

The type specimens of the bush cricket genera *Anaulacomera* Stål, 1873 and *Furnia* Stål, 1876 (Orthoptera: Tettigoniidae) held in the Muséum d'histoire naturelle de Genève

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Abstract: All of the specimens placed in the genus *Anaulacomera* Stål, 1873 in the collection of the Muséum d'histoire naturelle de Genève had been on a long-term loan since the 1960s. The recent return of this loan allowed the identification of potential type specimens of eleven species. These are listed, the label data is given and the condition of the specimens summarised.

Keywords: Central America - Saussure - Brunner von Wattenwyl - katydids - Geneva.

INTRODUCTION

The Orthoptera collections of the Muséum d'histoire naturelle de Genève (MHNG) owe much of their richness to collecting and networking skills of Henri de Saussure (1829-1905). Having made an expedition to Mexico and the Antilles in the 1850s, Saussure remained interested in the fauna of this region, and was asked to participate in studies resulting from the collecting of the naturalists who accompanied the French military intervention in Mexico in the 1860s and in the *Biologia Centrali-Americana* series published in London by Godman and Savin towards the end of the century (Hollier & Hollier, 2013). Saussure was in contact with most of the leading entomologists of the day, and the MHNG Orthoptera collection was studied by many specialists, including his friend Carl Brunner von Wattenwyl (1823-1914), a Swiss entomologist who had lived and studied in Bern and Geneva before moving to Vienna. Saussure and Alphonse Pictet (1838-1903) even gave up their project of revising the subfamily Pseudophyllinae because Brunner von Wattenwyl had already started a similar work, and although they published their preliminary findings (Pictet & Saussure, 1892), Brunner von Wattenwyl's monograph included many specimens from the MHNG (Brunner von Wattenwyl, 1895).

In 1958 Theodore Hubbell (1897-1989) started borrowing museum specimens for a revision of the genus *Anaulacomera* Stål, 1873. This project was taken over by Harold Grant (1921-1966) and, after his untimely death, by Michael Emsley. The study intended to use specimens from the MHNG, and although no loan

forms could be found, the species name labels pinned in the insect boxes of the MHNG collection remained as witness to the borrowed specimens. The absence of potential type specimens was noted in several parts of the type catalogue of the MHNG Orthoptera (Hollier, 2011; Hollier & Maehr, 2012; Hollier & Heads, 2015). In the spring of 2018 the specimens borrowed from the MHNG were returned unexpectedly and unannounced, and it is now possible to update the information about the MHNG holdings. Of particular interest are a number of specimens of species described by Brunner von Wattenwyl, which are probably part of his type series although the deposition of specimens in Geneva was not made explicit in the original descriptions. The identification of these specimens as types is partly based on the "TYPE BRUNN:" labels, which are associated with type specimens stated to be in Geneva in the original description (Hollier & Maehr, 2012), and the fact that the MHNG, while rich in specimens from Central America, has very few specimens from Peru.

ARRANGEMENT AND FORMAT

The species are listed in alphabetic order. The format follows Hollier & Heads (2015).

The following abbreviations are used:

BMNH The Natural History Museum, London
MHNG Muséum d'histoire naturelle de Genève
NHMW Naturhistorisches Museum, Wien

CATALOGUE

angustifolia Saussure, 1859: 202 [*Phylloptera*].

Bahia. Unspecified number of ♂ and ♀.

The MHNG collection contains two specimens, both syntypes. A ♀ specimen with labels: “Bahia” [handwritten on white card]; “*Anaulacomera angustifolia* Sss.” [handwritten on green paper]; “TYPE BRUNN.” [printed on white card]; “PROPERTY MUS. HIST. NAT. GENF” [printed on white card]; “MICH” [typewritten on yellow paper]; “Syntypus” [printed on red paper]. Specimen set with the wings folded; both antennae and all the legs are missing. A specimen with labels: “*Anaulacomera angustifolia* Sss.” [handwritten on green paper]; “TYPE BRUNN.” [printed on white card]; “PROPERTY MUS. HIST. NAT. GENF” [printed on white card]; “MICH” [typewritten on yellow paper]; “Syntypus” [printed on red paper]. Specimen set with wings folded; most of both antennae, all the legs and the abdomen are missing. There is insect feeding damage to the thorax and the base of the wings. A detached ♂ abdomen with signs of insect feeding damage was found next to this specimen in the box in which it had been transported and, because the size suggests that it may belong to this specimen, it has been glued to a card mount on a separate pin with a handwritten label indicating its possible provenance. Box B30.

Anaulacomera angustifolia (Saussure, 1859)

angustipennis Saussure & Pictet, 1897: 341, 344-345 [*Anaulacomera*].

