

Judaphos, A New Genus of Buccinid Gastropod from the Neogene of Costa Rica

by

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Abstract. *Judaphos imparabilis*, a new genus and species of Buccinidae, is described and figured. All the material was collected from the lowest 200 m of the section exposed at Punta Judas, Puntarenas Province, Pacific coast of Costa Rica. It is of probable late Miocene age. The monotypic genus differs from other buccinid genera by the appressed and channelled suture, which gives the appearance of a collar.

INTRODUCTION

In March of 1988, the field party of the Panama Paleontology Project (PPP) examined a number of fossiliferous outcrops on the Pacific coast of Costa Rica. The areas visited included the western part of the Burica Peninsula, Punta Judas, the southeastern coast of the Nicoya Peninsula, and the coastal area southeast of Puntarenas. At Punta Judas (Figure 1), 40 km WNW of Quepos, a thick sequence of volcanic sandstones, volcanic conglomerates, and litharenites is exposed (Seyfried et al., 1985). The beds dip to the east, those near the base very steeply so. This section was measured and the fossiliferous horizons carefully collected. Although the fossils were only moderately well preserved, I realized already during fieldwork that some of the specimens belonged to a genus unknown to me. Detailed study of the new material resulted in the recognition of a new genus and species, the descriptions of which follow below.

The abbreviation NMB stands for Naturhistorisches Museum Basel, Switzerland; PJ for Peter Jung localities; and CJ for Coates/Jackson localities (Anthony Coates and Jeremy Jackson, both of the Smithsonian Tropical Research Institute, Panama).

DESCRIPTION

Family BUCCINIDAE Rafinesque, 1815

Genus *Judaphos* Jung, gen. nov.

Etymology: Artificial combination of the geographic name (Punta) Judas and the generic name *Phos*. Gender: masculine.

Type species: *Judaphos imparabilis* sp. nov. Late Miocene, Costa Rica.

Diagnosis: *Judaphos* can be distinguished from other buccinid genera by its appressed and channelled suture, which gives the appearance of a collar. In apical view, the suture is undulatory wherever there are axial ribs.

Description: See description of type species.

Comparisons: *Judaphos* is more slender than *Nicema* Woodring (1964:268). The type species of *Nicema*, *N. amara* Woodring (1964:268, pl. 42, figs. 14, 15) from the lower part of the Gatun Formation (late Miocene) of Panama, has a larger apical angle than *Judaphos imparabilis*, the monotype of the genus, and a much more inflated body whorl without indication of axial sculpture.

Woodring (1964:268) assigned two additional species to *Nicema*: *Struthiolaria guttifera* Grzybowski (1899:647, pl. 19, fig. 8) from the early Miocene of Peru, which had been assigned to the genus *Northia* Gray (1847:140) by Olsson (1932:170, pl. 20, figs. 3, 9); and *Cantharus (Triumphis) predistortus* Marks (1951:117, pl. 7, figs. 8, 10, 11) from the late Miocene Daule Formation of Ecuador.

On the other hand, Olsson (1964:160) treated *Nicema* as a subgenus of *Northia* Gray, 1847, and Keen (1971:571) treated it as a subgenus of *Triumphis* Gray (1856:41). Species of *Northia*, however, are considerably more slender than species of *Nicema* or *Triumphis*. If *Nicema* is to be treated as a subgenus at all, it should go under *Triumphis* rather than *Northia*. *Judaphos*, however, clearly differs from *Triumphis* and *Nicema* by its channelled and appressed suture and by its more slender general shape.

