

A NEW GENUS AND SPECIES OF PANDALID SHRIMP (DECAPODA: CARIDEA) FROM THE WESTERN PACIFIC

Tomoyuki Komai and Tin-Yam Chan

(TK) Department of Animal Sciences, Natural History Museum and Institute, Chiba, 955-2 Aoba-cho, Chuo-ku, Chiba 260-8682, Japan;

(TYC, correspondence) Institute of Marine Biology, National Taiwan Ocean Biology, Keelung 202, Taiwan, R.O.C. (tychan@mail.ntou.edu.tw)

ABSTRACT

A new genus and new species of pandalid shrimp, *Calipandalus elachys*, is described on the basis of the specimens from Taiwan, Solomon Islands, and New Caledonia in the western Pacific Ocean. *Calipandalus* new genus resembles *Bitias* Fransen, 1990, in the lack of an exopod on the third maxilliped, the short rostrum, and the presence of arthrobranchs on the four anterior pereopods. It is distinguished from *Bitias* by the presence of tegumental scales, the moderately spaced, fixed dorsal teeth on the rostrum proper, the short antennular stylocerite, and the peculiar structures of the mandibular palp and the chela of the second pereopod. The new species also bears similarity to particular species of *Plesionika* Bate, 1888, although the absence of an exopod on the third maxilliped sets the new species apart from *Plesionika*.

Amongst the catches of recent deep-sea expeditions participated by the second author in the waters of New Caledonia (“NORFOLK 1” cruise) and Taiwan (“TAIWAN 2002” Expedition), a beautiful small shrimp was collected from both of these two far-distant localities. Subsequent search at the crustacean collection in the Muséum national d’Histoire naturelle, Paris, found that this shrimp was also recently collected from the Solomon Islands (“SALOMON 1” cruise). Careful examination has shown that this shrimp belongs to an undescribed species of the family Pandalidae Haworth, 1825, but does not fit the definition of any genus known. Using the recently published key to the caridean genera by Holthuis (1993), this shrimp keys out to *Bitias* Fransen, 1990, on account of the short rostrum, the absence of an exopod on the third maxilliped, and the presence of arthrobranchs as well as epiopods on the first four pereopods. However, it does not conform to the definition of *Bitias* in the presence of the tegumental scales, widely spaced teeth of the dorsal rostral series, of which on the rostrum proper are all fixed, the chela of the second pereopod having a peculiar shape, as well as many other characters. Hence, a new genus is established for this new species. Although the new species is placed close to *Bitias* after Holthuis’s (1993) key, the thin, greatly elongate pereopods and the well-developed ocellus align it to some species groups in *Plesionika* Bate, 1888, redefined by Chace (1985) (see also Chan and Crosnier, 1997).

The cruises “NORFOLK 1” and “SALOMON 1” were amongst the many ongoing expeditions organized by the IRD (Institut de Recherche pour le Développement, France) and the Muséum national d’Histoire naturelle, Paris (MNHN), extensively sampling the deep-sea fauna of the South Pacific. “TAIWAN 2002” is the third year deep-sea expedition initiated by the Taiwanese institutions together with the MNHN and IRD to explore the deep-sea fauna around Taiwan. The specimens are deposited at the National Taiwan Ocean University, Keelung (NTOU), National Museum of Natural Science, Taichung (NMNS), and the Muséum national d’Histoire naturelle, Paris (MNHN). The abbreviation cl. is the postorbital carapace length, measured from the orbital margin to the postero-dorsal margin of the carapace. Other abbreviations used in the text are: CP = beam trawl; DW = Warén dredge; stn = station.

TAXONOMY

Family Pandalidae Haworth, 1825

Calipandalus, new genus

Diagnosis.—Tegumental scales present and similar to those in other pandalids. Rostrum short, immovable, dorsal margin armed with moderately spaced, fixed teeth on rostrum proper, but postrostral series consisting of movable spines, ventral margin only with fixed teeth. Carapace without longitudinal carinae; orbital margin nearly vertical in lateral view,

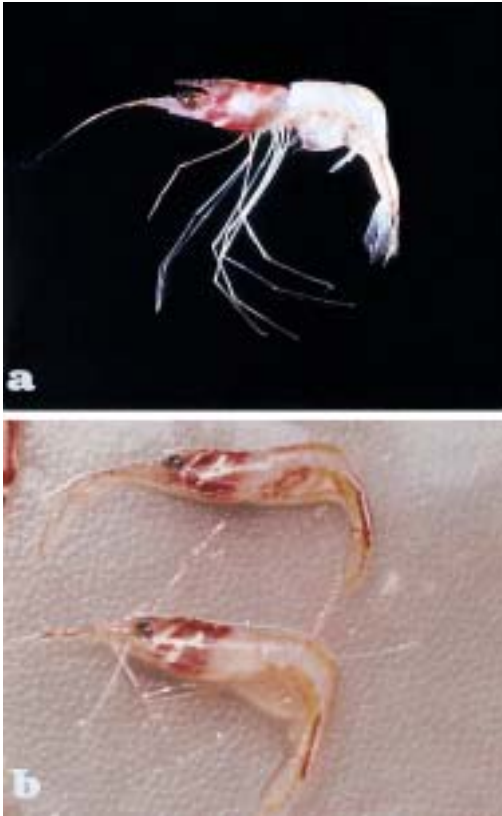


Fig. 1. *Calipandalus elachys* new genus, new species. a, holotype female (5.2 mm cl., NTOU H-2002-148) from Taiwan. b, "TAIWAN 2002" stn DW 148, Taiwan: upper,

