

Presence of *Sinelobus stanfordi* (Richardson, 1901) (Crustacea: Tanaidacea: Tanaidae) in coastal lagoons of western Mexico

Michel Hendrickx and Silvia Ibarra

(MEH, SI) Laboratorio de Invertebrados Bentónicos, Unidad Académica Mazatlán, Instituto de Ciencias del Mar y Limnología, Universidad Nacional Autónoma de México. PO Box 811, Mazatlán, Sinaloa 82000 (México).

(SI) Postgraduate program, Instituto de Ciencias del Mar y Limnología, Universidad Nacional Autónoma de México.

(MEH) Corresponding author: E-mail: michel@ola.icmyl.unam.mx

Abstract

Sinelobus stanfordi (Richardson, 1901), a cosmopolitan, euryhaline species, is reported from four coastal lagoon systems along the west coast of Mexico. Almost all specimens reported were collected on prop-roots of *Rhizophora mangle* Linnaeus, 1773, and among *Salicornia*. The abundant material collected indicates that the species reproduces at least from January to August.

Key words: *Sinelobus stanfordi*, Tanaidacea, distribution, coastal lagoons.

Introduction

There are very few records of Tanaidacea on the west coast of Mexico. In his review of Tanaidacea records for the entire west coast of America, Heard (2002) reported 70 species, quite certainly an underestimated figure due to the numerous undescribed species that must inhabit the variety of badly explored microhabitats available along this coast. Heard (2002) included in his list 14 species from Pacific Mexico: *Apseudes cedroensis* Menzies, 1953, described from Baja California and recently found into the Gulf of California (Hendrickx, 2007); *A. garthi* Menzies, 1953, from the Gulf of California; *Kalliapseudes crassus* Menzies, 1953 and *K. viridis* Menzies, 1953 from western Baja California; *Apseudomorpha glebosus* (Menzies, 1953) from Guadalupe Island and *A. magdalenensis* Menzies, 1953 also from western Baja California; *Synapseudes dispina* Menzies, 1953, *S. rudis* Menzies, 1953 (both from western Baja California), and *S. intumescens* Menzies, 1953, from Guadalupe Island; *Pagurapseudes laevis* Menzies, 1953, from Guadalupe Island; *Parapseudes pedispinis* (Boone, 1923) known from California to Ecuador, including the Pacific coast of Mexico (Menzies, 1953); *Chaulioleona dentata* Dojiri and Sieg, 1997, *Scoloura phillipsi* Sieg and Dojiri, 1991, and *Tanaella propinquus* Dojiri and Sieg, 1997, from Los Coronados Islands, Baja

California. *Neotanais armiger* Wolf, 1956, a deep-water species reported from the US west coast (45°N) to Chile, but with no record off Mexico (Heard, 2002).

Sinelobus stanfordi (Richardson, 1901) is a cosmopolitan, euryhaline species reported from the eastern Pacific in Clipperton Island (type locality), California, El Salvador, Panama, Peru, Colombia, and the Galapagos Islands (Heard 2002; Suarez *et al.* 2004). The species was briefly reported from the Pacific coast of Mexico by Hendrickx and Meda-Martínez (2001) as part of the invertebrate community associated with shrimp-ponds in southern Sinaloa. Since, it has been collected intensively in this part of the southern Gulf of California and further south, and previous samples obtained from incidental sampling in coastal lagoons in the same area were examined for this species. This note reports the presence of *S. stanfordi* in four coastal lagoon systems along the Pacific coast of Mexico. A restricted synonymy of the species is provided.

Material and Methods

Specimens of *Sinelobus stanfordi* were obtained from several coastal lagoons along the Pacific coast of Mexico by extracting, mostly by washing and sorting the epibiontes attached to

Rhizophora mangle Linnaeus, 1773, prop-roots. Because of the high heterogeneity observed among the epibiontes communities that were sampled, no attempt were made to standardize the amount of specimens collected by density unit. Some specimens were also obtained by collecting, washing and filtering a sample of *Salicornia* (collected with a plastic bag). Sorted material was first fixed with a 4% solution of formaldehyde, washed with freshwater and transferred to a 70% ethanol solution for conservation. Specimens were deposited in the regional collection of marine invertebrates (EMU followed by voucher number) at the Mazatlán unit of the Instituto de Ciencias del Mar y Limnología, UNAM.

Results

Specimens were found in five localities along the Pacific coast of Mexico (Fig. 1). A total of 590 specimens were collected.

