Solomon’s Gold Mine: Description or redescription of 24 species of *Caridina* (Crustacea: Decapoda: Atyidae) freshwater shrimps from the Solomon Islands, including 11 new species

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3 urn:lsid:zoobank.org:author:BB110358-4FA2-4F5B-BF3A-B51F69D81AA9
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**Abstract.** Following recent (2014–2017) collections made in the Solomon Islands by the MNHN and the NGO ESSI, we provide a checklist of the species of amphidromous freshwater shrimps of the genus *Caridina* H. Milne Edwards, 1837 from this region. Using morphological as well as molecular data in an integrative taxonomic perspective, we found a total of 24 species, including 11 new for science, that are described or re-described, illustrated and discussed in relation to their habitat and distribution. Newly described species are *Caridina barakoma* sp. nov., *C. choiseul* sp. nov., *C. intermedia* sp. nov., *C. maenea* sp. nov., *C. nana* sp. nov., *C. piokerai* sp. nov., *C. pisuku* sp. nov., *C. paratypus* sp. nov., *C. poarae* sp. nov., *C. sikipozo* sp. nov. and *C. turipi* sp. nov. *Caridina gueryi* Marquet, Keith & Kalfatak, 2009 is re-validated as a species distinct from *C. buehleri* Roux, 1934. Lectotypes are designated for *C. mertoni* Roux, 1911 and *C. papuana* Nobili, 1905. Diagnoses for 6 informative species groups are provided: *C. brevicarpalis* group, *C. gracilirostris* group, *C. nilotica* group, *C. typus* group, *C. serratiostris* group and *C. weberi* group. A map of the species distribution in the Solomon Islands, as well as the phylogenetic relationships between the species and their relatives, are provided.

**Keywords.** Amphidromous shrimp, Pacific Ocean, integrative taxonomy, morphology, 16S.
Introduction

The freshwater shrimp genus *Caridina* H. Milne-Edwards, 1837, comprising 311 species (WoRMS database: http://www.marinespecies.org/aphia.php?p=taxdetails&id=240672 as of March 2020) and mostly present in the Indo-Pacific region, is the most diversified genus of the family Atyidae (De Grave et al. 2015) and an important ecological component in the tropical streams (Covich et al. 1999; Pringle et al. 1993). Their high diversity combined with the lack of informative morphological characters have led to a confused taxonomy (Richard & Clark 2009). Indeed, until recently, their taxonomy was mainly based on morphological characters. Some have been proven highly variable within a species (e.g., rostrum shape and indentation (de Mazancourt et al. 2017b) or coloration) and so taxonomically non-informative, making it difficult to establish good species delimitations (von Rintelen & Cai 2009).

There is thus a need for an integrative and standardized approach to improve the taxonomy of the group, focusing on informative morphological features and using molecular characters (Page et al. 2005; Page & Hughes 2011; de Mazancourt et al. 2017b). In Indo-Pacific islands, amphidromous shrimps have been grouped into six main complexes: (1) *C. nilotica* complex (Johnson 1963; Holthuis 1978; Jalihal et al. 1984; Choy 1991; Richard & Clark 2005; Karge & Klotz 2007), (2) *C. weberi* complex (Richard & Chandran 1994; Cai & Shokita 2006a), (3) *C. gracilirostris* complex (Cai & Ng 2007), (4) *C. typus* complex (Karge & Klotz 2007; Bernardes et al. 2017), (5) *C. serratirostris* complex (Cai & Shokita 2006b), (6) *C. brevicarpalis* complex (Short 2009). Little work has been done to differentiate among the species clustered within these complexes, possibly due to the difficulty and costs associated with genetic analyses and the highly similar morphology of shrimps from different populations.

To illustrate this problem, species of the genus *Caridina* from the Solomon Islands were studied. Before this study, the neighboring islands belonging to the Bismarck and Admiralty archipelagoes in Papua New Guinea (Roux 1934) or those of the Vanuatu archipelago (Keith et al. 2010; de Mazancourt et al. 2017a) were inventoried, but none of the Solomon Islands were surveyed for freshwater shrimps. In order to fill this gap, in the context of the CEPF “Melanesia Hotspot”, an inventory of freshwater fauna was done in the Solomon Islands between 2014 and 2017, supported by the French Ichthyological Society. This archipelago, consisting of six major islands and over 900 smaller islands lies in Oceania to the east of Papua New Guinea and northwest of Vanuatu and covers a land area of 28 400 km². Six islands (Fig. 1) were prospected: Choiseul in October 2014, Malaita in June 2015, Kolombangara in November 2015, Vella Lavella and Ranongga in October 2016 and Isabel in October 2019. We examined all the specimens collected by combining morphological data with a 16S mtDNA analysis.

Material and methods

Collection of specimens

Specimens from the Solomon Islands were collected by electrofishing (portable Dekka 3000 electric device, Germany) (Lamarque et al. 1975). All material was preserved in 75–95% ethanol and has been deposited in the collections of the Muséum national d’histoire naturelle of Paris (MNHN).

Morphological comparison

The rostrum, the general cephalon, the pereiopods 1–3 and 5 and the abdomen were observed using a stereoscopic microscope. The proportions of the various joints of the appendages were measured using microphotographs and the AnalySIS Works software (Olympus). Drawings were made using the “Digital Inking” method (Coleman 2003, 2006) by tracing vectoral paths on high-resolution photographs using Adobe Illustrator.
DNA extraction, amplification and sequencing

DNA was extracted from abdominal tissues using the semi-automatic Eppendorf ep-Motion 5075 robot. Fragments of the mitochondrial 16S rRNA (~ 520 bp) were amplified using newly designed primers, adapted from Palumbi (1996) to our taxa: 16Sar-Lmod (TACTTCTGCCTGTATATCAAAAA) and 16Sbmod (GGTCTGAACTCAAATCATGAAA). DNA amplification was performed in 20 μl PCR reactions, containing approximately 3 ng of template DNA, 2.5 mM MgCl₂, 0.26 mM of each nucleotide, 0.3 μM of each primer, 5% DMSO, 1 ng of BSA and 1.5 units of QBIOTAQ polymerase (MPBiomedicals). Amplification products were generated by an initial denaturation step of 4 min at 94°C followed by 35 cycles of denaturation at 94°C for 30 s, annealing at 52°C for 40 s, extension at 72°C for 60 s and a final extension step at 72°C for 7 min.

PCR products were sequenced using the same primers and in both directions to ensure the accuracy of base calls. Chromatograms were edited using Geneious ver.8 software (http://www.geneious.com; Kearse et al. 2012). All sequences were deposited in GenBank (numbers MT303883 to MT303942).

Molecular analyses

DNA sequences were aligned using MEGA7 software (Kumar et al. 2016) with the Muscle algorithm (Edgar 2004). Using the Bayesian information criterion in jModelTest (Darriba et al. 2012; Guindon & Gascuel 2003) we retained the GTR + G + I model. Best-scoring ML trees were estimated by RAxML HPC2 ver. 8.2.10 (Stamatakis 2014) and best-scoring Bayesian Inference (BI) trees were estimated using MrBayes ver. 3.2.6 (Ronquist & Huelsenbeck 2003), both methods implemented in CIPRES with the previously determined model, running for 10000000 generations, a sampling frequency of 2000 and a burn in of 10%. Support for nodes was determined using posterior probabilities calculated by

![Fig. 1. Distribution of the species studied in the Solomon Islands.](image-url)
MrBayes implemented in the Cyber Infrastructure for Phylogenetic Research (CIPRES) portal v.3.1. (Miller et al. 2010; https://www.phylo.org/). One hundred independent searches, each starting from distinct random trees, were conducted. Robustness of the nodes was assessed using non-parametric bootstrapping (Felsenstein 1985) with 1000 bootstrap replicates. We considered a group to be ‘moderately supported’ if it had a bootstrap support value (B) between 75 and 89%, and Bayesian posterior probabilities (PP) between 0.8 and 0.95, and ‘highly supported’ when B ≥ 90% and PP ≥ 0.95. For the analysis, we included 49 specimens collected during the authors’ field trips to the Solomon Islands to which were added 18 specimens of species occurring in the Solomon Islands collected by the authors from other Indo-Pacific localities. Five sequences were also retrieved from GenBank (Table 1). Two species of Paratya Miers, 1882 were used as outgroups. Three different species delimitation methods were tested on the dataset. First, ABGD (Puillandre et al. 2012) was implemented on the web server https://bioinfo.mnhn.fr/abi/public/abgd/abgdweb.html, for which a pairwise distances matrix was built from the sequence’s alignment using the JC69 Jukes-Cantor model. We used Pmin = 0.001 and Pmax = 0.1 with 10 steps and X = 1.0. A graphical representation of the distribution of the distances showed a barcoding gap between 0.04 and 0.05 divergence. Second, we ran a bPTP analysis (Zhang et al. 2013) from the web server http://species.h-its.org/ptp/ using the ML tree as input. Other parameters were left as default. Finally, we used the GMYC method (Pons et al. 2006) implemented in the web server https://species.h-its.org/gmyc/ using only the single threshold method (phylogeny composed of several species with one coalescent time value), as species studied are phylogenetically close to each other. To run this analysis, an ultrametric tree is required, which was constructed using BEAST ver. 1.10.4 (Suchard et al. 2018). We used a relaxed lognormal clock with a coalescent tree prior, as these have been identified as best prior parameters for GMYC analyses (Esselstyn et al. 2012; Monaghan et al. 2009). Monte Carlo Markov chains (MCMC) ran for 10000000 generations, sampling every 2000 generations. Chain convergence was assessed using Tracer ver. 1.6 (Rambaut et al. 2014). The consensus tree (maximum clade credibility tree; 10% burn in; tree not presented) was constructed with TreeAnnotator ver. 1.10.4 (Drummond & Rambaut 2007).

Institutional abbreviations

HNHM = Hungarian Natural History Museum, Budapest
MNHN = Muséum national d’histoire naturelle, Paris
MZB = Museum Zoologicum Bogoriense, Bogor, Indonesia
NHM = Natural History Museum, London
NMB = Naturhistorisches Museum Basel, Basel
RMNH = Rijksmuseum van Natuurlijke Historie (now in the Naturalis Biodiversity Center, Leiden)
ZMA = Zoological Museum Amsterdam (now in the Naturalis Biodiversity Center, Leiden)
ZMB = Museum für Naturkunde, Berlin
ZRC = Zoological Research Collection, National University of Singapore, Singapore

Abbreviations for morphological analyses

The following abbreviations are used in the present text:

cl = carapace length (mm): measured from the post-orbital margin to the posterior margin of the carapace
ovig. = ovigerous
P1 = first pereiopod
P2 = second pereiopod
P3 = third pereiopod
P5 = fifth pereiopod
Pl1 = first pleopod
Pl2 = second pleopod
Table 1 (continued on next page). List of sequenced specimens.

| Species             | Locality       | DNA voucher | Registration n° | Type status | GenBank n° | Reference                        |
|---------------------|----------------|-------------|-----------------|-------------|------------|----------------------------------|
| *C. appendiculata*  | Kolombangara   | CA1494      | MNHN-IU-2018-135|             | MH497525   | de Mazancourt et al. 2018        |
|                     | Kolombangara   | CA1493      | MNHN-IU-2018-133|             | MH497524   | de Mazancourt et al. 2018        |
| *C. barakoma*       | Choiseul       | CA1364      | MNHN-IU-2014-20807| Paratype   | MT303885   | This study                       |
| sp. nov.            | Kolombangara   | CA1521      | MNHN-IU-2014-20809| Paratype   | MT303884   | This study                       |
|                     | Vella Lavella  | CA1942      | MNHN-IU-2014-20810| Paratype   | MT303883   | This study                       |
|                     | Guadalcanal    |             |                 |             |            |                                  |
|                     |               |             |                 |             |            |                                  |
| *C. brevidactyla*   | Kolombangara   | CA1500      |                 |             | MT303892   | This study                       |
|                     | Choiseul       | CA1345      | MNHN-IU-2018-172|             | MH497518   | de Mazancourt et al. 2018        |
|                     | Vella Lavella  | CA1940      | MNHN-IU-2018-185|             | MH497558   | de Mazancourt et al. 2018        |
| *C. buchleri*       | Vella Lavella  | CA1997      | MNHN-IU-2018-2846|             | MT303913   | This study                       |
|                     | Kolombangara   | CA1520      | MNHN-IU-2015-20  |             | MT303912   | This study                       |
|                     | Papua New Guinea| CA2252     | MNHN-IU-2018-2849|             | MT303915   | This study                       |
|                     | Vanuatu        | CA1014      | MNHN-IU-2015-23  |             | MT303914   | This study                       |
| *C. celebensis*     | Kolombangara   | CA1518      | MNHN-IU-2018-2943|             | MT303941   | This study                       |
|                     | Vanuatu        | CA1381      | MNHN-IU-2018-2946|             | MT303942   | This study                       |
|                     | Indonesia      |             | ZMB-DNA-652     |             | FN995356   | von Rintelen et al. 2012        |
| *C. choiseul*       | Choiseul       | CA1277      | MNHN-IU-2014-20827| Paratype | MT303894   | This study                       |
| sp. nov.            | Choiseul       | CA1285      | MNHN-IU-2014-20830| Paratype   | MT303893   | This study                       |
| *C. gracilirostris* | Kolombangara   | CA1497      | MNHN-IU-2018-2804|             | MT303886   | This study                       |
|                     | Australia      | CA1677      | MNHN-IU-2018-2805|             | MT303887   | This study                       |
|                     | Australia      | CA1681      | MNHN-IU-2018-2807|             | MT303888   | This study                       |
| *C. gueryi*         | Kolombangara   | CA1519      | MNHN-IU-2015-19  |             | KY350244   | de Mazancourt et al. 2017        |
|                     | Indonesia      | CA1161      | ZMB 29002       |             | KY350241   | de Mazancourt et al. 2017        |
|                     | Vanuatu        | CA2428      | MNHN-IU-2015-1769| Paratype   | MT303916   | This study                       |
|                     | Vanuatu        | CA1016      | MNHN-IU-2015-23  |             | KY350239   | de Mazancourt et al. 2017        |
| *C. intermedia*     | Choiseul       | CA1326      | MNHN-IU-2014-20844| Paratype   | MT303895   | This study                       |
| sp. nov.            | Kolombangara   | CA1499      | MNHN-IU-2014-20847| Paratype   | MT303896   | This study                       |
|                     | Vella Lavella  | CA1939      |                 | Paratype    | MT303897   | This study                       |
| *C. maeana*         | Malaita        | CA1509      | MNHN-IU-2018-2888| Holotype    | MT303925   | This study                       |
| sp. nov.            | Vanuatu        | CA1417      | MNHN-IU-2018-2895| Paratype    | MT303926   | This study                       |
| *C. mertoni*        | Malaita        | CA2000      | MNHN-IU-2018-2818|             | MT303898   | This study                       |
|                     | Kolombangara   | CA1505      | MNHN-IU-2017-2109|             | MG707141   | de Mazancourt et al. 2019a       |
|                     | Indonesia      | CA056       | NMB.693a        | Lectotype   | MG707139   | de Mazancourt et al. 2017        |
| *C. nana*           | Vella Lavella  | CA1903      | MNHN-IU-2018-2912| Holotype    | MT303931   | This study                       |
| sp. nov.            | Vella Lavella  | CA1902      | MNHN-IU-2018-2913| Paratype    | MT303930   | This study                       |
| *C. neglecta*       | Choiseul       | CA1310      | MNHN-IU-2018-2808|             | MT303891   | This study                       |
|                     | Vella Lavella  | CA1703      | MNHN-IU-2018-2813|             | MT303889   | This study                       |
|                     | Kolombangara   | CA1938      |                 |             | MT303890   | This study                       |
| *C. papuana*        | Choiseul       | CA1361      | MNHN-IU-2018-2856|             | MT303917   | This study                       |
Table 1. (continued) List of sequenced specimens.

| Species                  | Locality         | DNA voucher | Museum n°          | Type status | GenBank n°          | Reference                          |
|--------------------------|------------------|-------------|--------------------|-------------|---------------------|------------------------------------|
| **C. paratypus sp. nov.**| Choiseul         | CA1286      | MNHN-IU-2018-2862  |             | MT303918            | This study                         |
|                          | Malaita          | CA1999      | MNHN-IU-2018-2925  | Holotype    | MT303934            | This study                         |
|                          | Vanuatu          | CA1371      | MNHN-IU-2018-2926  | Paratype    | MT303935            | This study                         |
| **C. pisuku sp. nov.**    | Choiseul         | CA1930      | MNHN-IU-2018-2904  | Paratype    | MT303928            | This study                         |
|                          | Vella Lavella    | CA1981      | MNHN-IU-2018-2911  | Paratype    | MT303929            | This study                         |
|                          | Choiseul         | CA1282      | MNHN-IU-2014-20866 | Paratype    | MT303899            | This study                         |
|                          | Australia        | CA1685      | MNHN-IU-2014-20874 | Paratype    | MT303901            | This study                         |
|                          | Australia        | CA1699      | MNHN-IU-2014-20875 | Paratype    | MT303902            | This study                         |
| **C. poarae sp. nov.**    | Ranongga         | CA2350      | MNHN-IU-2018-2920  | Holotype    | MT303938            | This study                         |
|                          | Ranongga         | CA2348      | MNHN-IU-2018-2921  | Paratype    | MT303936            | This study                         |
|                          | Ranongga         | CA2349      | MNHN-IU-2018-2922  | Paratype    | MT303937            | This study                         |
| **C. serratirostris**     | Choiseul         | CA1351      | MNHN-IU-2018-2927  |             | MT303939            | This study                         |
|                          | Kolombangara     | CA1523      | MNHN-IU-2018-2931  |             | MT303940            | This study                         |
|                          | Australia        | GUCCS1      |                    |             | DQ478515            | Page et al. 2007                   |
| **C. sikipopo sp. nov.**  | Choiseul         | CA1928      | MNHN-IU-2018-2914  | Holotype    | MT303932            | This study                         |
|                          | Choiseul         | CA2310      | MNHN-IU-2018-2915  | Paratype    | MT303933            | This study                         |
| **C. tapaia**             | Choiseul         | CA1927      | MNHN-IU-2018-2882  |             | MT303924            | This study                         |
|                          | Malaita          | CA1508      | MNHN-IU-2018-2886  |             | MT303923            | This study                         |
|                          | French Polynesia | CA2058      | MNHN-IU-2018-260   | Holotype    | MK204717            | de Mazancourt et al. 2019b        |
| **C. turipi sp. nov.**    | Choiseul         | CA1359      | MNHN-IU-2014-20876 | Holotype    | MT303911            | This study                         |
|                          | Choiseul         | CA1349      | MNHN-IU-2014-20883 | Holotype    | MT303910            | This study                         |
| **C. typus**              | Choiseul         | CA1355      | MNHN-IU-2018-2824  |             | MT303903            | This study                         |
|                          | Choiseul         | CA1356      | MNHN-IU-2018-2825  |             | MT303904            | This study                         |
|                          | Japan            | CA1917      | MNHN-IU-2018-2828  |             | MT303908            | This study                         |
|                          | Madagascar       | CA1038      | MNHN-IU-2018-2829  |             | MT303907            | This study                         |
|                          | Papua New Guinea | CA2278      | MNHN-IU-2018-2836  |             | MT303905            | This study                         |
|                          | South Africa     | CA2090      | MNHN-IU-2018-2844  |             | MT303906            | This study                         |
|                          | New Caledonia    | CA1568      | MNHN-IU-2018-2844  |             | MT303909            | This study                         |
|                          | Sri Lanka        | 2311SL      |                    |             | AY708118            | Bossuyt et al. 2004                |
|                          | Vanuatu          | GUC721      |                    |             | DQ478563            | Page et al., 2007                  |
|                          | Australia        | GUCCY1      |                    |             | DQ478562            | Page et al., 2007                  |
| **C. weberi**             | Kolombangara     | CA1516      | MNHN-IU-2018-2867  |             | MT303920            | This study                         |
|                          | Malaita          | CA1511      | MNHN-IU-2018-2868  |             | MT303919            | This study                         |
|                          | Papua New Guinea | CA2254      | MNHN-IU-2018-2874  |             | MT303922            | This study                         |
|                          | Papua New Guinea | CA2244      | MNHN-IU-2018-2876  |             | MT303921            | This study                         |
| **P. caledonica**         | New Caledonia    | CA1800      |                    |             | MK189918            | de Mazancourt et al. 2019a         |
| **P. compressa**          | Japan            | Pcomp_366   |                    |             | AY661483            | Page et al. 2005                   |
Results

Molecular analyses

The species delimitation methods each yielded a different result: 23 species were recognised by ABGD, 29 by GMYC and 33 by bPTP (Fig. 2). Following an integrative taxonomy, we considered that 24 species could be characterised by both molecular and morphological data.

All of these are highly supported both in ML and BI analyses (PP > 0.99). Species belonging to the *C. serratirostris* complex do not form a monophyletic group, as clade B seems to be a sister group to all the others, excluding clade A. This cluster is, however, poorly supported in the ML analysis (B = 59.8%). Likewise, the *C. typus* complex (clades C and D) does not appear as a monophyletic group due to an unresolved polytomy. However, all the other complexes seem monophyletic, with strong supports.

![Fig. 2. Bayesian inference phylogenetic tree of the species studied. Numbers above branches are Bayesian posterior probabilities, numbers under branches are Maximum Likelihood bootstrap values. Results of the three species delimitation methods are indicated by the black bars on the right of the tree. Each bar represents a species recognized by the analysis.](image-url)
in the BI analysis (PP ranging from 0.96 for the *C. nilotica* complex to 1 for all the others) and low to strong supports in the ML analysis (B ranging from 56% for the *C. weberi* complex to 100% for the *C. brevicarpalis* complex). It is interesting to note that the *C. gracilirostris* complex, *C. brevicarpalis* complex and *C. nilotica* complex are clustered in a moderately to highly supported clade (PP = 1; B = 82.5%).

**Morphological analyses**

Measures and observations made on the specimens allowed us to confirm the molecular results in recognising the clades as 24 different species, including 11 new for science (see hereafter).

**Taxonomy**

**Class Malacostraca** Latreille, 1802  
**Order Decapoda** Latreille, 1802  
**Family Atyidae** De Haan, 1849  
**Genus Caridina** H. Milne Edwards, 1837

**Caridina brevicarpalis** species group

**Diagnosis**

Moderately robust morphology, with a long rostrum (passing end of antennular peduncle), always armed on the dorsal margin, without apical teeth, antennal spine below the suborbital angle, a long antennular peduncle (more than 0.70 times as long as carapace), pterygostomian margin subrectangular, stout legs, the carpus of the first pereiopod often deeply excavated, sixth abdominal somite about half of carapace length, high pre-anal carina bearing a spine, few spinules on the uropodal diaeresis (around 10), few, medium to short and smooth terminal setae on the telson; a subtriangular endopod of the first male pleopod with an appendix on the subdistal outer margin which reaches beyond the distal end of the endopod with most of its length.

**Caridina barakoma** sp. nov.  
urn:lsid:zoobank.org:act:E0FB6A6C-EDA8-4667-81F4-695A9632658D  
Figs 2G, 3

*Caridina brevicarpalis* – Page et al., 2007: 649 (GenBank: DQ478485). — de Mazancourt et al. 2019a: 166, 169–170.

**Etymology**

This new species in named after the village near the type locality. The name is used as an apposition.

**Material examined**

**Holotype**  
SOLOMON ISLANDS • ♂, cl 3.7 mm; Vella Lavella Island, Vala Kadju River; 07°49.860´ S, 156°42.644´ E; 18 m a.s.l.; 28 Oct. 2016; P. Keith and C. Lord leg.; MNHN-IU-2014-20805.

**Paratypes**  
SOLOMON ISLANDS – **Vella Lavella Island** • 1 ♀, cl 2.7 mm; same collection data as for holotype; DNA voucher: CA1942; MNHN-IU-2014-20810. – **Choiseul Island** • 1 ♀ ovig., cl 5.6 mm; Turipi River; 07°00.661´ S, 156°49.075´ E; 50 m a.s.l.; 15 Sep. 2014; P. Keith, G. Marquet and M. Mennesson leg.; MNHN-IU-2014-20806 • 1 ♀ ovig., cl 5.6 mm; Lopakare River downstream; 07°01.834´ S, 156°45.789´ E; 14 m a.s.l.; 21 Sep. 2014; P. Gerbeaux, P. Keith and G. Marquet leg; DNA voucher:
Description

CARIDINA sp., List of Caridina freshwater shrimp species from the Solomon Islands

CA1364; MNHN-IU-2014-20807 • 1 ♀ ovig., cl 5.8 mm; same collection data as for preceding; MNHN-IU-2014-20808. – *Kolombangara Island* • 1 ♀, cl 3.6 mm; Vagé River; 08°05.112’ S, 156°59.867’ E; 10 Nov. 2015; 21 m a.s.l.; P. Keith, C. Lord and G. Marquet leg.; DNA voucher: CA1521; MNHN-IU-2014-20809. – *Isabel Island* • 1 specimen; Suavanao, Rakata River; 15 m a.s.l.; 07.64456° S, 158.71918° E; 27 Oct. 2019; P. Keith, C. Lord, R. Causse and D. Boseto leg.; DNA voucher: CA2511; MNHN • 1 specimen; same collection data as for preceding; DNA voucher: CA2512; MNHN • 1 specimen; same collection data as for preceding; DNA voucher: CA2515; MNHN • 1 specimen; same collection data as for preceding; DNA voucher: CA2516; MNHN.

INDONESIA • 1 ♀ ovig., cl 7.0 mm; West Papua, Kayumera, found in a fish’s gut content; 03°53.525’ S, 134°28.621’ E; 22 Oct. 2010; P. Keith leg.; MNHN-IU-2014-20820.

PAPUA NEW GUINEA – *New Britain Island* • 1 ♀ ovig., cl 5.1 mm; Wara Creek; 05°39.012’ S, 150°39.012’ E; 29 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; MNHN-IU-2014-20811 • 1 ♀ ovig., cl 6.6mm; same collection data as for preceding; MNHN-IU-2014-20812 • 1 ♀, cl 6.1 mm; same collection data as for preceding; MNHN-IU-2014-20813 • 1 ♀ ovig., cl 5.4 mm; Walindi Creek; 05°21.187’ S, 150°02.693’ E; 30 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; MNHN-IU-2014-20814 • 1 ♀ ovig., cl 5.6mm; same collection data as for preceding; MNHN-IU-2014-20815 • 1 ♀ ovig., cl 5.3 mm; Vaavu River; 05°22.584’ S, 150°03.724’ E; 30 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; MNHN-IU-2014-20816 • 1 ♀ ovig., cl 5.9 mm; same collection data as for preceding; MNHN-IU-2014-20817 • 1 ♀ ovig., cl 6.2 mm; Crusher; 05°38.603’ S, 150°10.957’ E; 31 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; MNHN-IU-2014-20818 • 1 ♀ ovig., cl 6.5 mm; same collection data as for preceding; MNHN-IU-2014-20819.

Description

CEPHALOTHORAX. Antennal spine below suborbital angle. Pterygostomian margin sub rectangular. Rostrum (Fig. 3m) long, 0.9–1.2 of cl, passing end of scaphocerite, armed with 12–16 teeth on dorsal margin, without apical teeth, 0–1 of them situated on carapace behind orbital margin, ventral margin with 5–10 teeth. Eyes well developed, anterior end reaching to 0.50–0.60 length of basal segment of antennular peduncle. Antennular peduncle 0.72 (♀) or 0.88 (♂) times as long as carapace. Anterolateral angle reaching 0.20 length of second segment, basal segment of antennular peduncle longer than sum of second and third segment lengths, second segment distinctly longer than third segment. Stylocerite reaching 0.75–0.80 length of basal segment of antennular peduncle.

PEREIOPODS. Epipods on first four pereiopods. P1 (Fig. 3a): chela about 1.9–2.1 times as long as wide, movable finger 2.3–2.9 times as long as wide, 0.7–1.0 times length of palm; carpus 1.1–1.6 times as long as wide. P2 (Fig. 3b) more slender and longer than first pereiopod, with chela 1.8–2.1 times as long as wide: movable finger 3.1–3.8 times as long as wide, 1.2–1.3 times length of palm; carpus stout 2.8–3.7 times as long as wide. P3 (Fig. 3c): stout, very short dactylus (Fig. 3e) 2.1–2.8 times as long as wide (terminal spiniform seta included) with 5–6 spiniform setae on flexor margin including terminal one; short propodus 2.1–2.8 times as long as wide, 4.3–5.4 times as long as dactylus. P5 (Fig. 3d): dactylus (Fig. 3f) very short, 2.0–2.5 as long as wide with 6–17 spiniform setae on flexor margin; propodus 2.0–2.5 times as long as wide, 5.1–9.0 times as long as dactylus.