with few long bristles. Abdomen with pleura of anterior three somites rounded, pleura of fourth and fifth somites each with small posteroventral tooth. Telson with 4 pairs of dorsolateral spines. Eye well developed, darkly pigmented, with cornea much wider than eyestalk, bearing large ocellus. Antennule with stylocerite short, but terminating in acute tooth. Mandibular palp with greatly elongate third article having trigonal cross section. Posterior lobe of scaphognathite short, rounded, lacking fringe of strongly elongate setae. Third maxilliped without exopod. First pereopod slender, microscopically chelate; ischium devoid of laminar expansion, but with row of minute spinules on ventral surface. Second pereopods subequal, with carpus composed of 16 or 17 articles; chela more than 0.3 times as long as carpus, with distinct proximal hiatus between fingers. Third to fifth pereopods elongate and thin, dactylus feebly spinulate ventrally. Strap-like epipods

present on third maxilliped through fourth pereopod and corresponding setobranchs on first to fifth pereopod. Arthrobranchs on third to seventh thoracic somites.

Type species.—*Calipandalus elachys*, new species.

Etymology.—From the Greek *kalos* meaning beautiful, and the generic name *Pandalus*, in reference to the beautiful coloration of its type species in life. The gender is masculine.

Remarks.—At present, 22 genera are recognized in the family Pandalidae, following Chace's (1985) synonymy of *Parapandalus* Borradaile, 1899, with *Plesionika*: *Anachlorocurtis* Hayashi, 1975; *Atlantopandalus* Komai, 1999; *Austropandalus* Holthuis, 1952; *Bitias* Fransen, 1990; *Chelonika* Fransen, 1997; *Chlorocurtis* Kemp, 1925; *Chorotocella* Balss, 1914; *Chlorotocus* A. Milne-Edwards, 1882; *Dichelopandalus* Caulery, 1896; *Dorodotes* Bate, 1888; *Heterocarpus* A. Milne-Edwards, 1881; *Miopandalus* Bruce, 1983; *Notopandalus* Yaldwyn, 1960; *Pandalina* Calman, 1899; *Pandalopsis* Bate, 1888; *Pandalus* Leach, 1814; *Pantomus* A. Milne-Edwards, 1883; *Peripandalus* De Man, 1917; *Plesionika* Bate, 1888; *Procleptes* Bate, 1888; *Pseudopandalus* Crosnier, 1997; and *Stylopandalus* Coutière, 1905. In Holthuis's (1993) account of the Recent caridean genera, the present specimens key out with the genus *Bitias*, represented by two species, *B. brevis* (Rathbun, 1906) and *B. stocki* Fransen, 1990 (see Crosnier and Fransen, 1994). However, *Calipandalus* may be unique within the Pandaliae in the noticeably elongate, trigonal third article of the mandibular palp and the prominent proximal hiatus between the fingers of the chela of the second pereopod, as these character states are not known in other pandalid species (cf. Holthuis, 1993, Komai, 1994a). Further, the following characters set the new species apart from *Bitias*, warranting the establishment of a new genus: tegumental scales are present on the carapace, telson, eye-stalk, antennular peduncle and antenna in the new genus, but they are absent in *Bitias* (Chuang *et al.*, in press); the dorsal margin of the rostrum proper is armed only with moderately spaced fixed teeth, although the postrostral series consists of movable teeth in the new genus, whereas it is densely serrated with apparently movable teeth in *Bitias*; the antennular stylocerite is short, only reaching the midlength of the basal segment of the antennular peduncle in

