



<http://dx.doi.org/10.11646/zootaxa.3881.2.7>

<http://zoobank.org/urn:lsid:zoobank.org:pub:55C5288F-3838-4073-B435-99C1C9BD4FE3>

A new species of porcelain crab, *Petrolisthes tuerkayi* n. sp. (Crustacea: Anomura: Porcellanidae), from the Persian Gulf

REZA NADERLOO¹ & MICHAEL APEL²

¹*School of Biology, and Center of Excellence in Phylogeny of Living Organisms, College of Science, University of Tehran, 14155-6455 Tehran, Iran, Email: rnaderloo@khayam.ut.ac.ir*

²*Museum Mensch und Natur, Staatliche Naturwissenschaftliche Sammlungen Bayerns, Maria-Ward-Straße 1b, 80638 München, Germany. E-mail: apel@musmn.de*

Abstract

A new species of porcellanid crab, *Petrolisthes tuerkayi* n. sp., is described from the Persian Gulf. The new species is closely related to *P. rufescens* Heller, 1861, but is easily distinguishable by having three or four large spines distally on the posterior margin of the carpus of chelipeds, whereas the posterior margin of the cheliped merus in *P. rufescens* is unarmed.

Key words: Taxonomy, Decapoda, porcellanid crab, *Petrolisthes*, new species, Persian Gulf

Introduction

The Persian Gulf is better known for its oil-resources and political turbulence than for its marine biodiversity, which is still relatively poorly studied. Even though among marine organisms, decapod crustaceans have received more attention than some other taxa, there are still large gaps in our knowledge regarding species composition, biodiversity patterns and zoogeographical affinities. Compared to other groups of Decapoda, the Brachyura have been better documented (e.g., Stephensen 1946; Apel & Spiridonov 1998; Apel 2001; Naderloo & Sari 2007; Naderloo 2011; Naderloo *et al.* 2011; Naderloo & Türkay 2012), whereas other groups such as Anomura (see Naderloo *et al.* 2012) and Caridea (De Grave & Ashelby 2011) have received much less attention. Haig (1966) examined porcellanid crabs collected by the Danish Expedition 1937/38 to the Persian Gulf and recorded 14 species from Iranian waters. Apel (2001) recorded 18 species of this group from the Gulf. The species presented there as *Petrolisthes* sp. nov. [aff. *rufescens* (Heller, 1861)] is described here as a new species, *Petrolisthes tuerkayi* n. sp. As Apel (2001) mentioned, there is a clear difference on the carpus of chelipeds between *P. rufescens* and *P. tuerkayi* n. sp. The new species has three or four large spines distally on the posterior margin of the cheliped carpus. Recently, Ng *et al.* (2012) described another new porcellanid species, *Raphidopus persicus*, from the Persian Gulf, which reflects the necessity of more taxonomic work on this group in the area.

Materials and methods

The specimens examined in this study have been mostly collected from the Arabian coast of the Gulf by Michael Apel and from the Iranian coast of the Gulf by Reza Naderloo. Additional material from different collections was also examined. The abbreviations used are as follows: CL, carapace length; CB Carapace breadth; NHM, Natural History Museum, London; NHMW, Natural History Museum of Vienna, Austria; SMF, Senckenberg Museum, Frankfurt am Main, Germany; SNMNH, Saudi National Museum of Natural History, Riyadh, Saudi Arabia; UAE, United Arab Emirates; ZMUC, Universitets Zoologiske Museum, Copenhagen, Denmark; ZUTC, Zoology Museum of the University of Tehran, Iran.

furrow running parallel to lower margin over lower portion. Fingers without gape when closed; cutting edges with small granules; movable finger larger than immovable finger, with distinct round tooth on proximal part of cutting edge, not visible when closed; immovable finger curved inward apically; fingers apically twisted.

Walking legs (Figs. 1C–F) robust, second leg largest; ischium with feather-like setae on antero-distal margin; merus with anterior margin serrated, posterior surface with irregular long transverse ridges, extending to posterior margin; dorsodistal margin of first leg with few denticles, that of second leg nearly right angle, without denticles, that of third leg curved. Carpus irregularly serrated along anterior margin; posterior margin smooth; distinct longitudinal ridge along posterior surface of that of first and second legs, ridge faint on last leg carpus. Propodus cylindrical, slightly longer than carpus, relatively slender, with scattered long setae; 3 movable spines along posterior margin, spines getting larger distally; 2 or 3 spines on postero-distal margin. Dactylus becoming spine-like apically, with 3 movable spines along posterior margin.