ABDOMEN. Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite 0.58 times cl, 1.6 times as long as fifth somite, shorter than telson.

TELSON (Fig. 3h). 3.2–3.4 times as long as wide, with four to six pairs of dorsal spinules and one pair of dorsolateral spinules; posterior margin with a median process, it is rounded with 4 intermediate setae shorter than lateral ones.
Fig. 3. *Caridina barakoma* sp. nov. **a.** First pereiopod. **b.** Second pereiopod. **c.** Third pereiopod. **d.** Fifth pereiopod. **e.** Dactylus of third pereiopod. **f.** Dactylus of fifth pereiopod. **g.** Pre-anal carina. **h.** Uropodal diaeresis. **i.** Telson. **j.** First male pleopod. **k.** Second male pleopod. **l.** Eggs. **m.** Cephalothorax. MNHN-IU-2014-20807 (a–i, l–m) and MNHN-IU-2014-20805 (j–k).
MALE PLEOPODS. Pl1 (Fig. 3j): endopod subtriangular, 2.3 times as long as wide, reaching 0.29–0.41 length of exopod, with an appendix on subdistal outer margin which reaches beyond distal end of endopod with most of its length. Pl2 (Fig. 3k): appendix masculina reaching 0.54–0.56 times length of endopod; appendix interna reaching 0.77 of appendix masculina.

PRE-ANAL CARINA (Fig. 3g). High, armed with a spine.

UROPODAL DIAERESIS (Fig. 3h). With 8–10 spinules.

EGGS (Fig. 3l). Size: 0.21–0.25 × 0.37–0.40 mm.

Habitat
In the vegetation at the edge of the rivers in flowing water in the lower course of rivers.

Colour pattern
Unknown.

Distribution
Only collected in the Solomon Islands (Choiseul, Kolombangara, Vella Lavella, Isabel and Guadalcanal).

Remarks
This new species looks like the type specimens of *C. brevicarpalis* and *C. endehensis* both described by De Man (1892), with their very long rostrum, passing the end of the scaphocerite, without apical tooth and its P1 carpus deeply excavated. It can, however, easily be distinguished from *C. brevicarpalis* by its rostrum armed with more teeth on the dorsal margin, 12–16 (vs 11–14 for *C. brevicarpalis*) and on the ventral margin 5–10 teeth (vs 4–7), by its P3 propodus 4.3–5.4 times as long as dactylus (vs 4), by its P5 dactylus with fewer spiniform setae on flexor margin 6–17 (vs 20) and by its P5 propodus 5.1–9.0 times as long as dactylus (vs 5). Egg sizes are smaller, 0.21–0.25 × 0.37–0.40 (vs 0.33 × 0.53 according to Bouvier 1925). From *C. endehensis*, it can easily be separated by its rostrum slightly overreaching the antennal peduncle (vs far overreaching antennal scale for *C. endehensis*), dorsal margin nearly horizontal (vs ascendant in anterior ⅔), armed with 12–16 teeth on posterior ⅗ (vs 9–23 in posterior ⅔), armed ventrally with 5–10 teeth (vs 4–24).

In the litterature on *C. brevicarpalis*, we only find 3 drawings: in De Man (1892), Bouvier (1925) and Edmondson (1935). The latter studied specimens from Viti Levu (Fiji) which seem different from our species by their rostrum armed with 18 teeth on the dorsal margin and 7 on the ventral margin (vs respectively 12–16 and 5–10 in *C. barakoma* sp. nov. and 11–14 and 4–7 in the type specimens of *C. brevicarpalis*). By their uropodal diaeresis, 10–13, it also seems different from our new species (8–10) and the type specimens (8–9 according Bouvier 1925). Fiji is the easternmost limit of the *C. brevicarpalis* complex in the Pacific, as no species of this group occur in Futuna, Samoa or French Polynesia (Keith et al. 2013). In this paper we postulate that the *C. brevicarpalis* group includes several different species allied to *C. brevicarpalis* like *C. barakoma* sp. nov., *C. endehensis* and the Fijian species.

**Caridina gracilirostris** species group

Diagnosis
Slender morphology with a very long and upcurved rostrum (twice the carapace length), armed with few dorsal teeth (fewer than 10), apical teeth present, the antennal spine ventral to the inferior orbital angle, a long antennular peduncle (more than 0.70 times as long as carapace), pterygostomian margin rounded, segments of walking legs slender, a typical dorsal hump over the third abdominal somite, a long sixth
abdominal somite (always more than half of carapace length), a small pre-anal carina bearing or not an acute spine, few spinules on the uropodal diaeresis (>10), very few short terminal setae on the telson, endopod of the first male pleopod subtriangular mostly without an appendix, but when it is present, on the subdistal outer margin, reaches beyond distal end of endopod by a short length.

*Caridina gracilirostris* De Man, 1892
Figs 2E, 4, 25A

*Caridina gracilirostris* De Man, 1892: 399, pl. 25: fig. 31a–d (type locality: several localities, Sulawesi (Celebes) Indonesia).

*Caridina gracilirostris* – Bouvier 1925: 142, figs 305–307. — Blanco 1935: 32, pl. 2, figs 11–17. — de Mazancourt et al. 2019a: 166, 169–170.

Material examined

**Paralectotypes** (lectotype designated by Cai & Ng 2007)
INDONESIA • 2 ♀♂, cl 3.5–3.7 mm, 1 ♀ ovig., cl 5.1 mm; Sulawesi, Balangnipa; Oct.–Nov. 1888; M. Weber leg.; MNHN-IU-2015-1737.

**Other material**
SOLOMON ISLANDS – Kolombangara Island • 1 ♂, cl 3.0 mm; Jack Harbour River; 08°03.085´ S, 157°10.945´ E; 11 m a.s.l.; 11 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; DNA voucher: CA1497; MNHN-IU-2018-2804. – Isabel Island • 1 specimen; Kolopakissa, Zari River; 07°36.314´ S, 158°40.103´ E; ca 0–5 m a.s.l.; 26 Oct. 2019; P. Keith, C. Lord, R. Causse and D. Boseto leg.; DNA voucher: CA2506; MNHN.
AUSTRALIA • 1 ♂, cl 4.2 mm; Queensland, Johnstone River; 17°30.456´ S, 145°59.525´ E; 7 m a.s.l; 11 Jun. 2016; B. Mos leg.; DNA: CA1677; MNHN-IU-2018-2805 • 1 ♀ ovig., cl 5.6 mm; Queensland, Mulgrave River; 17°08.841´ S, 145°52.786´ E; 10 m a.s.l.; 7 Jun. 2016; B. Mos leg.; DNA voucher: CA1681; MNHN-IU-2018-2806 • 1 ♂, cl 4.2 mm; same collection data as for preceding; MNHN-IU-2018-2807.

**Description**

**Cephalothorax.** Antennal spine short, situated below inferior orbital angle. Pterygostomian margin sub-rectangular. Rostrum (Fig. 4m): strongly upturned, very long, 1.3–2.6 of cl, reaching far beyond distal end of scaphocerite, armed with 5–9 teeth on dorsal margin, with 1–2 apical teeth, 0–1 of them situated on carapace behind orbital margin, ventral margin with 21–35 teeth. Eyes well developed, anterior end reaching to 0.54–0.87 length of basal segment of antennular peduncle. Antennular peduncle 0.70 (∙♀) – 0.93 (∙♂) times as long as carapace. Anterolateral angle pointed, reaching to 0.40 length of second segment, second segment distinctly longer than third segment. Stylocerite reaching to 0.72–0.80 length of basal segment of antennular peduncle.

**Pereiopods.** Epipods on first four pereiopods. P1 (Fig. 4a): chela about 1.9–2.9 times as long as wide, movable finger 2.8–4.0 times as long as wide, 0.7–1.3 times length of palm; carpus 1.5–1.9 times as long as wide. P2 (Fig. 4b) more slender and longer than first pereiopod, with chela 2.0–2.5 times as long as wide: movable finger 3.3–4.2 times as long as wide, 1.1–1.8 times length of palm; carpus slender, 3.2–5.1 times as long as wide. P3 (Fig. 4c): dactylus stout (Fig. 4e), 3.3–3.8 times as long as wide (terminal spiniform seta included), with 7–10 spiniform setae on flexor margin in addition to terminal one; propodus 11.7–14.0 times as long as wide, 3.6–4.5 times as long as dactylus. P5 (Fig. 4d): dactylus
Fig. 4. *Caridina gracilirostris* (De Man, 1892). a. First pereiopod. b. Second pereiopod. c. Third pereiopod. d. Fifth pereiopod. e. Dactylus of third pereiopod. f. Dactylus of fifth pereiopod. g. Pre-anal carina. h. Uropodal diaeresis. i. Telson. j. First male pleopod. k. Second male pleopod. l. Eggs. m. Cephalothorax. MNHN-IU-2018-2804 (a–b, d, f–k), MNHN-IU-2018-2805 (c,e,m) and MNHN-IU-2018-2807 (l).
(Fig. 4f) 4.0–4.4 as long as wide, with 26–33 spiniform setae on flexor margin; propodus 14.9–22.4 times as long as wide, 3.8–4.4 times as long as dactylus.

**ABDOMEN.** Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite 0.8 times as long as carapace, 2.0 times as long as fifth somite, as long as telson.

**Telson** (Fig. 4i). Very slender, 4.5 times as long as wide, with four pairs of dorsal spinules and one pair of dorsolateral spinules; posterior margin without a median process; distal setae very stout, lateral pair distinctly longer than intermediate setae (mostly one pair).

**Male pleopods.** P1 (Fig. 4j): endopod subtriangular, 2.1 times as long as wide, 0.21 times as long as exopod, without appendix interna. P2 (Fig. 4k): appendix masculina reaching 0.50 times length of endopod; appendix interna reaching 0.50 of appendix masculina.

**Pre-anal carina** (Fig. 4g). With spine.

**Uropodal diaeresis** (Fig. 4h). With 6–10 spinules.

**Eggs** (Fig. 4l). Size: 0.34–0.43 × 0.19–0.26 mm.

**Habitat**
In the lower course of streams under marine influence, very often in brackish water.

**Colour pattern** (Fig. 25A)
Totally translucent body with a rostrum alternating black and red areas.

**Distribution**
Widely distributed in the tropical and subtropical Indo-Pacific region: Indonesia, the Philippines, India, Australia and the Solomon Islands.

**Remarks**
Our specimens fit well with the description given by Cai & Ng (2007): rostrum very long, reaching far beyond distal end of scaphocerite, strongly upturned, with presence of 0–1 postorbital teeth (vs 0 in Cai & Ng (2007)), 5–9 dorsal teeth (vs 3–9) and 21–35 ventral teeth (vs 28–36); P1 carpus 1.5–1.9 times as long as wide (vs 1.7); P2 carpus 3.2–5.1 times as long as wide (vs 4). P3 dactylus with 7–10 spiniform setae (vs 8), propodus 3.6–4.5 times as long as dactylus (vs 4.0); P5 dactylus with about 26–33 spiniform setae (vs 37) and propodus 3.8–4.4 times as long as dactylus (vs 3.8); uropodal diaeresis 6–10 (vs 5–11); small eggs 0.32–0.43 × 0.19–0.26 mm (vs 0.40 × 0.25 mm); no appendix interna on the endopod of the male first pleopod.

**Caridina neglecta** Cai & Ng, 2007

Figs 2F, 5, 25B

*Caridina neglecta* Cai & Ng, 2007: 1595, figs 4–5 (type locality: Sungai Batang, 13 km on road from Palopo to Wotu, Sulawesi, Indonesia).

**Material examined**

**Holotype**
INDONESIA • ♂, cl 4.3 mm; Sulawesi, Sungai Batang, 13 km on road from Palopo to Wotu; Mar. 1989; M. Kottelat and A. Werner leg.; MZB Cru 1570.
**Paratype**

INDONESIA • 1 ♂, cl 4.4 mm; same collection data as for holotype; ZRC 2007.0096.

**Other material**

SOLOMON ISLANDS – Choiseul Island • 1 ♂, cl 4.5 mm; Lokasereke River; 06°58.024’ S, 156°47.861’ E; 45 m a.s.l.; 13 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; DNA voucher: CA1310; MNHN-IU-2018-2808. – Kolombangara Island • 1 ♀ ovig., cl 4.2 mm; Liva River; 08°03.863’ S, 157°10.633’ E; 18 m a.s.l.; 11 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2019-106 • 1 ♂, cl 3.1 mm; same collection data as for preceding; MNHN-IU-2019-105 • 1 ♀ ovig., cl 5.0 mm; Jack Harbour River; 08°03.085’ S, 157°10.945’ E; 11 m a.s.l.; 11 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2018-2811 • 1 ♀ ovig., cl 4.7 mm; Vanga 2 River; 07°54.825’ S, 156°57.762’ E; 17 m a.s.l.; 18 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2018-2812. – Vella Lavella Island • 1 ♀ ovig., cl 4.9 mm; Vala Kadju River; 07°49.860’ S, 156°42.644’ E; 17 m a.s.l.; 28 Oct. 2016; P. Keith and C. Lord leg.; DNA voucher: CA1703; MNHN-IU-2018-2813 • 1 ♀, cl 4.1 mm; Joroveto River; 07°49.918’ S, 156°42.887’ E; 18 m a.s.l.; 28 Oct. 2016; P. Keith and C. Lord leg.; MNHN-IU-2018-2814.

VANUATU – Santo Island • 1 ♀ ovig., cl 5.6 mm; Sarataka River; 15°30.078’ S, 167°09.261’ E; 25 Jul. 2003; D. Kalfatak, P. Keith and G. Marquet leg.; MNHN-IU-2015-1767. – Isabel Island • 1 specimen; Kolopaki, Fufuna River; 07.64456° S, 158.71918° E; 15 m a.s.l.; 25 Oct. 2019; P. Keith, C. Lord, R. Causse and D. Boseto leg.; DNA voucher: CA2504; MNHN • 1 specimen; same collection data as for preceding; DNA voucher: CA2505; MNHN • 1 specimen; Rakata River confluence; 07.64190° S, 158.71504° E; 27 Oct. 2019; P. Keith, C. Lord, R. Causse and D. Boseto leg.; DNA voucher: CA2513; MNHN.

**Description**

**Cephalothorax.** Antennal spine short, situated below inferior orbital angle. Pterygostomian margin rectangular round. Rostrum (Fig. 5m): strongly upturned, very long, 1.6–2.2 of cl, reaching far beyond distal end of scaphocerite, armed with 5–9 teeth on dorsal margin, with 1–2 apical teeth, non of them situated on carapace behind orbital margin, ventral margin with 21–27 teeth. Eyes well developed, anterior end reaching to 0.7 times length of basal segment of antennular peduncle. Anterolateral angle reaching 0.32 length of second segment, second segment distinctly longer than third segment. Stylocerite reaching to 0.86 length of basal segment of antennular peduncle.

**Pereiopods.** Epipods on first four pereiopods. P1 (Fig. 5a): chela about 2.2–2.5 times as long as wide, movable finger 3.2–4.2 times as long as wide, 1.1–1.5 times length of palm; carpus 2.3–3.1 times as long as wide. P2 (Fig. 5b) more slender and longer than first pereiopod, with chela 2.5–3.1 times as long as wide; movable finger 3.7–4.9 times as long as wide, 1.2–1.6 times length of palm; carpus slender, 5.2–6.4 times as long as wide. P3 (Fig. 5c): stout, dactylus (Fig. 5e) 3.3–4.7 times as long as wide (terminal spiniform setae included), with 5–7 spiniform setae on flexor margin in addition to the terminal one; propodus 11.8–17.3 times as long as wide, 4.1–5.4 times as long as dactylus. P5 (Fig. 5d): dactylus (Fig. 5f) 4.0–5.3 as long as wide, with 31–53 spiniform setae on flexor margin; propodus 12.9–21.1 times as long as wide, 3.7–4.5 times as long as dactylus.

**Abdomen.** Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite 0.80 as long as carapace, 1.76 times as long as fifth somite, slightly shorter than telson.
Fig. 5. *Caridina neglecta* Cai & Ng, 2007. a. First pereiopod. b. Second pereiopod. c. Third pereiopod. d. Fifth pereiopod. e. Dactylus of third pereiopod. f. Dactylus of fifth pereiopod. g. Pre-anal carina. h. Uropodal diaeresis. i. Telson. j. First male pleopod. k. Second male pleopod. l. Eggs. m. Cephalothorax. MNHN-IU-2018-2811 (a–i, l) and MNHN-IU-2018-2808 (j–k, m).
**Telson** (Fig. 5i). 3.4–3.7 times as long as wide, with three or four pairs of dorsal spinules and one pair of dorsolateral spinules; posterior margin with a median process, distal setae short, lateral pair slightly longer than intermediate setae (mostly two pairs).

**Male pleopods.** Pl1 (Fig. 5j): endopod subtriangular, 1.5 times as long as wide, 0.17 times as long as exopod, with an appendix interna, on the subdistal outer margin, which reaches beyond distal end of endopod by a short length. Pl2 (Fig. 5k): appendix masculina reaching 0.57 times length of endopod; appendix interna reaching 0.71 of appendix masculina.

**Pre-anal carina** (Fig. 5g). With a spine.

**Uropodal diaeresis** (Fig. 5h). With 7–10 spinules.

**Eggs** (Fig. 5l). Size: 0.40–0.53 × 0.24–0.30 mm.

**Habitat**

In the lower course of streams, near the estuary.

**Colour pattern** (Fig. 25B)

Totally translucent body with a characteristic red ventral margin on the rostrum.

**Distribution**

This species occurs in Indonesia, the Philippines, the Solomon Islands and Vanuatu.

**Remarks**

Our specimens fit well with the description given by Cai & Ng (2007): rostrum very long, reaching far beyond distal end of scaphocerite, strongly upturned, with presence of 0 postorbital teeth (vs 0 in Cai & Ng (2007)), 5–9 dorsal teeth (vs 4–8) and 21–27 ventral teeth (vs 21–30); P1 carpus 2.3–3.1 times as long as wide (vs 2.3–2.9); P2 carpus 5.2–6.4 times as long as wide (vs 6.2–6.7). P3 dactylus with 5–7 spiniform setae (vs 6), propodus 4.1–5.4 as long as dactylus (vs 4.1–5.1); P5 dactylus with about 31–53 spiniform setae (vs 37–44) and propodus 3.7–4.5 times as long as dactylus (vs 3.7–3.8); uropodal diaeresis 7–10 (vs 9); small eggs 0.40–0.51 × 0.24–0.30 mm (vs 0.40 × 0.25 mm); appendix interna on the endopod of the male first pleopod.

The presence of an appendix interna on the endopod of the male first pleopod (vs no appendix interna) and a longer P1 carpus, 2.3–3.1 times as long as wide (vs 1.5–1.9), and P2 carpus, 5.2–6.4 times as long as wide (vs 3.2–5.1), separates *C. neglecta* from *C. gracilirostris*.

**Caridina nilotica** species group

**Diagnosis**

Slender morphology, with a mostly long rostrum (longer than the antennular peduncle) but variable, the antennal spine ventral to the inferior orbital angle, a long antennular peduncle (subequal to carapace length), segments of walking legs slender, a typical dorsal hump over the third abdominal somite, a long sixth abdominal somite (always more than half of carapace length), a small pre-anal carina sometimes bearing an acute spine, a moderate number of spinules on the uropodal diaeresis (<15), fewer, medium to short and terminal setae on the telson and a subtriangular endopod of the first male pleopod with or without an appendix on the subdistal outer margin or even placed at the distal end. An oblique red band on the cephalothorax is very characteristic.
Caridina appendiculata Jalihal & Shenoy, 1998
Figs 2H, 25C

Caridina appendiculata Jalihal & Shenoy, 1998: 128.

Caridina appendiculata – Klotz, Karge & von Rintelen 2007: 7–9, figs 3 (in part)–4.— de Mazancourt et al. 2018c: 1433–1435, fig.4. — de Mazancourt et al. 2019a: 166, 169–170.

Material examined

SOLOMON ISLANDS – Kolombangara Island • 1 ♂, cl 3.5 mm; Zamba River; 08°05.934´ S, 157°00.830´ E; 0 m a.s.l.; 9 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2018-133 • 1 ♂, cl 3.6 mm; same collection data as for preceding; MNHN-IU-2018-134 • 1 ♀ ovig., cl 4.0 mm; Vanga 2 River; 07°54.825´ S, 156°57.762´ E; 5 m a.s.l.; 18 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; DNA voucher: CA1494; MNHN-IU-2018-135 • 1 ♀ ovig., cl 4.1 mm; same collection data as for preceding; DNA voucher: CA1495; MNHN-IU-2018-136 • 1 ♂, cl 3.3 mm; same collection data as for preceding; MNHN-IU-2018-137. – Isabel Island • 1 specimen; Kia, Hobolito River; 07.62419° S, 158.54004° E; 0–9 m a.s.l.; 24 Oct. 2019; P. Keith, C. Lord, R. Causse and D. Boseto leg.; DNA voucher: CA2502; MNHN.

Remarks

de Mazancourt et al. (2018c) recently redescribed C. appendiculata in detail. This species is known from Australia, Indonesia (Flores, Obira and Sulawesi), Solomon Islands (Kolombangara, Isabel), Micronesia (Pohnpei), Palau and Vanuatu (Aneityum, Efate, Epi and Santo). This species lives in a typical brackish water environment (brackish water pool or lower part of rivers, near the estuary).

Caridina brevidactyla Roux, 1919
Figs 2K, 25D

Caridina nilotica var. brevidactyla J. Roux, 1919: 320–321.

Caridina nilotica var. brevidactyla – J. Roux 1926: 204–206.

Caridina brevidactyla – Cai & Ng 2001: 671, fig. 5.— de Mazancourt et al. 2018c: 1435–1438, fig. 5; 2019a: 166, 169–170.

Not Caridina nilotica var. brachydactyla form peninsularis Edmondson, 1935: 5, fig. 1g–k.

Material examined

SOLOMON ISLANDS – Choiseul Island • 1 ♀, cl 5.3 mm; Gu’ma River; 07°01.764´ S, 156°49.899´ E; 50 m a.s.l.; 17 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2018-168 • 1 ♀ ovig., cl 5.0 mm; Lokasereke River; 06°58.024´ S, 156°47.861´ E; 13 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2018-169 • 1 ♀ ovig., cl 5.1 mm; same collection data as for preceding; MNHN-IU-2018-170 • 1 ♀ ovig., cl 5.7 mm; same collection data as for preceding; MNHN-IU-2018-171 • 1 ♀ ovig., cl 5.8 mm; same collection data as for preceding; DNA voucher: CA1345; MNHN-IU-2018-172 • 1 ♀, cl 4.4 mm; Lopakare River; 07°01.834´ S, 156°45.789´ E; 21 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2018-173 • 1 ♂, cl 3.3 mm; same collection data as for preceding; MNHN-IU-2018-174 • 1 ♀ ovig., cl 5.0 mm; Vorama River; 06°58.687´ S, 156°46.746´ E; 15 m a.s.l.; 11 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2018-175 • 1 ♀ ovig., cl 5.3 mm; same collection data as for preceding; MNHN-IU-2018-176 • 1 ♂, cl 3.1 mm; same collection data as for preceding; MNHN-IU-2018-177. – Kolombangara Island • 1 ♀, cl 4.2 mm; Lodumoe River; 07°50.961´ S, 157°04.320´ E; 16 Nov. 2015; 0 m a.s.l.; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2018-178 • 1 ♀ ovig., cl 4.9 mm; same collection data as for preceding; DNA voucher:
de Mazancourt V. et al., List of Caridina freshwater shrimp species from the Solomon Islands

CA1500; MNHN-IU-2018-179 • 1 ♀ ovig., cl 3.7 mm; Vanga River; 07°54.825´ S, 156°57.762´ E; 18 Nov. 2015; 5 m a.s.l.; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2018-180 • 1 ♀ ovig., cl 3.9 mm; same collection data as for preceding; MNHN-IU-2018-181 • 1 ♂, cl 3.8 mm; same collection data as for preceding; MNHN-IU-2018-182. – Vella Lavella Island • 1 ♀ ovig., cl 4.6 mm; Maravari River; 07°51.703´ S, 156°41.748´ E; 31 Oct. 2016; P. Keith and C. Lord leg.; MNHN-IU-2018-183 • 1 ♂; same collection data as for preceding; MNHN-IU-2018-184 • 1 ♀ ovig., cl 4.0 mm; Wariassi River; 29 Oct. 2016; P. Keith and C. Lord leg.; MNHN-IU-2018-186 • 1 ♂, cl 4.2 mm; same collection data as for preceding; MNHN-IU-2018-187. – Isabel Island • 1 specimen; Kupikolo, Rapa River; 07°28.527´ S 158°17.105´ E; 0–7 m a.s.l.; 23 Oct. 2019; P. Keith, C. Lord, R. Causse and D. Boseto leg.; DNA voucher: CA2500; MNHN • 1 specimen; same collection data as for preceding; DNA voucher: CA2501; MNHN • 1 specimen; Kolopakissa River; 07°35.377´ S, 158°39.854´ E; 40 m a.s.l.; 26 Oct. 2019; P. Keith, C. Lord, R. Causse and D. Boseto leg.; DNA voucher: CA2507; MNHN • 1 specimen; same collection data as for preceding; DNA voucher: CA2508; MNHN • 1 specimen; Rakata River confluence; 07.64190° S, 158.71504° E; 27 Oct. 2019; P. Keith, C. Lord, R. Causse and D. Boseto leg.; DNA voucher: CA2514; MNHN.

Remarks

de Mazancourt et al. (2018c) recently designated a lectotype for C. brevidactyla Roux, 1919 and redescribed it in detail. This species is now known from Indonesia (Aru Island, Halmahera), Papua New Guinea (New Britain), Solomon Islands (Choiseul, Kolombangara, Vella Lavella, Isabel), Vanuatu (Efate, Epi, Malekula and Santo), New Caledonia and Fiji. This species is encountered in the lower part of rivers, sometimes in brackish conditions near the estuary.

Caridina choiseul sp. nov.
urn:lsid:zoobank.org:act:4C3B5DD9-C268-4876-AE84-5FF7CDD01DAE
Figs 2J, 6, 25E

Caridina sp. 2 Solomon – de Mazancourt et al. 2019a: 166, 169–170.

Etymology

Named after the island of Choiseul, where this new species occurs. The name is used as a noun in apposition.

Material examined

Holotype
SOLOMON ISLANDS • ♂, cl 3.9 mm; Choiseul Island, Creek 2; 06°59.027´ S, 156°47.913´ E; 93 m a.s.l.; 14 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2014-20821.

Paratypes
SOLOMON ISLANDS – Choiseul Island • 1 ♀, cl 4.5 mm; same collection data as for holotype; MNHN-IU-2014-20822 • 1 ♂, cl 3.8 mm; Lopakare River; 07°01.613´ S, 156°46.567´ E; 20 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2014-20823 • 1 ♂, cl 4.0 mm; same collection data as for preceding; MNHN-IU-2014-20824 • 1 ♀ ovig., cl 4.5 mm; same collection data as for preceding; MNHN-IU-2014-20825 • 1 ♀ ovig., cl 4.7 mm; same collection data as for preceding; MNHN-IU-2014-20826 • 1 ♀, cl 4.6 mm; same collection data as for preceding; DNA voucher: CA1277; MNHN-IU-2014-20827 • 1 ♀, cl 4.8 mm; same collection data as for preceding; MNHN-IU-2014-20828 • 1 ♂, cl 4.0 mm; Pisuku River, sector 1; 06°58.951´ S, 156°46.582´ E; 15 m a.s.l.; 10 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2014-20829 • 1 ♂, cl 4.1 mm; same collection data as for preceding; DNA voucher: CA1285; MNHN-IU-2014-20830 • 1 ♂, cl 4.7 mm; same collection data as for preceding; MNHN-IU-2014-20831 • 1 ♀ ovig., cl 5.1 mm; same collection data
as for preceding; MNHN-IU-2014-20832 • 1 ♀ ovig., cl 5.5 mm; same collection data as for preceding; MNHN-IU-2014-20833 • 1 ♂, cl 4.2 mm; Pisuku River, sector 2; 06°58.900’ S, 156°46.685’ E; 66 m a.s.l.; 10 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2014-20834 • 1 ♀, cl 5.4 mm; same collection data as for preceding; MNHN-IU-2014-20835 • 1 ♂, 4.2 mm; Pisuku River, upstream; 06°58.965’ S, 156°46.718’ E; 12 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2014-20836 • 1 ♀, cl 4.5 mm; same collection data as for preceding; MNHN-IU-2014-20837 • 1 ♀, cl 4.1 mm; same collection data as for preceding; MNHN-IU-2014-20838 • 1 ♀, cl 5.1 mm; same collection data as for preceding; MNHN-IU-2014-20839.