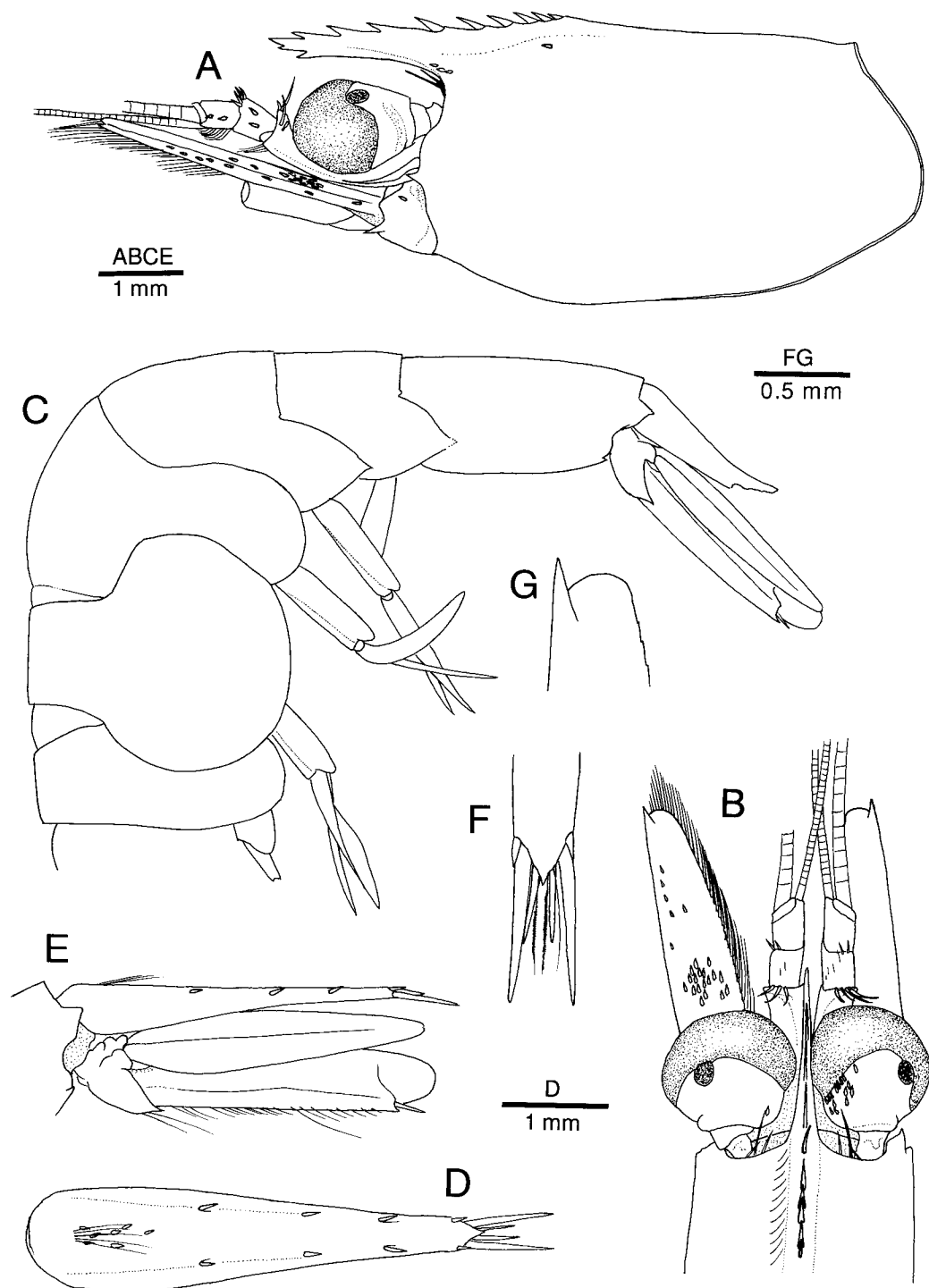


Fig. 2. *Calipandalus elachys* new genus, new species. A–C, G, holotype female (5.2 mm cl., NTOU H-2002-148) from Taiwan; D–F, paratype male (4.6 mm cl., NTOU P-2002-148) from Taiwan. A, carapace and cephalic appendages, lateral (most tegumental scales on carapace missing); B, anterior part of carapace and cephalic appendages (setae partially omitted); C, abdomen, lateral (setae omitted; telson and first pleopod damaged); D, telson, dorsal; E, telson and left uropod, lateral (setae partially omitted); F, posterior part of telson, dorsal; G, distal part of left antennal scaphocerite, dorsal.

Calipandalus, rather than reaching to the distal margin of the basal segment in *Bitias*; the first pereopod is chelate in *Calipandalus*, but not chelate in *Bitias*; the third to fifth pereopods are much more elongate and slender in the new genus than in *Bitias*. The other differences between *Calipandalus elachys* and the two species of *Bitias* include the nearly vertical, rather than concave, orbital margin with three long bristles, the sharply pointed posterolateral margin of the fourth abdominal pleuron, the presence of the large ocellus, the possession of four, rather than six, pairs of dorsolateral spines on the telson, the possession of one, rather than two, ventral spines on the ischium of the third pereopod, and the greatly reduced accessory spinules on the dactyli of the posterior three pereopods. These characters may have only specific significance, as these characters are often variable in other genera of the Pandalidae, e.g., *Plesionika* and *Pandalopsis* (cf. Chace, 1985; Komai, 1994a, b; Chan and Crosnier, 1997).

