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(CRUSTACEA DECAPODA: CARIDEA).**

CARDET

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**ARQUIVOS
DO
MUSEU
BOCAGE**

2.^a Série
Vol. III n.º 1
1971

Publicação do Museu e Laboratório Zoológico e Antropológico
FACULDADE DE CIÊNCIAS DE LISBOA

Arq. Mus. Boc. (2.^a série)
vol. III n.º 1 págs. 1-8

Dr. Fernando A. Chace, Jr.,
with best wishes,
Armando J. G. Figueira

MATERIALS FOR A REVISION
OF THE FAMILY STYLODACTYLIDAE
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I. DESCRIPTION OF A NEW GENUS
AND OF A NEW SPECIES

by

ARMANDO J. G. FIGUEIRA (1)

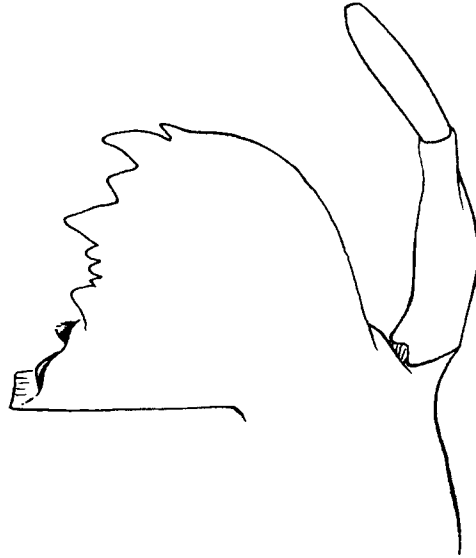
ABSTRACT: In the present paper (the first of a small series projected on stylo-dactylid shrimps) the genus *Stylo-dactylus* is redefined, a new genus *Parastylo-dactylus* proposed, and a key to the known stylo-dactylid genera provided; furthermore, it is shown that the Hawaiian stylo-dactylid referred to *Stylo-dactylus discissipes* by M. J. RATHBUN (1906) belongs to an undescribed species.

Described for the first time in 1881, the stylo-dactylid shrimps have remained until very recently among the least known of the carideans, due to their scarcity in collections and to the inadequacy of the descriptions of most of the recorded species.

A significant contribution to the knowledge of the family under consideration was made, however, by K.-I. HAYASHI and S. MIYAKE with the publication, in 1968, of their partial revision of the Stylo-dactylidae, in which a new genus, *Neostylo-dactylus*, was proposed, and three new species described.

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The genus *Neostylodactylus* was proposed by HAYASHI and MIYAKE for those stylodactylids that lack arthrobranchs and a mandibular palp; all the other species of the family were left by them in the old genus *Stylodactylus*, which they redefined. It must be pointed out, however, that the latter genus, as redefined by HAYASHI and MIYAKE, contains species both with, and



Text-fig. 1 — *Stylodactylus serratus* A. MILNE-EDWARDS: Mandible of the holotype.

without a mandibular palp. For this reason, it is evident that it must be split up into two genera, one containing the species with a mandibular palp, and the other, the species without a mandibular palp.

At my request Dr. J. FOREST, of the Muséum National d'Histoire Naturelle, Paris, sent me a camera-lucida drawing of the mandible of the type-specimen of *Stylodactylus serratus* A. MILNE-EDWARDS, 1881 (the type-species of the genus *Stylodactylus*). The drawing (reproduced above as text-figure 1) clearly shows a mandibular palp. For this reason a new genus, *Parastylodactylus*, is here proposed for reception of *Stylodactylus bimaxillaris* BATE, 1888 which, according to HAYASHI and MIYAKE, has no mandibular palp. A key to the three genera of the Family Stylodactylidae is included below.

Parastylodactylus gen. nov.

Diagnosis: No mandibular palp; arthrobranches on pereopods 1-4; articulated spines on both dorsal and ventral margins of rostrum.

Gender: Masculine.

Type-species: *Stylodactylus bimaxillaris* BATE, 1888.

Key to the known genera of the Family STYLODACTYLIDAE

- 1) Pereiopods without arthrobranches; mandibular palp absent
..... *Neostylodactylus* HAYASHI & MIYAKE, 1968
Pereiopods with arthrobranches; mandibular palp present or
absent 2
- 2) Mandibular palp present *Stylodactylus* A. MILNE-EDWARDS, 1881
Mandibular palp absent *Parastylodactylus* gen. nov.

* * *

Several years ago, while attempting to identify a damaged stylodactylid found in a fish stomach at the Funchal fish market, Madeira Island, I asked for and received on loan, from the Smithsonian Institution, Washington, U.S.A., the Hawaiian stylodactylid referred by RATHBUN (1906) to *Stylodactylus discissipes* BATE, 1888. The Hawaiian specimen proved, however, to belong to a new species, which is described below.