Remarks. *Petrolisthes tuerkayi* n. sp. closely resembles *P. rufescens* (Heller, 1861), but is most easily distinguishable from the latter species by the armature of the posterior margin of the cheliped carpus. In *P. tuerkayi* n. sp. there are three or four large spines along the posterior margin of cheliped carpus, whereas it is completely smooth without any spine in *P. rufescens*. Regarding the presence of spines along posterior margin of cheliped carpus, the new species resembles *P. lamarckii* (Leach, 1820) and *P. boscii* (Audouin, 1826), but these two species are characterized by having a distinct epibranchial spine. The epibranchial spine is characteristic of the *P. boscii*-group (*P. boscii*, *P. carinipes* (Heller, 1861), *P. donanensis* Osawa, 1997, *P. lamarckii*, and *P. moluccensis* (De Man, 1888)), while the *P. rufescens*-group (*P. rufescens*, *P. leptocheles* and *P. tuerkayi* n. sp.) is distinguishable from congeners by lacking epibranchial spines. Haig (1966) examined specimens of *P. rufescens* collected by the Danish Expedition 1937/38 from the Persian Gulf and found five specimens different from typical *P. rufescens* by having two or three teeth along posterior margin of carpus of the chelipeds. We examined Haig's (1966) material and identify those with teeth along posterior margin of cheliped carpus as the new species. Haig (1966) indicated the similarity of the new species with *P. lamarckii* in having teeth on the posterior margin of cheliped carpus, but as discussed above, *P. lamarckii* is included in the *P. boscii*-group by having a distinct epibranchial spine. Nobili (1906) also noticed the presence of such teeth in some specimens reported as *P. rufescens* collected from the Persian Gulf. The specimens of Nobili (1906) are most likely referable to *P. tuerkayi* n. sp.

Petrolisthes rufescens is a western Indian Ocean species, which is common in the intertidal zone of the Persian Gulf (Naderloo & Türkay 2012) and the Gulf of Oman (R.N. pers. obs.). A large number of specimens of *P. rufescens* from the Persian Gulf and outside the Gulf from the Pakistan and Red Sea have been examined and the consistency of the character (smooth posterior margin of cheliped merus) was observed in all specimens.

Etymology. The species is named after Prof. Dr. Michael Türkay, curator of the crustacean department of the Senckenberg Museum, who dedicated 45 years of his life to the taxonomy of decapod crustaceans, in particular in the northern Indian Ocean. Michael Türkay was supervisor of the Ph.D projects of the both authors dealing with the decapod crustacean fauna of the Persian Gulf.

Geographical distribution. So far only known from the southern coast of the Persian Gulf (Saudi Arabia, Bahrain, and UAE).

Acknowledgements

We want to thank Prof. Dr. Michael Türkay for his invaluable comments on the taxonomy of the species. Thanks are due to Jørgen Oelsen for his hospitality during our stay in Copenhagen and providing specimens for the authors.

References

- Apel, M. (2001) *Taxonomie und Zoogeographie der Brachyura, Paguridea und Porcellanidae (Crustacea: Decapoda) des Persisch-Arabischen Golfes*. Unpublished Ph.D thesis, Johann Wolfgang Goethe-Universität, Frankfurt a. M., 268 pp.
- Apel, M. & Spiridonov, V. (1998) Taxonomy and Zoogeography of the portunid crabs (Crustacea: Decapoda: Brachyura: Portunidae) of the Arabian Gulf and adjacent waters. *Fauna of Arabia*, 17, 159–331.
- De Grave, S. & Ashelby, C.W. (2011) Notes on some shrimp species (Decapoda: Caridea) from Qatar, with an annotated checklist of marine caridean species known from the Persian Gulf. *Marine Biodiversity Records*, 4, 1–7.

<http://dx.doi.org/10.1017/S1755267211000224>

- Haig, J. (1966) The Porcellanidae (Crustacea, Anomura) of the Iranian Gulf and Gulf of Oman. *Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening i Kobenhaven*, 129, 49–65.
- Naderloo, R. (2011) Grapsoid crabs (Decapoda: Brachyura: Thoracotremata) of the Persian Gulf and the Gulf of Oman. *Zootaxa*, 3048, 1–43.
- Naderloo, R., Moradmand, M., Sari, A. & Türkay, M. (2012) An annotated check list of hermit crabs (Crustacea: Decapoda: Anomura) of the Persian Gulf and the Gulf of Oman with five new records and an identification key to the North Indian Ocean genera. *Zoosystematics & Evolution*, 80 (1), 63–70.
<http://dx.doi.org/10.1002/zoos.201200007>
- Naderloo, R. & Sari, A. (2007) Subtidal crabs of the Iranian coast of the Persian Gulf. New collections and biogeographic considerations. *Aquatic Ecosystem Health & Management*, 10 (3), 341–349.
<http://dx.doi.org/10.1080/14634980701514620>
- Naderloo, R., Türkay, M. & Apel, M. (2011) Brachyuran crabs of the family Macrophthalmidae Dana, 1851 (Decapoda: Brachyura: Macrophthalmidae) of the Persian Gulf. *Zootaxa*, 2911, 1–42.
- Ng, P.K.L., Safaee M. & Naser M.D. (2012) new species of *Raphidopus* Stimpson, 1858, from the Persian Gulf (Crustacea: Decapoda: Anomura: Porcellanidae). *Zootaxa*, 3402, 54–60.
- Nobili, G. (1906) Crustacés décapodes et stomatopodes. In: Mission J. Bonnier et Ch. Perèz (Golfe Persique, 1901). *Bulletin Scientifique de la France et de la Belgique*, 40, 13–59, pls. 2–7.
- Stephensen, K. (1946) *The Brachyura of the Iranian Gulf. Danish Scientific Investigations in Iran, Part IV*. E. Munksgaard, Copenhagen, 57–237.