It is noteworthy that *Calipandalus elachys* shows similarities to particular species of *Plesionika* in some characters, such as the rather vertical posterior margin of the orbit, which bears setae or bristles (e.g., similar character state is found in "*Plesionika martia* (A. Milne-Edwards, 1883)" group and *P. taiwanica* Chan and Yu, 2000), the large ocellus on the eye (similar character state is known in "*P. rostricrescentis* Bate, 1888" group); and the elongate, thin third to fifth pereopods [e.g., species of "*P. carsini* Crosnier, 1986" group; "*P. macropoda* Chace, 1939" group; "*P. martia* group"; "*P. narval* (Fabricius, 1787)" group; "*P. sindoi* (Rathbun, 1906)" group possess greatly elongate, thin pereopods]. Nevertheless, *Calipandalus* is immediately distinguished from *Plesionika* by the absence of an exopod on the third maxilliped alone. Christoffersen (1989) performed a cladistic analysis on 21 genera of the presumably monophyletic taxon Pandaloida. He suspected the genus *Plesionika* to be paraphyletic or polyphyletic. Komai (1994a) also made a phylogenetic analysis on 22 pandaloid genera including several species assigned to *Plesionika*, and showed that *Plesionika* was polyphyletic. The currently defined *Plesionika* is the largest genus in Pandalidae and contains at least 80 species with extremely diverse morphology. For example, the species of "*P. narval*" group were assigned to the separate genus *Parapandalus* (see Chace, 1985, Holthuis, 1993); a subgenus *Nothocaris* Bate, 1888,

had been proposed for the species of the "*P. rostricrescentis*" group and alike (Burukovsky, 1981), and there is uncertainty on the affinity of the "*P. laevis* (A. Milne-Edwards, 1883)" group with *Heterocarpus* (see Chan and Crosnier, 1997); while the affinities of those bizarre species such as *P. bifurca* (Alcock and Anderson, 1894); *P. spinidorsalis* (Rathbun, 1906); *P. grahami* Kensley, Tranter, and Griffin, 1987; *P. taiwanica* Chan and Yu, 2000; and *P. albocristata* Chan and Chuang, 2002, remain unclear. Future study may eventually reveal that *Calipandalus* will be an ingroup of the *Plesionika* assemblage. More definite conclusion on the phylogenetic position of *Calipandalus* awaits a phylogenetic analysis of the Pandalidae.

Calipandalus elachys, new species

Figs. 1–4

Material Examined.—Holotype: Taiwan, TAIWAN 2002, R/V "Ocean Researcher 1": stn DW 148, 22°18.59'N, 121°29.39'E, 267–302 m, 20 May 2002, female 5.2 mm cl. (NTOU H-2002-148).

Paratypes: Same data as holotype, 1 male 4.6 mm cl. (NTOU P-2002-148); stn DW 149, 22°18.5'N, 121°18.5'E, 258 m, 20 May 2002, 1 female 4.0 mm cl., 1 specimen (badly damaged) (NTOU P-2002-149); stn DW 151, 22°18.34'N, 121°30.04'E, 301–356 m, 20 May 2002, 1 ovig. female 6.1 mm cl. (NTOU P-2002-151, transferred to NMNS).

Other specimens: New Caledonia, NORFOLK 1, R/V "Alis": stn CP 1718, 23°23.73'S, 168°1.39'E, 260–373 m, 26 June 2001, 2 ovig. females 4.4 mm and 4.5 mm cl. (NTOU).

Solomon Islands, SALOMON 1, R/V "Alis": stn DW 1854, 9°46.4'S, 160°52.9'E, 229–260 m, 7 Oct 2001, 1 male 5.7 mm cl., 1 female 5.7 mm cl. (MNHN); stn DW 1856, 9°46.4'S, 160°52.3'E, 254–281 m, 7 Oct 2001, 1 female cl. 4.8 mm (MNHN).

Description.—Body (Fig. 1) moderately robust; integument thin, not firm.

Rostrum (Fig. 2A) nearly horizontal, not reaching level of distal margin of second segment of antennular peduncle, 0.43–0.45 of carapace length; dorsal margin armed with 9–11 teeth over entire length, including 5–7 on carapace posterior to level of posterior orbital margin, those on rostrum proper moderately spaced, fixed, but postrostral series all movable with distinct basal suture, none with barbed tip, posteriormost spine arising from 0.30 of carapace length; ventral