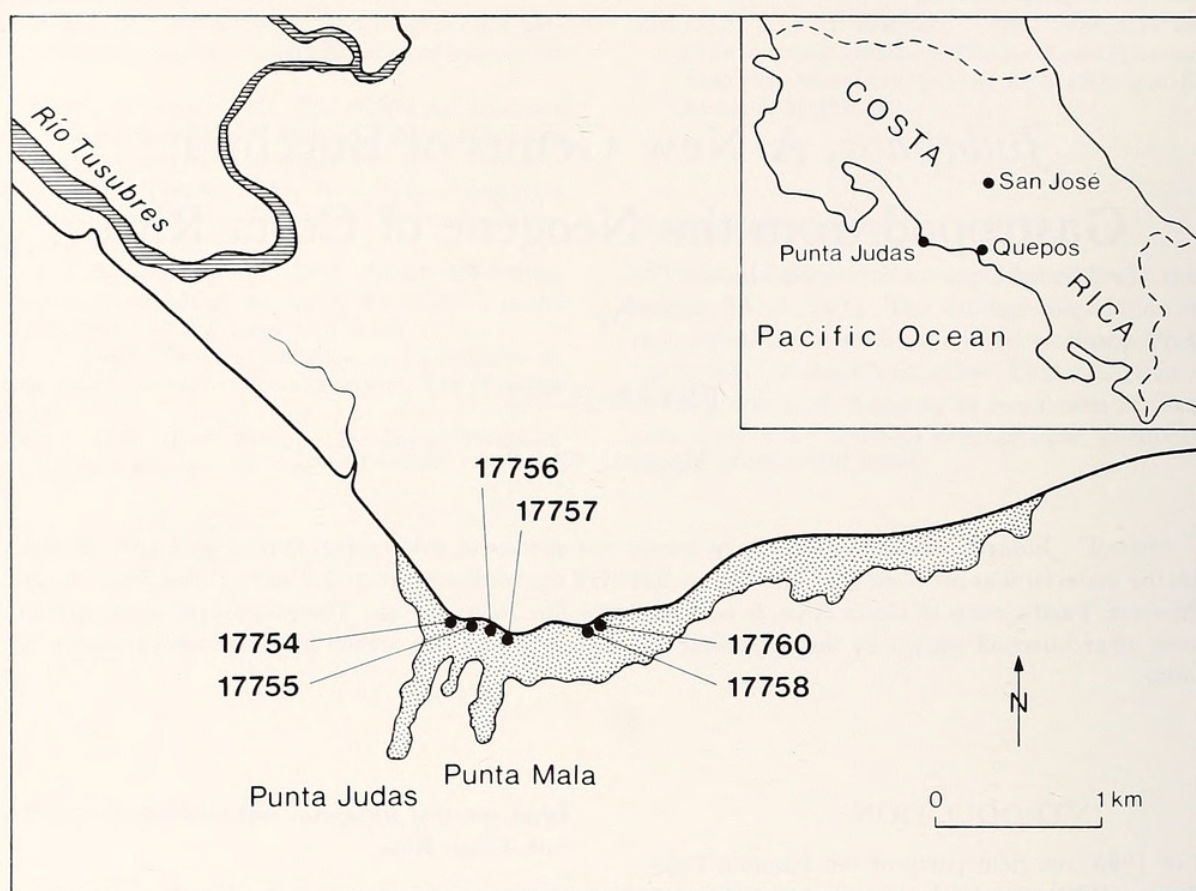


Figure 1

Map of Punta Judas and vicinity, Puntarenas Province, Costa Rica, showing location of NMB fossil localities. NMB locality 17757 is the type locality of *Judaphos imparabilis* Jung, gen. & sp. nov. The stippled area is exposed at low tide but not at high tide.

Judaphos imparabilis Jung, sp. nov.

Figures 2–7

Etymology: Latin *imparabilis* = hard to get.