Sinelobus stanfordi (Richardson, 1901)

Tanais stanfordi Richardson, 1901: 565-567, figs. 58-60

Sinelobus stanfordi: Suárez-Morales *et al.* 2004: 43, figs. 18-20; Hendrickx and Meda-Martínez, 2001: 61, fig. 4.5.

Material examined: Laguna Caimanero (ca 22°54'N, 106°04'W), Sinaloa, December 1977 (exact date unknown), 82 M (TL 2.56-4.70 mm), 64 H (TL 2.56-5.23 mm), and 42 HH (TL 3.10-4.80 mm), among *Salicornia* (EMU-8029). Laguna Huizache (23°01'09.60"N, 106°09'15.90"W), Sinaloa, 06/VII/2007, 1 H (TL 1.76 mm), among *Salicornia* (EMU-8265). El Verde Camacho Coastal lagoon, (ca 23°24'N, 106°32'W), Sinaloa, 10/II/1979, 10 M (TL 3.16-3.80 mm), 1 H (TL 2.50 mm), and 2 HH (TL 3.46 mm and 3.60 mm), on *Rhizophora mangle*, prop-roots (EMU-8028). El Verde Camacho coastal lagoon (23°24'46"N,

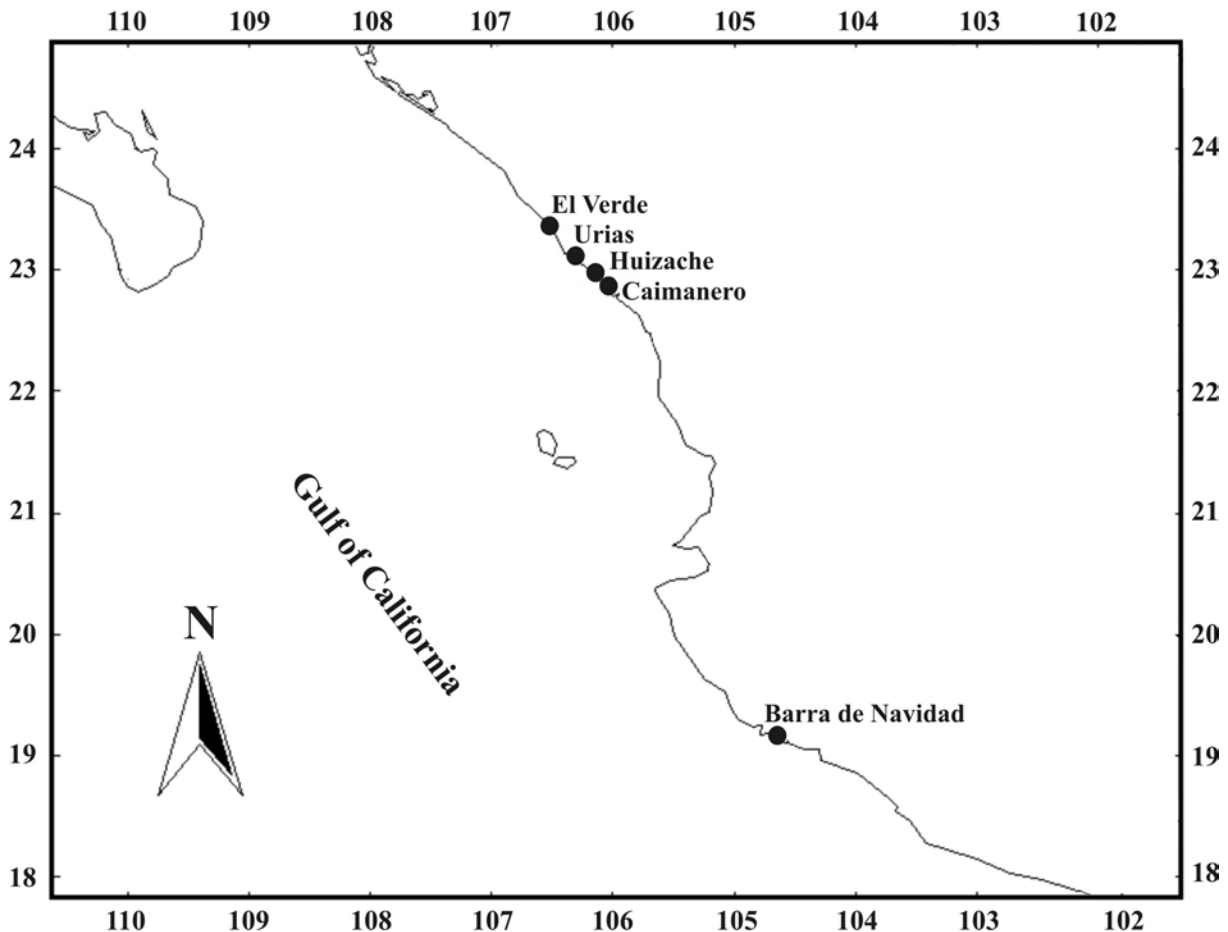


Fig. 1. Localities along the Pacific coast of Mexico where *Sinelobus stanfordi* has been collected. One locality might correspond to several samples.

106°32'51"W), Sinaloa, 26/XI/2007, 31 M (TL 1.60-3.60 mm), 42 H (TL 2.33-4.00 mm), and 6 HH (TL 2.83-3.93 mm), in trap with shell debris (EMU-8269). Estero de Urias Coastal lagoon (23°11'29.00"N, 106°21'48.70"W), Sinaloa, 1998, 7 M (TL 2.17 mm and 2.63 mm), and 3 HH (TL 2.26-3.00 mm), on *Rhizophora mangle* prop-roots (col. M. García-Guerrero) (EMU-8025). Estero de Urias coastal lagoon (23°09'14"N, 106°19'57"W), Sinaloa, 05/III/2007, 2 M (TL 2.96 and 2.96 mm), 5 H (TL 1.86-2.70 mm), and 2 HH (TL 3.10 mm and 3.56 mm), 5-liters trap with artificial algae-like substrate (EMU-8260). Estero de Urias coastal lagoon, (23°09'40.8"N, 106°19'53.2"W), Sinaloa, 30/I/2007, 9 