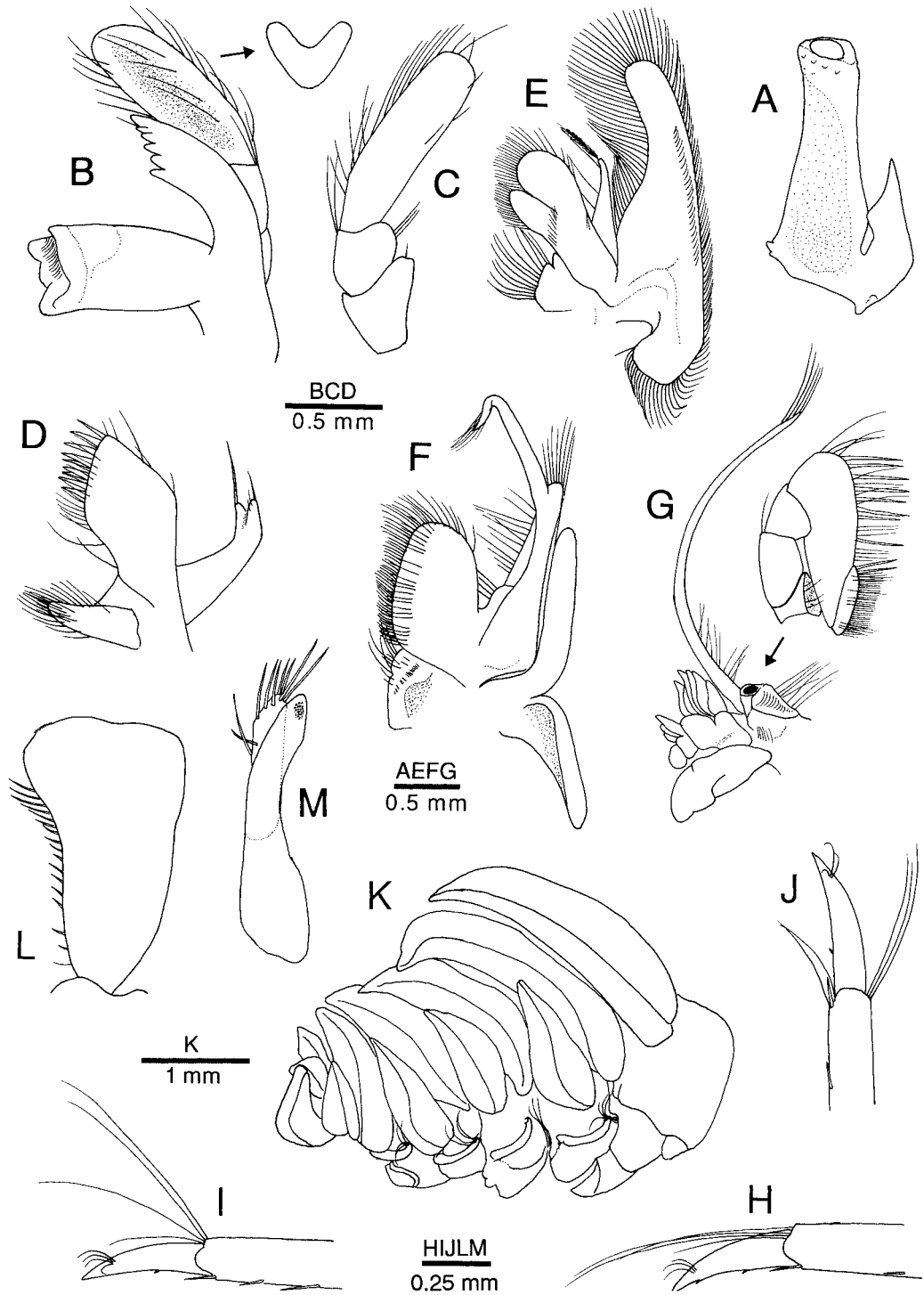


Fig. 3. *Calipandalus elachys* new genus, new species. A, D–G, ovig. female (4.5 mm cl., NTOU) from “NORFOLK 1” stn CP 1718, New Caledonia; B–C, paratype from Taiwan (badly damaged, NTOU P-2002-149); H–J, holotype female from Taiwan (5.2 mm cl., NTOU H-2002-148); K–M, paratype male from Taiwan (4.6 mm cl., NTOU P-2002-148). A, basal segment of right antennular peduncle, dorsal (spinules on dorsodistal margin missing); B, left mandible, ventral; insert, diagrammatic outline of cross section; C, palp of left mandible, dorsal; D, left maxillule, ventral; E, left maxilla, ventral; F,

margin with 2 or 3 small teeth subdistally. Carapace (Fig. 2A, B) with postrostral ridge low, not strongly compressed laterally, extending posteriorly to about midlength of carapace; orbit not concave, but rather vertical and somewhat inclined forwards in posterior portion, with fringe of spiniform bristles; suborbital lobe broadly rounded; antennal spine small, only slightly stronger than branchiostegal spine.

Abdomen (Fig. 2C) with third somite rounded posteriorly, unarmed, without median carina or hump-like projection, not strongly arched in dorsal midline in lateral view. Pleura of three anterior somites broadly rounded, those of fourth and fifth somites sharply pointed posteroven-trally. Sixth somite 1.88–1.93 times as long as fifth somite, 0.59–0.63 of carapace length, and 2.15–2.20 times as long as maximum height. Telson (Fig. 2D–F) 1.36 times as long as sixth somite and 0.90–0.93 of carapace length, terminating posteriorly in sharp tooth, with 4 pairs of dorsolateral spines, posteriormost pair situated dorsolateral to base of long, lateral spine of 2 posterior pairs.

Tegumental scales flattened and restricted to anterodorsal part of carapace, telson, eye-stalk, antennular peduncle and antennal scaphocerite, each with margins apparently smooth, devoid of subdistal notches.