Stylodactylus kauaiensis sp. nov.

Stylodactylus discissipes RATHBUN, 1906, p. 927, fig. 75, pl. 23, fig. 1.
[non] *Stylodactylus discissipes* BATE, 1888, p. 851, pl. 138, fig. 1.

One female, holotype, carapace length (without rostrum) 6.3 mm., Kauai Island, Hawaii, 230-253 fathoms.

Rostrum 1.4 times as long as carapace, armed dorsally with 31 movable spines (of which 7 are on carapace) and ventrally with 9, also movable.

Carapace lacking supra-orbital spine and bearing anteriorly antennal and branchiostegal spines (both well developed, antennal being larger of two) and minute pterygostomial spine. Small but distinct orbital furrow and hepatic groove present.

Abdominal somites dorsally rounded, without trace of dorsal carina. Pleura 1-5 broadly rounded and without posterior spine. Fifth abdominal somite (measured dorsally) slightly shorter than sixth; latter bearing posterolateral spine at articulation with telson.

Telson (including distal median spine) measuring about 0.6 of length of carapace without rostrum and about 1.5 dorsal length of sixth abdominal somite, ending posteriorly in acute median spine. Three movable spines on each side of median spine, outer one smallest and median one largest. Upper surface of telson broadly grooved from near base to apex. Borders of groove armed with 4 pairs of movable spines. Upper surface of telson, near proximal part, with small hairy protuberance.

Inner uropods attaining apex of telson; outer uropods sub-equal with inner ones and having outer margin distally armed with 2 spines, of which inner one movable and much longer than outer one. Protopodite of uropods armed with acute spine at origin of exterior margin of outer uropod.

Eyes well developed and attaining distal border of first antennular segment. Ocular peduncle narrower than cornea, latter being obliquely set on peduncle.

Antennular peduncle armed with long and acute stylocerite reaching, on left side, about middle of second antennular segment and, on right side, slightly beyond middle of second segment, but not reaching third; third segment shortest, first segment longest. Length of thick (hairy) part of outer antennular flagellum about 0.7 of length of carapace without rostrum.

Second segment of antennal peduncle bearing exteriorly small, very acute spine at base of scaphocerite. Fifth segment of antennal peduncle bearing exteriorly 2 small spinules on distal half; smaller, third spinule above most distal of these 2 spinules, and placed near upper border of segment. Antennal flagella lost. Scaphocerite (including distal spine) 0.5 of length of carapace without rostrum and extending slightly beyond apex of antennular peduncle. Three thin, long, movable spinules on proximal half of outer margin of right scaphocerite; 6 movable spinules (most proximal one smallest) along proximal $2/3$ of outer margin of left scaphocerite.

Mandible bearing well developed palp. Maxillula, maxilla, first and second maxillipeds not dissected.

Antepenultimate segment of third maxilliped attaining distal extremity of scaphocerite. Length of distal, penultimate, and antepenultimate segments

of third maxilliped, sub-equal. Distal segment of left third maxilliped ending in minute spinule (apparently broken on right third maxilliped); distal segment of third maxilliped otherwise unarmed. Upper margin of penultimate segment armed with a series of spinules; additional spinules on outer surface. Distally, on upper and lower margins, penultimate segment bearing stronger spinule. Distal part of antepenultimate segment armed with strong spinules; a number of smaller spinules on outer surface of mentioned segment. Lower margin of distal, penultimate and antepenultimate segments bearing very long setae; numerous spinules among mentioned setae on penultimate and antepenultimate segments.

Merus of first pereopod extending slightly beyond apex of scaphocerite. Chela very slightly longer than carapace, about 1.2 times as long as carpus, and sub-equal with merus. Lower margin of fingers, carpus, and merus bearing long setae; lower margin of palm with group of much shorter setae; a few short setae distal part of lower margin of carpus, near articulation with chela. Fixed finger of chela extending very slightly beyond movable finger; both fingers bearing 2-3 extremely small spinules at apex, and armed dorsally with minute spinules, observable under strong magnification. Palm bearing dorsally small, acute spine, another similar spine near base of fixed finger. Upper margin and inner surface of carpus armed with many acute spinules; spinules also on lower margin, near base of setae. Distal border of upper margin, at articulation with chela, armed with quite strong spinule; another similar spinule on distal part of lower margin, very close to articulation with chela. Upper margin of merus unarmed, except for small spinule very close to articulation with carpus. Outer surface of merus densely covered with spinules (increasing in size toward distal part of segment) and also with 2 larger, distal spinules, placed together, and directed distally. Lower margin of merus with minute spinules near base of setae, and with larger distal spinule near articulation with carpus. Inner surface of merus with proximal 1/3 unarmed and distal 2/3 bearing irregular rows of minute spinules; inner surface additionally armed distally with 2 strong spinules near articulation with carpus, one near upper margin of segment, other near lower margin.

