

A FOSSIL HOLOTHURIAN SCLERITE FROM THE LOWER  
RINCON FORMATION (OLIGO-MIOCENE)  
OF CALIFORNIA

R. W. HUDDLESTON<sup>1</sup>, K. L. FINGER<sup>2</sup> and K. N. KIRWAN<sup>2</sup>

<sup>1</sup>Scientific Research Systems, 11044 McGirk El Monte CA 91731 ; <sup>2</sup>Chevron Oil  
Field Research Company, P. O. Box 446, La Habra CA 90631

**ABSTRACT**

A wheel sclerite designated as *Jumaraina rinconensis* n. sp. is reported from lower part of Rincon Formation of Oligocene-Miocene age exposed along a dirt road above the west bank of Los Sauces Creek, Ventura County, California.

This is first record of this genus both from Oligo-Miocene age and from the western Hemisphere.

**INTRODUCTION**

Examination of outcrop samples from the lower Rincon Formation yielded a single holothurian wheel sclerite of family Theeliidae Frizzell and Exline, 1955. The samples were collected along a 295-foot (approximately 91 meters) bluff of steeply dipping calcareous mudstones exposed along a dirt road above the west bank of Los Sauces Creek, Ventura County, California (Sec. 32, T. 4N, R. 24W and Sec. 5, T. 3N, R. 24W, San Bernardino Baseline and meridian). This site is recorded at the Natural History Museum of Los Angeles County, section of Invertebrate Paleontology locality LACMIP 6130 (see Lipps and Kalisky 1972, fig. 3, for map of locality area). The sclerite was found near the base of this exposure in association with latest Zemorrian foraminifers. Poore (1980) and Warren and Newell (1980) suggested that the Oligocene-Miocene boundary is probably near the top of Zemorrian Stage at this locality.

Within the Theeliidae, the Rincon specimen differs from *Acanthotheelia* Frizzell and Exline; *Auricularites* Deflandre-Rigaud; *Stueria* Schlumberger; *Protheelia* Frizzell and Exline, and *Theelia* Schlumberger by lacking a cylindrical hub extending below the plane of the wheel and by possessing only six spokes with a smooth nondenticulated inner rim. The overall morphology of this specimen is characteristic of the genus *Jumaraina* Soodan 1973.

**SYSTEMATIC DESCRIPTION**

**Phylum** ECHINODERMATA

**Class** HOLOTHUROIDEA

**Family** THEELIIDAE Frizzell and Exline, 1955

**Genus** *Jumaraina* Soodan, 1973

*Jumaraina Rinconensis* Huddleston, Finger and Kirwan n. sp.

Figures A-G

DESCRIPTION: Wheel nearly circular with slightly irregular outer rim curving inward and upward; six radial spokes increasing slightly in thickness and width towards centre; interspoke spaces well developed; imperforate central area with coarsely granular central dome that rises above plane of wheel; inner wall of rim smooth, non-denticulated.

HOLOTYPE: LACMIP no. 5892.

REMARKS: Soodan (1973) recorded four species i.e. *Jumaraina indica* Soodan; *J. gujeratica* Soodan; *J. kutchensis* Soodan, and *J. jhurioensis* Soodan from the rocus of jhurio Formation exposed at jumara and jhurio domes kutch, India. *Jumaraina indica* has seven thick spokes which abruptly thin toward the central area. *Jumaraina gujeratica*

and *J. kutchensis* posses 12 and 11 spokes respectively. *Jumaraina jhurioensis* agrees with *J. rinconensis* in possessing six spokes. *J. jhurioensis*, however, possesses an extremely thick dorsal wheel rim and thick bread spokes with thin, poorly defined interspoke spaces that are nearly obliterated in dorsal view.

Prior to this study *Jumaraina* was known from only the Jhurio Formation (Jurassic) of India. The Rincon specimen expands both the geologic and geographic range of this genus and represents the first documented occurrence of this form in the Western Hemisphere.

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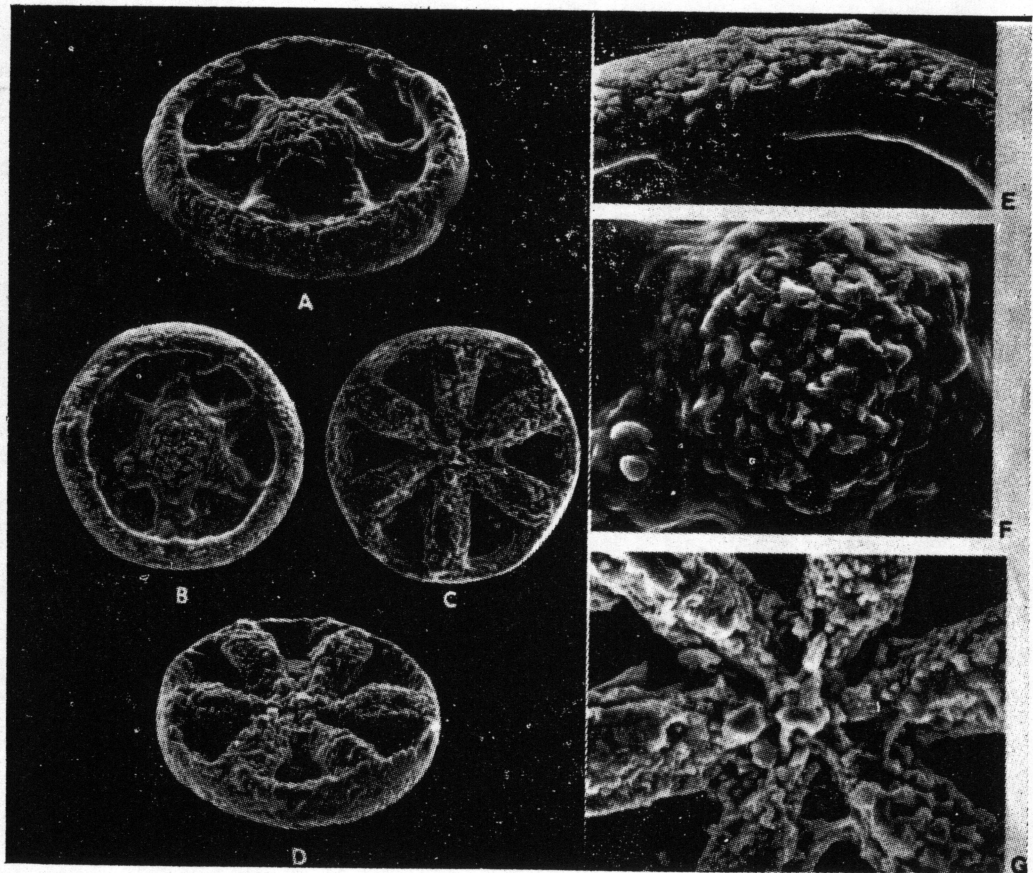
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#### EXPLANATION OF PLATE

Figures A-G. *Jumaraina rinconensis* Huddleston, Finger and Kirwan Holotype LACM 5892, A. dorsal view, inclined 45°, 135X; B. dorsal view, 105X; C. ventral view

105X; D. vintral view inclined 45°, 120X; E. dorsal view of wheel rim, 375X; F. dorsal view of central area 395X; G. vintral view of central area, 395X.



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