Description: Shell moderately large (height ranging from 40 to 55 mm), not strongly inflated. Protoconch not known. Number of teleoconch whorls about six. First three or four teleoconch whorls sculptured by broad axial ribs that narrow somewhat adapically. Axial ribs crossed by three to four narrow spiral threads. Number of axial ribs eight to 10 per whorl. On late teleoconch whorls axial ribs inconspicuous or absent, but spiral threads covering entire body whorl. Growth lines moderately prominent, orthocline in abapical part, slightly prosocline adapically. Suture strongly

appressed, thus becoming channelled and undulatory due to axial ribs. Whorls concave in profile below suture, not shouldered. Aperture moderately wide. Columella and parietal wall covered by thin callus. Posterior canal inconspicuous, bordered by narrow ridge. Outer lip thickened, its inner surface with about 10 inconspicuous narrow lirae. Anterior canal short. Siphonal fasciole not or only slightly swollen.

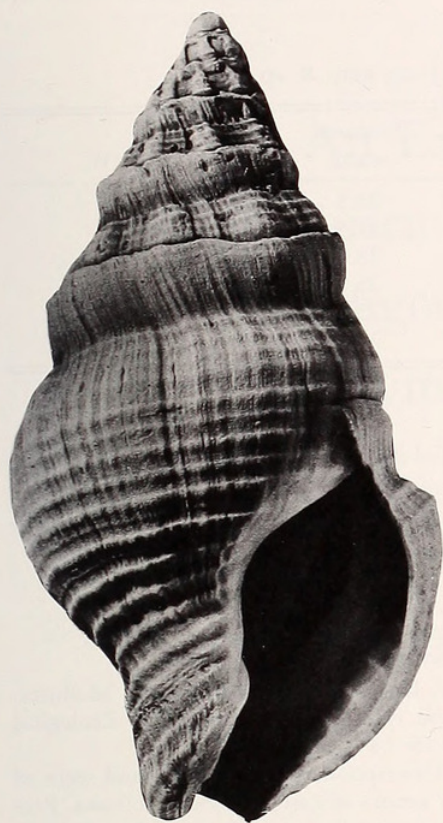
Holotype: NMB H 17465 (Figures 2–5).

Dimensions of holotype: Height 48.2 mm; width 26.5 mm.

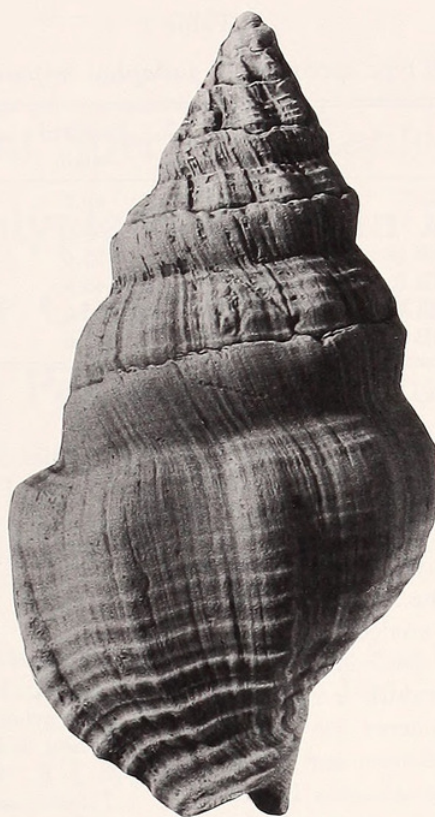
Type locality: NMB locality 17757: at high tide level behind Punta Mala, Punta Judas, 40 km WNW of Que-

Figures 2–7

Judaphos imparabilis Jung, gen. & sp. nov. 2–5. Holotype, NMB H 17465; 2: front view; 3: rear view; 4: from right side; 5: apical view. 6–7. Paratype, NMB H 17466; 6: slightly oblique front view; 7: from right side. All figures $\times 2$.



