

COMUNICACIONES

Distribution of *Petrolisthes lewisi*
(Crustacea: Porcellanidae) in the Eastern Tropical Pacific

Michel E. Hendrickx

Estación Mazatlán UNAM, Apdo. Postal 811 Mazatlán, 82000 Sinaloa, Mexico.

(Rec. 23-IX-1992. Acep. 24-XI-1992)

Resumen: El examen de especímenes recolectados recientemente en el Suroeste del golfo de California, México, permite precisar la posición taxonómica de las dos subespecies de *Petrolisthes lewisi* (Glassell, 1936): *P.l.lewisi* (Glassell, 1960) y *P.l.austrinus* Haig, 1960. Por la presencia de la forma sureña en la parte norte del área de distribución y la inconsistencia de la característica que permite distinguir las dos subespecies, se sugiere reconocer una sola especie para toda la región.

Key words: Porcellanidae, *Petrolisthes lewisi*, subspecies, distribution, Eastern Tropical Pacific.

With 31 species currently recognized for the Eastern Tropical Pacific, the genus *Petrolisthes* is well-represented and contains approximately 43% of the species of Porcellanidae known for the region. Their major habitat is the rocky intertidal zone where they are easily found under rocks or associated with sponges, corals or algae (Haig 1960, Gore and Abele 1976). Two subspecies of *Petrolisthes lewisi* (Glassell, 1936) have been recognized by Haig (1960): *P.l.lewisi* (Glassell, 1936) and *P.l.austrinus* Haig, 1960, a subspecies considered by Haig (1966) as the southern form of the species.

Material obtained from the rocky intertidal in the Southeastern Gulf of California indicates that the unique feature selected by Haig (1960) to separate the two subspecies is not constant and not consistently found among specimens presumably belonging to the northern form of *Petrolisthes lewisi*.

Abbreviations used in this paper are: cw = carapace width; EMU = Estación Mazatlán UNAM followed by the Reference Collection access number.

Petrolisthes lewisi (Glassell, 1936)
Pisosoma lewisi Glassell, 1936: 287
Petrolisthes lewisi.- Haig, 1957: 7

Petrolisthes lewisi lewisi.- Haig, 1960: 113, pl. 23, fig. 1; 1968:66.- Brusca, 1980: 268.- Gore, 1982: 16.- Rodríguez de la Cruz, 1987: 76.- Villalobos-Hiriart *et al.*, 1989:46.

Petrolisthes lewisi austrinus Haig, 1960: 115, pl. 5, pl. 23, fig.2; 1968: 67.- Brusca, 1980: 268.- Gore, 1982: 15.- Hendrickx and van der Heiden, 1983: 278.- Villalobos-Hiriart *et al.*, 1989:45.

Material examined: EMU-2728, Punta Piaxtla, Sinaloa, 23/XI/84, 12♂ (cw 2.4-4.6 mm), 2 ♀ (cw 4.0 mm) and 10♀♀ (cw 3.9-5.9 mm).- EMU-0649, Paseo Clausen, Mazatlan, Sinaloa, 15/II/80, 1♂ (cw 4.7mm), rocky intertidal.- EMU-1660, Cerro del Vigía, Mazatlan, Sinaloa, 03/XII/80, 1♂ (cw 3.0 mm) and 1♀ (cw 3.3 mm), rocky intertidal.- EMU-0978, Punta Chile, Mazatlan, Sinaloa, 26/IV/80, 1 (cw 3.4 mm) and 2♀ (cw 4.7 mm), rocky intertidal.- Puerto Viejo, Mazatlan, Sinaloa, 1984, 1♀♀ (cw 5.8 mm), rocky intertidal.- EMU-2436, Punta Mita, Nayarit, 27-29/XII/82, 23♂ (cw 2.9-4.7 mm), 21♀ (cw 1.7-2.3 mm) and 23♀♀ (cw 3.3-5.0 mm).

Previous records: As *P.l.lewisi*: Isla del Carmen, Puerto Escondido, Bahía Agua Verde, Cabo and Bahía de San Lucas, Punta Lobos,

Baja California. Isla Isabel, Islas Tres Marias, Nayarit. Tenacatita (type locality), Jalisco; Bahía de Tequepa (Acapulco), Guerrero; all localities in Mexico (Haig 1960). Zihuatanejo, Guerrero, Puerto Huatulco and Bahía Tangola-Tangola, Oaxaca, Mexico (Haig 1968). Bahía Guastecomate, Jalisco, Mexico (Gore 1982). Islas Tiburón, San Marcos, Montserrat and Cerralvo, Gulf of California (Villalobos-Hiriart *et al.* 1989) (Fig. 1).