Eye (Fig. 2A, B) very large, weakly flattened dorsoventrally, maximum diameter 0.33–0.35 of carapace length; ocellus large and prominent, strongly constricted but still having contact with cornea.

Antennular peduncle (Fig. 2A, B) reaching anterior 0.30 of antennal scale. Basal segment (Fig. 3A) with several long, curved, movable spinules on dorsodistal margin and with small tooth on ventromesial ridge; stylocerite terminating in sharp tooth, reaching level of mid-length of basal segment, with broad lobe on mesial margin. Distal two segments combined shorter than basal segment. Penultimate segment with 2–4 movable spinules on dorsodistal margin. Ultimate segment subequal in length to penultimate segment. Lateral flagellum with aesthetasc-bearing portion longer than carapace.

Antenna (Fig. 2A, B) with stout basicerite

bearing small ventrolateral tooth. Carpocerite reaching midlength of antennal scale. Scaphocerite with lateral margin nearly straight, 0.69–0.70 of carapace length, 4.30–4.35 times as long as wide, distolateral tooth overreaching rounded blade (Fig. 2G).

Mandible (Fig. 3B) with stout molar process; incisor process somewhat curved, distomesial margin with 6 blunt teeth; palp 3-articulated, basal article with prominent distomesial lobe; third article of palp (Fig. 3C) noticeably elongate, distinctly longer than proximal two articles combined, oblong in shape, with few facial setae; ventromesial margin of third article expanded in thin ridge, thus cross section of article trigonal; ventral surface of third article concave; lateral and ventromesial margins of third article of palp with row of rather sparse stiff setae, dorsomesial margin only with few setae. Maxillule (Fig. 3D) with coxal endite curved, tapering distally, setose; basal endite with 2 rows of spines and stiff setae on mesial margin; palp bilobed distally, each with apical setae. Maxilla (Fig. 3E) with coxal endite obscurely 2-lobed (distal lobe very small, but clearly discernible), with rather sparse long setae on mesial margin of proximal lobe; basal endite distinctly bilobed, with proximal lobe smaller than distal lobe; palp tapering distally, weakly curved, with 2 setae on mesial margin and 2 apical setae (longer seta plumose); scaphognathite moderately broad, posterior lobe short, rounded, fringed with short setae. First maxilliped (Fig. 3F) with coxal and basal endite separated by distinct suture; palp with shallow notch on mesial margin, 3-articulated; exopod with moderately broad caridean lobe, flagellum moderately long; epipod large, distinctly bilobed. Second maxilliped (Fig. 3G) with endopod 7-articulated; basis and ischium with mesial excavation; propodus somewhat elongate, narrowed distally, with row of long spines and setae on mesial margin; dactylus broadly attached to propodus, with long spines at anterior corner; exopod long; epipod subrectangular, bearing well-developed podobranch.

Third maxilliped (Fig. 4A) slender, overreaching scaphocerite by full length of ultimate segment. Coxa with flattened lateral process and

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left first maxilliped, ventral; G, left second maxilliped, ventral (broken between basis and ischium); H, dactylus and distal part of propodus of left third pereopod, lateral; I, same, left fifth pereopod; J, same, left fourth pereopod; K, left branchiae, lateral (semidiagrammatic); coxa of third maxilliped removed); L, endopod of left first pleopod, ventral; M, appendices masculina and interna of left second pleopod, mesial.

