



## The millipede genus *Anaulaciulus* Pocock, 1895 in Taiwan, with descriptions of four new species (Diplopoda, Julida, Julidae)

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### Abstract

The genus *Anaulaciulus* Pocock, 1895 is represented in Taiwan by eight nominate species, all keyed and nearly all mapped, including four new ones: *A. immensus* **sp. nov.**, *A. oligosegmentatus* **sp. nov.**, *A. multiarticulatus* **sp. nov.** and *A. setulifer* **sp. nov.** One species, *A. tonginus* (Karsch, 1881), is confirmed to be present in the fauna of the island, while the remaining three require revision. Taxonomic and distributional remarks are provided for all of the species.

**Key words:** Millipede, julid, taxonomy, new species, key, distribution, Taiwan

### Introduction

*Anaulaciulus* Pocock, 1895 is a fairly large genus of the Eurasian diplopod family Julidae, typical of temperate climates. Only two genera in the entire family are East to Southeast Asian, one of which is *Anaulaciulus*. It currently contains about 50 species or subspecies occurring in the Russian Far East, Japan, Korea, northeastern China, Taiwan, northern Myanmar, the Himalaya of India, Nepal and Bhutan, as well as in Pakistan (Enghoff 1986; Korsós 1996).

Korsós (2004) provided an extensive catalogue of the millipedes of Taiwan, which is still fully relevant as regards the Julidae. So we only briefly reiterate it in the historical section below, but quote it fully in the catalogue sections under each of the known species.

*Anaulaciulus* had remained an obscure name until Causey (1966) showed it to be a senior synonym of *Fusiulus* Attems, 1909. The first record of a species of *Anaulaciulus* in Taiwan belonged to Wang (1955), who described and illustrated it as *Fusiulus trapezoidus* Wang, 1955. The original description being very incomplete, while the line drawings highly schematic, this species, later reported from still another locality in northern Taiwan (Wang 1958, 1963), requires revision (see also Korsós 2004). In addition, Wang (1963) described: *Fusiulus trilobus quemoyensis* Wang, 1963, and *Fusiulus trilobus kuuuae* Wang, 1963, from Taiwan “mainland” and an adjacent islet. The latter subspecies was later shown to be a junior synonym of *Anaulaciulus tonginus* (Karsch, 1881), originally a Hong Kong species (Korsós 1994), whereas the former subspecies was elevated to a full species, *A. trilobus* Wang, 1963, even though it remains obscure as well (Enghoff 1986; Korsós 1994, 2004). Finally, Wang (1963) reported also *Anaulaciulus simplex* (Verhoeff, 1936) from an unknown locality in Taiwan. Since *A. simplex* was originally described from northern and central Japan (Verhoeff 1936), Wang's (1963) record in Taiwan is likewise questionable (Korsós 2004).

As a result, four nominate species of *Anaulaciulus* have hitherto been known from Taiwan (Korsós 1996, 2004), all requiring revision or verification.

Among the diplopod samples from Taiwan received for study, four new species of *Anaulaciulus* have been