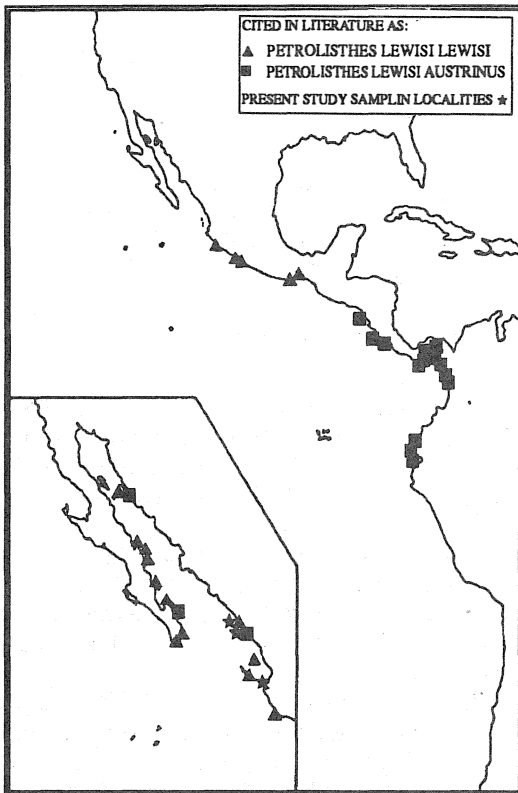


Fig. 1. Distribution of *Petrolisthes lewisi* in the Eastern Tropical Pacific.

As *P. l. austrinus*: Puerto Parker (type locality, Bahía Elena, about 8 km north of Punta Blanca) and Bahía Salinas, Costa Rica; Islas Flamenco, Taboga and Jicarita, Otoque, Islas Perlas, Guayabo Chiquito, Panama; Bahía de Cupica, Puerto Utria, Cabo Corrientes,

Colombia; Cabo San Francisco, Manta, Punta Santa Elena, Ecuador (Haig 1960). Golfo de Fonseca, Nicaragua, Bahía Honda, Panama (Haig 1968). Isla Culebra, Isla Perica, Panama (Gore 1982). Mazatlan, Sinaloa, Mexico (Hendrickx and van der Heiden 1983). Islas Tiburón and Cerralvo (Villalobos-Hiriart *et al.* 1989) (Fig. 1).

Remarks: Specimens typical of *Petrolisthes lewisi austrinus* sensu Haig, 1960, were collected in Nayarit and Southern Sinaloa; they all have teeth 1-3 on anterior margin of carpus clearly separated, almost equal in size and triangular in shape (Fig. 2A). Other specimens, from the same area, present slightly reduced 1st and 3rd teeth (Fig. 2B, C), but all teeth are still well-separated. Partly coalescent teeth are shown by other specimens (Fig. 2 D-G). In still another specimen, left chelae show almost completely coalescent 1st and 2nd teeth on left carpus while teeth on right carpus are well-separated (Fig. 2 H). A fourth teeth on anterior margin of carpus appears in only one specimen (Fig. 2 E).

According to Haig (1960), the only feature used to separate subspecies of *Petrolisthes lewisi* is the degree of coalescence shown by carpal teeth: partial or complete fusion of the proximal 2-3 teeth is found in the northern form and define specimens of *P. l. lewisi*, while well-separated teeth characterize the southern form, *austrinus*. Haig's data also indicate that subspecies distribution do not overlap.

The material examined herein not only indicates that typical "southern form" is found at the northernmost distribution limit of the "northern form", but also that an individual features a northern-like carpus on one cheliped and a southern-like carpus on the other. On the basis of these new data, it is suggested that subspecies of *Petrolisthes lewisi* should no longer be recognized and that the range of Glassell's species should be considered without a break from Isla San Marcos (27°15'N), east side of the Gulf of California, and Punta Piaxtla (23°39'N), west side of the Gulf of California, Mexico, to Punta Santa Elena (2°10'S), Ecuador.