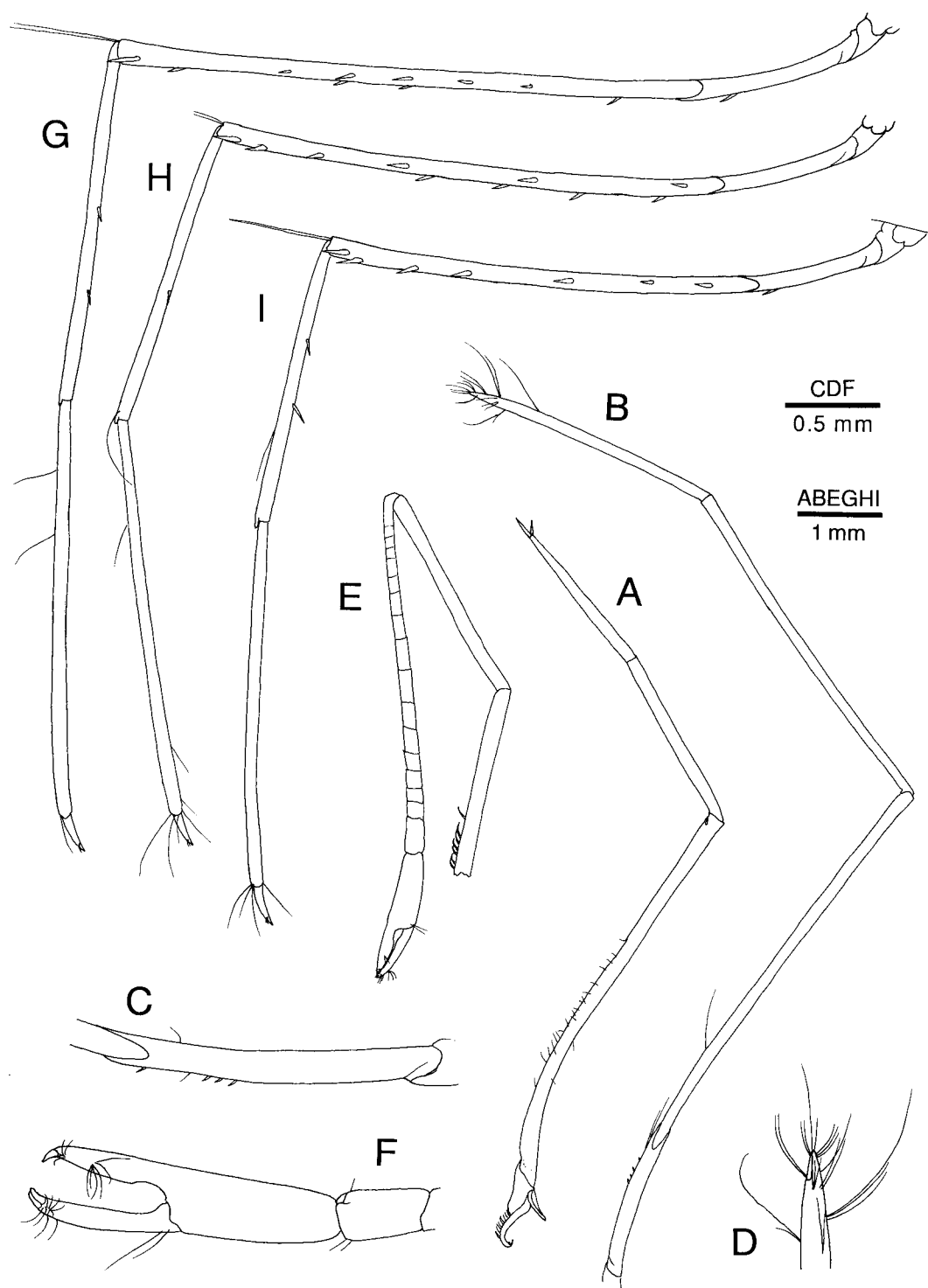


Fig. 4. *Calipandalus elachys* new genus, new species. Left thoracic appendages. A–D, G–I, holotype female from Taiwan (5.2 mm cl., NTOU H-2002-148); E–F, ovigerous female from “NORFOLK 1” stn CP 1718, New Caledonia (detached pereopod with origin of specimen could not be determined, NTOU). A, third maxilliped, lateral; B, first pereopod, lateral; C, ischium of first pereopod, lateral; D, distal of chela of first pereopod; E, second pereopod, lateral; F, chela of second pereopod; G, third pereopod, lateral; H, fourth pereopod, lateral; I, fifth pereopod, lateral.

Table. 1. *Calipandalus elachys*, new genus, new species. Branchial formula.

Thoracic somites	1	2	3	4	5	6	7	8
	Maxillipeds			Pereopods				
Appendages	1	2	3	1	2	3	4	5
Pleurobranchs	—	—	—	1	1	1	1	1
Arthrobranch	—	—	2	1	1	1	1	—
Podobranh	—	1	—	—	—	—	—	—
Epipods	+	+	+	+	+	+	+	—
Setobranchs	—	—	—	+	+	+	+	+
Exopods	+	+	—	—	—	—	—	—

strap-like epipod. Antepenultimate segment with tiny spinule at distolateral corner and with sparse short setae on ventral margin. Penultimate segment 1.15 times as long as ultimate segment (terminal spine on ultimate segment excluded). Ultimate segment armed terminally with long slender apical and few short subapical spines.

First pereopod (Fig. 4B) slender, elongate, microscopically chelate (Fig. 4D), overreaching scaphocerite by length of chela and 0.75 of propodus. Ischium with 3–5 spinules on distal half of ventral surface, devoid of laminar expansion (Fig. 4C). Merus 2.97 times as long as ischium. Carpus 0.82 of merus length. Chela 0.74 of carpus length, with tufts of setae on distal 0.25.

Second pereopods subequal, overreaching scaphocerite by length of chela and nearly entire carpus. Ischium with row of spiniform setae on ventral margin. Merus without annulation. Carpus divided in 16 or 17 articles. Chela (Fig. 4F) 0.37–0.40 of carpus length; fingers with distinct hiatus proximally; fixed finger terminating in simple, somewhat curved unguis; dactylus 0.90–0.94 of palm length, terminating in 2 rather large, curved unguis.