Guiana; Cayenne. Unspecified number of ♂.

The MHNG collection contains one ♂ syntype with labels: “CAYENNE” [printed on green paper]; “*Anaulacomera angustipennis* Sss. & Pict.” [handwritten on green card]; “PROPERTY MUS. HIST. NAT. GENF” [printed on white card]; “MICH” [typewritten on yellow paper]; “Syntypus” [printed on red paper]. Specimen set with the wings folded; all the legs have been lost. Since the type series was unspecified, this specimen should be regarded as a syntype. Box B31.

Anaulacomera angustipennis Saussure & Pictet, 1897

brevicollis Brunner von Wattenwyl, 1878: 294 [*Anaulacomera*].

Central-Peru (Mus. Warschau). Unspecified number of ♂.

The MHNG collection contains one ♂ specimen with labels: “*Anaulacomera brevicollis* Brunn.” [handwritten on green paper]; “TYPE BRUNN.” [printed on white card]; “PROPERTY MUS. HIST. NAT. GENF” [printed on white card]; “MICH” [typewritten on yellow paper]; “Possible syntype of *A. brevicollis* BvW, Hollier 2018” [handwritten on red paper]. Specimens set with the wings folded; most of both antennae, the tarsi of the left front leg, the entire right front leg and left middle leg, the tibia and tarsi of the right middle leg and the tibia and tarsi of

the right hind leg are lost. The left front wing, which lacks the tip, is detached and secured on the original pin. The species name label pinned in the box has “Pérou centr.” written on it, suggesting that the “TYPE BRUNN.” label is warranted. Box B31.

Anaulacomera brevicollis Brunner von Wattenwyl, 1878

cornucervi Brunner von Wattenwyl, 1878: 290-291 [*Anaulacomera*].

Central-Peru (Mus. Warschau). Unspecified number of ♂ and ♀.

The MHNG collection contains one ♂ specimen with labels: “*cornucervi* Br.” [handwritten on green paper]; “TYPE BRUNN.” [printed on white card]; “PROPERTY MUS. HIST. NAT. GENF” [printed on white card]; “MICH” [typewritten on yellow paper]; “Possible syntype of *A. cornucervi* BvW, Hollier 2018” [handwritten on red paper]. Specimen (Fig. 1) set with wings folded; all three right legs are missing. The left front wing is detached and secured on the original pin. The species name label pinned in the box has “Pérou centr.” written on it, tending to support the “TYPE BRUNN.” label. Box B30.

Anaulacomera cornucervi Brunner von Wattenwyl, 1878

denticauda Saussure & Pictet, 1897: 341, 345, pl. 16, figs 15-16 [*Anaulacomera*].

Mexico, Temax in N. Yucatan (Gaumer). Probably one damaged ♂ and an unspecified number of ♀ (♂ measurements incomplete but variation in femur mentioned implying more than one ♀).

The MHNG collection contains two syntypes. A ♂ with labels: “Temax, N. Yucatan, Gaumer” [printed on white card]; “*Anaulacomera denticauda* ♂ Sss. et Pict.” [handwritten on green paper]; “PROPERTY MUS. HIST. NAT. GENF” [printed on white card]; “MICH” [typewritten on yellow paper]; “Syntypus” [printed on red paper]. Specimen set with left wings spread and right wings folded; the left front wing and most of the right front wing are lost. Most of both antennae, the left front leg, the claw of the left middle leg, the entire right middle leg and the left hind leg are missing. The right hind leg has been reattached with glue and lacks the claws. There is insect feeding damage to the abdomen and the cerci are broken. A ♀ with labels: “Temax, N. Yucatan, Gaumer” [printed on white card]; “*Anaulacomera denticauda* Saussure & Pictet 1897 Det. M. G. Emsley 1984” [typewritten on white card]; “PROPERTY MUS. HIST. NAT. GENF” [printed on white card]; “Homotype” [handwritten on white card]; “MICH” [typewritten on yellow paper]; “Syntypus” [printed on red paper]. Specimen set with wings folded; most of both antennae and all the legs are lost. There is a ♀ syntype, erroneously referred to as the holotype on OSF, in the BMNH (images on OSF). Box B31.

Anaulacomera denticauda Saussure & Pictet, 1897



Fig. 1. Possible syntype of *Anaulacomera cornucervi* Brunner von Wattenwyl (lateral view).

erinifolia Saussure, 1859: 203 [*Phylloptera*].

Bahia. Unspecified number of ♂.