Distal extremity of merus of second pereopod extending very slightly beyond distal extremity of antennular peduncle and attaining apex of blade of scaphocerite. Chela about 1.3 times as long as carpus and about 0.9 length of merus. Apex of fixed finger, unlike first pereopod, not extending beyond apex of movable finger. Spinulation and pilosity fairly similar to those of first pair.

Carpus of third pereopod extending nearly to apex of 3rd antennular segment. Propodus very slightly more than 4 times as long as dactylus,

1.9 times as long as carpus, and about 0.6 length of merus-ischium. Dactylus armed ventrally with 4 spines increasing gradually in size toward distal part of segment. Small plumose hair dorsally, on proximal third of dactylus; tuft of small setae on the outer-lateral margin, near most proximal ventral spine. Proximal half of upper margin of propodus bearing 4-6 movable spinules; 14 similar spinules along whole length of lower margin. Upper margin of carpus bearing some movable spinules; distal 2/3 of lower margin with 5-6 movable spinules, much larger than those on upper margin, 2 most distal very close to each other. Upper margin of merus bearing about 12-13 movable spinules; stronger spinule on distal border, near carpus. Lower margin of merus armed with 12 spines, increasing in size toward distal part of segment, most distal one pointing quite distally, not obliquely as the others. Inner side of lower margin of merus, at articulation with carpus, with movable spinule. Both propodus and carpus densely covered with long setae; setae also present on merus.

Merus of fourth pereopod reaching about middle of scaphocerite. Propodus almost 5 times as long as dactylus, about 2.3 times as long as carpus, about 0.75 length of merus, and very slightly more than 4 times as long as ischium; latter fused with merus, but suture clearly visible. Armature and pilosity of dactylus similar to those of 3rd pereopods. Propodus bearing 8 movable spinules on proximal 2/3 of upper margin and 13-14 ones along whole length of lower margin. Carpus bearing several movable spinules on upper margin; 5 movable spinules on lower margin (larger than those on upper margin), 2 most distal very close to each other. Upper margin of merus armed with about 9-10 movable spinules; much stronger one near carpus. Lower margin of merus armed with 12-13 spines, increasing gradually in size toward distal part of segment, most distal one pointing quite distally; a movable spine on inner side of lower margin near articulation with carpus.

Merus of fifth pereopod reaching about to base of stylocerite. Propodus about 5 times as long as dactylus, slightly more than twice length of carpus, about 0.9 of length of merus, and about 4 times as long as ischium. Dactylus armed ventrally with 6 spines, increasing gradually in size toward distal part of segment. As in 3rd and 4th pereopods, dactylus of 5th pereopod bearing small plumose seta dorsally on proximal third, as well as tuft of small setae on outer-lateral margin, near most proximal of ventral spines. Proximal 2/3 of upper margin of propodus bearing 10-12 movable spinules; 16 movable spinules along whole length of lower margin of propodus, penultimate much larger than others, and distal one placed close to dactylus. Upper margin of carpus bearing several movable spinules; five movable spinules (larger than those on upper margin) on distal half of lower margin, 2 most

distal ones placed close to each other and larger than remaining 3, most proximal one of latter smallest. Merus bearing dorsally on distal third 2-5 minute, movable spinules, as well as much stronger one at articulation with carpus; lower margin bearing 10 strong spines, increasing gradually in size toward distal part of segment and placed obliquely, except most distal one pointing distally (although not as much as counterparts on 3rd and 4th pereopods). Movable spinule on inner side of lower margin of merus, near articulation with carpus.

DISCUSSION

Stylodactylus kauaiensis, by possessing a series of spinules on the outer margin of the scaphocerite, differs from all known species of the genus, except *S. rectirostris* A. MILNE-EDWARDS, 1883 and *S. multidentatus* KUBO, 1942. It can, however, be distinguished at once from those two species by the absence of a supra-orbital spine.

The holotype of the present species is deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A., and bears the U.S.N.M. Catalogue No. 31009.

*

I wish to thank Dr. FENNER A. CHACE, JR., National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A., not only for being instrumental in arranging the loan of the specimen on which the description of *Stylodactylus kauaiensis* is based, but also for reviewing the present translation of my original Portuguese manuscript. I am also indebted to Dr. JACQUES FOREST, Laboratoire de Zoologie (Arthropodes), Muséum National d'Histoire Naturelle, Paris, France, for dissecting and drawing, at my request, the mandibles of the holotype of *Stylodactylus serratus* A. MILNE-EDWARDS, and to Dr. KEN-ICHI HAYASHI, Zoological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka, Japan, for the loan of a specimen of *Stylodactylus major* HAYASHI & MIYAKE.

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Arq. Mus. Boc. (2.ª sér.), 2, n. s. 16: XXVII-XXXI.

Editor:
Prof. Dr. G. F. SACARRÃO
Director, Museu Bocage

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