Posterior three pereopods greatly elongate, slender, decreasing in length posteriorly; ischia armed with 1 ventral spine. Third pereopod (Fig. 4G) overreaching scaphocerite by length of distal three segments and 0.1 of merus length; merus 1.30–1.41 times as long as carapace, with 6 or 7 lateral and 4–6 ventral spines; carpus 0.55–0.62 of merus length, 0.82–0.88 of propodus length, armed with 2 lateral spines; propodus devoid of spinules on ventral surface, but with few long setae on distal margin; dactylus (Fig. 3H) compressed laterally, slightly curved, 0.09–0.14 of propodus length, terminating in simple unguis, armed with 2 minute, widely spaced accessory spinules on ventral margin. Fourth pereopod (Fig. 4H) overreaching scaphocerite by length of distal three segments; merus 1.07–

1.23 times as long as carapace, with 6–8 lateral and 4 ventral spines; carpus 0.60–0.62 of merus length, 0.78–0.80 of propodus length, armed with 1 or 2 lateral spines around midlength; propodus devoid of spinules on ventral surface, but with few long setae on distal margin; dactylus (Fig. 3I) 0.09–0.13 of propodus length, armed with 1 minute accessory spinule on ventral margin at midlength. Fifth pereopod (Fig. 4I) overreaching scaphocerite by length of distal two segments and 0.8 of carpus length; merus 0.96–1.07 times as long as carapace, with 6 or 7 lateral spines; carpus 0.64–0.70 of merus length, 0.71–0.77 of propodus length, armed with 2 lateral spines; propodus devoid of spinules or grooming apparatus on ventral surface, but with few long setae on distal margin; dactylus (Fig. 3J) 0.12–0.15 of propodus length, armed with 1 or 2 minute accessory spinules along basal half of ventral margin somewhat proximal to midlength.

Branchiae (Fig. 3K) as usual in pandalids, formula summarized in Table 1. Pleurobranchs on fourth to eighth thoracic somites, increasing in size posteriorly. Two arthrobranchs on third maxilliped; single arthrobranch on first to fourth pereopods. Strap-like epipods on third maxilliped to fourth pereopods and corresponding setobranchs on first to fifth pereopods.

Endopod of first pleopod of male (Fig. 3L) noticeably broadened distally, with cluster of cincinnuli at distomesial margin, but appendix interna not differentiated; mesial margin sinuous, with row of spiniform setae increasing in size distally. Endopod of first pleopod of female tapering distally, about 0.40 of exopod length. Appendix masculina on second pleopod of male (Fig. 3M) subequal in length to appendix interna, moderately stout, armed with about 10 long spines on distodorsal and distal margins. Exopod of third pleopod 0.40–0.50 of carapace length. Uropod (Fig. 2E) with protopod terminating

posterolaterally in sharp tooth; endopod slightly overreaching posterior end of telson proper; exopod slightly longer than endopod, bearing long movable spine mesial to small distolateral tooth.

Eggs oval, 0.4×0.5 mm in diameter.

Size.—Females 4.0–6.1 mm cl., ovigerous females 4.4–6.1 mm cl.; adult males 4.6–5.7 mm cl.

Coloration (Fig. 1).—Body, including pereopods, generally translucent. Anterior 0.60–0.70 of carapace crossed with two thick red and two thin white oblique bands (posterior bands thicker). Antennular flagella banded with red and white. Eyes dark brown. Lateral surfaces of abdomen with two thick longitudinal yellow lines; dorsal yellow line running from first to third somites and then followed by a thin red line running from fifth somite to basal part of telson, ventral yellow line running from second somite to telson and those on fifth somite to telson accompanied with a thin red line on top, a white band also present between the red lines from fifth somite to basal part of telson. Lateral surfaces of pleopods somewhat yellowish. Eggs light green.

Type-locality.—Southeastern Taiwan.

Distribution.—Western Pacific and so far only known from Taiwan, Solomon Islands, and New Caledonia, at depths of 229–373 m on tops of sea mounts.

Etymology.—From the Greek, *elachya*, small, in reference to the small size of the new species for the Pandalidae.

Remarks.—There is no specimen having both the second pereopods intact. A left second pereopod was found in the bottle containing two ovigerous specimens from New Caledonia. Two specimens from Solomon Islands (1 male from stn DW 1854 and 1 female from stn DW 1856) bear a right second pereopod. The number of the carpal articles is 17 in the New Caledonian specimen, 16 in the two specimens from the Solomon Islands. Therefore, it can be safely assumed that the second pereopods are subequal in *Calipandalus elachys*.

The holotype is infested by an unidentified bopyrid attached to the ventral part of the abdomen.

The present discovery of the new species shows the similarity between the deep-sea shrimp fauna of Taiwan and the South Pacific (also see Chan and Crosnier, 1997; Chan, in

press). However, this relationship is likely more apparent than real. As this shrimp was only collected from hard bottoms on tops of sea mounts in the present localities, the current disjunct distribution of this new shrimp probably reflects the scarcity in the samplings on deep-sea hard bottoms throughout the Indo-Pacific. Recent discovery of more specimens of the rare pandalid shrimp *Bitias* from Taiwan and New Caledonia as well as Japan (Chuang *et al.*, in press) further supports such an explanation.

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