Comparative material

*Caridina variabilirostris* (de Mazancourt, Marquet & Keith, 2018)
See de Mazancourt et al. (2018a)

*Caridina brachydactyla* (De Man, 1908)
INDONESIA • lectotype (designated by Richard & Clark 2010), ♀ ovig., cl 4.8 mm; Flores Island, river near Reo; Nov. 1888; M. Weber leg.; RMNH Crust D. 977 • 2 paratype, ♀ ♀ ovig., cl 5.3–5.4 mm; Flores Island, river in Mbawa; Jan. 1889; M. Weber leg.; RMNH 2552 • 1 ♂, cl 5.8 mm; Bali Island; NMB 1054a • 2 ♂♂, cl 2.7–3.7 mm, 1 ♀ ovig., cl 4.3 mm, 1 ♂, cl 4.8 mm; Sulawesi, Palopo, Macau (locality code: 63.10); W. Klotz leg.; ZMB • 1 ♀ ovig., cl 4.0 mm; Sulawesi, Palopo, Tojo (locality code: 64.10); W. Klotz leg.; ZMB.

*Caridina elongapoda* (Liang & Yan, 1977)
CHINA • 3 ♂♂, cl 2.8–3.5 mm, 1 ♀, cl 4.2 mm; Hong Kong, Pak Tam Chung and Kai Sai Chau (locality codes 14.11 and 22.09); W. Klotz leg.; ZMB.

MALAYSIA • 1 ♂, cl 4.2 mm, 1 ♀, cl 4.3 mm, 1 ♀ ovig., cl 4.3 mm; Pulau Tioman, Sungai Asah; 24 Jun. 1997; Ng et al. leg.; ZRC 1998.0865.

*Caridina peninsularis* (Kemp, 1918)
MALAYSIA • lectotype (designated by Cai et al. 2007), ♂, cl 3.2 mm; Penang Island, Botanical Garden; Feb. 1916; N. Anandale leg.; MNHN-IU-2015-1749 • 1 paratype, ♀ ovig., cl 5.4 mm; same collection data as for lectotype; MNHN-IU-2015-1750 • 1 paratype, ♀, cl 3.4 mm, 1 paratype, ♀ ovig., cl 5.2 mm, 1 paratype, ♂, cl 3.9 mm; same collection data as for lectotype; NHM 1919.11.1.12-21 (1761124).

SINGAPORE • 1 ♀ ovig., cl 5.1 mm, 1 ♂, cl 4.2 mm; Tanglin [incorrectly spelt Tangtum in NHM register and on label, see Richard & Clark 2014]; 1958; Bedford and Lanchester leg.; NHM 1958.8.7.14–17 (1749569).

*Caridina variabilis* (de Mazancourt, Rogers & Keith, 2018)
See de Mazancourt et al. (2018b).

*Caridina sundanella* (Holthuis, 1978)
INDONESIA • 1 syntype ♂, cl 3.6 mm, 1 syntype, ♀, cl 5.2 mm; Sumba Island, West Sumba, 4 km N of Waimangura, Waikamburu Brook, Station 450; 250 m a.s.l.; 19 Aug. 1949; E. Sutter and A. Bühler leg.; NMB 989a.
Description

CEPHALOTHORAX. Carapace (Fig. 6m) smooth, glabrous, with sharp antennal spine placed at lower orbital angle. Pterygostomial margin subrectangular. Variable length rostrum, 0.5–1.2 of cl, 16–28 dorsal teeth closely set, leaving 0.0–0.35 unarmed distally, 1–4 post-orbital teeth present. 7–12 teeth present on ventral margin extending from proximal end either to tip or with short distal part unarmed. Number of dorsal teeth on rostrum before first ventral tooth 13–19. Eyes well developed, anterior end reaching to 0.72 times length of basal segment of antennular peduncle. Antennular peduncle 0.75 (♀) – 0.88 (♂) times as long as carapace. Anterolateral angle reaching 0.30 length of second segment, second segment distinctly longer than third segment. Stylocerite reaching to 0.83 length of basal segment of antennular peduncle.

PEREIOPODS. Slender P1 (Fig. 6a): chela about 1.8–2.3 times as long as wide, dactylus 3.3–4.8 times as long as wide, 1.3–1.8 length of palm; carpus 1.9–2.4 times as long as wide with shallow excavation on anterior margin. P2 (Fig. 6b) more slender and longer than first pereiopod: chela 2.0–27 times as long as wide, dactylus 3.8–6.3 times as long as wide, 1.3–1.8 times length of palm; carpus 4.6–7.7 times as long as wide. P3 (Fig. 6c): dactylus (Fig. 6e) 2.7–3.8 times as long as wide (terminal spiniform setae included) with 5–6 spiniform setae on flexor margin in addition to terminal one; propodus 13.0–19.6 times as long as wide, 5.0–6.8 times as long as dactylus. P5 (Fig. 6d): dactylus (Fig. 6f) 3.3–4.9 times as long as wide, with 28–41 spiniform setae on flexor margin; propodus 13.6–25.5 times as long as wide, 4.8–6.5 times as long as dactylus.

ABDOMEN. A typical dorsal hump over third abdominal somite. Sixth abdominal somite 0.7 as long as carapace, 1.9 times as long as fifth somite, slightly shorter than telson.

TELSON (Fig. 6i). 2.9–3.2 times as long as wide, with four pairs of dorsal spinules and one pair of dorsolateral spinules; posterior margin with a median process, distal setae short, lateral pair slightly longer than intermediate setae (4–7).

MALE PLEOPODS. Pl1 (Fig. 6j): endopod subtriangular, 2.1 times as long as wide, 0.15 times as long as exopod, with an appendix interna placed at distal end. Pl2 (Fig. 6k): appendix masculina reaching 0.56 times length of endopod; appendix interna reaching 0.70 of appendix masculina.

PRE-ANAL CARINA (Fig. 6g). With a spine or not.

UROPODAL DIAERESIS (Fig. 6h). With 9–14 spinules.

EGGS (Fig. 6l). Size: 0.40–0.45 × 0.24–0.28 mm.

Habitat

This species prefers fresh and well-oxygenated waters. It is found from the lower to the higher course. It is more abundant in the areas situated above waterfalls, where predators are less numerous.

Colour pattern (Fig. 25E)

The colour of the body is hyaline with many red dots.

Distribution

As far as we know, this species is known only from Choiseul Island.
Fig. 6. *Caridina choiseul* sp. nov. **a.** First pereiopod. **b.** Second pereiopod. **c.** Third pereiopod. **d.** Fifth pereiopod. **e.** Dactylus of third pereiopod. **f.** Dactylus of fifth pereiopod. **g.** Pre-anal carina. **h.** Uropodal diaeresis. **i.** Telson. **j.** First male pleopod. **k.** Second male pleopod. **l.** Eggs. **m–n.** Rostrum variations. **o.** Cephalothorax. MNHN-IU-2014-20833 (a–g (top, with spine), h, l), MNHN-IU-2014-20836 (g (bottom, without spine)), MNHN-IU-2014-20831 (i), MNHN-IU-2014-20829 (j–k), MNHN-IU-2014-20827 (m), MNHN-IU-2014-20837 (n) and MNHN-IU-2014-20826 (o).
Remarks

In this new species, rostrum length is variable (cl 0.5–1.2), being longer in the lower course and shorter in the upper course, as recently found by de Mazancourt et al. (2017b) who highlighted the “Pinocchio-shrimp effect” on C. variabilirostris de Mazancourt, Marquet & Keith, 2018 from Pohnpei. When the rostrum is short, the general appearance resembles that of C. mertoni Roux, 1911, whereas when the rostrum is long, the general appearance is similar to that of C. brachydactyla De Man, 1908. Similarly, C. variabilis de Mazancourt, Rogers & Keith, 2018 from Guam and Palau shows a longer or a shorter rostrum depending on the altitude.

Caridina choiseul sp. nov. looks like C. variabilis and C. variabilirostris from Micronesia by the number of teeth and their placement on the rostrum, the proportions between the joints of pereiopods and egg size. However, it can be differentiated by the pre-anal carina that sometimes has a spine (vs always unarmed in C. variabilis and C. variabilirostris) and the P5 dactylus that has more spiniform setae on the flexor margin: 28–41 (vs 13–30 and 18–29, respectively). Caridina choiseul sp. nov. is most similar to C. brachydactyla De Man, 1908 and C. peninsularis Kemp, 1918, but its P2 chela is stouter (2.0–2.7 times as long as wide vs 2.7–3.2 and 2.8–3.0, respectively) and the pre-anal carina which has a spine or not (vs always armed). Caridina choiseul sp. nov. looks like Caridina elongapoda Liang & Yan, 1977, but the pre-anal carina has a spine or not (vs always unarmed) and its P3 dactylus with 5–6 spiniform setae on the flexor margin in addition to the terminal one (vs 6–7). Caridina choiseul sp. nov. looks like C. mertoni Roux, 1911 and C. sundanella Holthuis, 1978, but the pre-anal carina has a spine or not (vs always unarmed) and its rostrum has 7–12 ventral teeth (vs 4–9 and 7–9, respectively).

Caridina intermedia sp. nov.

urn:lsid:zoobank.org:act:7A52CFEB-5BA8-483F-9C70-69958430DF8E

Figs 2I, 7, 25F

Caridina sp. Sol.2 – Page et al. 2007: 649 (GenBank: DQ478545).

Caridina sp. 1 Solomon – de Mazancourt et al. 2019a: 166, 169–170.

Etymology

Caridina intermedia sp. nov. was named for its intermediate morphometry between those of C. brevidactyla and C. grandirostris.

Material examined

Holotype

SOLOMON ISLANDS • ♀, cl 5.4 mm; Choiseul Island, Gu’ma River; 07°01.764´ S, 156°49.899´ E; 50 m a.s.l.; 17 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2014-20840.

Paratypes

SOLOMON ISLANDS – Choiseul Island • 1 ♀ ovig., cl 5.4 mm; Lokasereke River; 06°58.024´ S, 156°47.861´ E; 13 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2014-20841 • 1 ♀ ovig., cl 4.9 mm; same collection data as for preceding; MNHN-IU-2014-20842 • 1 ♂, cl 3.4 mm; same collection data as for preceding; MNHN-IU-2014-20843 • 1 ♂, cl 3.4 mm; Pisuku River, downstream; 06°58.848´ S, 156°46.582´ E; 12 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; DNA voucher: CA1326; MNHN-IU-2014-20844 • 1 ♂, cl 3.5 mm; same collection data as for preceding; MNHN-IU-2014-20845 • 1 ♂, cl 3.7 mm; same collection data as for preceding; MNHN-IU-2014-20846. – Kolombangara Island • 1 ♂, cl 3.5 mm; Poitete River; 07°52.413´ S, 157°07.982´ E; 15 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; DNA voucher: CA1499; MNHN-IU-2014-20847. – Vella Lavella Island • 1 ♂, cl 3.1 mm; Vala Kadju River; 07°49.860´ S, 156°42.644´ E; 28 Oct. 2016; P. Keith and C. Lord leg.; MNHN-IU-2014-20848 • 1 ♀ ovig., cl 3.9 mm; same collection data as for preceding;
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MNHN-IU-2014-20849 • 1 ♂, cl 2.8 mm; Joroveto River; 07°49.918’ S, 156°42.887’ E; 28 Oct. 2016, P. Keith and C. Lord leg.; MNHN-IU-2014-20850 • 1 ♀ ovig., cl 3.9 mm; same collection data as for preceding; MNHN-IU-2014-20851. – Isabel Island • 1 specimen; Rakata River; 15 m a.s.l.; 07.64456° S, 158.71918° E; 27 Oct. 2019; P. Keith, C. Lord, R. Causse and D. Boseto leg.; DNA voucher: CA2509; MNHN • 1 specimen; same collection data as for preceding; DNA voucher: CA2510; MNHN.

Other material
PAPUA NEW GUINEA – New Britain • 1 ♂, cl 4.1 mm; Ore River; 05°43.145° S, 49°34.128° E; 25 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; MNHN-IU-2014-20852 • 1 ♀ ovig., cl 5.7 mm; same collection data as for preceding; MNHN-IU-2014-20853 • 1 ♀ ovig., cl 6.3 mm; same collection data as for preceding; MNHN-IU-2014-20854 • 1 ♀ ovig., cl 5.7 mm; same collection data as for preceding; MNHN-IU-2014-20855 • 1 ♂, cl 4.3 mm; Garu road; 05°27.278° S, 149°58.415° E; 26 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; MNHN-IU-2014-20856 • 1 ♀, cl 4.5 mm; same collection data as for preceding; MNHN-IU-2014-20857 • 1 ♂, cl 4.2 mm; Galuku River; 05°45.187° S, 150°35.001° E; 20 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; MNHN-IU-2014-20858 • 1 ♀ ovig., cl 5.9 mm; same collection data as for preceding; MNHN-IU-2014-20859 • 1 ♀ ovig., cl 5.4 mm; Kokori River; 05°42.650° S, 150°37.693° E; 22 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; MNHN-IU-2014-20860 • 1 ♀ ovig., cl 5.7 mm; Rangihi swamp; 05°34.549° S, 149°28.943° E; 24 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; MNHN-IU-2014-20861.

Comparative material
Caridina longirostris (H. Milne Edwards, 1837)
See de Mazancourt et al. 2018c.

Caridina appendiculata (Jalihal & Shenoy, 1998)
See de Mazancourt et al. 2018c.

Caridina brevidactyla (Roux, 1919)
See de Mazancourt et al. 2018c.

Caridina gracilipes (De Man, 1892)
See de Mazancourt et al. 2018c.

Description
CEPHALOTHORAX. Carapace (Fig. 7m) smooth, glabrous, with sharp antennal spine placed at lower orbital angle. Pterygostomial margin subrectangular. Long rostrum, 1.1–1.8 of cl, curved up distally, reaching well beyond scaphocerite. 16–26 dorsal teeth closely set, leaving 0.4–1.3 unarmed distally except for one or two subapical teeth, 1–3 post-orbital teeth present. 9–20 teeth present of ventral margin, extending from proximal end either to tip or with short distal part unarmed. Number of dorsal teeth on rostrum before first ventral tooth 11–16. Eyes well developed, anterior end reaching to 0.60–0.63 length of basal segment of antennular peduncle. Antennular peduncle 0.69 (♀) – 0.90 (♂) times as long as carapace. Anterolateral angle pointed reaching to 0.37 length of the second segment; second segment distinctly longer than third segment. Stylocerite reaching to 0.83–0.90 length of basal segment of antennular peduncle.

Pereiopods. Slender P1 (Fig. 7a): chela about 2.0–2.4 times as long as wide, dactylus 3.4–4.2 times as long as wide, 1.1–1.5 length of palm; carpus 2.4–3.1 times as long as wide, with shallow excavation on anterior margin. P2 (Fig. 7b) more slender and longer than first pereiopod: chela 2.3–2.9 times as long as wide, dactylus 4.1–5.4 times as long as wide, 1.1–1.6 times length of palm; carpus 5.8–6.7 times as long as wide. P3 (Fig. 7c): dactylus (Fig. 7e) 2.9–4.2 times as long as wide, with 6–7 spiniform setae on flexor margin in addition to terminal one; propodus 15.3–21.7 times as long as wide, 4.4–6.6 times...
Fig. 7. *Caridina intermedia* sp. nov. a. First pereiopod. b. Second pereiopod. c. Third pereiopod. d. Fifth pereiopod. e. Dactylus of third pereiopod. f. Dactylus of fifth pereiopod. g. Pre-anal carina. h. Uropodal diaeresis. i. Telson. j. First male pleopod. k. Second male pleopod. l. Eggs. m. Cephalothorax. MNHN-IU-2014-20842 (a–h, l), MNHN-IU-2014-20843 (i), MNHN-IU-2014-20850 (j–k) and MNHN-IU-2014-20860 (m).
as long as dactylus. P5 (Fig. 7d): dactylus (Fig. 7f) 4.1–5.6 long as wide, with 31–59 spiniform setae on flexor margin; propodus 18.9–27.9 times as long as wide, 4.7–6.1 as long as dactylus.

ABDOMEN. Typical dorsal hump over third abdominal somite, sixth abdominal somite 0.74 as long as carapace, 1.9 times as long as fifth somite, 1.0 times as long as telson.

TELSON (Fig. 7i). 3.8 times as long as wide, with four pairs of dorsal spinules and one pair of dorsolateral spinules; posterior margin with median process, distal setae short, lateral pair slightly longer than intermediate setae (4).

MALE PLEOPODS. Pl1 (Fig. 7j): endopod subtriangular, 2.2 times as long as wide, 0.22 times as long as exopod, with appendix interna placed on subdistal outer margin. Pl2 (Fig. 7k): appendix masculina reaching 0.55 times length of endopod; appendix interna reaching 0.90 of appendix masculina.

PRE-ANAL CARINA (Fig. 7g). With spine.

UROPODAL DIAERESIS (Fig. 7h). With 9–14 spinules.

EGGS (Fig. 7l). Size: 0.33–0.43 × 0.20–0.25 mm.

Habitat

All specimens were collected in a typical brackish water environment (brackish water pool or lower part of rivers, near the estuary). In rivers of Solomon Islands, *C. intermedia* sp. nov. is syntopic with *C. brevidactyla* and *C. appendiculata*.

Colour pattern (Fig. 25F)

The colour of the body is hyaline with many reds dots.

Distribution

*Caridina intermedia* sp. nov. is known from the Solomon Islands (Choiseul, Kolombangara, Vella Lavella and Isabel) and Papua New Guinea (New Britain).

Remarks

*Caridina intermedia* sp. nov. differs from *C. longirostris* by its longer P1 and P2 carpus, respectively 2.4–3.1 (vs 1.4–1.8 in *C. longirostris*) and 5.8–6.7 (vs 4.0–4.2) times as long as wide, a stouter P3 dactylus 2.9–4.2 (vs 4.0–4.8) times as long as wide, with propodus 4.4–6.6 (vs 3.4–4.1) times as long as dactylus, and a stouter P5 propodus, 4.1–5.6 (vs 3.2–3.5) times as long as dactylus. *C. intermedia* sp. nov. has an appendix interna on the endopod of the male first pleopod (vs none).

*Caridina intermedia* sp. nov. differs from *C. appendiculata* by its greater number of teeth on the proximal part of the dorsal margin of the rostrum, 16–26 closely set (vs 12–17 teeth somewhat irregular spaced in *C. appendiculata*), greater number of dorsal teeth before the first ventral teeth 11–16 (vs 8–12) and a slightly greater number of spiniform setae on the dactylus of the fifth pereiopod 31–59 (vs 33–44).

*Caridina intermedia* sp. nov. differs from *C. gracilipes* by its longer P2 carpus, 5.8–6.7 (vs 4.4–5.9 in *C. gracilipes*), by a lower number of spiniform setae on the dactylus of the third pereiopod, 6–7 (vs 9–10), with its more slender P3 propodus, 4.4–6.6 times as long as dactylus (vs 3.8–4.6), and its longer and more slender P5 propodus, 18.9–27.9 times as long as wide (vs 16.2–19.3).

*Caridina intermedia* sp. nov. is similar to *C. grandirostris* and *C. brevidactyla* by its rostrum with a similar number of dorsal teeth, 16–26 (vs 17–21 in *C. grandirostris* and 17–30 in *C. brevidactyla*).
However, even though *C. intermedia* sp. nov. like *C. grandirostris* always has a pre-anal carina with a spine, *C. brevidactyla* never has one. *C. intermedia* sp. nov. can be separated from *C. grandirostris* by its greater P3 dactylus, 2.9–4.2 (vs 2.3–2.9 in *C. grandirostris*), its longer P3 propodus, 15.3–21.7 times as long as wide (vs 13–15), and its longer P5 propodus, 18.9–27.9 times as long as wide (vs 13.4–16.1).

*Caridina mertoni* Roux, 1911

Figs 2L, 8, 25G

*Caridina mertoni* Roux, 1911: 84.

**Material examined**

**Lectotype** (here designated)

INDONESIA • ♂, cl 3.8 mm; Kei Besar Island, Elat; 1908; H. Merton leg.; DNA voucher: CA056; NMB 693a.

**Paralectotypes**

INDONESIA – Kei Besar Island • 1 ♂, cl 2.7 mm, 1 ♀, cl 4.1 mm; same collection data as for lectotype; NMB 693a • 1 ♂, cl 3.8 mm; same collection data as for lectotype; MNHN-IU-2018-1819 • 1 ♂, cl 3.4 mm; same collection data as for lectotype; MNHN-IU-2015-1820 • 1 ♂, cl 3.1 mm, 1 ♀ ovig., cl 4.8 mm; Warka; 1908; H. Merton leg.; NMB 693b • 1 ♀, cl 4.3 mm; Enralang; 1908; H. Merton leg.; NMB 693c.

**Other material**

SOLOMON ISLANDS – Kolombangara Island • 1 ♂, cl 2.9 mm; Manolu River; 08°05.312´ S, 157°00.813´ E; 28 m a.s.l.; 10 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2017-2108 • 1 ♂, cl 3.8 mm; same collection data as for preceding; MNHN-IU-2017-2107 • 1 ♂, cl 3.7 mm; same collection data as for preceding; DNA voucher: CA1505; MNHN-IU-2017-2109 • 1 ♀ ovig., cl 3.9 mm; same collection data as for preceding; MNHN-IU-2018-2815 • 1 ♂, cl 4.0 mm; Sulomunu River; 08°02.253´ S, 157°09.257´ E; 148 m a.s.l.; 12 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2018-2816 • 1 ♀, cl 6.2 mm; same collection data as for preceding; MNHN-IU-2018-2817.

– Malaita Island • 1 ♂, cl 4.5 mm; Tanana River; 09°17.383´ S, 167°07.012´ E; 276 m a.s.l.; 16 Jun. 2015; D. Boseto leg.; DNA voucher: CA2000; MNHN-IU-2018-2818 • 1 ♂, cl 4.6 mm; same collection data as for preceding; MNHN-IU-2018-2819 • 1 ♀, cl 5.6 mm; same collection data as for preceding; MNHN-IU-2018-2820 • 1 ♂, cl 4.4 mm; Wairahuta River; 09°16.967´ S, 161°07.285´ E; 258 m a.s.l.; 17 Jun. 2015; D. Boseto leg.; MNHN-IU-2018-2821 • 1 ♀, cl 5.5 mm; same collection data as for preceding; MNHN-IU-2018-2822 • 1 ♀, cl 5.6 mm; same collection data as for preceding; MNHN-IU-2018-2823.

**Description**

**CEPHALOTHORAX.** Carapace (Fig. 8m) smooth, glabrous, suborbital angle obscure, largely fused with antennal spine angle; pterygostomian margin rectangularly rounded. Rostrum (Fig. 8m–o) straight or slightly curved down, 0.6–1.1 of cl, sometimes slightly inclined distally, reaching as far as distal end of antennular peduncle. 17–24 dorsal teeth closely set, leaving 0.0–0.25 unarmed distally except for one or two subapical teeth, 2–5 post-orbital teeth present. 4–9 teeth present of ventral margin. Number of dorsal teeth on rostrum before first ventral tooth 12–19. Eyes well developed, anterior end reaching to 0.70–0.77 length of basal segment of antennular peduncle. Antennular peduncle 0.64 (♀) – 0.81 (♂) times as long as carapace. Anterolateral angle pointed, reaching to 0.40 length of second segment;
Fig. 8. *Caridina mertoni* Roux, 1911. **a**. First pereiopod. **b**. Second pereiopod. **c**. Third pereiopod. **d**. Fifth pereiopod. **e**. Dactylus of third pereiopod. **f**. Dactylus of fifth pereiopod. **g**. Pre-anal carina. **h**. Uropodal diaeresis. **i**. Telson. **j**. First male pleopod. **k**. Second male pleopod. **l**. Eggs. **m**. Cephalothorax. **n–o**. Rostrum variations. MNHN-IU-2018-2817 (a–f, m), MNHN-IU-2018-2815 (h–i, l), MNHN-IU-2018-2816 (j–k), MNHN-IU-2017-2109 (n) and MNHN-IU-2018-2819 (g, o).
second segment distinctly longer than third segment. Stylocerite reaching to 0.77–0.80 length of basal segment of antennular peduncle.

PEREIOPODS. Slender P1 (Fig. 8a): chela about 1.8–2.1 times as long as wide, dactylus 2.9–4.5 times as long as wide, 1.1–2.0 length of palm; carpus 1.9–2.6 times as long as wide, with shallow excavation on anterior margin. P2 (Fig. 8b): more slender and longer than first pereiopod: chela 1.9–2.5 times as long as wide, dactylus 3.6–5.0 times as long as wide, 1.4–2.1 times length of palm; carpus 4.4–5.6 times as long as wide. P3 (Fig. 8c): dactylus (Fig. 8e) 2.8–3.4 times as long as wide (terminal spiniform setae included), with 5–6 spiniform setae on flexor margin in addition to terminal one; propodus 12.8–18.3 times as long as wide, 4.5–6.7 times as long as dactylus. P5 (Fig. 8d): dactylus (Fig. 8f) 2.6–4.5 times as long as wide, with 27–44 spiniform setae on flexor margin; propodus 15.6–25.1 times as long as wide, 4.8–9.0 times as long as dactylus.

ABDOMEN. Typical dorsal hump over third abdominal somite, sixth abdominal somite 0.71 times as long as carapace, 1.7 times as long as fifth somite, slightly shorter than telson.

TELSON (Fig. 8i), 2.7 times as long as wide, with four pairs of dorsal spinules and one pair of dorsolateral spinules; posterior margin with a median process, distal setae short, lateral pair slightly shorter or longer than intermediate setae (5–8).

MALE PLEOPODS. PI1 (Fig. 8j): endopod subtriangular, 1.6 times as long as wide, 0.20 times as long as exopod, with appendix interna placed at distal end. PI2 (Fig. 8k): appendix masculina reaching 0.54 times length of endopod; appendix interna reaching 0.87 of appendix masculina.

PRE-ANAL CARINA (Fig. 8g). Without spine.

UROPODAL DIAERESIS (Fig. 8h). With 8–14 spinules.

EGGS (Fig. 8l). Size: 0.44–0.49 × 0.24–0.29 mm.

Habitat
This species prefers fresh and well-oxygenated waters. It is found from the middle to the higher course of rivers. They are more abundant in areas situated above waterfalls where predators are less numerous.

Colour pattern (Fig. 25G)
The colour of the body is hyaline with many red dots and oblique red bands.

Distribution
*Caridina mertoni* is known from Indonesia (Grand-Kei island and Waigeo (Roux 1928)) and the Solomon Islands (Kolombangara and Malaita).

Remarks
Our specimens from Solomon Islands look like the type specimens: rostrum with presence of 2–3 postorbital teeth (vs 2–5 in type specimens), 17–24 dorsal teeth (vs 20–23) and 4–9 ventral teeth (vs 4–7); P1 carpus 1.9–2.6 times as long as wide (vs. 2.0–2.5); P2 carpus 4.6–5.6 times as long as wide (vs 4.4–5.1). P3 dactylus with 5–6 spiniform setae (vs 5–6), propodus 4.8–6.7 times as long as dactylus (vs 4.5–5.9); P5 dactylus with about 27–39 spiniform setae (vs 36–44), propodus 18.2–25.1 times as long as width (vs 15.6–21.4) and dactylus 2.6–4.5 times as long as wide (vs 2.8–4.1); number of spinules on uropodal diaeresis 10–13 (vs 8–14); small eggs 0.44–0.49 × 0.28–0.29 (vs 0.44–0.46 × 0.24–0.26 mm). Some values given by Bouvier (1925) are also similar: P3 dactylus with 5–6 spiniform setae (vs 5–6...
according to Bouvier (1925)), P5 dactylus with about 30–35 spiniform setae (vs 27–39), telson with 5 intermediate setae as long as or slightly longer than the lateral pair (vs 2–4 pairs of intermediate setae, lateral pair no longer than intermediate). The type specimens exhibit a shorter rostrum than those collected from Solomon Islands: 0.6–0.8 of cl (vs 0.9–1.1). However, the rostrum length widely used in Caridina taxonomy might not be as reliable as previously thought. It is highly plastic and varies with environmental parameters (de Mazancourt et al. 2017b).

Caridina pisuku sp. nov.
urn:lsid:zoobank.org:act:C2046392-256D-4485-8E85-8E94B9A37FF8
Figs 2M, 9

C. longirostris – Page et al. 2007: 647 (GenBank: DQ478506–DQ478507).
Caridina sp. 3 Solomon – de Mazancourt et al. 2019a: 166, 169–170.

Etymology
Named after the river Pisuku, in Choiseul Island, the type locality where this new species occurs. The name is used as a noun in apposition.