M (TL 2.13-3.10 mm), 9 H (TL 2.00-3.66 mm), and 1 HH (TL 3.23 mm), on *Rhizophora mangle* prop-roots (EMU-8263). Estero de Urias coastal lagoon (23°09'40.8"N, 106°19'53.2"W), Sinaloa, 05/III/2007, 1 M (TL 2.00 mm) and 4 H (TL 2.53-3.13 mm), on *Rhizophora mangle* prop-roots (EMU-8259). Estero de Urias coastal lagoon (23°11'43.50"N, 106°23'44.80"W), Sinaloa, 26/IV/2007, 17 M (TL 2.13-2.80 mm), 12 H (TL 2.30-3.56 mm), and 14 HH (TL 2.45-3.56 mm), on *Rhizophora mangle* prop-roots (EMU-8262). Estero de Urias coastal lagoon (23°09'40.8"N, 106°19'53.2"W), Sinaloa, 26/IV/2007, 1 M (TL 2.73 mm), 3 H (TL 2.70-3.10 mm), and 3 HH (TL 2.76-3.76 mm), on *Rhizophora mangle* prop-roots (EMU-8261). Estero de Urias coastal lagoon (23°10'27.5"N, 106°20'07.7"W), 02/VII/2007, 18 M (TL 2.03-2.93 mm), 36 H (TL 1.93-3.23 mm), and 6 HH (TL 2.46-3.13 mm), on *Rhizophora mangle* prop-roots (EMU-8264). Estero de Urias coastal lagoon (23°11'43.50"N, 106°23'44.8"W), 07/VIII/2007, 44 M (TL 1.96-2.96 mm), 34 H (TL 2.03-3.76 mm), and 26 HH (TL 2.13-3.80 mm), on *Rhizophora mangle* prop-roots (EMU-8266). Estero de Urias Coastal lagoon, (23°10'27.50"N, 106°20'07.70"W), Sinaloa, 09/X/2007, 2 H (TL 2.57 mm and 2.63 mm), and 1 HH (TL 2.53 mm), on *Rhizophora mangle* prop-roots (EMU-8267). Estero de Urias Coastal lagoon, (23°09'40.80"N, 106°19'53.20"W), Sinaloa, 09/X/2007, 2 M (TL 2.80 mm and 3.23 mm), on *Rhizophora mangle* prop-roots (EMU-8268). Barra de Navidad coastal lagoon, (19°11'46"N, 104°40'W), Jalisco, 04/III/2008, 32 M (TL 2.10-3.57 mm), 11 H (TL 2.83-4.90 mm), and 4 HH (TL 3.40-4.60), on *Rhizophora mangle* prop-roots (col. J. Arciniega Flores) (EMU-8723).