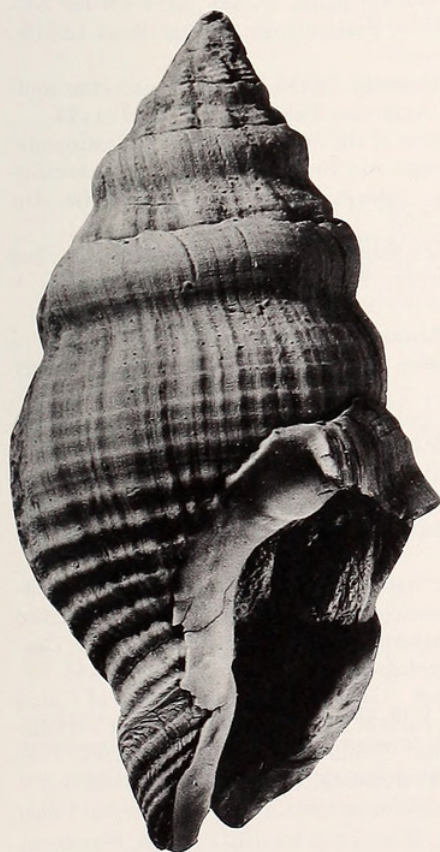
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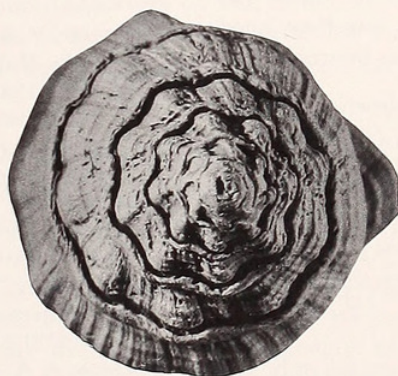
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6



5



7

Table 1

Dimensions of selected type specimens of *Judaphos imparabilis* Jung gen. & sp. nov.

Specimen	Restored height	Restored width	H/W
NMB H 17465: holotype (Figures 2-5)	49.0	26.5	1.85
NMB H 17466: paratype (Figures 6, 7)	51.6	27.5	1.88
NMB H 17526: paratype from NMB locality 17754	55.6	28.0	1.98
NMB H 17527: paratype from NMB locality 17755	46.5	25.2	1.84
NMB H 17528: paratype from NMB locality 17756	43.6	23.0	1.89
NMB H 17529: paratype from NMB locality 17757	41.6	24.9	1.67

pos, Puntarenas Province, Costa Rica (Figure 1). Age: probably late Miocene. Costa Rican grid reference: 404/670, 385/500.

Remarks: *Judaphos imparabilis* is the type and sole species of this new genus. Only a few of the available specimens are well preserved and most are eroded or incomplete. The protoconch is missing on all specimens.

The age of the beds carrying *J. imparabilis* is not well established. Seyfried et al. (1985) considered the entire section at Punta Judas to be of middle Miocene age. Jung (1989:54), in his discussion of *Strombina colinensis* H. K. Hodson (in Hodson & Hodson, 1931), also called it middle Miocene, although all other records of *S. colinensis* are of late Miocene and early Pliocene age. Microfossil samples taken at many localities failed to yield any age-diagnostic Foraminifera. The available mollusks from the Punta Judas section suggest a late Miocene age, but they need further study before a firmer statement can be made.

Material: Six lots comprising only 14 specimens, all from the lowest part of the Punta Judas section (Figure 1).

1 specimen, NMB locality 17754 (= PJ 1849 = CJ-88-14-1).
1 specimen, NMB locality 17755 (= PJ 1850).
6 specimens, NMB locality 17756 (= PJ 1851).
3 specimens, NMB locality 17757 (=PJ 1852 = CJ-88-14-2).
1 specimen, NMB locality 17758 (= PJ 1853 = CJ-88-14-4).
2 specimens, NMB locality 17760 (= PJ 1855).

Measurements (in mm): The measurements of only six specimens are given in Table 1. The remaining eight specimens are too incomplete to be measured.

Occurrence: Lowest 200 m of Punta Judas section (late Miocene) at Punta Judas and Punta Mala, Puntarenas Province, Costa Rica (Seyfried et al., 1985:11, fig. 2).

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