Material examined
Holotype
SOLOMON ISLANDS – Choiseul Island • ♂, cl 3.7 mm; Choiseul Island, Pisuku River, sector 1; 06°58.951´ S, 156°46.582´ E; 15 m a.s.l.; 10 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2014-20862.

Paratypes
SOLOMON ISLANDS • 1 ♂, cl 3.7 mm; same collection data as for holotype; DNA voucher: CA1282; MNHN-IU-2014-20863 • 1 ♀ ovig., cl 5.6 mm; same collection data as for holotype; DNA voucher: CA1347; MNHN-IU-2014-20865 • 1 ♀, cl 4.8 mm; same collection data as for holotype; MNHN-IU-2014-20866 • 1 ♀, cl 5.0 mm; same collection data as for holotype; MNHN-IU-2014-20867 • 1 ♀, cl 5.1 mm; same collection data as for holotype; MNHN-IU-2014-20868 • 1 ♀, cl 5.0 mm; Pisuku River, sector 2; 06°58.900´ S, 156°46.685´ E; 66 m a.s.l.; 10 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2014-20870 • 1 ♀, juvenile, cl 2.2 mm; Pisuku River, downstream; 06°58.848´ S, 156°46.582´ E; 12 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2014-20871.

Other material
AUSTRALIA – Queensland • 1 ♂, cl 4.4 mm; Christian Creek; 17°20.100´ S, 145°55.400´ E; 34 m a.s.l.; 6 Jun. 2016; B. Mos leg.; MNHN-IU-2014-20873 • 1 ♀ ovig., cl 6.7 mm; same collection data as for preceding; DNA voucher: CA1685; MNHN-IU-2014-20874 • 1 ♂, cl 4.6 mm; Gordons Creek; 16°57.967´ S, 145° 43.833´ E; 39 m a.s.l.; 3 Jun. 2016; B. Mos leg.; DNA voucher: CA1699; MNHN-IU-2014-20875.

INDONESIA • tissue only; West Papua, Kayumera; 03°53.286´ S, 134°28.658´ E; 22 Oct. 2010; P. Keith leg.; MNHN-IU-2014-20872.

Comparative material
Caridina variabilirostris (de Mazancourt, Marquet & Keith, 2018)
See de Mazancourt et al. (2018a).
Caridina brachydactyla (De Man, 1908)
INDONESIA • lectotype (designated by Richard & Clark 2010), ♀ ovig., cl 4.8 mm; Flores Island, river near Reo; Nov. 1888; M. Weber leg.; RMNH Crust D. 977 • 2 paralecotypes, ♀ ♀ ovig., cl 5.3–5.4 mm; Flores Island, river in Mbawa; Jan. 1889; M. Weber leg.; RMNH 2552 • 1 ♀, cl 5.8 mm; Bali Island; NMB 1054a • 2 ♂♂, cl 2.7–3.7 mm, 1 ♀ ovig., cl 4.3 mm, 1 ♂, cl 4.8 mm; Sulawesi, Palopo, Macaui (locality code: 63.10); W. Klotz leg.; ZMB • 1 ♀ ovig., cl 4.0 mm; Sulawesi, Palopo, Tojo (locality code: 64.10); W. Klotz leg.; ZMB.

Caridina elongapoda (Liang & Yan, 1977)
CHINA • 3 ♂♂, cl 2.8–3.5 mm, 1 ♀, cl 4.2 mm; Hong Kong, Pak Tam Chung and Kai Sai Chau (locality codes 14.11 and 22.09); W. Klotz leg.; ZMB.

MALAYSIA • 1 ♂, cl 4.2 mm, 1 ♀, cl 4.3 mm, 1 ♀ ovig., cl 4.3 mm; Pulau Tioman, Sungai Asah; 24 Jun. 1997; Ng et al. leg.; ZRC 1998.0865.

Caridina peninsularis (Kemp, 1918)
MALAYSIA • lectotype (designated by Cai et al. 2007), ♂, cl 3.2 mm; Penang Island, Botanical Garden; Feb. 1916; N. Anandale leg.; MNHN-IU-2015-1749 • 1 paralectotype, ♀ ovig., cl 5.4 mm; same collection data as for lectotype; MNHN-IU-2015-1750 • 1 paralectotype, ♂, cl 3.4 mm, 1 paralectotype, ♀ ovig., cl 5.2 mm, 1 paralectotype, ♂, cl 3.9 mm; same collection data as for lectotype; NHM 1919.11.1.12-21 (1761124).

SINGAPORE • 1 ♀ ovig., cl 5.1 mm, 1 ♂, cl 4.2 mm; Tanglin [incorrectly spelt Tangtum in NHM register and on label, see Richard & Clark 2014]; 1958; Bedford and Lanchester leg.; NHM 1958.8.7.14–17 (1749569).

Caridina variabilis (de Mazancourt, Rogers & Keith, 2018)
See de Mazancourt et al. (2018b).

Caridina sundanella (Holthuis, 1978)
INDONESIA • 1 syntype, ♂, cl 3.6 mm, 1 syntype, ♀, cl 5.2 mm; Sumba Island, West Sumba, 4 km N of Waïmangura, Waikamburu Brook, Station 450; 250 m a.s.l.; 19 Aug. 1949; E. Sutter and A. Bühler leg.; NMB 989a.

Description

Cephalothorax. Carapace (Fig. 9m) smooth, glabrous, with sharp antennal spine placed at lower orbital angle. Pterygostomial margin rounded. Antennular peduncle 0.64 (♀) – 0.80 (♂) times as long as carapace. Long rostrum (Fig. 9m–o), 0.8–1.1 of cl, 17–28 dorsal teeth closely set, leaving 0.20–0.80 of length unarmed distally, 1–3 post-orbital teeth present. 6–18 teeth present of ventral margin extending from proximal end either to tip or with short distal part unarmed. Number of dorsal teeth on rostrum behind first ventral tooth 11–21.

Pereiopods. Slender P1 (Fig. 9a): chela about 1.7–2.2 times as long as wide, dactylus 2.6–3.9 times as long as wide, 1.1–1.7 length of palm; carpus 1.4–2.6 times as long as wide with shallow excavation on anterior margin. P2 (Fig. 9b) more slender and longer than first pereiopod: chela 2.2–2.6 times as long as wide, dactylus 3.9–5.2 times as long as wide, 1.2–2.1 times length of palm; carpus 4.8–5.7 times as long as wide. P3 (Fig. 9c): dactylus (Fig. 9e) 3.0–3.4 times as long as wide (terminal spiniform setae included), with 5–7 spiniform setae on flexor margin in addition to terminal one; propodus 10.6–17.9 times as long as wide, 4.1–6.2 times as long as dactylus. P5 (Fig. 9d): dactylus (Fig. 9f) 3.3–5.1 times as long as wide, 22–46 spiniform setae on flexor margin; propodus 18.3–26.2 times as long as wide, 4.9–7.6 times as long as dactylus.
Fig. 9. *Caridina pisuku* sp. nov. a. First pereiopod. b. Second pereiopod. c. Third pereiopod. d. Fifth pereiopod. e. Dactylus of third pereiopod. f. Dactylus of fifth pereiopod. g. Pre-anal carina. h. Uropodal diaeresis. i. Telson. j. First male pleopod. k. Second male pleopod. l. Eggs. m. Cephalothorax. n–o. Rostrum variations. MNHN-IU-2014-20865 (a–f, l), MNHN-IU-2014-20873 (g–h, j–k), MNHN-IU-2014-20864 (m), MNHN-IU-2014-20868 (i, n) and MNHN-IU-2014-20862 (o).
**ABDOMEN.** Typical dorsal hump over third abdominal somite. Sixth abdominal somite 0.64 as long as carapace, 1.6 times as long as fifth somite, slightly shorter than telson.

**Telson** (Fig. 9i). 3.5 times as long as wide, four pairs of dorsal spinules and one pair of dorsolateral spinules; posterior margin with median process, distal setae short, lateral pair slightly longer than intermediate setae (4–5).

**Male pleopods.** Pl1 (Fig. 9j): endopod subtriangular, 2.1 times as long as wide, 0.19 times as long as exopod, with appendix interna placed at distal end. Pl2 (Fig. 9k): appendix masculina reaching 0.60 times length of endopod; appendix interna reaching 0.66 of appendix masculina.

**Pre-anal carina** (Fig. 9g). With spine.

**Uropodal diaeresis** (Fig. 9h). With 10–16 spinules.

**Eggs** (Fig. 9l). Size: 0.36–0.47 × 0.28–0.29mm.

**Habitat**
This species prefers fresh and well-oxygenated waters. It is found only in the lower course of rivers.

**Colour pattern**
Unknown.

**Distribution**
This species was found on Choiseul Island (Solomon Islands), Indonesia (West Papua) and Australia (Queensland).

**Remarks**
*Caridina pisuku* sp. nov. looks like *C. variabilis* and *C. variabilirostris* from Micronesia by the number of teeth and their placement on the rostrum, the proportions between the joints of pereiopods and egg size. However, it can be distinguished by the presence of a spine on the pre-anal carina (vs the pre-anal carina always unarmed in *C. variabilis* and *C. variabilirostris*).

*Caridina pisuku* sp. nov. is most similar to *C. brachydactyla* De Man, 1908, *C. elongapoda* Liang & Yan, 1977, *C. mertoni* Roux, 1911, *C. peninsularis* Kemp, 1918 and *C. sundanella* Holthuis, 1978. In contrast to *C. elongapoda*, *C. mertoni* and *C. sundanella*, our new species has a spine on the pre-anal carina, like in *C. brachydactyla* and *C. peninsularis*, but its P2 chela is stouter 2.2–2.6 times as long as wide (vs 2.7–3.2 and 2.8–3.0, respectively).

*Caridina pisuku* sp. nov. looks like *C. choiseul* sp. nov. by the number of teeth and their placement on the rostrum, the proportions between the joints of pereiopods, and the size of the eggs. However, the pre-anal carina always has a spine (vs the pre-anal with a spine or not in *C. choiseul* sp. nov.) and the pterygostomial margin is rounded (vs subrectangular).

**Caridina typus** species group

**Diagnosis**
Robust morphology with a straight rostrum, armed or not on the dorsal margin, without apical teeth, antennal spine fused with inferior orbital angle, antennular peduncle equal or more than half of carapace in length, pterygostomian margin blunt to rather narrowly rounded, stout walking legs, carpus of first
pereiopod excavated, short sixth abdominal somite (less than half of carapace length), high pre-anal carina with no spine or a small one, a great number of spinules on the uropodal diaeresis (>15), plumose terminal setae on the telson subequal to lateral ones or slightly longer, and a long subrectangular endopod of the first male pleopod with a short appendix on the subdistal outer margin.

**Caridina typus** H. Milne Edwards, 1837
Figs 2D, 10

*Caridina typus* H. Milne Edwards, 1837: 363, pl. 25, figs 4–5 (type locality: Mauritius).

*Caridina exilirostris* Stimpson, 1860: 98 (type locality: Okinawa (Loo Choo) Island, Ryukyu Islands, Japan).

*Caridina typus* f. typica Bouvier, 1925: 249–253, figs 271–297.

*Caridina typus* f. caledonica Bouvier, 1925: 253, figs 296–297 (type locality: New Caledonia).

*Caridina typus* – Richters 1880: 162, pl. 17, fig. 23. — De Man 1892: 367, pl. 21, fig. 22. — Holthuis 1965: 10–11, fig. 3. — Bossuyt *et al.* 2004: 480 (GenBank: AY708118). — Cai *et al.* 2006: 412–418, figs 13–15 (partim).— Page *et al.* 2007: 648–650 (Genbank: DQ478558– DQ478563). — de Mazancourt *et al.* 2019a: 166, 169–170.

**Material examined**

**SOLOMON ISLANDS – Choiseul Island** • 1 ♀, cl 3.8 mm; Creek 1; 06°59.085´ S, 156°47.454´ E; 132 m a.s.l.; 14 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; DNA voucher: CA1355; MNHN-IU-2018-2824 • 1 ♀, cl 4.0 mm; same collection data as for preceding; DNA voucher: CA1356; MNHN-IU-2018-2825. – **Kolombangara Island** • 1 ♂, cl 3.9 mm; Sulumuni River; 08°02.253´ S, 157°09.257´ E; 148 m a.s.l.; 12 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2018-2826.

**FEDERATED STATES OF MICRONESIA** • 1 ♀, cl 3.6 mm; Pohnpei Island, Nanpil River, estuary; 06°56.683´ N, 158°12.550´ E; 5 m a.s.l.; 13 Mar. 2012; M. Castelin, P. Gerbeaux, P. Keith, G. Marquet and L. Taillebois leg.; MNHN-IU-2018-2837 • 1 ♀ ovig., cl 3.9 mm; same collection data as for preceding; MNHN-IU-2018-2838.

**JAPAN** • 1 ♀, cl 6.3 mm; Shikoku, Mugi, irrigation canal; 33°40.796´ N, 134°26.024´ E; 317 m a.s.l.; 16 Jun. 2017; M. Saito leg.; MNHN-IU-2018-2827 • 1 ♀, cl 6.7 mm; same collection data as for preceding; DNA voucher: CA1917; MNHN-IU-2018-2828.

**MADAGASCAR** • 1 ♀, cl 4.5 mm; Antsatoko River; 13°36.660´ S, 50°00.341´ E; 29 m a.s.l.; 6 Jul. 2008; C. Ellien, E. Feunteun, N. Mary and T. Robinet leg.; DNA voucher: CA1038; MNHN-IU-2018-2829 • 1 ♀ ovig., cl 6.9 mm; same collection data as for preceding; MNHN-IU-2018-2830 • 1 ♀ ovig., cl 7.1 mm; same collection data as for preceding; MNHN-IU-2018-2831.

**MALAYSIA** • 3 ♂♂, cl 8.0–8.5 mm; Pulau Langkavi, Sungai datai; 15 Mar. 2008; Schubart, Klaus and Koiler leg.; ZMB 28490.

**NEW CALEDONIA** • 1 ♀ ovig., cl 6.8 mm; Pirogues River; 22°11.208´ S, 166°43.292´ E; 102 m a.s.l.; 10 Nov. 2016; G. Marquet, P. Tiberghien and V. de Mazancourt leg.; MNHN-IU-2018-2832 • 1 ♀, cl 4.9 mm; Natoré River; 22°03.597´ S, 166°53.983´ E; 12 Nov. 2016; 5 m a.s.l.; G. Marquet, P. Tiberghien and V. de Mazancourt leg.; MNHN-IU-2018-2833.

**PALAU** • 1 ♀, cl 4.7 mm; Babeldaob Island, Ngerchokl River; 07°36.527´ N, 134°36.958´ E; 36 m a.s.l.; 27 Feb. 2011; M. Castelin, P. Gerbeaux, P. Keith, G. Marquet and L. Taillebois leg.; MNHN-
IU-2018-2839 • 1 ♀ ovig., cl 4.4 mm; same collection data as for preceding; MNHN-IU-2018-2840 • 1 ♀ ovig., cl 4.6 mm; same collection data as for preceding; MNHN-IU-2018-2841.

PAPUA NEW GUINEA – New Britain • 1 ♀ ovig., cl 8.7 mm; Walindi River; 05°21.187’ S, 150°02.699’ E; 30 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; MNHN-IU-2018-2834 • 1 ♀ ovig., cl 5.8 mm; Rangihí swamp; 05°34.549’ S, 149°928.943’ E; 24 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; MNHN-IU-2018-2835 • 1 ♀ ovig., cl 6.4 mm; same collection data as for preceding; DNA voucher: CA2278; MNHN-IU-2018-2836.

SEYCHELLES • 1 ♀, cl 9.2 mm; Praslin Island, Nouvelle Découverte River; 04°19.200´ S, 55°42.333´ E; 16 m a.s.l.; 8 Oct. 2003; P. Bosc, H. Grondin, P. Keith and P. Valade leg.; MNHN-IU-2014-577.

SOUTH AFRICA • 1 ♀ ovig., cl 10.1mm; Umtata River; 31°55.511´ S, 29°08.199´ E; 2 m a.s.l.; 13 Feb. 2018; L. Maliwa, M. Mlambo, G. Marquet and P. Tiberghien leg.; MNHN-IU-2018-2843 • 1 ♂, cl 5.7 mm; Mpenjati River; 30°56.645´ S, 030°13.660´ E; 93 m a.s.l.; 15 Feb. 2018; P. Kubheka, N. McClurg, T. McClurg, L. Maliwa, M. Mlambo, G. Marquet and P. Tiberghien leg.; DNA voucher: CA2090; MNHN-IU-2018-2844.

VANUATU • 1 ♂, cl 3.9 mm; Epi Island, Buavinai River; 16°48.189´ S, 168°11.084´ E; 45 m a.s.l.; 27 Oct. 2014; A. Acou, D. Kalfatak, G. Marquet and M. Mennesson leg.; MNHN-IU-2018-2842.

**Description**

**Cephalothorax.** Suborbital angle indistinguishably fused with antennal spine. Pterygo stomian margin subrectangular. Rostrum (Fig. 10m): short, 0.3–0.6 of cl, reaching from end of basal segment to end of third segment of antennular peduncle, unarmed dorsally, ventral margin with 0–4 teeth. Eyes well developed. Prominent antennular keel. Antennular peduncle slender, 0.42 (♀) – 0.54 (♂) times as long as carapace. Basal segment 0.50–0.54 times as long as length of antennular peduncle, second segment 1.42–1.50 times as long as third. Stylocerite reaching 0.70–0.80 length of basal segment of antennular peduncle.

**Pereiopods.** Epipods on first four pereiopods. P1 (Fig. 10a): chela about 1.9–2.7 times as long as wide, movable finger 1.9–3.9 times as long as wide, 0.6–1.3 times length of palm; carpus 1.0–2.2 times as long as wide. P2 (Fig. 10b) more slender and longer than first pereiopod, with chela 2.4–3.3 times as long as wide: movable finger 3.8–5.4 times as long as wide, 1.3–1.8 times length of palm; carpus slender, 5.0–6.5 times as long as wide. P3 (Fig. 10c): stout, dactylus (Fig. 10e) 2.5–3.4 times as long as wide (terminal spiniform seta included), with 5–7 spiniform setae on flexor margin in addition to terminal one; propodus 7.9–10.0 times as long as wide, 3.6–4.6 times as long as dactylus. P5 (Fig. 10d): dactylus (Fig. 10f) 3.2–5.1 as long as wide, with 33–81 spiniform setae on flexor margin; propodus 10.4–16.9 times as long as wide, 3.2–5.7 times as long as dactylus.

**Abdomen.** Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite 0.43–0.48 times as long as carapace, 1.4 times as long as fifth somite, shorter than telson.

**Telson (Fig. 10i).** 2.8 times as long as wide, with four to six pairs of dorsal spinules and one pair of dorsolateral spinules; posterior margin with median process, rounded with 5–9 plumose intermediate setae subequal to lateral ones or slightly longer.

**Male pleopods.** P11 (Fig. 10j): endopod subrectangular, 3.6 times as long as wide, 0.44 times as long as exopod, with appendix interna, on subdistal outer margin, which reaches beyond distal end of endopod on a short length. P12 (Fig. 10k): appendix masculina elongated, reaching 0.59–0.76 times length of endopod; appendix interna reaching about 0.46–0.65 times appendix masculina length.
Fig. 10. *Caridina typus* H. Milne Edwards, 1837. a. First pereiopod. b. Second pereiopod. c. Third pereiopod. d. Fifth pereiopod. e. Dactylus of third pereiopod. f. Dactylus of fifth pereiopod. g. Pre-anal carina. h. Uropodal diaeresis. i. Telson. j. First male pleopod. k. Second male pleopod. l. Eggs. m. Cephalothorax. MNHN-IU-2018-2825 (a–c, e, h), MNHN-IU-2018-2842 (d, f), MNHN-IU-2018-2826 (g, j–k), MNHN-IU-2018-2833 (i), MNHN-IU-2018-2832 (l) and MNHN-IU-2018-2824 (m).
PRE-ANAL CARINA (Fig. 10g). High, unarmed.

UROPODAL DIAERESIS (Fig. 10h). With 15–22 spinules.

EGGS (Fig. 10l). Size: 0.38–0.54 × 0.23–0.32 mm.

Habitat
This species is found from the lower to higher course of rivers (5–317 m). It can be found in areas where the current speed is low, rich in vegetation debris, as well as in zones where the current is strong.

Colour pattern
The colour of the body can vary from pink-orange to blackish brown, sometimes with a brown to white stripe on the back.

Distribution
*Caridina typus*, the type species of the genus, has a very wide distribution in the Indo-West Pacific area, ranging from South Africa, Madagascar and the Seychelles to Japan, Malaysia, Philippines, Australia, Micronesia (Pohnpei), Papua New Guinea, Solomon Islands, New Caledonia, Vanuatu and Fiji. In contrast to what Holthuis (1965) and Chace (1997) stated, *C. typus* does not occur in Polynesia, but a species allied to *C. jeani* Cai, 2010 (see below).

Remarks
According to Chace (1997) and Cai *et al.* (2006) the type locality of *C. typus* is unknown. Bouvier (1925) ensures that type specimens have been caught on Mauritius Island but were lost following a move in 1918 caused by bombardments of Paris.

Our specimens fit well with the descriptions of this species occurring in Japan by Cai *et al.* (2006) by its short rostrum reaching near the end to the third segment of the antennular peduncle (vs to end of second segment of antennular peduncle according to Cai *et al.* (2006)), unarmed dorsally and armed ventrally, with 0–4 teeth (vs 1–4). P1 carpus 1.0–2.2 (vs. 1.6); P2 carpus 5.0–6.5 (vs 5.0–6.2). P3 dactylus with 5–7 spiniform setae (vs 5–7), propodus 3.6–4.6 as long as dactylus (vs 3.7–4.4); P5 dactylus with about 33–81 spiniform setae (vs 60–77), propodus 10.4–16.9 times long as width (vs 11–14) and propodus 3.2–5.7 times as long as dactylus (vs 3.3–3.7); P11 endopod elongate, with distinct appendix interna near distal end of endopod; pre-anal carina lacking spine; telson terminating in posteromedian projection, lateral pair subequal (vs subequal). Uropodal diariesis 15–22 (vs 19–24). Egg sizes 0.38–0.54 × 0.23–0.32 (vs 0.45–0.48 × 0.23–0.26).

*Caridina turipi* sp. nov.

urn:lsid:zoobank.org:act:9DB3C416-1B20-4CF4-A3D2-CDC36AA8309C

Figs 2C, 11

*Caridina cf. weberi* sp. 1 – de Mazancourt *et al.* 2019a: 166, 169–170.

Etymology
Named after the river Turipi, in Choiseul Island, the type locality where this new species occurs. The name is used as a noun in apposition.

Material examined

**Holotype**

SOLOMON ISLANDS • ♀, cl 5.9 mm; Choiseul Island, Turipi River; 07°00.661´ S, 156°49.075´ E; 51 m a.s.l.; 15 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; DNA voucher: CA1359; MNHN-IU-2014-20876.
Paratypes
SOLOMON ISLANDS – Choiseul Island • 1 ♀ ovig., cl 4.9 mm; same collection data as for holotype; MNHN-IU-2014-20877 • 1 ♀ ovig., cl 5.2 mm; same collection data as for holotype; MNHN-IU-2014-20878 • 1 ♀ ovig., cl 5.4 mm; same collection data as for holotype; MNHN-IU-2014-20879 • 1 ♀ ovig., cl 5.6 mm; same collection data as for holotype; MNHN-IU-2014-20880 • 1 ♀ ovig., cl 5.7 mm; same collection data as for holotype; MNHN-IU-2014-20881 • 1 ♀ ovig., cl 4.6 mm; Vorama River; MNHN-IU-2014-20882 • 1 ♀ ovig., cl 5.5 mm; 06°58.687´ S, 156°46.745´ E; 15 m a.s.l.; 11 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; DNA voucher: CA1349; MNHN-IU-2014-20883 • 1 ♀ ovig., cl 6.3 mm; Creek 2; 06°59.027´ S, 156°47.913´ E; 132 m a.s.l.; 14 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2014-20884.

Comparative material
*Caridina sumatrensis* (De Man, 1892)
INDONESIA • 1 syntype, ♀, cl 4.9 mm; Sumatra, Batak land, near Deli; Dec. 1890; C. Moesch leg.; MNHN-IU-2015-1758 • 1 ♀ ovig., cl 5.1 mm; Java; NMB 6.II.b.

THAILAND • 1 ♀ ovig., cl 4.8 mm; "Siam"; 1884; Harmand leg.; MNHN-IU-2015-1759.

VIETNAM • 1 ♀, cl 4.0 mm, 1 ♀ ovig., cl 4.0 mm; Conchinchina, forest ponds; Jul. 1884; Harmand leg.; MNHN-IU-2015-1760.

Description
**Cephalothorax.** Suborbital angle indistinguishably fused with antennal spine. Pterygostomian margin rounded. Rostrum (Fig. 11k): straight, short, 0.4–0.5 of cl, reaching to end of second segment of antennular peduncle, armed with 11–15 teeth on dorsal margin, 2–4 of them situated on carapace behind orbital margin, ventral margin with 2–4 teeth. Eyes well developed, anterior end reaching to 0.76 length of basal segment of antennular peduncle. Antennular peduncle 0.37–0.50 times as long as carapace. Anterolateral angle reaching 0.36 length of second segment, second segment longer than third segment. Stylocerite reaching to 0.86 length of basal segment of antennular peduncle.

**Pereiopods.** Epipods on first four pereiopods. P1 (Fig. 11a): chela about 1.9–2.1 times as long as wide, movable finger 2.6–3.0 times as long as wide, 0.9–1.0 times length of palm; carpus 1.5–1.8 times as long as wide. P2 (Fig. 11b) more slender and longer than first pereiopod, with chela 2.6–3.1 times as long as wide: movable finger 4.6–4.9 times as long as wide, 1.5–2.1 times length of palm; carpus slender, 5.5–6.6 times as long as wide. P3 (Fig. 11c): stout, dactylus (Fig. 11e) 3.0–3.3 times as long as wide (terminal spiniform seta included) with 5–6 spiniform setae on flexor margin in addition to terminal one; propodus 8.8–10.5 times as long as wide, 4.1–4.7 times as long as dactylus. P5 (Fig. 11d): dactylus (Fig. 11f) 3.3–4.5 as long as wide, with 37–46 spiniform setae on flexor margin; propodus 13.5–15.3 times as long as wide, 4.1–5.2 times as long as dactylus.

**Abdomen.** Third abdominal somite with moderarely convex dorsal profile. Sixth abdominal somite 0.43 times as long as carapace, 1.3 times as long as fifth somite, slightly shorter than telson.

**Telson** (Fig. 11i). 2.3 times as long as wide, with four or five pairs of dorsal spinules and pair of dorsolateral spinules; posterior margin without median process, rounded, with 4–7 long intermediate setae longer than lateral ones.

**Male pleopods.** No males.

**Pre-anal carina** (Fig. 11g). High, unarmed.
Fig. 11. *Caridina turipi* sp. nov. **a.** First pereiopod. **b.** Second pereiopod. **c.** Third pereiopod. **d.** Fifth pereiopod. **e.** Dactylus of third pereiopod. **f.** Dactylus of fifth pereiopod. **g.** Pre-anal carina. **h.** Uropodal diaeresis. **i.** Telson. **j.** Eggs. **k.** Cephalothorax. MNHN-IU-2014-20883 (a–f, h, j–k), MNHN-IU-2014-20882 (g) and MNHN-IU-2014-20878 (i).
UROPODAL DIAERESIS (Fig. 11h). With 17–21 spinules.

EGGS (Fig. 11j). Size: 0.35–0.44 × 0.21–0.25 mm.

Habitat
This species is largely rheophile and prefers fresh and well-oxygenated waters from the lower to the higher course of rivers.

Colour pattern
Unknown.

Distribution
As far as we know, this species occurs only in Choiseul Island.

Remarks
This new species looks like *C. sumatrensis* De Man, 1892 by its number of dorsal teeth on the rostrum situated on carapace behind orbital margin 2–4 (vs 2–6 in *C. sumatrensis*) and the proportions between the joints of pereiopods like P1 carpus 1.5–1.8 as long as wide (vs 1.6–2.0), P2 carpus 5.5–6.6 as long as wide (vs 5.2–6.4), P3 dactylus 3.0–3.3 as long as wide (vs 2.7–3.7), P5 dactylus 3.3–4.5 times as long as wide (vs 3.2–3.4). However, it differs by its rostrum that has fewer teeth the on dorsal margin, 11–15 (vs 15–22), as well as on its on the ventral margin, 2–4 (vs 2–7), its P1 chela is shorter, 1.9–2.1 times as long as wide (vs 2.0–2.4) and its P5 dactylus has more spiniform setae on the flexor margin, 37–46 (vs 36).