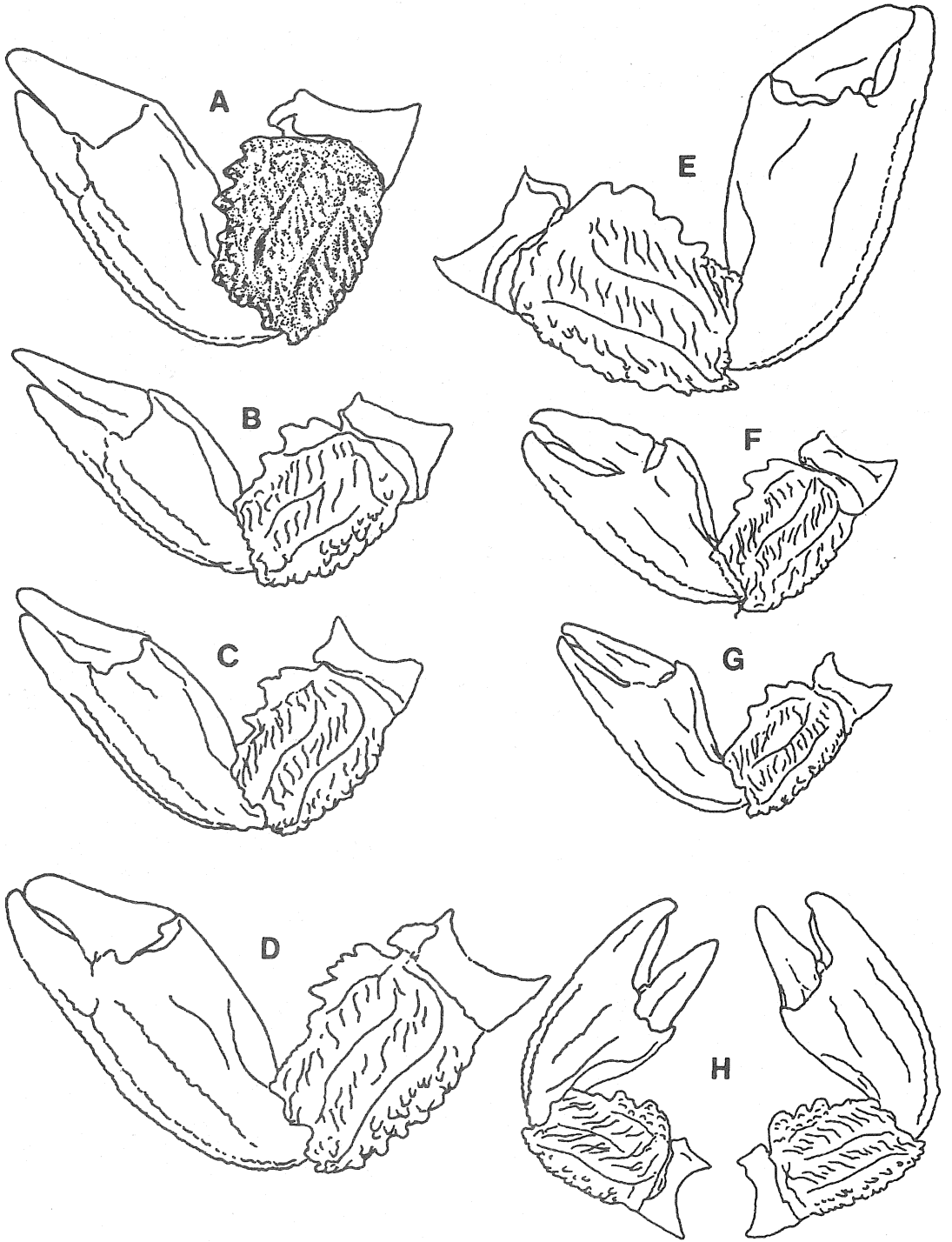


Fig. 2. Dorsal view of chelipeds of *Petrolisthes lewisi* (Glassell, 1936). A-D, specimens from Punta Mita, Nayarit, Mexico; E-H, specimens from Mazatlan, Sinaloa.

The author thanks Janet Haig, Allan Hancock Foundation, Los Angeles, for examining some of the specimens reported herein and Graciano Valenzuela for the original art work.

REFERENCES

- Brusca, R.C. 1980. *Common Intertidal Invertebrates of the Gulf of California*. 2nd. Ed. University of Arizona Press, Tucson, Arizona. 513p.
- Glassell, S.A. 1936. New porcellanids and pinnotherids from tropical North American waters. *Trans. San Diego Soc. Nat. Hist.* 8(14):91-106.
- Gore, R. H. 1982. Porcellanid crabs from the coast of Mexico and Central America (Crustacea, Decapoda, Anomura). *Smith. Contrib. Zool.* 363:1-32.
- Haig, J. 1960. The Porcellanidae (Crustacea Anomura) of the Eastern Pacific. *Allan Hancock Pacific Exped.* 24:1-400.
- Haig, J. 1968. Eastern Pacific Expeditions of the New York Zoological Society. 47. Porcellanid crabs (Crustacea: Anomura) from the west coast of tropical America. *Zoologica.* 53(2):57-74.
- Hendrickx M.E. & A.M. van der Heiden. 1983. New records of twelve species of crustaceans along the Pacific coast of Mexico. *An. Inst. Cienc. del Mar y Limnol., Univ. Nal. Autón. México.* 10(1):277-279.
- Rodríguez de la Cruz, M.C. 1987. *Crustáceos decápodos del Golfo de California*. Sría. de Pesca (Ed.), México, D.F. 306 p.
- Villalobos, J.L., J.C. Nates Rodríguez, A. Cantú Díaz Barriga, M.D. Valle Martínez, P. Flores Hernández, E. Lira Fernández & P. Schmidtsdorf Valencia. 1989. Listados faunísticos de México. I. Crustáceos estomatópodos y decápodos intermareales de las islas del Golfo de California, México. *Publ. Esp. An. Inst. Biol., UNAM.*