



***Imbria* nom. nov., a replacement name for *Orthopleura* Imbrie, 1959 (Brachiopoda)**

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The genus *Orthopleura* Imbrie, 1959 (Brachiopoda: Rhynchonelliformea: Strophomenata: Orthotetida: Orthotetidina: Chilidiopsoidea: Areostrophiiidae: Areostrophiiinae, following the classification of Kaesler & Selden 1997–2007) was erected to contain three species of extinct brachiopods from Devonian deposits in the United States. *Orthopleura rhipis* Imbrie, 1959 was assigned as the type species at time of erection. *Streptorhynchus flabellum* Whitfield, 1882, *Schuchertella orthoplicata* Stainbrook, 1943, and two undescribed species, “*Orthopleura* sp. A” and “*Orthopleura* sp. B”, were treated as congeneric (Imbrie 1959). However, *Orthopleura* Imbrie, 1959 is a junior homonym of *Orthopleura* Spinola, 1845 (Insecta: Coleoptera: Cleridae), the latter being the type genus of the subfamily Orthopleurinae Böving & Craighead, 1931: 56 (see also Opitz 2017 on the validity of this name), The aforementioned usage for the brachiopod taxon must be rejected because the name is not available per Article 60 of The International Code of Zoological Nomenclature (ICZN 1999, and henceforth “the Code”). The rejected junior homonym has no known available and potentially valid synonym and must be replaced by a new substitute name.

Genus *Orthopleura* Spinola, 1845

Type species: *Tillus damicornis* Fabricius, 1798: 117 by subsequent designation in Gorham 1877: 426, see also Article 69.1 of the Code.

Bousquet (2016: 511) addressed the correct publication date of this genus, which has been incorrectly reported in past literature as “1844” based on the imprint date on the title page.

Spinola (1845: 80) erected this genus to contain two described and one new species—*Tillus damicornis* Fabricius, 1798, *Dermestes sanguinicollis* Fabricius, 1787 and *Orthopleura quadraticollis* Spinola, 1845. Except for the type species as designated by Gorham (1877), all other taxa originally included in this genus—and others subsequently included in this genus by Corporaal (1950) in his catalogue of the family—have since been transferred into different genera (see Barr 1976, Opitz 2013, Winkler 1979, and Winkler 1984) leaving *Orthopleura* Spinola monotypic.

Fabricius (1798) originally described *Tillus damicornis* from North American specimens in the collection of John Dietrich Herschel. The fate of Herschel’s collection—including the types of this species—is unknown. It is possible that these specimens were subsumed into other collections or they may have been destroyed (Madge 1994). Fabricius (1798) provides only a brief description of this species which lacks sufficient detail to unambiguously determine its identity. However, a few particulars in Fabricius’ original work are worth noting. First, the antennal club of this clerid species, which the original description claims to be composed of two, flattened, acuminate segments, is atypical of the North American clerofauna and suggests either an otherwise unknown genus or a type specimen with missing terminal antennomeres. Second, the comparison of *Tillus damicornis* to an established junior synonym of *Dermestodes sanguinicollis* (Fabricius, 1787) (see Winker 1979)—“[*Tillus*] *weberi* ... *Statura omnino praecedentis* [i.e. *Tillus damicornis*] *at alius et maior*”—establishes the morphological similarity of these two species and suggests that orthopleurines were within the scope of Fabricius’ taxonomic concept of *Tillus* Olivier, 1790.

There are four specimens labeled as *Orthopleura damicornis* in Spinola’s collection (Ekis 1975). This is presumably the material which Spinola examined when he established the genus. Spinola (1845) was not explicit about the origin of these specimens, and he habitually did not attach labels to his pinned material (Ekis 1975). Therefore, there appears to be no strong evidence that these specimens are—or are not—the types described by Fabricius. Spinola’s description and illustrations of this species appear to be of a North American orthopleurine similar in morphology and coloration to *Neorthopleurra thoracica* (Say, 1823) sec. Barr 1976.

However, Barr (1976: 2) reported that the type specimens of *Orthopleura damicornis* (Fabricius, 1798)—presumably referring to the specimens in Spinola’s collection—are not congeneric with other species included in the genus by Corporaal (1950: 266) and used this claim to justify erection of the genus *Neorthopleura* Barr. It is worth noting that Barr provided no evidence to support this claim—i.e. no redescription of *Orthopleura* Spinola, no inclusion of this genus in keys, no discussion of diagnostic characters used for distinguishing this genus from morphologically similar taxa, and no references to any prior works that suggested this genus as distinct—pinning the validity of his newly erected taxon solely upon the author’s expert opinion. Subsequent authors either followed Barr’s classification or simply did not include *Orthopleura* Spinola in their revisionary works.

Despite the uncertainty regarding type material of the type species of *Orthopleura* Spinola, Article 70.1 of the Code is clear on the validity of the establishment of this genus, stating that “[i]t is to be assumed, in the absence of clear evidence to the contrary, that an author has identified the species correctly when he or she... includes a previously established nominal species in a new nominal genus.”

While the genus *Orthopleura* Spinola is demonstrably valid, a great deal of work remains to stabilize the taxonomy of the type species and of other, morphologically similar taxa. A complete modern revision of *Orthopleura* Spinola is needed and would include, minimally, (1) a thorough redescription of Spinola’s types (Museo Regionale de Scienze Naturali, Turin) and (2) evaluation of this material in relation to Fabricius’ original description, (3) an exhaustive search of the Fabrician material and their past and present repositories (Zoologisk Museum, Copenhagen and Zoologische Museum Kiel, respectively) for types matching Fabricius’ description, (4) the formal designation of either lectotypes or neotypes as per the specifications of the Code in order to stabilize the identity of *Tillus damicornis* Fabricius, and (5) an informed evaluation of the validity of other orthopleurine genera, including some discussion of diagnostic characters needed to separate *Orthopleura* Spinola from other, similar genera.

Genus *Imbria* Reily, nom. nov.

= *Orthopleura* Imbrie, 1959: 391. Preoccupied by *Orthopleura* Spinola, 1845.

Type species: *Orthopleura rhipis* Imbrie, 1959 by original designation.

Etymology: The name *Imbria* is honorific of the late Dr. John Imbrie, the author who first recognized this taxon as distinct.

***Imbria rhipis* (Imbrie, 1959), comb. nov.**

= *Orthopleura rhipis* Imbrie, 1959: 392.

***Imbria flabellum* (Whitfield, 1882), comb. nov.**

= *Orthopleura flabellum* (Whitfield, 1882) sec. Imbrie 1959: 392.

= *Orothethes flabellum* (Whitfield, 1882) sec. Schuhert 1897: 297.

= *Streptorhynchus flabellum* Whitfield, 1882: 200.

***Imbria orthoplicata* (Stainbrook, 1943), comb. nov.**

= *Orthopleura orthoplicata* (Stainbrook, 1943) sec. Imbrie 1959: 392.

= *Schuchertella orthoplicata* Stainbrook, 1943: 43, uncertainty of genus is indicated in the original description as “*Schuchertella? orthoplicata*”.

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