Comments: The geographic range of *S. stanfordi* along the Pacific coast of Mexico is hereby extended to the north to 23°24'46"N and to the south to 19°11'46"N, thus covering ca 4°13' degrees of latitude interval (Fig. 1). It has been previously reported in several localities in the East Pacific: El Salvador, Panama, Peru (Suarez-Morales, 2004), Colombia (Gutu and Ramos, 1995), and the Galapagos Island (Gardiner, 1975). According to Richardson (1901: 567), the type locality is Clipperton Island ("Clipperton Island Lagoon"), almost 1300 km off continental Mexico and 950 km away from the Revillagigedo Archipelago. Although our material was always collected on mangrove prop-roots or close to mangrove, *S. stanfordi* is known to occur in a wide variety of habitats (e.g., coralline substrate, intertidal sediments, algae) (Suárez-Morales *et al.*, 2004), all present on Clipperton Island where no mangrove are to be found.

According to García-Guerrero and Hendrickx (2004), other Peracarida associated with *S. stanfordi* on prop-roots are the isopods *Paradella diana* (Menzies, 1962), *Uromunna* sp. (both dominant), *Paracerceis sculpta* (Holmes, 1904), and *Cassidinidea mexicana* Hendrickx and Espinosa-Pérez, 1988 (both scarce). The abundant material collected in Estero de Urias, Sinaloa, Mexico, indicates that the species reproduces at least from January to August. The material from Caimanero (about 30 km south of the Estero de Urias), collected in December, extends even more the observed reproducing period.

Of the 14 species of Tanaidacea cited by Heard (2002) for the Pacific coast of Mexico, 10 were either described or reported in a single contribution by Menzies (1953). This clearly indicates the little interest for the group in the region, notwithstanding the fact that some of Menzies' species might turn out to be more widely distributed than previously thought and very abundant in the region (see Hendrickx, 2007).

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References

- García-Guerrero, M. and M.E. Hendrickx. 2004. Distribution of isopods (Peracarida, Isopoda) associated with prop roots of *Rhizophora mangle* in a tropical coastal lagoon, southeastern Gulf of California, Mexico. *Crustaceana* 76(10):1153-1169.
- Gardiner, L.F. 1975. The systematics, postmarsupial development, and ecology of the deep-sea family Neotanaidae (Crustacea: Tanaidacea). *Smithsonian Contributions to Zoology*. 170:1-265.
- Gutu, M. and G.E. Ramos. 1995. Tanaidaceans (Crustacea, Peracarida) from the waters of Colombian Pacific with the descriptions of two new species. *Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa"*. 35:29-48.
- Heard, R.W. 2002. Annotated checklist and bibliography for the order Tanaidacea (Crustacea: Malacostraca: Peracarida) reported from the Pacific coasts of the Americas (Alaska to Chile) and associated off shore islands. Pp. 369-383, *in*: M.E. Hendrickx (ed.). *Contributions to the Study of East Pacific Crustaceans [Contribuciones al Estudio de los Crustáceos del Pacífico Este]*. Instituto de Ciencias del Mar y Limnología, UNAM. 383 pp.
- Hendrickx, M.E. and M.A. Meda Martínez. 2001. Cap. 4. Fauna asociada en relación con la operación de estanques camaronícolas en sistemas lagunares. Pp. 57-74. *In*: Páez-Osuna, F. (ed.). *Camaronicultura y Medio Ambiente*. Instituto de Ciencias del Mar y Limnología, UNAM, Programa Universitario de Alimentos, El Colegio de Sinaloa. 519 p.
- Menzies, R.J. 1953. The apseudid Chelifera of the eastern tropical and north temperate Pacific Ocean. *Bulletin of the Museum of Comparative Zoology at Harvard University*. 107(9):443-496.
- Richardson, H. 1901. Papers from the Hopkins Stanford Galapagos Expedition, 1898-1899. VI. The Isopods. *Proceedings of the Washington Academy of Sciences* 8:565-568.
- Suárez-Morales, E., R.W. Heard, S. García-Madrigal, J.J. Oliva-Rivera and E. Escobar-Briones. 2004. Catálogo de los Tanaidaceos (Crustacea: Peracarida) del Caribe Mexicano. CONACyT, SEMARNAT, ECOSUR. 121 pp.

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