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## Description of three species of *Halmyrapseudes* (Crustacea: Tanaidacea: Parapseudidae), with a discussion of biogeography

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### Abstract

We describe *Halmyrapseudes gutui* sp. nov. from a mangrove area on Lidee Island, southern Thailand. This species closely resembles *H. cooperi*, *H. killaiyensis*, and *H. thaumastocheles*, but differs in having the lacinia mobilis with three teeth, and the pereopod 1 carpus with 0,1 or 1,1 ventral simple setae proximal to each spiniform seta. We redescribed and synonymized two species of questionable affiliation, *Aapseudes cooperi* and *A. digitalis*, placing them in *Halmyrapseudes*, and partly redescribed *Halmyrapseudes killaiyensis*. *Halmyrapseudes* and *Pseudohalmyrapseudes* have disjunct distributions. *Halmyrapseudes* is similar in distribution to two freshwater fish taxa whose distributions are considered to reflect the breakup of Gondwana and subsequent continental drift. *Pseudohalmyrapseudes* occurs around Australia, and its distribution seems to be separated from that of *Halmyrapseudes* by Wallace's Line or Huxley's Line, which are distributional barriers for both terrestrial organisms and an amphidromous shrimp. The adjacent distributions and morphological similarities suggest that *Halmyrapseudes* and *Pseudohalmyrapseudes* are sister taxa.

**Key words:** Tanaidacea, *Halmyrapseudes*, new species, mangrove, Thailand, Gondwana, Wallace's Line, Huxley's Line

### Introduction

The brackish-water tanaidacean genus *Halmyrapseudes* was established for *H. cubanensis* Băcescu & Guțu, 1974. Băcescu & Guțu (1974; 1975) also described two congeners (*H. bahamensis* Băcescu & Guțu, 1974; *H. spaansi* Băcescu & Guțu, 1975) and transferred *H. killaiyensis* (Balasubrahmanyam, 1962) and *H. thaumastocheles* (Monod, 1935) into this genus. *Halmyrapseudes srilankaensis* (Băcescu, 1981), transferred to this genus by Bamber *et al.* (2002), is now regarded as a junior synonym of *H. killaiyensis* (Guțu 2008; see Remarks for *H. killaiyensis* below).

In addition to these five species, Bamber *et al.* (2002) and Guțu (2008) transferred *Aapseudes cooperi* Brown, 1954 and *A. digitalis* Brown, 1956 into *Halmyrapseudes*, but these placements are questionable, because they were not based on observations or redescrptions of type specimens, and Brown's (1954, 1956) descriptions and illustrations are inadequate. Therefore, Brown's (1954, 1956) type material needs to be reexamined.

In this paper, we describe a new species of *Halmyrapseudes* from Thailand; redescribe *A. cooperi* and *A. digitalis* from non-type specimens deposited by A.C. Brown in the Iziko Museum; and provide limited redescrptions of *H. killaiyensis* based on the specimens of Bamber *et al.* (2002, as *H. srilankaensis*), which lack descriptions of the reverse sides of appendages (e.g., the inner side in the pereopod 1). Finally, we discuss the global distribution pattern of *Halmyrapseudes*.

### Material and methods

Type specimens of the Thai species were deposited in the Zoological Institute, Faculty of Science, Hokkaido

Guțu 2008) and suggesting they diverged from a common ancestor. Interestingly, the distributional boundary between *Halmyrapseudes* and *Pseudohalmyrapseudes* seems to coincide with Wallace's line or Huxley's line (Fig. 12A; cf. Lohman *et al.* 2011). These lines were originally based on terrestrial organisms but also apply to amphidromous shrimps (Wowor & Ng 2007). A distributional study of *Halmyrapseudes* and *Pseudohalmyrapseudes* in Southeast Asia will be interesting for testing these boundaries further for fresh- or brackish-water invertebrates.

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