In contrast to previous definitions (Karge & Klotz, 2007), we consider that the *C. typus* group is not characterized by the absence of dorsal teeth on the rostrum. Bouvier (1925) includes many species with an armed rostrum in his “groupe du *C. typus*”; however, we consider some of them to be part of the *C. weberi* species group (see below).

According to our study, the length of setae on the telson (namely plumose terminal setae on the telson subequal to lateral ones or slightly longer) is a better criteria to characterize this group that agree with our molecular results (see de Mazancourt et al. 2019a where it appears as a monophyletic group). We thus consider some species like *C. turipi* or *C. sumatrensis* that have numerous dorsal teeth to be part of the *C. typus* group.

*Caridina weberi* species group

Diagnosis
Robust morphology with a straight or bent rostrum, armed or not on the dorsal margin, without apical teeth, the antennal spine fused with the inferior orbital angle, antennular peduncle equal to or more than half of carapace in length, pterygostomian margin rounded, stout walking leg segments, the carpus of the first pereiopod often deeply excavated, a short sixth abdominal somite (around half of carapace length), a high pre-anal carina with no spine or a small one, a great number of spinules on the uropodal diaeresis (>15), long and plumose terminal setae on the telson clearly longer than lateral ones, and a long subrectangular endopod of the first male pleopod with a short appendix on the subdistal outer margin.

*Caridina buehleri* Roux, 1934
Figs 2W, 12, 26A

*Caridina buehleri* Roux, 1934: 219, figs 1–5 (type locality: Bimoun, New Ireland west coast, Papua New Guinea).

*Caridina buehleri* – de Mazancourt et al. 2019a: 166, 169–170.
Material examined

**Holotype**
PAPUA NEW GUINEA • ♀, cl 7 mm; New Ireland, Bimoun; F. Speiser, H. Hediger and A. Bühler leg.; NMB 822.

**Other material**

SOLOMON ISLANDS – Kolombangara Island • 1 ♀ ovig., cl 3.8 mm; Liva River; 08°03.863’ S, 157°10.633’ E; 11 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2015-18 • 1 ♀ ovig., cl 4.1 mm; Pipiro River; 07°53.083’ S, 157°08.195’ E; 13 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; DNA voucher: CA1520; MNHN-IU-2015-20 • 1 ♀ ovig., cl 4.5 mm; Vanga 2 River; 07°54.825’ S, 156°57.762’ E; 18 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2015–22 • 1 ♀ ovig., cl 2.8 mm; same collection data as for preceding; MNHN-IU-2016-5725 • 1 ♀ ovig., cl 4.5 mm; Vanga 1 River; 07°55.088’ S, 156°57.624’ E; 18 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2016-5726 • 1 ♀ ovig., cl 4.1 mm; Liva River; 08°03.863’ S, 157°10.633’ E; 11 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2015-28 • 1 ♀ ovig., cl 3.9 mm; Pipiro River; 07°53.083’ S, 155°10.633’ E; 13 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2015-20 • 1 ♀ ovig., cl 4.1 mm; Liva River; 08°03.863’ S, 157°10.633’ E; 11 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2015-22 • 1 ♀ ovig., cl 4.5 mm; Vanga 2 River; 07°54.825’ S, 156°57.762’ E; 18 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2015-24 • 1 ♀ ovig., cl 4.5 mm; Vanga 1 River; 07°55.088’ S, 156°57.624’ E; 18 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2015-25 • 1 ♀ ovig., cl 4.5 mm; Walindi River; 05°21.187’ S, 50°02.693’ E; 30 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; DNA voucher: CA2252; MNHN-IU-2018-2849.

VANUATU • 1 ♀ ovig., cl 6.0 mm; Malekula Island, Brenwe River; 16°07.593’ S, 167°16.779’ E; 54 m a.s.l.; 20 Nov. 2008; P. Feutry, P. Keith, C. Lord and L. Taillebois leg.; DNA voucher: CA1014; MNHN-IU-2015-23.

**Description**

**Cephalothorax.** Antennal spine below suborbital angle. Pterygostomian margin sub rectangular. Rostrum (Fig. 12l): 0.4–0.7 of cl, reaching to distal end of antennular peduncle, armed with 13–16 teeth on dorsal margin, 2–5 of them situated on carapace behind orbital margin, ventral margin with 2–5 teeth. Eyes well developed, anterior end reaching to 0.66 length of basal segment of antennular peduncle. Anteolateral angle reaching to about half of second segment, basal segment of antennular peduncle longer than sum of second and third segment lengths, second segment distinctly longer than third segment. Stylocerite sharp, long, reaching to about half of second segment of antennular peduncle.

**Pereiopods.** Epipods on first four pereiopods. P1 (Fig. 12a): chela about 2.2–2.3 times as long as wide, movable finger 2.1–2.8 times as long as wide, 0.5–0.8 times length of palm; carpus 1.5–1.7 times as long as wide. P2 (Fig. 12b) more slender and longer than first pereiopod, with chela 2.6–3.1 times as long as wide: movable finger 4.0–4.5 times as long as wide, 1.3–1.7 times length of palm; carpus slender, 5.5–6.2 times as long as wide. P3 (Fig. 12c): dactylus (Fig. 12e) 3.0–3.5 times as long as wide (terminal spiniform seta included) with 5–6 spiniform setae on flexor margin in addition to terminal one; propodus 9.0–10.2 times as long as wide, 3.6–4.4 times as long as dactylus. P5 (Fig. 12d): dactylus (Fig. 12f) 3.7–4.7 times as long as wide, with 27–33 spiniform setae on flexor margin; propodus 11.5–14.4 times as long as wide, 3.8–4.1 times as long as dactylus.
Fig. 12. *Caridina buehleri* Roux, 1934. a. First pereiopod. b. Second pereiopod. c. Third pereiopod. d. Fifth pereiopod. e. Dactylus of third pereiopod. f. Dactylus of fifth pereiopod. g. Pre-anal carina. h. Uropodal diaeresis. i. Telson. j. Pre-anal carina. k. Eggs. l. Cephalothorax. MNHN-IU-2018-2845 (a–i, k), MNHN-IU-2015-20 (j) and MNHN-IU-2018-2846 (l).
ABDOMEN. Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite 0.47 times as long as carapace, 1.6 times as long as fifth somite, shorter than telson.

TELSON (Fig. 12i). 2.4 times as long as wide, with four pairs of dorsal spinules and one pair of dorsolateral spinules; posterior margin with median process, broadly convex with 7–9 plumose intermediate setae much longer than lateral ones.

MALE PLEOPODS. No males.

PRE-ANAL CARINA (Fig. 12j). High, unarmed.

UROPODAL DIAERESIS (Fig. 12h). With 17–21 spinules.

EGGS (Fig. 12k). Size: 0.20–0.27 × 0.33–0.43.

Habitat
This species lives in a typical brackish water environment (brackishwater pools or lower part of rivers, near the estuary). The species is rarely found over the superior limit of the tide-influenced zone, and was not found in the true freshwater zone.

Colour pattern (Fig. 26A)
Body usually dark red to black, with a lighter dorsal band from the rostrum to the telson and sometimes white stripes on each abdominal somite.

Distribution
This species occurs in Solomon Islands (Kolombangara, Vella Lavella), in the Vanuatu archipelago (Malekula and Santo islands) and in Papua New Guinea (New Britain).

Remarks
de Mazancourt et al. (2017a) redescribed C. buehleri in detail, but their description actually represented two species: C. buehleri described by Roux sensu stricto and another species, C. gueryi, described by Marquet et al. 2009 and redescribed below. Indeed, our specimens fit well with the holotype from New Ireland (PNG) by its P5 dactylus 3.7–4.7 as long as wide (vs 3.6) with 27–33 spiniform setae on flexor margin (vs 30), propodus 11.5–14.4 times as long as wide (vs 9.4), 3.8–4.1 times as long as dactylus (vs 3.8).

**Caridina gueryi** Marquet, Keith & Kalfatak, 2009
Figs 2X, 13, 26B

*Caridina gueryi* Marquet, Keith & Kalfatak, 2009: 159–166, figs 1–3 (type locality: unnamed river, 15°17´45.30″ S, 167°9´35.98″ E, Santo, Vanuatu).

*Caridina buehleri* – Klotz et al. 2007: 3–7.

Material examined

**Holotype**
VANUATU • ♀ ovig., cl 6.8 mm; Santo Island, unnamed river; 15°17´45.30″ S; 167°9´35.98″ E; 22 Jul. 2003; P. Keith and G. Marquet leg.; MNHN-IU-2015-1768.

**Paratypes**
VANUATU • 1♂, cl 3.6 mm; same collection data as for holotype; DNA voucher: CA2428; MNHN-IU-2015-1769 • 1 ♀ ovig., cl 6.0 mm; same collection data as for holotype; MNHN-IU-2015-1771 • 1 ♀ ovig., cl 5.5 mm; same collection data as for holotype; MNHN-IU-2015-1775.
Other material

SOLOMON ISLANDS – Kolombangara Island • 1 ♀ ovig., cl 4.3 mm; Jack Harbour River; 08°03.085´ S, 157°10.945´ E; 11 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; DNA voucher: CA1519; MNHN-IU-2015-19 • 1 ♀ ovig., cl 3.9 mm; Vagé River; 08°5.112´ S, 156°59.867´ E; 10 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2015-17 • 1 ♀ ovig., cl 4.5 mm; Vanga 1 River; 07°55.088´ S, 156°57.624´ E; 18 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2015-21.

INDONESIA • 1 ♀ ovig., cl 6.4 mm; Sulawesi, Luwuk Peninsula, W of Ampana, freshwater spring in Mallontong, brackish water pool (field code 70–05); 00°53.125´ S, 121°31.371´ E; 27 May 2005; M. Glaubrecht, T. von Rintelen and K. Zitzler leg.; ZMB 29000.

VANUATU • 3 ♀ ♀ ovig., cl 5–6 mm; Malekula Island, Brenwe River; 16°07.593´ S, 167°16.779´ E; 54 m a.s.l.; 20 Nov. 2008; P. Feutry, P. Keith, C. Lord and L. Taillebois leg.; MNHN-IU-2015-23.

Description

CEPHALOTHORAX. Antennal spine below suborbital angle. Pterygostomian margin sub rectangular. Rostrum (Fig. 13k): 0.5–1.4 of cl, reaching to or overreaching distal end of scaphocerite, armed with 9–17 teeth on dorsal margin, 3–5 of them situated on carapace behind orbital margin, ventral margin with 2–7 teeth. Eyes well developed, anterior end reaching to 0.63 length of basal segment of antennular peduncle. Antennular peduncle 0.56–0.57 (♀) times as long as carapace. Anterolateral angle reaching 0.33 length of second segment, basal segment of antennular peduncle longer than sum of second and third segment lengths, second segment distinctly longer than third segment. Stylocerite sharp, long, reaching to about half of second segment of antennular peduncle.

PEREIOPODS. Epipods on first four pereiopods. P1 (Fig. 13a–b): chela about 1.9–2.4 times as long as wide, movable finger 2.1–2.7 times as long as wide, 0.4–0.8 times length of palm; carpus 1.2–1.7 times as long as wide. P2 (Fig. 13c) more slender and longer than first pereiopod, with chela 2.2–3.0 times as long as wide: movable finger 3.0–4.8 times as long as wide, 1.0–1.7 times length of palm; carpus slender, 4.2–6.7 times as long as wide. P3 (Fig. 13d): dactylus (Fig. 13f) 2.9–4.0 times as long as wide: terminal spiniform seta included, with 6–7 spiniform setae on flexor margin in addition to terminal one; propodus 8.1–14.0 times as long as wide, 3.5–5.3 times as long as dactylus. P5 (Fig. 13e): dactylus (Fig. 13g) 3.3–4.4 times as long as wide as with 26–31 spiniform setae on flexor margin; propodus 12.3–20.5 times as long as wide, 4.4–6.2 times as long as dactylus.

ABDOMEN. Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite 0.48 as long as carapace, 1.5 times as long as fifth somite, shorter than telson.

TELSON (Fig. 13j). 2.5 times as long as wide, with 5–6 pairs of dorsal spinules and one pair of dorsolateral spinules; posterior margin with a median process, broadly convex with 7–12 plumose intermediate setae much longer than lateral.

MALE PLEOPODS. Pl1: endopod subtriangular, 2.9 times as long as wide, reaching 0.37 times length of endopod, with an appendix on subdistal outer margin which reaches beyond distal end of endopod with most of its length. Pl2: appendix masculina reaching 0.57 times length of endopod; appendix interna reaching 0.60 of appendix masculina.

PRE-ANAL CARINA (Fig. 13h). High, unarmed.

UROPODAL DIAERESIS (Fig. 13i). With 17–19 spinules.

EGGS. Size: 0.21–0.33 × 0.33–0.49.
Fig. 13. Caridina gueryi Marquet, Keith & Kalfatak, 2009. a. Details of the fingers of the first pereiopod. b. First pereiopod. c. Second pereiopod. d. Third pereiopod. e. Fifth pereiopod. f. Dactylus of third pereiopod. g. Dactylus of fifth pereiopod. h. Pre-anal carina. i. Uropodal diaeresis. j. Telson. k. Cephalothorax. MNHN-IU-2015-19 (a–k).
Habitat
This species lives in a typical brackish water environment (brackish water pools or lower part of rivers, near the estuary). The species is rarely found over the superior limit of the tide-influenced zone, and was not found in the true freshwater zone.

Colour pattern (Fig. 26B)
Body usually dark red to black, with a lighter dorsal band from the rostrum to the telson and sometimes white stripes on each abdominal somite.

Distribution
This species occurs in the Solomon Islands (Kolombangara), in the Vanuatu archipelago (Malekula and Santo Islands) and in Indonesia (Sulawesi).

Remarks
Our specimens are distinguished from the holotype of *C. buelheri* from New Ireland by its long P5 propodus, 12.3–20.5 times as long as wide (vs short P5 propodus 9.4 in the holotype of *C. buelheri*) and 4.4–6.2 times as long as the dactylus (vs 3.8). In contrast, they fit well with the holotype of *C. gueryi* from Santo (vs 12.3–15.9 and 4.6–5.2 in the holotype of *C. gueryi*, respectively). However, if we include other specimens of *C. buelheri*, the characters overlap, which is the reason why we previously mistakenly placed them in synonymy (de Mazancourt et al. 2017a). These two species can thus be considered to be cryptic.

According to our molecular results, studied specimens from Sulawesi, the Solomon Islands and the Vanuatu archipelago belong to *C. gueryi*.

*Caridina papuana* Nobili, 1905
Figs 2N, 14, 26E

*Caridina weberi* var. *papuana* Nobili, 1905: 481, pl. XII, fig. 1.

*Caridina weberi* var. *papuana* – Roux 1917: 591; 1928: 204–205; 1934: 221–222. — Bouvier 1925: 246.

*Caridina cf. weberi papuana* – Page et al. 2007: 649 (GenBank: DQ478543–DQ478544).

*Caridina papuana* – de Mazancourt et al. 2019a: 166, 169–170.

Material examined
Lectotype (here designated)
PAPUA NEW GUINEA • ♂, 3.2 mm; “German New Guinea”, Stephansort, in a small stream in the forest; L. Biró leg.; HNHM 1124-1893.

Paralectotypes
PAPUA NEW GUINEA • 4 ♀♂, cl 2.5–3.1 mm, 2 ♀♀ ovig., cl 4.1–4.6 mm; same collection data as for holotype; HNHM 1124-1893.

Other material
SOLOMON ISLANDS – Choiseul Island • 1 ♂, cl 3.2 mm; Creek 1; 06°59.085´ S, 156°47.454´ E; 132 m a.s.l.; 14 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2018-2850 • 1 ♂, cl 3.3 mm; Creek 2; 06°59.085´ S, 156°47.913´ E; 93 m a.s.l.; 14 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2018-2851 • 1 ♂, cl 3.6 mm; same collection data as for preceding; MNHN-IU-2018-2852 • 1 ♀, cl 3.2 mm; same collection data as for preceding; MNHN-IU-2018-2853
• 1 ♀, cl 5.1 mm; same collection data as for preceding; MNHN-IU-2018-2854 • 1 ♀ ovig., cl 4.6 mm; same collection data as for preceding; MNHN-IU-2018-2855 • 1 ♀ ovig., cl 3.4 mm; Lopakare River; 07°01.613´S, 156°46.567´E; 20 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; DNA voucher: CA1361; MNHN-IU-2018-2856 • 1 ♀ ovig., cl 3.4 mm; same collection data as for preceding; MNHN-IU-2018-2857 • 1 ♀ ovig., cl 3.4 mm; same collection data as for preceding; MNHN-IU-2018-2858 • 1 ♀ ovig., cl 3.5 mm; same collection data as for preceding; MNHN-IU-2018-2859 • 1 ♀ ovig., cl 3.6 mm; same collection data as for preceding; MNHN-IU-2018-2860 • 1 ♀, 4.6 mm; same collection data as for preceding; MNHN-IU-2018-2861 • 1 ♀, 4.6 mm; same collection data as for preceding; DNA voucher: CA1286; MNHN-IU-2018-2862 • 1 ♀, cl 5.0 mm; Pisuku River, sector 1; 06°58.951´S, 156°46.582´E; 15 m a.s.l.; 10 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2018-2863 • 1 ♀ ovig., cl 4.1 mm; Gu’ma River; 07°01.764´S, 156°49.899´E; 50 m a.s.l.; 17 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2018-2864 • 1 ♀ ovig., cl 5.3 mm; same collection data as for preceding; MNHN-IU-2018-2865 • 1 ♀, cl 4.7 mm; same collection data as for preceding; MNHN-IU-2018-2866.

**Comparative material**

*Caridina weberi* De Man, 1892

INDONESIA • 3 syntypes, 2 ♂♂, cl 4.4–4.5 mm, 1 ♀ ovig., cl 6.1 mm; Flores Island, Kotting; Dec. 1888; M. Weber leg.; MNHN-IU-2015-1755.

**Description**

**CEPHALOTHORAX.** Suborbital angle indistinguishably fused with antennal spine. Pterygostomian margin rounded. Rostrum (Fig. 14m): curved down, short, 0.3–0.4 of cl, sometimes reaching middle of second segment of antennular peduncle, armed with 9–11 teeth on dorsal margin, 0–1 of them situated on carapace behind orbital margin, ventral margin with 2–4 teeth. Eyes well developed, anterior end reaching to 0.67 length of basal segment of antennular peduncle. Antennular peduncle 0.66 times as long as carapace. Anterolateral angle reaching 0.30 length of second segment, second segment of equal length with third segment. Stylocerite reaching to 0.8 length of basal segment of antennular peduncle.

**PEREIOPODS.** Epipods on first four pereiopods. P1 (Fig. 14a): chela about 1.9–2.1 times as long as wide, movable finger 2.6–3.2 times as long as wide, 0.7–0.9 times length of palm; short carpus 1.3–1.5 times as long as wide. P2 (Fig. 14b) More slender and longer than first pereiopod, with chela 2.2–2.5 times as long as wide: movable finger 4.3–5.0 times as long as wide, 1.6–2.0 times length of palm; carpus slender, 4.2–5.1 times as long as wide. P3 (Fig. 14c): stout, dactylus (Fig. 14e) 3.0–3.2 times as long as wide (terminal spiniform seta included), with 5–6 spiniform setae on flexor margin in addition to terminal one; propodus 8.9–10.7 times as long as wide, 3.8–4.5 times as long as dactylus. P5 (Fig. 14d): dactylus (Fig. 14f) 2.8–3.9 as long as wide, with 25–31 spiniform setae on flexor margin, first setae enlarged; propodus 12.1–15.1 times as long as wide, 4.2 5.0 times as long as dactylus.

**ABDOMEN.** Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite about half length of carapace, 1.7 times as long as fifth somite, slightly shorter than telson.

**TELSON (Fig. 14i).** 2.6 times as long as wide, with four or five pairs of dorsal spinules and one pair of dorsolateral spinules; posterior margin without a median process, rounded, with 5–9 very long intermediate setae longer than lateral.

**MALE PLEOPODS.** Pl1 (Fig. 14j): endopod subrectangular, 3 times as long as wide, reaching 0.43 times length of endopod, with an appendix on subdistal outer margin which reaches beyond distal end of endopod on a short length. Pl2 (Fig. 14k): appendix masculina reaching 0.76 times length of endopod; appendix interna reaching 0.64 of appendix masculina.
Fig. 14. *Caridina papuana* Nobili, 1905. a. First pereiopod. b. Second pereiopod. c. Third pereiopod. d. Fifth pereiopod. e. Dactylus of third pereiopod. f. Dactylus of fifth pereiopod. g. Pre-anal carina. h. Uropodal diaeresis. i. Telson. j. First male pleopod. k. Second male pleopod. l. Eggs. m. Cephalothorax. MNHN-IU-2018-2856 (a–f, l), MNHN-IU-2018-2850 (g, j–k) and MNHN-IU-2018-2857 (h, m), MNHN-IU-2018-2859 (i).
PRE-ANAL CARINA (Fig. 14g). High, unarmed.

UROPODAL DIAERESIS (Fig. 14h). With 14–21 spinules.

EGGS. Size: 0.36–0.44 × 0.21–0.26mm.

Habitat
This species is largely rheophile and prefers fresh and well-oxygenated waters from the lower to the higher course of rivers.

Colour pattern (Fig. 26E)
Body dark all over, sometimes with a white dorsal band running from the rostrum to the telson.

Distribution
This species occurs in the Solomon Islands (Choiseul) and in Papua New Guinea.

Remarks
All former mentions of this taxa were subspecific; given the results of our study, we decided to erect it to specific level (de Mazancourt et al. 2019a). Our specimens fit well with the types from Papua New Guinea: Rostrum curved down, short, 0.3–0.4 of cl (vs 0.4 in type specimens) sometimes reaching middle of the second segment of the antennular peduncle, armed with 9–11 teeth on the dorsal margin (vs 9–14), 0–1 of them situated on the carapace behind the orbital margin (vs 0), ventral margin with 2–4 teeth (vs 2–5); P1 carpus 1.3–1.5 times as long as wide (vs. 1.4–1.7); P2 carpus 4.2–5.1 times as long as wide (vs 4.5–5.5); P3 dactylus with 5–6 spiniform setae (vs 5), propodus 3.8–4.5 times as long as dactylus (vs 4.3); P5 dactylus with 25–31 spiniform setae (vs 25); uropodal diaresis 14–21 (vs 17–19); small eggs, 0.36–0.44 × 0.21–0.26 mm (vs 0.33–0.38 × 0.24–0.29); appendix interna on the endopod of the male first pleopod. Some specimens from Gu’ma River have one tooth situated on the carapace behind the orbital margin. However, their P5 are similar to those of C. papuana, with the dactylus 3.5 times as long as wide (vs 2.8–3.9), with 27 spiniform setae on the flexor margin (vs 25–31) and propodus 12.1 times as long as wide (vs 12.1–15.1), 4.4 times as long as dactylus (vs 4.2 5.0).

**Caridina weberi** De Man, 1892
Figs 2T, 15, 26C

*Caridina weberi* De Man, 1892: 371, pl. 22, fig. 23a (type locality: Kotting, Flores, Indonesia).

*Caridina weberi* – Bouvier 1925: 242, figs. 562–571. — Roux 1928: 203–204. — Cai & Ng 2001: 666, fig. 3.

*Caridina* cf. *weberi* sp. 2 – de Mazancourt et al. 2019a: 166, 169–170.

Not *Caridina weberi* Edmondson, 1935: 8; figs 3a–f.

Material examined

Syntypes
INDONESIA • 2♂♂, cl 4.4–4.5 mm, 1♀ ovig., cl 6.1 mm; Flores Island, Kotting; Dec. 1888; M. Weber leg.; MNHN-IU-2015-1755.

Other material
SOLOMON ISLANDS – Kolombangara Island • 1♀ ovig., cl 6.4 mm; Sulumuni River; 08°02.253´ S, 157°09.257´ E; 148 m a.s.l.; 12 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; DNA voucher:
CA1516; MNHN-IU-2018-2867. – Malaita Island • 1 ♂, cl 3.5 mm; Tanana River; 09°17.383’ S, 167°07.012’ E; 276 m a.s.l.; 16 Jun. 2015; D. Boseto leg.; DNA voucher: CA1511; MNHN-IU-2018-2868 • 1 ♂, cl 3.7 mm; same collection data as for preceding; MNHN-IU-2018-2869 • 1 ♂, cl 3.8 mm; same collection data as for preceding; MNHN-IU-2018-2870.

PAPUA NEW GUINEA – New Britain • 1 ♂, cl 4.6 mm; Bereme village, Huvenganga River; 05°45.187’ S, 150°35.0014’ E; 19 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; MNHN-IU-2018-2871 • 1 ♂, cl 5.3 mm; same collection data as for preceding; MNHN-IU-2018-2872 • 1 ♀ ovig., cl 6.8 mm; same collection data as for preceding; MNHN-IU-2018-2873 • 1 ♀ ovig., cl 7.5 mm; same collection data as for preceding; DNA voucher: CA2254; MNHN-IU-2018-2874 • 1 ♀ ovig., cl 6.2 mm; Bereme district, Galaku River; 05°45.187’ S, 150°35.0014’ E; 20 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; MNHN-IU-2018-2875 • 1 ♀ ovig., cl 6.5 mm; Bereme district, Wogan River; 05°45.187’ S, 150°35.0014’ E; 21 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; DNA voucher: CA2244; MNHN-IU-2018-2876.

Description

CEPHALOTHORAX. Suborbital angle indistinguishably fused with antennal spine. Pterygostomian margin rounded. Rostrum (Fig. 15m): straight, short, 0.4 of cl, reaching to base or near middle of second segment of antennular peduncle, armed with 11–23 teeth on dorsal margin, 0–2 of them situated on carapace behind orbital margin, ventral margin with 2–5 teeth. Eyes well developed, anterior end reaching to 0.7 times length of basal segment of antennular peduncle. Antennular peduncle 0.64 times as long as carapace. Anterolateral angle reaching 0.21 length of second segment, second segment longer than third segment. Stylocerite reaching to 0.75 length of basal segment of antennular peduncle.

PEREIPODS. Epipods on first four pereiopods. P1 (Fig. 15a): chela about 2.0–2.3 times as long as wide, movable finger 2.6–4.1 times as long as wide, 0.8–1.5 times length of palm; carpus 1.4–2.0 times as long as wide. P2 (Fig. 15b) more slender and longer than first pereiopod, with chela 2.5–2.9 times as long as wide: movable finger 3.9–5.1 times as long as wide, 1.3–1.7 times length of palm; carpus slender, 4.8–5.5 times as long as wide. P3 (Fig. 15c): stout, dactylus (Fig. 15e) 2.8–37 times as long as wide (terminal spiniform seta included), with 6–8 spiniform setae on flexor margin in addition to terminal one; propodus 9.5–12.7 times as long as wide, 4.0–4.6 times as long as dactylus. P5 (Fig. 15d): dactylus (Fig. 15f) 3.9–5.2 times as long as wide, with 47–66 spiniform setae on flexor margin; propodus 13.3–19.3 times as long as wide, 3.8–4.5 times as long as dactylus.

ABDOMEN. Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite about half length of carapace, 1.7 times as long as fifth somite, reaching 0.84 times length of telson.

TELSON (Fig. 15i). 2.6 times as long as wide, with five to seven pairs of dorsal spines and one pair of dorsolateral spines; posterior margin with median process, rounded, with 6–11 very long intermediate setae longer than one or two lateral ones.

MALE PLEOPODS. Pl1 (Fig. 15j): endopod of male subrectangular, 2.5 times as long as wide, reaching 0.40 length of endopod, with an appendix on distal outer margin which reaches beyond distal end of endopod on a short length. Pl2 (Fig. 15k): appendix masculina reaching 0.57 times length of endopod; appendix interna reaching 0.75 of appendix masculina.

PRE-ANAL CARINA (Fig. 15g). High, unarmed.

UROPODAL DIAERESIS (Fig. 15h). With 17–21 spinules.

EGGS. Ovigerous females with eggs size: 0.35–0.42 × 0.19–0.25mm.
Fig. 15. *Caridina weberi* De Man, 1892. **a.** First pereiopod. **b.** Second pereiopod. **c.** Third pereiopod. **d.** Fifth pereiopod. **e.** Dactylus of third pereiopod. **f.** Dactylus of fifth pereiopod. **g.** Pre-anal carina. **h.** Uropodal diaeresis. **i.** Telson. **j.** First male pleopod. **k.** Second male pleopod. **l.** Eggs. **m.** Cephalothorax. MNHN-IU-2018-2867 (a–i, l–m) and MNHN-IU-2018-2870 (j–k).
Habitat
This species is largely rheophile and prefers fresh and well-oxygenated waters from the higher course of rivers (148–276 m a.s.l.).