The MHNG collection contains one ♂ syntype with labels: “Bahia” [handwritten on white card]; “*Anaulacomera erinifolia* Sss.” [handwritten on green paper]; “TYPE BRUNN.” [printed on white card]; “PROPERTY MUS. HIST. NAT. GENF” [printed on white card]; “MICH” [typewritten on yellow paper]; “Syntypus” [printed on red paper]. Specimen set with the wings folded; about half of the right front wing is missing. Most of both antenna, the tibia and tarsi of the left front leg, the entire right front leg, both middle legs, the entire left hind leg and the end of the tibia and the tarsi of the right hind leg are lost; the femur of the right hind leg is broken but still attached in the middle. The specimen has been repaired with glue at some time, but the repaired parts are no longer attached. The abdomen is missing. Box B30.

Anaulacomera erinifolia (Saussure, 1859)

incerta Brunner von Wattenwyl, 1878: 296, fig. 85 d-e [*Anaulacomera*].

Tenatagu (c.m. Nr. 9077), Fidji (c.m. Nr. 3926). Unspecified number of ♂ and ♀.

The MHNG collection contains two specimens. A ♂ with labels: “*Anaulacomera incerta* Brunn.” [handwritten on whitish paper]; “TYPE BRUNN.” [printed on white card]; “PROPERTY MUS. HIST. NAT. GENF” [printed on white card]; “MICH” [typewritten on yellow paper]; “Possible syntype of *A. incerta* BvW, Hollier 2018”

[handwritten on red paper]. Specimen set with the wings folded; the ends of the antennae, the tarsi of the left front leg, the last tarsal segment of the left middle leg and the last tarsal segment of the left hind leg are missing. A ♂ with labels: “*Anaulacomera incerta* Brunn.” [handwritten on whitish paper]; “PROPERTY MUS. HIST. NAT. GENF” [printed on white card]; “MICH” [typewritten on yellow paper]. Specimen set with the wings folded; most of both antennae, the last tarsal segment of the left middle leg and two tarsal segments of the right hind leg are lost. The left hind leg, which lacks two tarsal segments, is detached and secured through the femur on the original pin. The species name label pinned in the box has “Fidji” written on it, suggesting that the “TYPE BRUNNER” label may be warranted, although it is less clear whether the second specimen, which lacks such a label, is also a potential syntype. Box B31.

Furnia incerta (Brunner von Wattenwyl, 1878)

laticauda Brunner von Wattenwyl, 1878: 292 [*Anaulacomera*].

Mexico (Mus. Genf, Wien), Orizaba (c.m. Nr. 7151), St Jean (Columbia, Mus. Berlin). Unspecified number of ♂ and ♀.

The MHNG collection contains three specimens that can be identified as syntypes. A ♂ with labels: “Mexique, Sumichrast” [handwritten on white paper]; “*laticauda* Br.” [handwritten on green paper]; “*Anaulacomera laticauda* Br. 1878 Det. M. G. Emsley 1984” [typewritten

on white card]; "PROPERTY MUS. HIST. NAT. GENF" [printed on white card]; "MICH" [typewritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with the wings folded; most of both antennae, both front legs, the right middle leg, the tibia and tarsi of the left hind leg and the tarsi of the right hind leg are missing. There is insect feeding damage to the thorax. A ♂ with labels: "Bilimek Mexico 1871, Cuernavacca" [printed on white card with "Cuernavacca" handwritten]; "Anaulac. laticauda Br." [handwritten on white card with printed margins]; "Anaulacomera laticauda Br. 1878 Det. M. G. Emsley 1984" [typewritten on white card]; "PROPERTY MUS. HIST. NAT. GENF" [printed on white card]; "# 8" [handwritten on white paper]; "MICH" [typewritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with left front wing spread and the others folded; both antennae, the tibia and tarsi of the left middle leg, the entire right middle leg and both hind legs are missing. A ♀ with labels: "Anaulacomera laticauda Brun." [handwritten on green paper]; "TYPE BRUNN." [printed on white card]; "Anaulacomera laticauda Br. 1878 Det. M. G. Emsley 1984" [typewritten on white card]; "PROPERTY MUS. HIST. NAT. GENF" [printed on white card]; "MICH" [typewritten on yellow paper]; "Syntypus" [printed on red paper]. Specimen set with the wings folded; most of both antennae, the last tarsal segment of the left front leg, the tibia and tarsi of the right front leg and all of both hind legs are missing. There is insect feeding damage to the abdomen. The other eight specimens under this name have data labels characteristic of the specimens collected for the *Biologia Centrali-Americana* or stating that the specimens were collected by Fruhstorfer, and were therefore collected after the publication of the original description.

