

# GENERIC LEVEL REVIEW AND PHYLOGENY OF TROMBIDIIDAE AND PODOTHROMBIIDAE (ACARI: ACTINOTRICHIDA: TROMBIDIOIDEA) OF THE WORLD

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**Abstract.**— Genera of Trombidiidae and Podothrombiidae of the World are reviewed and their diagnoses verified based on the type material and non-type specimens originating from samples collected in different zoogeographical regions. Twenty two genera of Trombidiidae and two of Podothrombiidae are recognized. Each generic account is supplemented with a map of hitherto known distribution. A key to the world genera of Trombidiidae and Podothrombiidae is provided and a list of species included in each genus is given.

The following six new genera are established within Trombidiidae: *Andinothrombium*, *Andrethrombium*, *Darjeelingia*, *Robauxthrombium*, *Ronaldothrombium*, *Wohltmannella*. Six new trombidiid species are described: *Andinothrombium elatum*, *Darjeelingia longipes*, *Dolichothrombium azerbaijanicum*, *D. tenerifensis*, *Robauxthrombium andinum*, *Ronaldothrombium parametae*.

New generic synonyms are proposed for *Allothrombium* Berlese, 1903 (= *Corethrothrombium* Oudemans, 1928, = *Mongolothrombium* Feider, 1979), *Mesothrombium* Hirst, 1926 (= *Austrothrombium* Womersley, 1934) and *Trombidium* Fabricius, 1775 (= *Kaszabothrombium* Feider, 1973).

Verified diagnoses of monotypic genera *Calctrombidium* Haitlinger, 2003 and *Oskootrombium* Saboori et al., 2006 are provided.

*Variathrombium* Robaux, 1969 is excluded from Podothrombiidae and transferred to Trombidiidae.

*Archithrombium* Feider, 1955, *Emitrombidium* Lombardini, 1949 and *Phyllotrombidium* Cooreman, 1946 are treated as nomina dubia.

*Porttrombidium* Haitlinger, 2000 is excluded from Trombidiidae and regarded as more closely related to Microtrombidiidae and Neothrombiidae.

The following new specific synonyms are proposed: *Acarus tinctorius* Linnaeus, 1767 (= *Trombidium tinctorium* var. *brevipilum* Berlese, 1910), *Trombidium megalochirum* Berlese, 1910 (= *Caenothrombium coccineum* André, 1947).

The following new combinations are created within Trombidiidae: *Allothrombium christopheanum* (Kramer, 1897), *Allothrombium laticoxum* (Feider, 1973), *Allothrombium pectinifer* (Oudemans, 1926), *Allothrombium vandermeermohri* (Oudemans, 1929), *Andrethrombium crassicomum* (Berlese, 1910), *Andrethrombium delamarei* (André, 1962), *Azaritrombium telletceae* (Goldarazena et al., 2000), *Caenothrombium corpulentum* (Berlese, 1910), *Caenothrombium dammermani* (Vitzthum, 1926), *Clinotrombium southcotti* (Fain, 1991), *Mesothrombium mullewaense* (Southcott, 1986), *Mesothrombium porongoreense* (Southcott, 1986), *Mesothrombium scaurum* (Southcott, 1986), *Mesothrombium ursinum* (Berlese, 1910), *Paratrombium crassipalpe* (Trägårdh, 1904), *Paratrombium colhuanum* (Vitzthum, 1933), *Paratrombium monoeciportuense* (André, 1928), *Paratrombium pediocolatum* (André, 1927), *Paratrombium quadrimaculatum* (Berlese, 1912), *Paratrombium raeticum* (Schweizer et Bader, 1963), *Paratrombium superbium* (Banks, 1910), *Paratrombium tarsale* (Berlese, 1916), *Paratrombium trispilum* (Berlese, 1916), *Robauxthrombium chiliense* (Robaux, 1969), *Robauxthrombium eupectum* (Leonardi, 1901), *Robauxthrombium unisetum* (Robaux, 1969), *Ronaldothrombium bellator* (Southcott, 1986), *Ronaldothrombium dumosum* (Southcott, 1986), *Ronaldothrombium watanabei* (Shiba, 1976), *Trombidium aratrorum* (Feider, 1973),

*Wohltmannella cypriense* (Robaux, 1964), *Wohltmannella dobrogiacum* (Feider, 1950), *Wohltmannella vannieri* (Robaux, 1967), and – within Podothrombiidae: *Kurilothrombium shibai* (Gabryś, 1988).

An adult specimen of *Dinothrombium tinctorium* (Linnaeus, 1767) is selected as neotype.

Lectotypes are designated for *Allothrombium crassicomum* Berlese, 1910 (now *Andrethrombium crassicomum*), *Allothrombium delamarei* André, 1962 (now *Andrethrombium delamarei*), *Allothrombium gracile* Berlese, 1910, *Allothrombium metae* Boshell et Kerr, 1942, *Allothrombium pergrande* Berlese, 1903, *Caenothrombium unisetum* Robaux, 1969 (now *Robauxthrombium unisetum*), *Dinothrombium* (*Dolichothrombium*) *alpinum* Schweizer, 1951 (now *Dolichothrombium alpinum*), *Dolichothrombium fournieri* Robaux, 1967, *Dinothrombium* (*Dolichothrombium*) *grandjeani* André, 1954 (now *Dolichothrombium grandjeani*), *Podothrombium subnudum* Berlese, 1910, *Trombidium insulare* Berlese, 1910 (now *Paratrombium insulare*), *Sericothrombium monoeciportuense* André, 1928 (now *Paratrombium monoeciportuense*), *Trombidium quadrimaculatum* Berlese, 1912 (now *Paratrombium quadrimaculatum*), *Trombidium tarsale* Berlese, 1916 (now *Paratrombium tarsale*).

*Sericothrombium holosericeum* var. *brevipapillosa* André, 1924, earlier synonymized with *Trombidium holosericeum* (L.), is restored to specific status – *Trombidium brevipapillosa* (André, 1924).

*Andrethrombium delamarei* (André, 1962), *Dinothrombium tinctorium* (Linnaeus, 1767) and *Dinothrombium oparbellae* (André, 1949) are redescribed.

An attempt at reconstructing relationships among the genera has been made. The maximum parsimony and neighbour joining analysis considered 129 characters of 62 specific level taxa (including four taxa assigned to the outgroup) known from different life stages. The monophyly of most taxa has been confirmed and the scope of hitherto distinguished subfamilies of Trombidiidae has been verified. The following new subfamilies are proposed within Trombidiidae: Dolichothrombiinae – with *Dolichothrombium* Feider, 1945 and Paratrombiinae – comprising the genera *Paratrombium* Bruyant, 1910 and *Pollicotrombium* Southcott, 1986.



**Key words.**— Acari, Trombidiidae, Podothrombiidae, World, taxonomy, new taxa, key, phylogeny.

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