Colour pattern (Fig. 26C)
Body covered in small dots, several red stripes, sometimes with a white dorsal band running from the rostrum to the telson.

Distribution
This species occurs in Indonesia (Sumba, Halmahera), Papua New Guinea (New Britain) and the Solomon Islands (Kolombangara and Malaita).

Remarks
Our specimens fit well with the types, described by De Man (1892) from Flores, by its P1 carpus 1.4–2.0 times as long as wide (vs 1.9–2.1 in type specimens); by its P2 carpus 4.8–5.5 times as long as wide (vs 4.9–5.4); by its P3 dactylus 2.8–3.7 times as long as wide (terminal spiniform seta included) (vs 3.2) with 6–8 spiniform setae on the flexor margin in addition to the terminal one (vs 6–7), propodus 9.5–12.7 times as long as wide (vs 9.0), 4.0–4.6 times as long as dactylus (vs 3.5–3.9); by its P5 dactylus 3.9–5.2 as long as wide (vs 4.6) with 47–66 spiniform setae on the flexor margin (vs 60–65), propodus 13.3–19.3 times as long as wide (vs 15.6) and 3.8–4.5 times as long as dactylus (vs 3.6); by its telson with one or two pairs of setae, lateral pair of setae distinctly longer than sublateral pair, both shorter than 6–11 intermediate setae (vs 8); by its eggs size 0.35–0.42 × 0.19–0.25 mm (vs 0.39–0.40 × 0.23–0.26 mm).

Our specimens are also similar to C. weberi as described by Cai & Ng (2001) from Halmahera (Indonesia) in the shape of the rostrum, which is straight, reaching to base or near middle of second segment of antennular peduncle (see Fig. 3A–B) with 0–2 teeth situated on carapace behind orbital, and also by its telson with two pairs of setae, lateral pair of setae distinctly longer than sublateral pair, both shorter than intermediate setae (see Fig. 3C–E), its P5 dactylus with 47–66 spiniform setae on flexor margin (vs 55 according to Cai & Ng (2001)), and by its eggs size 0.35–0.42 × 0.19–0.25 mm (vs 0.4–0.2 mm). However, the rostrum has more teeth (0–2) 11–23/2–5 (vs (1–2) 12–19/2–6 according to Roux (1928)), by its P1 carpus about 2.0–2.3 times as long as wide (vs 2–2.1), P2 carpus about 2.5–2.9 times as long as wide (vs 2.8–3.1), P3 dactylus 2.8–3.7 times as long as wide (terminal spiniform seta included) (vs 3.1–3.8), with 6–8 spiniform setae on flexor margin in addition to the terminal one (vs 6–7), its P3 propodus 4.0–4.6 times as long as dactylus (vs 4.5–4.6), P5 dactylus 3.9–5.2 as long as wide (vs 4.4–5), with 47–66 spiniform setae (vs 62–70) on flexor margin, and its eggs size 0.35–0.42 × 0.19–0.25 mm (vs 0.35–0.38 × 0.20–0.21 mm). However, its P5 propodus is longer 3.8–4.5 times as long as dactylus (vs 5.0). We consider the observed differences to be within an intra-specific range.

It is also similar to C. weberi as described by Roux (1928) from Sumba by its rostrum formula (0–2) 11–23/2–5 (vs (1–2) 12–19/2–6 according to Roux (1928)), by its P1 carpus 1.4–2.0 times as long as wide (vs 1.5–2.1), its chela about 2.0–2.3 times as long as wide (vs 2–2.1), its P2 carpus 4.8–5.5 times as long as wide (vs 5–5.7), its P2 chela about 2.5–2.9 times as long as wide (vs 2.8–3.1), its P3 dactylus 2.8–3.7 times as long as wide (terminal spiniform seta included) (vs 3.1–3.8), with 6–8 spiniform setae on flexor margin in addition to the terminal one (vs 6–7), its P3 propodus 4.0–4.6 times as long as dactylus (vs 4.5–5.4), P5 dactylus 3.9–5.2 as long as wide (vs 4.4–5), with 47–66 spiniform setae (vs 62–70) on flexor margin, and its eggs size 0.35–0.42 × 0.19–0.25 mm (vs 0.35–0.38 × 0.20–0.21 mm). However, its P5 propodus is longer 3.8–4.5 times as long as the dactylus (vs 3.4–3.6). We think that the observed differences are also within an intra-specific range.

Caridina tupaia de Mazancourt, Marquet & Keith, 2019
Figs 2S, 16

Material examined
SOLOMON ISLANDS – Choiseul Island • 1 ♀, cl 3.2 mm; Creek 2; 06°59.085´ S, 156°47.454´ E; 93 m a.s.l.; 14 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2018-2877 • 1 ♂, cl 3.4 mm; same collection data as for preceding; MNHN-IU-2018-2878 • 1 ♀, cl 3.6 mm; same
collection data as for preceding; MNHN-IU-2018-2879 • 1 ♂, cl 3.6 mm; same collection data as for preceding; MNHN-IU-2018-2880 • 1 ♂, cl 3.9 mm; same collection data as for preceding; MNHN-IU-2018-2881 • 1 ♀, cl 3.5 mm; same collection data as for preceding; DNA voucher: CA1927; MNHN-IU-2018-2882 • 1 ♀ ovig., cl 4.5 mm; same collection data as for preceding; MNHN-IU-2018-2884 • 1 ♀ ovig., cl 5.2 mm; Creek 1; 06°59.085´ S, 156°47.454´ E; 132 m a.s.l.; 14 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; DNA voucher: CA1927; MNHN-IU-2018-2885. – **Malaita Island** • 1 ♂, cl 3.6 mm; Tanana River; 09°17.383´ S, 167°07.012´ E; 276 m a.s.l.; 16 Jun. 2015; D. Boseto leg.; DNA voucher: CA1508; MNHN-IU-2018-2886 • 1 ♂, cl 3.1 mm; small tributary close to Nunubala Camp; 09°00.056´ S, 160°51.893´ E; 23 Jun. 2015; 315 m a.s.l.; D. Boseto leg.; MNHN-IU-2018-2887.

**Description**

See de Mazancourt *et al.* (2019b).

**Habitat**

This species is largely rheophile and prefers fresh and well-oxygenated waters from the lower course to the higher course of rivers.

**Colour pattern**

The live general colour of the body is yellowish and slightly translucent. Numerous red spots are visible all over the body. Sometimes, a lighter longitudinal dorsal band is present stretching from the rostrum to the telson (see de Mazancourt *et al.* 2019b).

**Distribution**

This species seems to have a wide distribution: Solomon Islands (Malaita and Choiseul), Fiji, Samoa, Cook (Rarotonga) and French Polynesia (Society and Austral archipelagos).

**Remarks**

Recently de Mazancourt *et al.* (2019b) have revised the species of the *C. weberi* group from Polynesia. Contrary to what Edmondson (1935) wrote, *C. weberi* does not occur in Polynesia but four other species of the *C. weberi* complex. Among these species, one also occurs in the Solomon Islands: *C. tupaia*.

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**Fig. 16.** *Caridina tupaia* de Mazancourt, Marquet & Keith, 2019. Cephalothorax. MNHN-IU-2018-2884.
Curiously, although the dorsal teeth of the rostrum are situated all along its length, with sometimes 1–3 of them situated on the carapace behind the orbital margin in French Polynesia, in Samoa (Upolu) and the Cook Islands, specimens from the Solomon Islands have dorsal teeth situated considerably anterior to the orbital margin with none of them situated on the carapace behind the orbital margin (see Fig. 16).

**Caridina maeana** sp. nov.  
[urn:lsid:zoobank.org:act:36785008-1E93-4AE5-8162-238D2560E30C](urn:lsid:zoobank.org:act:36785008-1E93-4AE5-8162-238D2560E30C)
Figs 2O, 17, 26F–H

**Caridina cf. weberi** sp. 4 – de Mazancourt *et al.* 2019a: 166, 169–170.

### Etymology
This new species is named after the local name of the type locality, River Maeana. The name is used as an apposition.

### Material examined

**Holotype**

SOLOMON ISLANDS • ♂, cl 3.6 mm; Malaita Island, Maeana River; 09°00.056´S, 160°51.893´E; 315 m a.s.l.; 23 Jun. 2015; D. Boseto leg.; DNA voucher: CA1509; MNHN-IU-2018-2888.

**Paratypes**

SOLOMON ISLANDS – Malaita Island • 1 ♂, cl 3.1 mm; same collection data as for holotype; MNHN-IU-2018-2889 • 1 ♂, cl 3.3 mm; same collection data as for holotype; MNHN-IU-2018-2890 • 1 ♂, cl 3.4 mm; same collection data as for holotype; MNHN-IU-2018-2891 • 1 ♂, cl 3.5 mm; same collection data as for holotype; MNHN-IU-2018-2892 • 1 ♂, cl 3.5 mm; same collection data as for holotype; MNHN-IU-2018-2893 • 1 ♂, cl 4.0 mm; same collection data as for holotype; MNHN-IU-2018-2894. – Choiseul Island • 1 specimen; Sicata River; 07°22.477´S, 157°20.109´E; 46 m a.s.l.; P. Keith, C. Lord, R. Causse and D. Boseto leg.; DNA voucher: CA2495; MNHN • 1 specimen; same collection data as for preceding; DNA voucher: CA2496; MNHN.

**Other material**

VANUATU • 1 ♀ ovig., cl 5.3 mm; Santo Island, Pelouva River; 14°58.685´S, 166°38.757´E; 279 m a.s.l.; 15 Nov. 2006; P. Gerbeaux, P. Keith and C. Lord leg.; DNA voucher: CA1417; MNHN-IU-2018-2895.

**Comparative material**

*Caridina weberi* var. *keiensis* (Roux, 1911)  
INDONESIA • lectotype (selected by Y. Cai, accepted here), ♀ ovig., cl 5.7 mm; Kei Besar, Warka; 5 June 1908; H. Merton leg.; NMB 6.IV.b • 2 paralectotypes, 2 ♀♂, cl 2.6 mm; same collection data as for lectotype; NMB 6.IV.a • 2 paralectotypes, 1 ♀, cl 5.5 mm, 1 ♂, cl 3.4 mm; same collection data as for lectotype; NMB 6.IV.b.

*Caridina parvirostris* (De Man, 1892)  
INDONESIA • 2 syntypes, ♀♂, cl 3.1–3.2 mm; Flores Island, river near Bombang; Jan. 1889; M. Weber leg.; MHNN-IU-2015-1748 • 1 syntype, ♀, cl 4.2 mm; same collection data as for preceding; MHNN-IU-2015-1745.

### Description

**Cephalothorax.** Suborbital angle indistinguishably fused with antennal spine. Pterygostomian margin rounded. Rostrum (Fig. 17m): bent down, short, 0.3–0.5 of cl, reaching to base or middle of second
segment of antennular peduncle, armed with 8–13 teeth on dorsal margin, all on rostrum considerably anterior to orbital margin, ventral margin with 2–5 teeth. Eyes well developed, anterior end reaching to 0.75 length of basal segment of antennular peduncle. Antennular peduncle 0.70 times as long as carapace. Anterolateral angle reaching 0.20 length of second segment, second segment longer than third segment. Stylocerite reaching to 0.62 length of basal segment of antennular peduncle.

**Pereiopods.** Epipods on first four pereiopods. P1 (Fig. 17a): chela about 2.0–2.2 times as long as wide, movable finger 3.1–3.93 times as long as wide, 1.0–1.3 times length of palm; carpus 1.4–1.8 times as long as wide. P2 (Fig. 17b) more slender and longer than first pereiopod, with chela 2.3–2.6 times as long as wide: movable finger 4.6–4.9 times as long as wide, 1.6–2.0 times length of palm; carpus slender, 5.0–5.4 times as long as wide. P3 (Fig. 17c): stout, dactylus (Fig. 17e) 2.4–3.1 times as long as wide (terminal spiniform seta included), with 5–7 spiniform setae on flexor margin in addition to terminal one; propodus 8.6–9.2 times as long as wide, 3.9–5.2 times as long as dactylus. P5 (Fig. 17d): dactylus (Fig. 17e) 2.4–4.4 times as long as wide, ending in two large claws, with 35–47 spiniform setae on flexor margin; propodus 13.0–17.7 times as long as wide, 4.4–6.0 times as long as dactylus.

**Abdomen.** Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite 0.49 times as long as carapace, 1.6 times as long as fifth somite, slightly shorter than telson.

**Telson** (Fig. 17i). 3 times as long as wide, with four or five pairs of dorsal spinules and one pair of dorsolateral spinules; posterior margin with median process, rounded, with 6 very long intermediate setae longer than lateral.

**Male pleopods.** Pl1 (Fig. 17j): endopod subrectangular, 2.5 times as long as wide, reaching 0.41 length of endopod, with appendix on subdistal outer margin which reaches beyond distal end of endopod on short length. P2 (Fig. 17k): appendix masculina reaching 0.70 times length of endopod; appendix interna reaching 0.64 times length of appendix masculina.

**Pre-anal carina** (Fig. 17g). High, unarmed.

**Uropodal diaeresis** (Fig. 17h). With 16–19 spinules.

**Eggs** (Fig. 17l). Size: 0.49–0.50 × 0.29–0.30 mm.

**Habitat**

This new species is largely rheophile and prefers fresh and well-oxygenated waters in the higher course of rivers (279–315 m a.s.l.).

**Colour pattern** (Fig. 26F)

The general colour is blueish overall, reddish on the cephalothorax with many red dots all over the body.

**Distribution**

This species occurs in the Solomon Islands (Malaita and Choiseul) and Vanuatu (Santo Island).

**Remarks**

This species looks like *C. weberi keiensis* from Kei Besar Island (Indonesia) by its rostrum with 8–13 dorsal teeth (vs 2–13 in *C. w. keiensis*), all of them on the rostrum, considerably anterior to the orbital margin, and its P5 dactylus ending in two large claws. However, the P2 dactylus is longer, 4.6–4.9 times as long as wide (vs 3.2–4.1), as is the P2 carpus, 5.0–5.4 (vs 3.5–4.5).
Fig. 17. *Caridina maeana* sp. nov. a. First pereiopod. b. Second pereiopod. c. Third pereiopod. d. Fifth pereiopod. e. Dactylus of third pereiopod. f. Dactylus of fifth pereiopod. g. Pre-anal carina. h. Uropodal diaeresis. i. Telson. j. First male pleopod. k. Second male pleopod. l. Eggs. m. Cephalothorax. MNHN-IU-2018-2889: (a–i, m), MNHN-IU-2018-2891 (j–k) and MNHN-IU-2018-2895 (l).
This species also looks like *C. parvirostris* (De Man, 1892) from Flores (Indonesia) by its rostrum with 8–13 dorsal teeth (vs 8–10 in *C. parvirostris*), but the P2 carpus is shorter, 5.0–5.4 times as long as wide (vs 6.0–7.4), as is the P2 chela, 2.3–2.6 (vs 2.6–3.0), and its P5 ends in two large claws (vs one claw).

### Caridina piokerai** sp. nov.

urn:lsid:zoobank.org:act:CF802FC0-547B-4E48-A7D5-9E99A4561F9D
Figs 2U, 18

*Caridina cf. weberi* sp. 5 – de Mazancourt *et al.* 2019a: 166, 169–170.

### Etymology

This species is dedicated to Piokera S. Holland (Ecological Solutions Solomon Islands team member) who helped with the sampling in Kolombangara Island.

### Material examined

- **Holotype**
  
  SOLOMON ISLANDS • ♀, cl 3.5 mm; Kolombangara Island, Poitete River; 07°53.077´ S, 157°07.776´ E; 13 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; DNA voucher: CA1909; MNHN-IU-2018-2896.

- **Paratypes**

  - SOLOMON ISLANDS – Kolombangara Island • 1 ♀ ovig., cl 2.9 mm; Vagi River; 08°06.640´ S, 157°00.1674´ E; 59 m a.s.l.; 10 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2018-2897 • 1 ♀ ovig., cl 3.1 mm; same collection data as for preceding; MNHN-IU-2018-2898 • 1 ♀ ovig., cl 3.3 mm; same collection data as for preceding; MNHN-IU-2018-2899 • 1 ♀ ovig., cl 2.9 mm; Liva River; 08°03.881´ S, 157°10.421´ E; 11 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2018-2900 • 1 ♀ ovig., cl 3.6 mm; Sulumeni River; 08°02.253´ S, 157°09.257´ E; 148 m a.s.l.; 12 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2018-2901 • 1 ♀ ovig., cl 3.3 mm; Vanga 1 River; 07°55.088´ S, 156°57.624´ E; 18 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2018-2902.

  - **Choiseul Island** • 1 ♀ ovig., cl 3.1 mm; Lopakare River; MNHN-IU-2018-2903 • 1 ♀, cl 3.9 mm; 07°01.613´ S, 156°46.567´ E; 50 m a.s.l.; 20 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; DNA voucher: CA1930; MNHN-IU-2018-2904.

  - **Vella Lavella Island** • 1 ♀ ovig., cl 2.6 mm; Vala Kadju River; MNHN-IU-2018-2905 • 1 ♀ ovig., cl 2.8 mm; 07°49.860´ S, 156°42.644´ E; 17 m a.s.l.; 28 Oct. 2016; P. Keith and C. Lord leg.; MNHN-IU-2018-2906 • 1 ♀ ovig., cl 3.2 mm; Maravari River; 07°51.703´ S, 156°41.768´ E; 81 m a.s.l.; 31 Oct. 2016; P. Keith and C. Lord leg.; MNHN-IU-2018-2907 • 1 ♀ ovig., cl 2.8 mm; same collection data as for preceding; MNHN-IU-2018-2908 • 1 ♀ ovig., cl 3.2 mm; same collection data as for preceding; MNHN-IU-2018-2909 • 1 ♀ ovig., cl 3.2 mm; same collection data as for preceding; MNHN-IU-2018-2910 • 1 ♀ ovig., cl 2.1 mm; same collection data as for preceding; DNA voucher: CA1981; MNHN-IU-2018-2911.

### Description

**CEPHALOTHORAX.** Suborbital angle indistinguishably fused with antennal spine. Pterygostomian margin rounded. Rostrum (Fig. 18k): straight or bent down, short, 0.3–0.5 of cl, reaching to second segment of antennular peduncle, armed with 9–13 teeth on dorsal margin, 0–1 of them situated on carapace behind orbital margin, ventral margin with 1–4 teeth. Eyes well developed, anterior end reaching to 0.66 length of basal segment of antennular peduncle. Antennular peduncle 0.50 times as long as carapace. Anterolateral angle reaching 0.33 length of second segment, second segment shorter than third segment. Stylocerite reaching to 0.90 length of basal segment of antennular peduncle.

**PEREIOPODS.** Epipods on first four pereiopods. P1 (Fig. 18a): chela about 1.9–2.3 times as long as wide, movable finger 2.5–3.6 times as long as wide, 0.9–1.5 times length of palm; carpus 1.4–1.8 times as long
Fig. 18. *Caridina piokerai* sp. nov. **a.** First pereiopod. **b.** Second pereiopod. **c.** Third pereiopod. **d.** Fifth pereiopod. **e.** Dactylus of third pereiopod. **f.** Dactylus of fifth pereiopod. **g.** Pre-anal carina. **h.** Uropodal diaeresis. **i.** Telson. **j.** Eggs. **k.** Cephalothorax. MNHN-IU-2018-2900 (a–k).
as wide. P2 (Fig. 18b) more slender and longer than first pereiopod, with chela 2.4–3.0 times as long as wide: movable finger 3.9–5.2 times as long as wide, 1.4–2.1 times length of palm; carpus slender, 4.6–6.2 times as long as wide. P3 (Fig. 18c): stout, dactylus (Fig. 18e) 2.6–3.4 times as long as wide (terminal spiniform setae included), with 4–5 spiniform setae on flexor margin in addition to terminal one; propodus 8.1–10.4 times as long as wide, 3.9–5.3 times as long as dactylus. P5 (Fig. 18d): dactylus (Fig. 18f) 2.7–4.5 times as long as wide, with 21–33 spiniform setae on flexor margin; propodus 10.5–15.0 times as long as wide, 3.5–6.2 times as long as dactylus.

**ABDOMEN.** Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite 0.48 times as long as carapace, 1.4 times as long as fifth somite, 0.88 as long as telson.

**Telson** (Fig. 18i). 3 times as long as wide, with five pairs of dorsal spinules and pair of dorsolateral spinules; posterior margin with median process, rounded, with 5–10 very long intermediate setae longer than lateral ones.

**Male Pleopods.** No males.

**Pre-anal Carina** (Fig. 18g). High, unarmed.

**Uropodal Diaeresis** (Fig. 18h). With 17–20 spinules.

**Eggs.** Size: 0.39–0.47 × 0.20–0.28 mm.

**Habitat**
This species is largely rheophile and prefers fresh and well-oxygenated waters from the lower course to the higher course of rivers (17–148m a.s.l.).

**Colour pattern**
Unknown.

**Distribution**
This new species occurs on several of the Solomon Islands (Choiseul, Kolombangara and Vella Lavella).

**Remarks**
These specimens from the Solomon Islands are very similar to *C. macrodentata* Cai & Shokita (2006a) because of the large teeth on the dorsal margin of the rostrum. However, the P1 and P2 carpus are slender, 1.4–1.8 times as long as wide (vs 1.2 in *C. macrodentata*) and 4.6–6.2 (vs 3.8), respectively, and the P5 dactylus is longer, 3.5–6.2 as long as wide (vs 2.4), not ending in two large claws (vs ending in two large claws).

*Caridina nana* sp. nov.

urn:lsid:zoobank.org:act:312659E0-1F36-4BAB-9714-2FBC71B57C6A

Figs 2P, 19

*Caridina cf. weberi* sp. 6 – de Mazancourt et al. 2019a: 166, 169–170.

**Etymology**
This species is named after its small size.
Material examined

**Holotype**
SOLOMON ISLANDS • ♀, cl 3.0 mm; Vella Lavella Island, Maravari River; 07°51.703´ S, 156°41.748´ E; 31 Oct. 2016; P. Keith and C. Lord leg.; DNA voucher: CA1903; MNHN-IU-2018-2912.

**Paratype**
SOLOMON ISLANDS • 1 ♀, cl 2.7 mm; same collection data as for holotype; DNA voucher: CA1902; MNHN-IU-2018-2913.

**Comparative material**
*Caridina parvirostris* De Man, 1892
INDONESIA • 2 syntypes, ♂♂, cl 3.1–3.2 mm; Flores Island, river near Bombang; Jan. 1889; M. Weber leg.; MHNN-IU-2015-1748 • 1 syntype, ♀, cl 4.2 mm; same collection data as for preceding; MNHN-IU-2015-1754.

Description

**Cephalothorax.** Suborbital angle indistinguishably fused with antennal spine. Pterygostomian margin rounded. Rostrum (Fig. 19k): bent down, very short, 0.2–0.3 of cl, not reaching to first segment of antennular peduncle, armed with 7 teeth on dorsal margin, 0 of them situated on carapace behind orbital margin, ventral margin with 1 tooth. Eyes well developed, anterior end reaching to 0.72 length of basal segment of antennular peduncle. Short antennular peduncle 0.36–0.49 times as long as carapace. Anterolateral angle reaching 0.37 length of second segment, second segment longer than third segment. Stylocerite reaching to 0.95 length of basal segment of antennular peduncle.

**Pereiopods.** Epipods on first four pereiopods. P1 (Fig. 19a–b): chela about 1.9–2.0 times as long as wide, movable finger 2.5–2.8 times as long as wide, 0.7–0.9 times length of palm; carpus 1.6–1.7 times as long as wide. P2 (Fig. 19c) more slender and longer than first pereiopod, with chela 2.8–2.9 times as long as wide: movable finger 5.1 times as long as wide, 1.6–1.8 times length of palm; carpus slender, 6.6–6.8 times as long as wide. P3 (Fig. 19d): stout, dactylus (Fig. 19f) 2.7–3.0 times as long as wide (terminal one spiniform seta included), with 4–5 spiniform setae on flexor margin in addition to terminal; propod 8.1–9.6 times as long as wide, 4.0–4.8 times as long as dactylus. P5 (Fig. 19e): dactylus (Fig. 19g) 3.2–3.4 times as long as wide, with 26–28 spiniform setae on flexor margin; propod 11.5–13.6 times as long as wide, 4.2–4.7 times as long as dactylus.

**Abdomen.** Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite 0.47 times as long as carapace, 1.5 times as long as fifth somite, 0.91 times as long as telson.

**Telson** (Fig. 19i). slender, 4.3 times as long as wide, with four pairs of dorsal spinules and pair of dorsolateral spinules; posterior margin with median process, rounded, with 6–7 very long intermediate setae longer than lateral ones.

**Male pleopods.** No males.

**Pre-anal carina** (Fig. 19j). High, unarmed.

**Uropodal diaeresis** (Fig. 19h). With 16–17 spinules.

**Eggs.** Size: 0.39–0.41 × 0.19–0.21.

**Habitat**
This species is largely rheophile and prefers fresh and well-oxygenated waters from the higher course of rivers.
Fig. 19. *Caridina nana* sp. nov. **a**. First pereiopod. **b**. Details of the fingers of the first pereiopod. **c**. Second pereiopod. **d**. Third pereiopod. **e**. Fifth pereiopod. **f**. Dactylus of third pereiopod. **g**. Dactylus of fifth pereiopod. **h**. Uropodal diaeresis. **i**. Telson. **j**. Pre-anal carina. **k**. Cephalothorax. MNHN-IU-2018-2912 (a–k).
Colour pattern
Unknown.

Distribution
As far as we know, this new species occurs only in Vella Lavella (Solomon Islands).

Remarks
These specimens from the Solomon Islands are very similar to *C. parvirostris* by the long P2 carpus, 6.6–6.8 times as long as wide (vs 6.0–7.4 in *C. parvirostris*), but are different by the bent rostrum with fewer and smaller dorsal teeth 6–7 (vs 8–10), by the shorter P1 dactylus, 2.5–2.8 times as long as wide (vs 3.0–3.4), and also the shorter P1 chela, 1.9–2.0 times as long as wide (vs 2.0–2.3).

*Caridina sikipozo* sp. nov.
urn:lsid:zoobank.org:act:6A7B9C82-DA70-47AA-81C4-21C351A7BD4F
Figs 2V, 20

Etymology
This species is named after the Sikipozo tribe living around the type locality.

Material examined

Holotype
SOLOMON ISLANDS • ♀, cl 3.2 mm; Choiseul Island, Lokataveva Creek; 06°59.085´ S, 156°47.454´ E; 93 m a.s.l.; 14 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; DNA voucher: CA1928; MNHN-IU-2018-2914.

Paratype
SOLOMON ISLANDS • 1 ♀, cl 3.1 mm; same collection data as for holotype; DNA voucher: CA2310; MNHN-IU-2018-2915.

Description

CEPHALOTHORAX. Suborbital angle indistinguishably fused with antennal spine. Rostrum (Fig. 20j): bent down, short, 0.3–0.4 of cl, reaching end of first segment of antennular peduncle, armed with 14–17 teeth on dorsal margin, 2–3 of them situated on carapace behind orbital margin, ventral margin with 4–5 teeth. Eyes well developed, anterior end reaching to 0.70 length of basal segment of antennular peduncle. Antennular peduncle 0.63 (♀) times as long as carapace. Pointed anterolateral angle reaching 0.31 length of second segment, second segment longer than third segment. Stylocerite reaching to 0.94 length of basal segment of antennular peduncle.

PEREIOPODS. Epipods on first four pereiopods. P1 (Fig. 20a): chela about 2.1–2.2 times as long as wide, movable finger 3.4–3.5 times as long as wide, 1.1–1.3 times length of palm; carpus 1.7–1.8 times as long as wide. P2 (Fig. 20b) more slender and longer than first pereiopod, with chela 2.3–2.4 times as long as wide: movable finger 4.7–4.8 times as long as wide, 1.6–1.8 times length of palm; short carpus, 5.2–5.3 times as long as wide. P3 (Fig. 20c): stout, dactylus (Fig. 20d) 3.2 times as long as wide (terminal spiniform seta included), with 6 spiniform setae on flexor margin including terminal one; propodus 10.3–11.3 times as long as wide, 4.3–4.4 times as long as dactylus. P5: missing in all specimens.

ABDOMEN. Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite 0.48 times as long as carapace, 1.7 times as long as fifth somite, 0.86 times as long as telson.
Fig. 20. *Caridina sikipozo* sp. nov. a. First pereiopod. b. Second pereiopod. c. Third pereiopod. d. Dactylus of third pereiopod. e. Pre-anal carina. f. Uropodal diaeresis. g. Telson. h. First male pleopod. i. Second male pleopod. j. Cephalothorax. MNHN-IU-2018-2914 (a–e, g, j) and MNHN-IU-2018-2915 (f, h–i).
TELSON (Fig. 20g). 2.3 times as long as wide, eight pairs of dorsal spinules and pair of dorsolateral spinules; posterior margin without median process, rounded, with 6–9 long intermediate setae longer than lateral ones.

