

Auchenorrhyncan biodiversity in Japan

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Taxonomic studies of Auchenorrhyncha in Japan were started by Dr Shonen Matsumura in 1898, and he described many taxa under various families. Afterward, Dr Tamotsu Ishihara intensively studied Japanese auchenorrhynchans, revising two large families, Delphacidae (1949) and Cicadellidae (1953). Furthermore, Hayashi (1996) counted and stated the number of Japanese species to be 772 in total. After the recent additions, the number has been increased as 915 under 371 genera. Although Japan is very small in extent, about 1/25 of China, the “relative” number of species or genera are very abundant, as many as 1/3 (*cf.* Hua 2000). The richness (high biodiversity) in Japanese Auchenorrhyncha must come from various factors, topography, geology, climate, vegetation, etc.

The Japan Archipelago spreads over 2,000 km from NE to SW, situated in eastern margin of the Eurasian Continent; climate zones from subarctic (Hokkaido) to subtropical (Ryukyus). The border line (zone) of zoogeographic regions, Palaeartic and Oriental, is running south of Kyushu, called the “Tokara Strait”. The Ogasawara (Bonin) Islands belong to the Pacific Region.

Palaeartic taxa. [Cicadellidae] most species of Aphrodinae, Drabescini, Alebrini; [Delphacidae] Kelisiinae, Stenocraninae (mostly) and Delphacinae (partly); [Derbidae] (partly), etc.

The species mainly restricted to Hokkaido also occur in Sakhalin and/or the S Kurils. [Cicadellidae] *Bathysmatophorus kurilensis*, *Metidiocerus elegans*, *Limotettix ainoicus*, *Pithyotettix kerzhneri*; [Delphacidae] *Criomorpha wilhelmi*; Achilidae: *Cixidia onukii*, etc.

Some other species are limited to Tsushima Is., situated on the halfway from Kyushu to the Korean Peninsula. Some species are common to the Continent: *Suisha coreana*, *Petaloccephala engelhardti*, *Drabescus ineffectus*, *Matsumurella curvicauda*, etc.

Oriental taxa. [Cicadellidae] Coelidiinae (*Calodia*, *Thagria*), Selenocephalinae (some *Parabolopona*, *Tambocerus* sp.), Typhlocybinae (Erythroneurini such as *Lectotypella*, *Seriana*, *Singapora*, *Ifugoa*); [Cixiidae] *Siniarius*, *Andixius*, *Dystheatias*, *Kirbyana*, *Neocarpia*, *Borysthenes*; [Nogodinidae] most species including *Tonga*, *Lollius*, etc.

Pacific taxa. Several species described mainly by Dr Matsumura endemic to the Ogasawara Isls.: [Aphrophoridae] *Hiraphora longiceps*; [Cicadellidae] *Batracomorphus ogasawarensis*, *Lodiana boninensis*, *Nesoclutha phryne*; [Delphacidae] brachypterous species of *Ugyops* (undescribed); [Tropiduchidae] most of *Mesepora*, all of *Kallitaxila* etc. Fennah (1971) also described some endemic species of Ricaniidae.

Endemic taxa: Many species in various families are endemic especially to the Ryukyus: [Cicadidae] four *Platypleura* and other cicadas; [Aphrophoridae] *Aphrophora paguma* (C Ryukyus); [Cicadellidae] *Pagaronia amamiensis* (southernmost species); [Issidae] Ryukyuan species of *Sarima*, *Gergithus* and *Hemisphaerius*; etc. In the Japan Proper, some endemic leafhopper genera of Pagaroniini (Evacanthinae) may be notable; they are *Babacephala*, *Kurotsuyanus* and *Tengirhinus*.

Taxa on bamboos: Bamboo auchenorrhynchans are known in some families: *Aphrophora vittata* (Aphrophoridae); *Mukaria zonata*, *Bambusana* spp., *Togaricrania rubrovitta* (Cicadellidae); *Epeurysa nawai*, *Kakuna* spp. (Delphacidae); *Mysidioides sapporensis* (Derbidae). Furthermore, several species were probably introduced with *Bambusa multiplex* and other edible bamboos: *Mukaria maculata*, *Myittana* sp. (undescribed) (Cicadellidae); Delphacidae of *Arcofacies*, *Arcofaciella*, *Belocera*, *Malaxella*, and *Purohita*.

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