

Wood decomposition (Diptera: Axymyiidae).

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Potential competing interests: No potential competing interests to declare.

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Family Axymyiidae is part of Order: Diptera, Suborder Nematocera, and Infraorder: Axymyiomorpha. Are medium-sized mosquitoes, robustly built, discreetly dark to reddish-brown, with a body length of 9 to 12 millimeters, and with relatively short legs and antennae. The large head has very large and complex eyes. In males these collide at the top of the head, in females they are widely separated. There are also three ocelli. The short, pearl-like antennae with constrictions at the segment boundaries consist of 16 [1-4].

The trunk bears three short pairs of legs, the tibia without spurs, spines, or longer hairs. The wings are elongated and generally somewhat darkened. The wing vein is characteristic: the ray ends in four branches, where R2 branches from its trunk at almost right angles and reaches the edge vein near the confluence of R1. The MRI of the transverse artery is transparent and appears as a continuation of the radial artery (Figure 1) [2-5].



Figure 1. *Axymyia* McAtee, 1921. Source: Sample ID: CCDB-23503-B08. Attribution (2015).

The larvae family Axymyiidae live in dead wood that is free of bark and moss, mainly in forest swamps and on the banks of small forest streams. Each larva sits in a bottle-shaped auto-rotated cavity in the wood so that only the tip of the breathing tube protrudes out. It feeds on the wood mass eaten and probably on the microorganisms it contains. They develop in four larval stages. The mature larvae rotate in the cavity and widen the tunnel to the wooden surface, in whose mouth they transform into pupa. Adult mosquitoes hatch in North America in April or early May. They are rarely found and almost nothing is known about their way of life. Some species have been observed forming flocks, probably to mate (Figure 2) [2-7].



Figure 2. *Axymyia furcata* McAtee, 1921. Source: Photo#1215221, Danby, Tompkins County, New York, USA April 23, 2016.

The small family is spread across the Palearctic. It occurs in northern North America, Siberia, and northern Asia, from southern to southern China and Taiwan, and from western to eastern Europe (Figure 3) [2-14].



Figure 3. Several long and intersecting larval galleries. Damage: Larvae rotate in the cavity and widen the tunnel to the wooden surface. <http://doi.org/10.5281/zenodo.231670>.

The family Axymyiidae, of which only 6 extant species in 3 genera are known, and 3 fossil species. Genera and species: *Axymyia* McAtee 1921, *Axymyia furcata* McAtee 1921 and *Axymyia japonica* Ishida 1953. *Mesaxymyia* Mamaev, 1968. *Mkerteszi* (Doubt, 1930): *Mkerteszi stackelbergi* Mamaev 1968. *Protaxymyia* Mamaev & Krivosheina 1966: *Protaxymyia melanoptera* Mamaev & Krivosheina 1966 and *Protaxymyia sinica* Yang, 1993 [15-16].

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