MALE PLEOPODS. Pl1 (Fig. 20h): endopod subrectangular, 3 times as long as wide, reaching 0.53 length of endopod, with an appendix on subdistal outer margin which reaches beyond distal end of endopod on a short length. Pl2 (Fig. 20i): appendix masculina reaching 0.72 times length of endopod; appendix interna reaching 0.61 length of appendix masculina.

PRE-ANAL CARINA (Fig. 20e). High, unarmed.

UROPODAL DIAERESIS (Fig. 20f). With 23 spinules.

Habitat
This new species is largely rheophile and prefers fresh and well-oxygenated waters in the higher course of rivers.

Colour pattern
Unknown.

Distribution
As far as we know, this new species occurs only on Choiseul (Solomon Islands).

Remarks
These specimens from the Solomon Islands are very similar to Caridina turipi sp. nov. by the high number of postorbital teeth on the dorsal margin of the rostrum (2–3 vs 2–4 for C. turipi sp. nov.). However, this new species can be separated by its longer P1 dactylus (3.4–3.5 vs 2.8–3.0 mm), by its shorter P2 chela (2.3–2.4 vs 2.6–3.1 mm) and shorter P2 carpus (5.2–5.3 vs 5.5–6.6 mm).

Caridina poarae sp. nov.

urn:lsid:zoobank.org:act:CF9FB7DB-335A-4A29-ABD4-68082519CEFF
Figs 2R, 21

Etymology
This new species is named after the local name of the type locality, river Poarae. The name is used as an apposition.

Material examined

Holotype
SOLOMON ISLANDS • ♀, cl 4.1 mm; Ranongga Island, Poarae River; 08°05.028′ S, 156°35.979′ E; 25 Oct. 2016; D. Boseto leg.; DNA voucher: CA2350; MNHN-IU-2018-2920.

Paratypes
SOLOMON ISLANDS • 1 juvenile, cl 2.9 mm; same collection data as for holotype; DNA voucher: CA2348; MNHN-IU-2018-2921 • 1 ♀ ovig., cl 3.4 mm; same collection data as for holotype; DNA voucher: CA2349; MNHN-IU-2018-2922.

Other material
VANUATU • 1 ♀ ovig., cl 5.3 mm; Santo Island; MNHN-IU-2018-2923 • 1 ♀, cl 5.3 mm; same collection data as for preceding; MNHN-IU-2018-2924.
Description

Cephalothorax. Suborbital angle indistinguishably fused with antennal spine. Pterygostomian margin broadly subrectangular. Rostrum (Fig. 21k): straight, short, 0.3 of cl, reaching to near end of first segment of antennular peduncle, unarmed dorsally, ventral margin with 1–3 teeth. Eyes well developed. Antennular peduncle 0.54 times as long as carapace. Anterolateral angle reaching 0.33 length of second segment, second segment little longer than third segment. Stylocerite reaching to 0.83 times length of basal segment of antennular peduncle.

Pereiopods. Epipods on first four pereiopods. P1 (Fig. 21a): chela about 2.0–2.3 times as long as wide, movable finger 2.3–3.2 times as long as wide, 0.8–1.2 times length of palm; carpus 1.3–1.7 times as long as wide. P2 (Fig. 21b) more slender and longer than first pereiopod, with chela 1.4–3.8 times as long as wide: movable finger 4.7–4.9 times as long as wide, 1.4–1.6 times length of palm; carpus slender, 4.5–5.7 times as long as wide. P3 (Fig. 21c): stout, dactylus (Fig. 21e) 2.9–3.0 times as long as wide (terminal spiniform seta included), with 5–6 spiniform setae on flexor margin including terminal; propodus 6.7–7.7 times as long as wide, 3.2–3.7 times as long as dactylus. P5 (Fig. 21d): dactylus (Fig. 21f) 3.9–4.5 times as long as wide, with 42–61 spiniform setae on flexor margin; propodus 9.6–13.8 times as long as wide, 2.9–3.5 times as long as dactylus.

Abdomen. Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite 0.48 times as long as carapace, 1.5 times as long as fifth somite, shorter than telson.

Telson (Fig. 21i). 2.7 times as long as wide, with four or five pairs of dorsal spinules and pair of dorsolateral spinules, posterior margin with median process, rounded, with 5–8 plumose intermediate setae longer than lateral ones.

Male pleopods. No males.

Pre-anal carina (Fig. 21g). High, unarmed.

Uropodal diaeresis (Fig. 21h). With 19–24 spinules.

Eggs. Ovigerous females with eggs size: 0.42–0.49 × 0.22–0.32 mm.

Habitat

This new species is rheophile and prefers fresh and well-oxygenated waters from the middle to upper course of rivers.

Colour pattern

Unknown.

Distribution

This species occurs in Solomon Islands (Ranongga) and Vanuatu (Santo).

Remarks

This new species looks like C. typus by its unarmed dorsal rostrum, but it is distinguished by its shorter P3 propodus, 6.7–7.7 times as long as wide (vs 7.9–10.0 in C. typus), and P3 propodus 3.2–3.7 times as long as dactylus, (vs 3.6–4.6). This new species also looks like C. jeani, by its unarmed dorsal rostrum but it is easily distinguish by its longer P3 dactylus, 4.4–4.6 times as long as wide (vs 1.6 in C. jeani) and its P5 dactylus, 3.9–4.5 times as long as wide (vs 2.7–3.2).
Fig. 21. *Caridina poarae* sp. nov. a. First pereiopod. b. Second pereiopod. c. Third pereiopod. d. Fifth pereiopod. e. Dactylus of third pereiopod. f. Dactylus of fifth pereiopod. g. Pre-anal carina. h. Uropodal diaeresis. i. Telson. j. Eggs. k. Cephalothorax. MNHN-IU-2018-2922 (a–k).
Caridina paratypus sp. nov.
urn:lsid:zoobank.org:act:5E893FC0-9914-4441-BBD4-7824C0D5747D
Figs 2Q, 22

Caridina cf. jeani – de Mazancourt et al. 2019a: 166, 169–170.

Etymology
This new species is named after its resemblance to C. typus.

Material examined

Holotype
SOLOMON ISLANDS • ♂, cl 5.0 mm; Malaita Island, Wairahuta River; 09°16.960´ S, 161°07.287´ E; 250 m a.s.l.; 17 Jun. 2015; D. Boseto leg.; DNA voucher: CA1999; MNHN-IU-2018-2925.

Paratypes
VANUATU • 1 ♀ ovig., cl 6.2 mm; Epi Island, Buavinai River; 16°47.908´ S, 168°11.3654´ E; 28 Oct. 2014; 117 m a.s.l.; A. Acou, D. Kalfatak, G. Marquet and M. Mennesson leg.; DNA voucher: CA1371; MNHN-IU-2018-2926.

Description

CEPHALOTHORAX. Suborbital angle indistinguishably fused with antennal spine. Pterygostomian margin broadly subrectangular. Rostrum (Fig. 22m): straight, short, 0.4 of cl, reaching to near middle of second segment of antennular peduncle, unarmed dorsally, ventral margin with 0–5 teeth. Eyes well developed.

Antennular peduncle 0.51 (♀) – 0.60 (♂) times as long as carapace. Anterolateral angle reaching 0.40 length of second segment, second segment shorter than third segment. Stylocerite reaching near basal segment of antennular peduncle.

PEREIOPODS. Epipods on first four pereiopods. P1 (Fig. 22a): chela about 1.9–2.1 times as long as wide, movable finger 2.1–2.2 times as long as wide, 0.7 times length of palm; carpus 1.5–16 times as long as wide. P2 (Fig. 22b) more slender and longer than first pereiopod, with chela 2.5–2.8 times as long as wide: movable finger 4.8–4.9 times as long as wide, 1.7–1.8 times length of palm; carpus slender, 5.4–5.9 times as long as wide. P3 (Fig. 22c): stout, dactylus (Fig. 22e) 3.2–3.9 times as long as wide (terminal spiniform seta included), with 7 spiniform setae on flexor margin in addition to terminal one; propodus 11.1–11.3 times as long as wide, 4.4–4.6 times as long as dactylus, merus bearing long setae on ventral margin. P5 (Fig. 22d): dactylus (Fig. 22f) 5.6–6.6 times as long as wide, with 59–60 spiniform setae on flexor margin; propodus 16.2–18.1 times as long as wide, 3.7–4.4 times as long as dactylus, merus bearing long setae on ventral margin.

ABDOMEN. Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite 0.46 times as long as carapace, 1.5 times as long as fifth somite, shorter than telson.

TELSON (Fig. 22i). 2.3 times as long as wide, with five or six pairs of dorsal spinules and pair of dorsolateral spinules; posterior margin with median process, rounded, with 10–11 plumose intermediate setae longer than lateral ones.

MALE PLEOPODS. Pl1 (Fig. 22j): endopod subrectangular, 3.2 times as long as wide, reaching 0.54 length of endopod, with appendix on subdistal outer margin which reaches slightly beyond distal end of endopod on short length. P12 (Fig. 22k): appendix masculina reaching 0.58 times length of endopod; appendix interna reaching 0.41 times length of appendix masculina.

HIGH PRE-ANAL CARINA (Fig. 22g). Unarmed.
Fig. 22. Caridina paratypus sp. nov. a. First pereiopod. b. Second pereiopod. c. Third pereiopod. d. Fifth pereiopod. e. Dactylus of third pereiopod. f. Dactylus of fifth pereiopod. g. Pre-anal carina. h. Uropodal diaeresis. i. Telson. j. First male pleopod. k. Second male pleopod. l. Eggs. m. Cephalothorax. MNHN-IU-2018-2925 (a–h, j–k, m) and MNHN-IU-2018-2926 (i, l).
UROPODAL DIAERESIS (Fig. 22h). With 17–19 spinules.

EGGS (Fig. 22l). Size: 0.50–0.54 × 0.29–0.31mm.

Habitat
This species is largely rheophile and prefers fresh and well-oxygenated waters from the middle to upper course of rivers (117–250 m a.s.l.).

Colour pattern
Unknown.

Distribution
This species occurs in the Solomon Islands (Malaita) and Vanuatu (Epi).

Remarks
This new species looks like *C. typus* by its unarmed dorsal rostrum and its elongate P2 carpus, 5.4–5.9 times as long as wide (vs 5.0–6.5 in *C. typus*), but is easily distinguished by its longer P5 dactylus, 5.6–6.6 (vs 3.6–5.1), and its telson with 10–11 plumose intermediate setae longer than lateral ones (vs 5–8 smooth intermediate setae subequal to lateral ones).

This new species also looks like *C. jeani* by its unarmed dorsal rostrum and its telson with 10–11 plumose intermediate setae longer than lateral ones (vs 6–8 in *C. jeani*), but it is easily distinguished by its longer P3 dactylus, 4.4–4.6 times as long as wide (terminal spiniform seta included), with 7 spiniform setae on the flexor margin in addition to the terminal one (vs 1.6 with 5 spiniform setae), and by its shorter appendix masculine on the second male pleopod, 0.58 of the length of the endopod (vs 0.80).

In the same way as for the *C. typus* group, we include in the *C. weberi* group species with or without dorsal teeth on their rostrum. The length of setae on the telson (namely long and plumose terminal setae on the telson clearly longer than lateral ones) is a better criterion to characterize this group.

**Caridina serratiostris** species group

Diagnosis
Moderately robust morphology with a moderately short and straight rostrum (reaching end of antennular peduncle), armed with many dorsal teeth, at least 6 of them on the carapace, without apical teeth, the antennal spine ventral to the inferior orbital angle, a long antennular peduncle (about half the carapace length) with an usually long stylocerite (reaching end of first segment of antennular peduncle), pterygostomian margin rounded, segments of walking legs very slender, sixth abdominal somite about half of carapace length, a small pre-anal carina sometimes bearing an acute spine, a great number of spinules on the uropodal diatresis (>15), numerous, long and plumose terminal setae on the telson and a rounded endopod of the first male pleopod, without appendix interna.

**Caridina serratiostris** De Man, 1892

Figs 2A, 23

*Caridina serratiostris* De Man, 1892: 382, pl. 23, figs 28a–e (type locality: “Bangkalan” and “Bonea” Rivers, Selayar, Indonesia).

*Caridina serratiostris* var. *typica* Bouvier, 1925: 218 (partim), 480–486.

*Caridina serratiostris* – Roux 1926: 248. — Page et al. 2007: 647 (GenBank: DQ478515).

Not *Caridina serratiostris* – Holthuis 1978: 38; fig. 13.
Material examined

Paralectotypes (lectotype designated in Cai & Shokita 2006b)

INDONESIA • 1 ♀ ovig., cl 4.0 mm, 1 ♂, cl 3.1 mm; Selayar Island, Bangkalan; 1889; M. Weber leg.; MNHN-IU-2015-1907 • 1 ♀ ovig., cl 4.1 mm; same collection data as for preceding; MNHN-IU-2015-1908.

Other material

SOLOMON ISLANDS – Choiseul Island • 1 ♀ ovig., cl 5.0 mm; Vorama River; 06°58.687’ S, 156°46.746’ E; 15 m a.s.l.; 11 Oct. 2014; P. Gerbeaux, P. Keith and G. Marquet leg.; DNA voucher: CA1351; MNHN-IU-2018-2927 • 1 ♀ ovig., cl 3.4 mm; Lopakare River, upstream; 07°01.613’ S, 156°45.789’ E; 20 Oct. 2014; 14 m a.s.l.; P. Gerbeaux, P. Keith and G. Marquet leg.; MNHN-IU-2018-2928 • 1 ♀ ovig., cl 3.5 mm; Lopakare River, downstream; 07°01.834’ S, 156°57.762’ E; 11 Oct. 2015; P. Gerbeaux, P. Keith and G. Marquet leg.; DNA voucher: CA1351; MNHN-IU-2018-2929. – Kolombangara Island • 1 ♀ ovig., cl 3.6 mm; Vanga 2 River; 07°54.825’ S, 156°57.762’ E; 11 Oct. 2015; P. Keith, C. Lord and G. Marquet leg.; DNA voucher: CA1351; MNHN-IU-2018-2930. – Vella Lavella Island • 1 ♀ ovig., cl 3.6 mm; Vala Kadju; 07°49.860’ S, 156°42.644’ E; 28 Oct. 2016; P. Keith and C. Lord leg.; MNHN-IU-2018-2931. – Isabel Island • 1 specimen; Rapa River; 07°28.527’ S, 158°17.105’ E; 0–7 m a.s.l.; 23 Oct. 2019; P. Keith, C. Lord, R. Causse and D. Boseto leg.; DNA voucher: CA2530; MNHN-AUSTRALIA – Queensland • 1 ♀ ovig., cl 4.1 mm; Captain Cook Highway; 16°22.266’ S, 145°24.551’ E; 64 m a.s.l.; 14 Jun. 2016; B. Mos leg.; MNHN-IU-2018-2935 • 1 ♀ ovig., cl 3.2 mm; same collection data as for preceding; MNHN-IU-2018-2936 • 1 ♀ ovig., cl 3.8 mm; Johnstone River; 17°30.933’ S, 145°59.437’ E; 8 m a.s.l.; 11 Jun. 2016; B. Mos leg.; MNHN-IU-2018-2937 • 1 ♀ ovig., cl 3.2 mm; Barron River; 16°52.443’ S, 145°40.830’ E; 5 m a.s.l.; 8 Jun. 2016; B. Mos leg.; MNHN-IU-2018-2938 • 1 ♀ ovig., cl 3.6 mm; Mowbray River; 16°33.859’ S, 145°27.844’ E; 15 m a.s.l.; 14 Jun. 2016; B. Mos leg.; MNHN-IU-2018-2939.

PAPUA NEW GUINEA • 1 ♀ ovig., cl 5.4 mm; New Britain, Rangihi swamp; 05°34.549’ S, 149°28.943’ E; 24 Oct. 2018; R. Causse, P. Keith and C. Lord leg.; MNHN-IU-2018-2940.

Description

CEPHALOTHORAX. Antennal spine ventral to inferior orbital angle. Pterygostomian margin rounded. Rostrum (Fig. 23m–n): straight, short, 0.6–0.9 of cl, reaching beyond end of antennular peduncle, armed with 22–26 teeth on dorsal margin, 7–10 of them situated on carapace behind orbital margin, ventral margin with 6–7 teeth. Eyes developed, anterior end reaching to 0.54 times length of basal segment of antennular peduncle. Long antennular peduncle, 0.78 (♀) – 0.95 (♂) times as long as carapace; second segment distinctly longer than third segment. Stylocerite reaching to middle of second segment of antennular peduncle.

PEREIOPODS. Epipods on first four pereiopods. P1 (Fig. 23a): chela about 2.3–2.9 times as long as wide, movable finger 4.1–5.1 times as long as wide, 1.1–1.8 times length of palm; carpus 3.3–4.5 times as long as wide. P2 (Fig. 23b) more slender and longer than first pereiopod, with chela 3.7–5.1 times as long as wide: movable finger 6.0–8.3 times as long as wide, 1.7–1.9 times length of palm; carpus slender, 8.3–10.9 times as long as wide. P3 (Fig. 23c): slender, dactylus (Fig. 23c) 3.7–4.4 times as long as wide (terminal spiniform seta included), with 6–7 spiniform setae on flexor margin including terminal one; propodus 14.2–17.1 times as long as wide, 4.1–5.3 times as long as dactylus, distinctive very long seta on distal end of carpus and merus. P5 (Fig. 23d): dactylus (Fig. 23f) 4.5–5.5 as long as wide, with 10–15
spiniform setae on flexor margin; propodus 18.7–24.0 times as long as wide, 4.5–5.5 times as long as dactylus.

**ABDOMEN.** Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite 0.56 times as long as carapace, 1.7 times as long as fifth somite, shorter than telson.

**Telson** (Fig. 23i). 2.5–3.5 times as long as wide, with five pairs of dorsal spinules and pair of dorsolateral spinules; posterior margin with small median process, rounded, with 8–10 very long intermediate plumose setae longer than lateral ones.

**Male pleopods.** Pl1 (Fig. 23j): endopod rounded, 1.4 times as long as wide, reaching 0.22 times length of endopod, no appendix. Pl2 (Fig. 23k): appendix masculina reaching 0.77 times length of endopod; appendix interna reaching 0.75 times length of appendix masculina.

**Pre-anal carina** (Fig. 23g). High, with a spine.

**Uropodal diaeresis** (Fig. 23h). With 15–17 spinules.

**Eggs.** Ovigerous females with small eggs, size: 0.30–0.38 × 0.18–0.23mm.

**Habitat**

*Caridina serratirostris* lives from the estuarine brackish water to the fresh water in the lower course of the rivers.

**Colour pattern** (Fig. 26D)
The body is yellowish to reddish with many red dots.

**Distribution**

This species occurs in Indonesia (Selajar), the Solomon Islands, Australia and Papua New Guinea (New Britain).

**Remarks**

Our specimens fit well with the types from Selayar: straight rostrum, 0.6–0.9 of cl (vs 0.6–0.9 in the type specimens), sometimes reaching the end of the antennular peduncle, armed with 22–26 teeth on dorsal margin (vs 20–27), 7–10 of them situated on carapace behind orbital margin (vs 8–9), ventral margin with 6–7 teeth (vs 4–7); P1 carpus 3.3–4.5 times as long as wide (vs 3.1–4.9); P2 carpus 8.3–10.9 times as long as wide (vs 7.0–9.0); P3 dactylus with 6–7 spiniform setae (vs 6–7) propodus 4.1–5.3 times as long as dactylus (vs 3.8–4.2); uropodal diaresis with 15–17 spinules (vs 14–19); small eggs, 0.30–0.38 × 0.18–0.23 mm (vs 0.28–0.31 × 0.13–0.15); no appendix interna on the endopod of the male first pleopod.

*Caridina celebensis* De Man, 1892

Figs 2B, 24

*Caridina serratirostris* var. *celebensis* De Man, 1892: 385, pl. 23, figs 28f–h (type locality: river at Palopo, Luwu, Sulawesi (Celebes), Indonesia).

*Caridina serratirostris* var. *celebensis* – Bouvier 1925: 220.

*Caridina celebensis* – Holthuis 1978: 39, fig. 14. — Cai & Shokita 2006b: 247. — von Rintelen et al. 2012 (GenBank: FN995356).
Fig. 23. *Caridina serratirostris* De Man, 1892. a. First pereiopod. b. Second pereiopod. c. Third pereiopod. d. Fifth pereiopod. e. Dactylus of third pereiopod. f. Dactylus of fifth pereiopod. g. Preanal carina. h. Uropodal diaeresis. i. Telson. j. First male pleopod. k. Second male pleopod. l. Eggs. m. Rostrum variation. n. Cephalothorax. MNHN-IU-2018-2928 (a–i, l), MNHN-IU-2018-2933 (j–k, m) and MNHN-IU-2018-2927 (n).
Material examined

Paralectotype (lectotype designated in Cai & Shokita 2006b)

INDONESIA • 1 ♀ ovig., cl 3.5 mm; Sulawesi, Luwu, river near Palopo; Feb. 1889; M. Weber leg.; MNHN-IU-2015-1926.

Other material

SOLOMON ISLANDS – Kolombangara Island • 1 ♀ ovig., cl 3.1 mm; Lodumoe River; 07°50.961´ S, 157°04.320´ E; 16 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2018-2941 • 1 ♀ ovig., cl 3.2 mm; same collection data as for preceding; MNHN-IU-2018-2942 • 1 ♀, cl 3.5 mm; Munga River; 07°54.420´ S, 156°57.932´ E; 5 m a.s.l.; 19 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; DNA voucher: CA1518; MNHN-IU-2018-2943 • 1 ♀ ovig., cl 3.4 mm; Liva River; 08°03.863´ S, 157°10.633´ E; 14 m a.s.l.; 11 Nov. 2015; P. Keith, C. Lord and G. Marquet leg.; MNHN-IU-2018-2944.

– Vella Lavella Island • 1 ♀ ovig., cl 3.5 mm; Wariassi River; 29 Oct. 2016; P. Keith and C. Lord leg.; MNHN-IU-2018-2945.

VANUATU – Efate Island • 1 ♀, cl 3.0 mm; Marona River; 17°33´51.860˝ S, 168°17´08.140˝ E; 5 m a.s.l.; 9 Nov. 2014; A. Accou, G. Marquet and M. Mennesson leg.; DNA voucher: CA1381; MNHN-IU-2018-2946 • 1 ♀ ovig., cl 3.4 mm; Mele River; 17°40.578´ S, 168°15.462´ E; 32 m a.s.l.; A. Acou, G. Marquet and M. Mennesson leg.; MNHN-IU-2018-2947.

Description

Cephalothorax. Antennal spine ventral to inferior orbital angle. Pterygostomian margin rounded. Rostrum (Fig. 24k): straight, 0.6–0.7 of cl, reaching to base of third segment of antennular peduncle, armed with 17–22 teeth on dorsal margin, 6–8 of them situated on carapace behind orbital margin, ventral margin with 4–7 teeth. Eyes developed, anterior end reaching to 0.66 times length of basal segment of antennular peduncle. Long antennular peduncle, 0.57–0.75 (♀) times as long as carapace. Anterolateral angle reaching 0.22 times length of second segment, second segment distinctly longer than third segment. Stylocerite reaching just beyond beginning of second segment of antennular peduncle.

Pereiopods. Epipods on first four pereiopods. P1 (Fig. 24a): chela about 2.7–2.8 times as long as wide, movable finger 3.6–4.5 times as long as wide, 1.0–1.7 times length of palm; carpus 4.0–5.0 times as long as wide. P2 (Fig. 24b) more slender and longer than first pereiopod, with chela 5.5–6.6 times as long as wide: movable finger 6.4–8.1 times as long as wide, 1.2–1.3 times length of palm; carpus slender, 11.9–12.0 times as long as wide. P3 (Fig. 24c): slender, dactylus (Fig. 24e) 3.7–4.6 times as long as wide (terminal spiniform seta included), with 7–10 spiniform setae on flexor margin including terminal one; propodus 12.4–13.2 times as long as wide, 3.5–4.0 times as long as dactylus. P5 (Fig. 24d): dactylus (Fig. 24f) 4.7–5.1 as long as wide, with 10–15 spiniform setae on flexor margin; propodus 15.0–16.2 times as long as wide, 3.7–3.9 times as long as dactylus.

Abdomen. Third abdominal somite with moderately convex dorsal profile. Sixth abdominal somite 0.58 times as long as carapace, 1.7 times as long as fifth somite, shorter than telson.

Telson (Fig. 24i). 2.4 times as long as wide, with four or five pairs of dorsal spinules and pair of dorsolateral spinules; posterior margin with median process, rounded, with 9–11 very long intermediate setae longer than lateral ones.

Male pleopods. No males.

Pre-anal carina (Fig. 24g). High, with a spine.

Uropodal diaeresis (Fig. 24h). With 13–17 spinules.
Fig. 24. *Caridina celebensis* De Man, 1892. a. First pereiopod. b. Second pereiopod. c. Third pereiopod. d. Fifth pereiopod. e. Dactylus of third pereiopod. f. Dactylus of fifth pereiopod. g. Pre-anal carina. h. Uropodal diaeresis. i. Telson. j. Eggs. k. Cephalothorax. MNHN-IU-2018-2944 (a–f, j), MNHN-IU-2018-2946 (g) and MNHN-IU-2018-2943 (h–i, k).
EGGS. Size: 0.30–0.38 × 0.18–0.23mm.

Habitat

*Caridina celebensis* lives essentially in the estuarine brackish waters in the lower course of rivers.

Colour pattern

Unknown.

Distribution

This species occurs in Indonesia (Sulawesi), the Solomon Islands, Vanuatu and the Philippines (Palawan).

Remarks

According to Holthuis (1978), *C. celebensis* can be separated from *C. serratirostris* by its shorter rostrum reaching to the base of the third segment of the antennular peduncle (vs reaching beyond the end of the antennular peduncle), with less dorsal teeth 17–22 (vs 22–26). Its P2 carpus is longer, 11.9–12.0 as long as wide (vs 8.3–10.9), and also its P2 chela is 5.5–6.6 times as long as wide (vs 3.7–5.1), but its movable finger is 1.2–1.3 times the length of the palm (vs 1.7–1.9), its P3 dactylus has more spiniform setae on the flexor margin in addition to the terminal one, 7–10 (vs 6–7), and its P5 propodus is 15.0–16.2 times as long as wide (vs 18.7–24.0) and 3.7–3.9 times as long as the dactylus (vs 4.5–5.5).

According to Cai & Shokita (2006b), the characters used by Holthuis are not always reliable. On the contrary, the size of the arthrobranch on the base of P1 in *C. serratirostris* is highly variable, from very distinct to almost indiscernible, but is totally absent in *C. celebensis*.

Nevertheless, our study allowed us to find other morphological characters that separate these two species well, such as the number of teeth on the dorsal margin of the rostrum or the length of the P2 carpus.

