lower Callovian), ENE of Sadhara, Pachchham Island, Kachchh.

Description.—The shell is small, well inflated, and posteriorly rostrate; the blunt end of the rostrum is just below the middle to ventral 1/3 of the shell-height. The umbones are tumid, incurved, opisthogyrous, well above the cardinal margin and mesial to slightly anterior to the midline; umbonal profile is broadly angular. Anterodorsal margin and corresponding profile are moderately inclined and gently convex, merging smoothly with the small and rather acutely arched anterior margin. Posterodorsal margin long and concave, the proximal $\frac{2}{3}$ sloping steeply, while the distal 1/3 slopes comparatively gently. The ventral margin is more or less gently and symmetrically convex, meeting the anterior margin in a smooth curve, but forming a bluntly rounded rostrum at the posterodorsal margin. The lunule is small but wide, shallow and poorly defined while the escutcheon is prominent, elongated, well impressed and bounded by a broadly rounded, non-bifurcating umbonal ridge in each valve. A shallow and faint sulcus extends from near the umbo to the anteroventral end without producing any sinuosity in the margin.

¹ Variously spelled: Putcham, Patcham; Cutch, Kachh, Kutch.



TEXT-FIG. 1—Indoculana sadharaensis n. sp., holotype (BHU PG/235/1); Nucula Flags (lower Callovian), ENE of the village of Sadhara (Pachchham Island, Kachchh). A, external view, left valve, ×3.5. B, internal view, left valve, ×4.05. C, dorsal view, tilted a little to show slightly curved transverse threads, ×4.18. D, dorsal view, tilted to show radials in the anterior part, ×4.16.

The shell surface is ornamented with comarginal and radial threads. The former are very fine, sharply rounded, evenly spaced and cover the whole of the shell surface; they number about 65 on a shell 6.3 mm high. The radials are present in the anterior and posterior regions only. The anterior 1/10 portion of the shell surface bears about 40 radial threads which rapidly deflect towards the anterior at their ventral ends; the posterior 1/2 to 2/5 of the surface has about 30, rather widely spaced, fine threads, many of them originating from the posterior umbonal ridge itself. The escutcheon has about 35 prominent, slightly curved transverse threads which terminate against the umbonal ridge with a little upward bend.

The hinge consists of a long and concave posterior row of teeth, and a comparatively short and convex anterior row. The teeth of the posterior row, numbering 10, are small, vertical and parallel; whereas those in the anterior row, numbering 16, are also vertical and parallel but gradually increase in size anteriorly.

Dimensions.—The measurements are given in Table 1.

TABLE 1—Measurements (in mm) of Indoculana sadharaensis. Numerals in parentheses are percentages of length.

Specimen	no.	Length	Height	Inflation (single valve)
PG/235/1	(holotype)	10.0	6.3 (63.0)	2.5 (25.0)
PG/235/6	(paratype)	8.3	5.6 (67.3)	
PG/235/3	(paratype)	7.6	4.9 (64.4)	2.1 (27.6)
PG/235/4	(paratype)	6.9	4.9 (71.0)	<u> </u>
PG/235/2	(paratype)	6.8	4.5 (66.0)	1.9 (27.9)
PG/235/5	(paratype)	6.2	4.5 (72.5)	2.0 (32.2)
	pecimen PG/235/1 PG/235/6 PG/235/3 PG/235/4 PG/235/2 PG/235/5	pecimen no. PG/235/1 (holotype) PG/235/6 (paratype) PG/235/3 (paratype) PG/235/2 (paratype) PG/235/2 (paratype) PG/235/5 (paratype)	Specimen no. Length PG/235/1 (holotype) 10.0 PG/235/6 (paratype) 8.3 PG/235/3 (paratype) 7.6 PG/235/4 (paratype) 6.9 PG/235/2 (paratype) 6.8 PG/235/5 (paratype) 6.2	Expecimen no. Length Height PG/235/1 (holotype) 10.0 6.3 (63.0) PG/235/6 (paratype) 8.3 5.6 (67.3) PG/235/3 (paratype) 7.6 4.9 (64.4) PG/235/4 (paratype) 6.9 4.9 (64.4) PG/235/2 (paratype) 6.8 4.5 (66.0) PG/235/5 (paratype) 6.2 4.5 (72.5)

Remarks.—The present species differs from Indoculana calloviensis (Kanjilal & Singh, 1973, p. 469, pl. 1) by the absence of radial threads over the middle portion of the shell surface, and the presence of a faint sulcus between the umbo and the anteroventral margin. Also the escutcheon of *I. calloviensis* is smooth except for very feeble concentric undulations; whereas prominent transverse threads occur in the new species.

About a dozen specimens in the BHU collection labeled "Dacryomya" agrawali, from beds 20 and 26 (lower Callovian) of the Bela Formation, have some similarities to this new species. They differ, however, in the presence of radial threads on their posterior part only and hence are quite distinct.

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