Identification key

1. More than 6 dorsal rostrum teeth situated on carapace behind orbital margin. A long stylocerite, reaching at least the beginning of the second segment of antennular peduncle: *C. serratirostris* group .................................................................................................................. 2
   – Fewer than 6 dorsal rostrum teeth situated on carapace behind orbital margin. A long or short stylocerite .................................................................................................................................. 3

2. Rostrum with 22–26 dorsal teeth and P2 carpus 8.2–10.9 times as long as wide .................................................. *C. serratirostris* De Man, 1892
   – Rostrum with 17–22 dorsal teeth and P2 carpus 11.9–12.0 times as long as wide .............................................. *C. celebensis* De Man, 1892

3. Number of spiniform setae on uropodal diaeresis 6–10 and a very long and upcurved rostrum with 5–9 dorsal teeth, widely spaced: *C. gracilirostris* group .......................................................................................................................... 4
   – Number of spiniform setae on uropodal diaeresis 8–22 and a long or short rostrum with 8–28 dorsal teeth, closely set ......................................................................................................................... 5

4. No appendix interna on the endopod of the male first pleopod. P1 and P2 carpus 1.5–1.9 and 3.2–5.1 times as long as wide, respectively ................................................................. *C. gracilirostris* De Man, 1892
   – With an appendix interna on the endopod of the male first pleopod. P1 and P2 carpus 2.3–3.1 and 5.2–6.4 times as long as wide, respectively ......................................................... *C. neglecta* Cai & Ng, 2007

5. Uropodal diaeresis with 14–22 spinules and short rostrum, armed or not .................................................. 6
   – Uropodal diaeresis with 8–17 spinules and rostrum variable in shape and length, always unarmed .................................................. 18
Fig. 25. Live colourations. A. *Caridina gracilirostris* De Man, 1892 (MNHN-IU-2018-2804). B. *Caridina neglecta* Cai & Ng, 2007 (MNHN-IU-2018-2811). C. *Caridina appendiculata* Jalihal & Shenoy, 1998 (MNHN-IU-2018-135). D. *Caridina brevidactyla* Roux, 1919 (CA1503). E. *Caridina choiseul* sp. nov. (Choiseul Island). F. *Caridina intermedia* sp. nov. (MNHN-IU-2014-20847). G. *Caridina mertoni* Roux, 1911 (Kolombangara Island). Photographs by P. Keith (A–G).
Fig. 26. Live colourations. A. Caridina buehleri Roux, 1934 (MNHN-IU-2015-20). B. Caridina gueryi Marquet, Keith & Kalfatak, 2009 (MNHN-IU-2015-19). C. Caridina weberi De Man, 1892 (Kolombangara Island). D. Caridina serratirostris De Man, 1892 (MNHN-IU-2018-2931). E. Caridina papuana Nobili, 1905 (Choiseul Island). Habitats in the Solomon Islands. F. Caridina maeana sp. nov. (Choiseul Island). G. Lentic mode, Lodumoe river, Kolombangara Island. H. Lotic mode, Sulumuni river, Kolombangara Island. Photographs by P. Keith (A, D–F, H) and C. Lord (B–C, G).
6. Telson with numerous and very long plumose intermediate setae .......... 7 (C. weberi complex)
   - Telson with few long intermediate setae ................................. 17 (C. typus complex)

7. Long stylocerite reaching to about halfway along second segment of peduncle 8
   - Short stylocerite not reaching second segment of peduncle 9

8. P5 propodus 3.8–4.4 times as long as dactylus ......................... C. buchleri Roux, 1934
   - P5 propodus 4.4–6.2 times as long as dactylus ............... C. gueryi Marquet, Keith & Kalfatak, 2009

9. No dorsal teeth on the rostrum ................................................. 10
   - 8–22 dorsal teeth on the rostrum .................................................. 11

10. P5 dactylus 4.9–6.6 times as long as wide and P3 propodus 8.6–11.3 times as long as wide ....
    - P5 dactylus 3.9–4.5 times as long as wide and P3 propodus 6.7–7.7 times as long as wide ........
      C. paratypus sp. nov.

11. Dorsal teeth of rostrum situated considerably anterior to orbital margin .......................... 12
    - Dorsal teeth of rostrum situated all along its length ............................ 14

12. 8–7 large teeth on dorsal margin of rostrum ...................... C. nana sp. nov.
    - 8–15 small teeth on dorsal margin of rostrum ............................................. 13

13. P5 dactylus biunguiculate ....................................................... C. maeana sp. nov.
    - P5 dactylus unguiculate ................................................. C. tupaia de Mazancourt, Marquet & Keith, 2019

14. Telson with one or two lateral pairs of setae, with 11–22 dorsal teeth ...... C. weberi De Man, 1892
    - Telson always with one pair of lateral setae, with 9–13 dorsal teeth .......................... 15

15. 0–1 post-orbital teeth on the dorsal margin of the rostrum ................ 16
    - 2 or more post-orbital teeth on the dorsal margin of the rostrum .............. C. sikipozo sp. nov.

16. P3 dactylus 2.8–3.0 times as long as wide .................................. C. piokerai sp. nov.
    - P3 dactylus 3.0–3.3 times as long as wide .............................................. C. papuana Nobili, 1905

17. Rostrum with no dorsal teeth .................................. C. typus H. Milne Edwards, 1837
    - Rostrum with dorsal teeth .................................................. C. turipi sp. nov.

18. P1 carpus shaped as a half crescent; no apical tooth on the rostrum .......... C. barakoma sp. nov.
    - P1 carpus more or less long; 1–5 apical teeth on the rostrum ....... C. nilotica complex

19. Very long rostrum, 1.1–2.1 times as long as carapace .......................... 20
    - Moderately long rostrum, variable, 0.5–1.2 times as long as carapace ........ 22

20. Pre-anal carina without a spine ........................................... C. brevidactyla Roux, 1919
    - Pre-anal carina with a spine ............................................................ 21

21. Rostrum with 12–18 dorsal teeth, somewhat irregularly spaced, 8–12 dorsal teeth before the first ventral teeth ........................................ C. appendiculata Jalihal & Shenoy, 1998
    - Rostrum with 16–26 dorsal teeth, closely set, 11–16 dorsal teeth before the first ventral teeth .....
22. Pre-anal carina always without a spine; rostrum with 4–9 ventral teeth .......... *C. mertoni* Roux, 1911
   – Pre-anal carina with or without a spine; rostrum with 6–18 ventral teeth .................................................. 23

23. Pre-anal carina always with a spine, pterygostomial margin rounded .................. *C. pisuku* sp. nov.
   – Pre-anal carina with or without a spine, pterygostomial margin subrectangular .......................................................... 24

**Conclusion**

By visiting only five major islands of the Solomon Archipelago, we identified 24 *Caridina* species including 11 of which are new. As expected for such a wide-ranging genus, regional differences in diversity of *Caridina* exist in the Indo-Pacific. When focusing on endemic species of *Caridina*, the maximum diversity occurs around the Coral Triangle (Veron et al. 2009), between the Philippines, Indonesia, and Papua-New Guinea. According to our study, the Solomon Archipelago belongs to this maximum diversity area. Indeed, among our 24 Solomon *Caridina* species, 5 appear to be endemic to this archipelago.

Regional patterns appear in the diversity of *Caridina* in the Indo-Pacific, which are explained by the age, size, and latitude of the islands. Geologically old islands have had more opportunity to be colonized by shrimps, and had time for colonizers to adapt and specialize to the different habitats and form new species (Chen & He 2009). Indeed, the complex geological history of the Solomon Islands may explain the richness of its fauna: the extension of the archipelago, stretching over 1300 km, with many large, high elevation and old islands (2700 m high, 10049 km² and formation in Early Miocene for Bougainville) promoted its great diversity.

The patterns in the diversity of endemic species vary considerably from those of amphidromous *Caridina* species (de Mazancourt et al. in press). The greatest diversity of amphidromous species is found in Indonesia, in the Solomon Islands and Vanuatu. Indeed, among our 24 species of the Solomon Islands, 12 are shared with Indonesia, 10 with Vanuatu and 6 with Papua New Guinea. On the other hand, only 4 species are shared with Australia and 3 with New Caledonia.

This may also include the Coral Triangle, as the diversity of *Caridina* from the area remains poorly known. The lowest diversity of amphidromous species is found in Polynesia and at the borders of the distribution area in general. Important areas of endemism, such as Madagascar, are not hotspots of diversity for amphidromous species. Localities with low endemism, like the Polynesian or Micronesian islands, often have a higher proportion of amphidromous species. Patterns in the diversity of amphidromous species may be explained by the recent colonization of the islands by amphidromous shrimps with great dispersal abilities, allowing them to colonize these isolated habitats without becoming reproductively isolated. Furthermore, small islands exhibit unstable conditions in which endemic landlocked populations could not maintain themselves in rivers, in contrast to amphidromous species that maintain a stock of larvae in the ocean, ready to recolonize depopulated habitats (McDowall 2007).

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References
Bernardes S.C., Pepato A.R., von Rintelen T., von Rintelen K., Page T.J., Freitag H. & de Bruyn M. 2017. The complex evolutionary history and phylogeography of Caridina typus (Crustacea: Decapoda): long-distance dispersal and cryptic allopatric species. Scientific Reports 7: (9044): 1–13. https://doi.org/10.1038/s41598-017-08494-w

Blanco G.J. 1935. The Atyidae of the Philippine Islands. Philippine Journal of Science 56 (1): 29–39.

Bossuyt F., Meegaskumbura M., Beenaerts N., Gower D.J., Pethiyagoda R., Roelants K., Mannaeert A., Wilkinson M., Bahir M.M., Manamendra-Arachchi K., Ng, P.K.L., Schneider C.J., Oommen O.V. &
Milinkovitch M.C. 2004. Local endemism within the Western Ghats-Sri Lanka biodiversity hotspot. *Science* 306 (5695): 479–481. https://doi.org/10.1126/science.1100167

Bouvier E.L. 1925. Recherches sur la morphologie, les variations, la distribution géographique des crevettes de la famille des Atyidés. *Encyclopédie Entomologique* 4 (A): 1–370.

Cai Y & Ng P.K.L. 2001. The freshwater decapod crustaceans of Halmahera, Indonesia. *Journal of Crustacean Biology* 21 (3): 665–695. https://doi.org/10.1651/0022-2930(2001)021[0665TLFDCA]2.0.CO;2

Cai Y & Ng P.K.L. 2007. A revision of the *Caridina gracilirostris* De Man, 1892, species group, with descriptions of two new taxa (Decapoda; Caridea; Atyidae). *Journal of Natural History* 41 (25–28): 1585–1602. https://doi.org/10.1080/00222930701458754

Cai Y. & Shokita S. 2006a. Atyid shrimps (Crustacea: Decapoda: Caridea) of the Ryukyu Islands, southern Japan, with descriptions of two new species. *The Raffles Bulletin of Zoology* 54 (2): 245–270.

Cai Y., Ng P.K.L., Shokita S. & Satake K. 2006. On the species of Japanese atyid shrimps (Decapoda: Caridea) described by William Stimpson (1860). *Journal of Crustacean Biology* 26 (3): 392–419. https://doi.org/10.1651/C-2572.1

Cai Y., Ng P.K.L. & Choy S. 2007. Freshwater shrimps of the family Atyidae (Crustacea: Decapoda: Caridea) from Peninsular Malaysia and Singapore. *Raffles Bulletin of Zoology* 55 (2): 277–309.

Chace F.A. Jr. 1997. The caridean shrimps (Crustacea: Decapoda) of the Albatross Philippine Expedition 1907–1910, Part 6: Superfamily Palaemonoidea. *Smithsonian Contributions to Zoology* 543: 1–152. https://doi.org/10.5479/si.00810282.543

Chen X.-Y. & He F. 2009. Speciation and endemism under the model of island biogeography. *Ecology* 90 (1): 39–45.

Coleman C.O. 2003. “Digital inking”: How to make perfect line drawings on computers. *Organisms Diversity and Evolution* 3 (4): 303. https://doi.org/10.1078/1439-6092-00081

Coleman C.O. 2006. Substituting time-consuming pencil drawings in arthropod taxonomy using stacks of digital photographs. *Zootaxa* 1360 (1): 61–68. https://doi.org/10.11646/zootaxa.1360.1.4

Covich A.P., Palmer M.A. & Crowl T.A. 1999. The role of benthic invertebrate species in freshwater ecosystems. *BioScience* 49: 119–128. https://doi.org/10.2307/1313537

Darriba D., Taboada G.L., Doallo R. & Posada D. 2012. *jModelTest* 2: more models, new heuristics and parallel computing. *Nature Methods* 9 (8): 772–772. https://doi.org/10.1038/nmeth.2109

De Grave S., Smith K.G., Adeler N.A., Allen D.J., Alvarez F., Anker A., Cai Y., Carrizo S.F., Klotz W., Mantelatto F.L., Page T.J., Shy J.-Y., Villalobos J.L. & Wowor D. 2015. Dead shrimp blues: A global assessment of extinction risk in freshwater shrimps (Crustacea: Decapoda: Caridea). *PLoS ONE* 10: e0120198. https://doi.org/10.1371/journal.pone.0120198

De Man J.G. 1892. Decapoden des Indischen Archipels. *In: Weber M. (ed.), Zoologische Ergebnisse einer Reise in Niederländisch Ost-Indien* 2: 265–527. Brill, Leiden.

Drummond A. J. & Rambaut. A. 2007. *BEAST*: Bayesian evolutionary analysis by sampling trees. *BMC Evolutionary Biology* 7: 214. https://doi.org/10.1186/1471-2148-7-214
Edgar R.C. 2004. MUSCLE: multiple sequence alignment with high accuracy and high throughput. *Nucleic Acids Research* 32 (5): 1792. https://doi.org/10.1093/nar/gkh340

Edmondson C.H. 1935. Atyidae of Southern Polynesia. *Occasional Papers of Bernice P. Bishop Museum* 11 (3): 1–19.

Esselstyn J.A., Evans B.J., Sedlock J.L., Anwarali Khan F.A. & Heaney L.R. 2012. Single-locus species delimitation: a test of the mixed Yule-coalescent model, with an empirical application to Philippine round-leaf bats. *Proceedings of the Royal Society B* 279 (1743): 3678–3686. https://doi.org/10.1098/rspb.2012.0705

Felsenstein J. 1985. Confidence limits on phylogenies: an approach using the bootstrap. *Evolution* 39 (4): 783–791. https://doi.org/10.1111/j.1558-5646.1985.tb00420.x

Guindon S. & Gascuel O. 2003. A simple, fast, and accurate algorithm to estimate large phylogenies by maximum likelihood. *Systematic Biology* 52 (5): 696–704. https://doi.org/10.1080/10635150390235520

Holthuis L.B. 1965. The Atyidae of Madagascar. *Mémoires du Muséum National d’Histoire Naturelle, séries A (Zoologie)* 33 (1): 1–48.

Holthuis L.B. 1969. Études hydrobiologiques en Nouvelle-Calédonie (Mission 1965 du Premier institut de Zoologie de l’Université de Vienne). IX. The freshwater shrimps of New Caledonia. *Cahiers O.R.S.T.O.M., Série Hydrobiologie* 3 (2): 87–108.

Holthuis L.B. 1978. A collection of decapod Crustacea from Sumba, Lesser Sunda Islands, Indonesia. *Zoologische Verhandelingen Uitgegeven door het Rijksmuseum van Natuurlijke Historie te Leiden* 53 (19): 209–224.

Jalihal D.R. & Shenoy S. 1998. Taxonomic revision of some Indian prawn species of genus *Caridina* H. Milne Edwards, 1837 (Atyidae). *Proceedings and Abstracts of the Fourth International Crustacean Congress* 128–129.

Jalihal D.R., Shenoy S. & Sankolli K.N. 1984. Five new species of freshwater atyid shrimps of the genus *Caridina* H. Milne Edwards from Dharwar area (Karnataka State, India). *Records of the Zoological Survey of India. Miscellaneous Publication, Occasional Paper* 69: 1–40.

Johnson D.S. 1963. Distributional and other notes on some freshwater prawns (Atyidae and Palaemonidae) mainly from the Indo-West Pacific region. *Bulletin of the National Museum of Singapore* 32: 5–30.

Karge A. & Klotz W. 2007. *Süßwassergarnelen aus aller Welt*. Dähne Verlag, Ettingen, Germany.

Kearse M., Moir R., Wilson A., Stones-Havas S., Cheung M., Sturrock S., Buxton S., Cooper A., Markowitz S., Duran C., Thierer T., Ashton B., Meintjes P. & Drummond A. 2012. Geneious Basic: an integrated and extendable desktop software platform for the organization and analysis of sequence data. *Bioinformatics* 28 (12): 1647–1649. https://doi.org/10.1093/bioinformatics/bts199

Keith P., Marquet G., Lord C., Kalfata D., & Vigneux E. 2010. *Poissons et Crustacés d’Eau douce du Vanuatu*. Société française d’Ichtyologie, Paris.

Keith P., Marquet G., Gerbeaux P., Vigneux E. & Lord C. 2013. *Poissons et Crustacés d’Eau douce de Polynésie. Taxonomie, Écologie, Biologie et Gestion*. Société française d’Ichtyologie, Paris.

Kemp S. 1918. Zoological results of a tour in the Far East. Crustacea Decapoda and Stomatopoda. *Memoirs of the Royal Asiatic Society of Bengal* 6: 274–293.

Klotz W., Karge A. & von Rintelen K. 2007. A redescription of two atyid shrimps (Decapoda: *Caridina*) from central Sulawesi, Indonesia. *Zootaxa* 1466 (1): 1–10. https://doi.org/10.11646/zootaxa.1466.1.1
Kumar S., Stecher G., & Tamura K. 2016. MEGA7: Molecular Evolutionary Genetics Analysis Version 7.0 for Bigger Datasets. Molecular Biology and Evolution, 33 (7), 1870–1874. https://doi.org/10.1093/molbev/msw054

Lamarque P., Therezien Y. & Charlon N. 1975. Étude des conditions de la pêche à l’électricité dans les eaux tropicales. Bois et Forêts des Tropiques 161: 61–63.

Liang X.-Q. & Yan S.-L. 1977. New species and subspecies of Caridina (Decapoda, Caridea) from Fukien, China. Acta Hydrobiologia Sinica 6: 219–225.

Marquet G., Keith P. & Kalfatak D. 2009. Caridina gueryi, a new species of freshwater shrimp (Decapoda, Atyidae) from Santo Island, Vanuatu. Crustaceana 82: 159–166. https://doi.org/10.1163/156854008X367179

de Mazancourt V., Marquet G., Klotz W., Keith P. & Castelin M. 2017a. When morphology and molecules work together: lines of evidence for the validity of Caridina buehleri Roux, 1934 (Crustacea: Decapoda: Atyidae) and for C. gueryi Marquet, Keith & Kalfatak, 2009 as its junior synonym. Invertebrate Systematics 31: 220–230. https://doi.org/10.1071/IS16044

de Mazancourt V., Marquet G. & Keith P. 2017b. The “Pinocchio-shrimp effect”: first evidence of rostrum length variation with the environment in Caridina H. Milne Edwards, 1837 (Crustacea: Decapoda: Atyidae). Journal of Crustacean Biology 37 (3): 249–257. https://doi.org/10.1093/jcbiol/rux025

de Mazancourt V., Marquet G., Rogers D.C. & Keith P. 2018b. Description of a new species of Caridina (Crustacea: Decapoda: Atyidae) from two Micronesian islands (Guam and Babeldaob). Zootaxa 4377 (1): 39–50. https://doi.org/10.11646/zootaxa.4377.1.3

de Mazancourt V., Klotz W., Marquet G. & Keith P. 2018 c. Integrative taxonomy helps separate four species of freshwater shrimps commonly overlooked as Caridina longirostris (Crustacea: Decapoda: Atyidae) in Indo-West Pacific islands. Invertebrate Systematics 32 (6): 1422–1447. https://doi.org/10.1071/is18034

de Mazancourt V., Marquet G. & Keith P. 2018a. Caridina variabilirostris (Crustacea: Decapoda: Atyidae), a new species of freshwater shrimp from Pohnpei (Micronesia). European Journal of Taxonomy 453: 1–16. https://doi.org/10.5852/ejt.2018.453

de Mazancourt V., Klotz W., Marquet G., Mos B., Rogers D.C. & Keith P. 2019a. The complex study of complexes: the first well-supported phylogeny of two species complexes within genus Caridina (Decapoda: Caridea: Atyidae) sheds light on evolution, biogeography, and habitat. Molecular Phylogenetics and Evolution 131: 164–180. https://doi.org/10.1016/j.ympev.2018.11.002

de Mazancourt V., Marquet G., & Keith P. 2019b. Revision of freshwater shrimps belonging to Caridina weberi complex (Crustacea: Decapoda: Atyidae) from Polynesia with discussion on their biogeography. Journal of Natural History 53 (13–14): 815–847. https://doi.org/10.1080/00222933.2019.1612959

de Mazancourt V., Klotz W., Marquet G., Mos B., Rogers D.C. & Keith P. (in press). Chapter 11: New insights on biodiversity and conservation of amphidromous shrimps of the Indo-Pacific islands (Decapoda: Atyidae: Caridina). In: Kawai T. & Rogers D.C. (eds) Advances in Crustacean Research 22. CRC Press (Taylor & Francis), Boca Raton.

McDowall R.M. 2007. On amphidromy, a distinct form of diadromy in aquatic organisms. Fish and Fisheries 8 (1): 1–13. https://doi.org/10.1111/j.1467-2979.2007.00232.x

Milne Edwards H. 1837. Histoire naturelle des crustacés, comprenant l’anatomie, la physiologie et la classification de ces animaux. Librairie encyclopédique de Roret 1834–1840, Paris. https://doi.org/10.5962/bhl.title.39738
Miller M.A., Pfeiffer W. & Schwartz T. 2010. Creating the CIPRES Science Gateway for inference of large phylogenetic trees. In: Proceedings of the Gateway Computing Environments Workshop (GCE), New Orleans: 1–8. https://doi.org/10.1109/GCE.2010.5676129

Monaghan M.T., Wild R., Elliot M., Fujisawa T., Balke M., Inward D.J.G., Lees D.C., Ranaivosolo R., Eggleton P., Barraclough T.G. & Vogler A.P. 2009. Accelerated species inventory on Madagascar using coalescent-based models of species delineation. Systematic Biology 58: 298–311. https://doi.org/10.1093/sysbio/syp027

Nobili G. 1905. Decapodi e isopodi della Nuova Guinea Tedesca raccolti dal Sign. L. Biro. Annales Historico-Naturales Musei Nationalis Hungarici 3: 480–507.

Page T.J. & Hughes J.M. 2011. Neither molecular nor morphological data have all the answers; with an example from Macrobrachium (Decapoda: Palaemonidae) from Australia. Zootaxa 2874 (1): 65–68. https://doi.org/10.11646/zootaxa.2874.1.4

Page T.J., Choy S. & Hughes J. 2005. The taxonomic feedback loop: symbiosis of morphology and molecules. Biology Letters 1: 139–142. https://doi.org/10.1098/rsbl.2005.0298

Page T.J., von Rintelen K. & Hughes J.M. 2007. An island in the stream: Australia’s place in the cosmopolitan world of Indo-West Pacific freshwater shrimp (Decapoda: Atyidae: Caridina). Molecular Phylogenetics and Evolution 43 (2): 645–659. https://doi.org/10.1016/j.ympev.2006.08.007

Palumbi S.R., Hillis D.M., Moritz C. & Mable B.K. 1996. in: Hillis D.M., Moritz C. & Mable B.K. (eds), Nucleic Acids II: The Polymerase Chain Reaction, Molecular Systematics 2: 205–247. Sinauer, Sunderland, Massachusetts.

Pons J., Barraclough T.G., Gomez-Zurita J., Cardoso A., Duran D.P., Hazell S., Kamoun S., Sumlin W.D. & Vogler A.P. 2006. Sequence-based species delimitation for the DNA taxonomy of undescribed insects. Systematic Biology 55: 595–609. https://doi.org/10.1080/10635150600852011

Pringle C. M., Blake G.A., Covich A.P., Buzby K.M. & Finley A. 1993. Effects of omnivorous shrimp in a montane tropical stream: sediment removal, disturbance of sessile invertebrates and enhancement of understory algal biomass. Oecologia 93: 1–11. https://doi.org/10.1007/BF00321183

Puillandre N., Lambert A., Brouillet S. & Achaz G. 2012. ABGD, Automatic Barcode Gap Discovery for primary species delimitation. Molecular Ecology 21 (8): 1864–1877. https://doi.org/10.1111/j.1365-294X.2011.05239.x

Rambaut A., Suchard M.A., Xie D., & Drummond A. J. 2014. Tracer v1.6. Available from http://beast.bio.ed.ac.uk/Tracer [accessed 27 Jul. 2020].

Richard J. & Chandran M.R. 1994. A systematic report on the freshwater prawns of the atyid genus Caridina H. Milne Edwards 1837, from Madras (Tamilnadu: India). Journal of the Bombay Natural History Society 91: 241–259.

Richard J. & Clark P.F. 2005. Caridina nilotica (P. Roux, 1833) (Crustacea: Decapoda: Caridea: Atyidae) from East Africa, with descriptions of four new species. Proceedings of the Biological Society of Washington 118 (4): 706–730. https://doi.org/10.2988/0006-324X(2005)118[706:CNPRCD]2.0.CO;2

Richard J. & Clark P.F. 2009. African Caridina (Crustacea: Decapoda: Caridea: Atyidae): redescriptions of C. africana Kingsley, 1882, C. togoensis Hilgendorf, 1893, C. natalensis Bouvier, 1925 and C. roubaudi Bouvier, 1925 with descriptions of 14 new species. Zootaxa 1995: 1–75.

Richard J. & Clark P.F. 2010. Caridina H. Milne Edwards, 1837 (Crustacea: Decapoda: Caridea: Atyoidea: Atyidae) - Freshwater shrimps from eastern and Southern Africa. Zootaxa, 337 (2372): 305–337. https://doi.org/10.11646/zootaxa.2372.1.24
List of *Caridina* freshwater shrimp species from the Solomon Islands

Richters F. 1880. Decapoda. In: Möbius K. (ed.), *Beiträge zur Meeresfauna der Insel Mauritius und der Seychellen bearbeitet von K. Möbius, F. Richters und E. von Martens nach Sammlungen, angelegt auf einer Reise nach Mauritius* 139–178. Gutmann, Berlin.

von Rintelen K. & Cai Y. 2009. Radiation of endemic species flocks in ancient lakes: systematic revision of the freshwater shrimp *Caridina* H. Milne Edwards, 1837 (Crustacea: Decapoda: Atyidae) from the ancient lakes of Sulawesi, Indonesia, with the description of eight new species. *Raffles Bulletin of Zoology* 57: 343–452.

von Rintelen K., Page T.J., Cai Y., Roe K., Stelbrink B., Kuhajda B.R., Iliffe T.M., Hughes J. & von Rintelen T. 2012. Drawn to the dark side: A molecular phylogeny of freshwater shrimps (Crustacea: Decapoda: Caridea: Atyidae) reveals frequent cave invasions and challenges current taxonomic hypotheses. *Molecular Phylogenetics and Evolution* 63 (1): 82–96. https://doi.org/10.1016/j.ympev.2011.12.015

Ronquist F. & Huelsenbeck J.P. 2003. MrBayes 3: Bayesian phylogenetic inference under mixed models. *Bioinformatics* 19 (12): 1572–1574. https://doi.org/10.1093/bioinformatics/btg180

Roux J. 1911. Nouvelles espèces de décapodes d’eau douce provenant de Papouasie. *Notes from the Leyden Museum* 33: 81–106.

Roux J. 1917. Crustacés. In: Wichman C.E.A. (ed.), *Expedition de 1903. Nova Guinea, Résultats de l’Expédition scientifique Néerlandaise de la Nouvelle-Guinée, Zoologie* 6: 589–621. Brill, Leiden.

Roux J. 1919. Süsswasserdekapoden von den Aru- und Kei-Inseln. *Abhandlungen der Senckenbergischen Naturforschenden Gesellschaft* 35: 317–351.

Roux J. 1926. An account of australian Atyidae. *Records of the Australian Museum* 15 (3): 237–254.

Roux J. 1928. Notes carcinologiques de l’archipel indo-australien, I: Décapodes macroures d’eau douce de l’archipel indo-australien. *Treubia* 10 (2–3): 197–216.

Roux J. 1929. Crustacea. III. Atyidae. In: Petit G. (ed.), *Contribution à l’Ètude de la Faune de Madagascar. Faune des Colonies françaises* 3: 293–319. Société d'éditions géographiques, maritimes et coloniales, Paris.

Roux J. 1934. Notes de carcinologie métanésienne. I. Décapodes d’eau douce de l’Archipel Bismarck et des îles de l’Amirauté. *Revue Suisse de Zoologie* 41: 217–234.

Short J.W. 2009. Freshwater Crustacea of the Mimika Region, New Guinea. PT Freeport Indonesia, Kuala Kencana, Timika.

Stimpson W. 1860. *Prodromus descriptionis animalium evertibratorum, quae in Expeditione ad Oceanum Pacificum Septentrialem, a Republica Federata missa, Cadwaladaro Ringgold et Johanne Rodgers Ducibus, observavit et descripsit. Pars VIII, Crustacea Macrura. Proceedings of the Academy of Natural Sciences of Philadelphia* 22: 44. https://doi.org/10.5962/bhl.title.51447

Stamatakis A. 2014. RAxML version 8: a tool for phylogenetic analysis and post-analysis of large phylogenies. *Bioinformatics*, 30 (9), 1312–1313. https://doi.org/10.1093/bioinformatics/btu033

Suchard M.A., Lemey P., Baele G., Ayres D.L., Drummond A.J. & Rambaut A. 2018. Bayesian phylogenetic and phylodynamic data integration using BEAST 1.10 *Virus Evolution* 4: vey016. https://doi.org/10.1093/ve/vey016

Veron J.E.N., Devantier L.M., Turak E., Green A.L., Kininmonth S., Stafford-Smith M. & Peterson N. 2009. Delineating the Coral Triangle. *Galaxea, Journal of Coral Reef Studies* 11 (2): 91–100. https://doi.org/10.3755/galaxea.11.91
Zhang J., Kapli P., Pavlidis P., & Stamatakis A. 2013. A general species delimitation method with applications to phylogenetic placements. *Bioinformatics* 29 (22): 2869–2876. 
https://doi.org/10.1093/bioinformatics/btt499

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