Anaulacomera laticauda Brunner von Wattenwyl, 1878

lativertex Brunner von Wattenwyl, 1878: 292-293 [*Anaulacomera*].

Santa Fe de Bogota (c.m. Nr. 4805). Unspecified number of ♂.

The MHNG collection contains one ♂ specimen with labels: "COLOMBIE, 603.28" [printed on white card with numerals handwritten]; "lativertex Br." [handwritten on green paper]; "Type Brunner" [handwritten on white card]; "PROPERTY MUS. HIST. NAT. GENF" [printed on white card]; "Possible syntype of *A. lativertex* BvW, Hollier 2018" [handwritten on red paper]. Specimen set with the wings folded; the ends of both antennae are lost. The MHNG acquisition register number 603.28 records a purchase of 86 pinned Orthoptera collected in Colombia with the date 1879. That would appear to make it impossible for this specimen to be a syntype, but there is much evidence that the registers were often written up in arrears and the specimens may have arrived sooner.

Anaulacomera lativertex Brunner von Wattenwyl, 1878

securifera Brunner von Wattenwyl, 1878: 289 [*Anaulacomera*].

Central-Peru (Mus Warschau). Unspecified number of ♂. The MHNG collection contains two ♂ specimens, both possible syntypes. A ♂ with labels: "securifera Br." [handwritten on green paper]; "TYPE BRUNN." [printed on white card]; "PROPERTY MUS. HIST. NAT. GENF" [printed on white card]; "MICH" [typewritten on yellow paper]; "Possible syntype of *A. securifera* BvW, Hollier 2018" [handwritten on red paper]. Specimen set with wings folded; the ends of both antennae, the entire left front leg, the tarsi of the right front leg, the entire left middle leg, the tibia and tarsi of the right middle leg and all of both hind legs are missing. The left front wing is detached and glued to a card mound on the original pin. A ♂ with labels: "Anaulacomera securifera Br." [handwritten on green paper]; "TYPE BRUNN." [printed on white card]; "PROPERTY MUS. HIST. NAT. GENF" [printed on white card]; "MICH" [typewritten on yellow paper]; "Possible syntype of *A. securifera* BvW, Hollier 2018" [handwritten on red paper]. Specimen set with the wings folded; both antennae, both front legs, the tibia and tarsi of the left middle leg, the entire right middle leg and both hind legs are missing. There is insect feeding damage to the abdomen, which has been repaired with glue. The species name label pinned in the box has the locality "Pérou" handwritten on it, tending to support the "TYPE BRUNN" labels. Box B30.

Anaulacomera securifera Brunner von Wattenwyl, 1878

sulcata Brunner von Wattenwyl, 1878: 289-290 [*Anaulacomera*].

Brasilien (Mus. Wien, c.m. Nr. 1097), Peru (Mus. Warschau). Unspecified number of ♂ and ♀.

The MHNG collection contains two specimens. A ♂ with labels: "sulcata Br." [handwritten on green paper]; "TYPE BRUNN." [printed on white card]; "PROPERTY MUS. HIST. NAT. GENF" [printed on white card]; "MICH" [typewritten on yellow paper]; "Possible syntype of *A. sulcata* BvW, Hollier 2018" [handwritten on red paper]. Specimen set with left front wing spread and other wings folded; most of both antennae, both front legs and both hind legs are missing. The left middle leg is detached and glued to the "TYPE BRUNN." label. There is insect feeding damage to the thorax and abdomen. A specimen with labels: "Anaulacomera sulcata Br." [handwritten on green paper]; "TYPE BRUNN." [printed on white card]; "PROPERTY MUS. HIST. NAT. GENF" [printed on white card]; "MICH" [typewritten on yellow paper]; "Possible syntype of *A. sulcata* BvW, Hollier 2018" [handwritten on red paper]. Specimens set with wings folded; most of both antennae, the left front leg, both middle legs and the tarsi of both hind legs are missing. The end of the abdomen is lost and there is insect feeding damage to what remains. The left front wing is detached and secured on the original pin. The species name label pinned in the box has "Amer. mérid." written on it,

suggesting that the “TYPE BRUNN:” label is warranted. Box B30.

Anaulacomera sulcata Brunner von Wattenwyl, 1878

There are other specimens of interest amongst those returned.

A ♀ in box B30 has labels: “Pernambuco” [handwritten on white card]; “*Anaulacomera inversa* ? Brunn.”; “PROPERTY MUS. HIST. NAT. GENF” [printed on white card]; “MICH” [typewritten on yellow paper]. This specimen was described by Brunner von Wattenwyl (1878: 285) immediately after his description of *A. inversa* based on ♂ specimen(s) from Brazil deposited in the NHMW. Brunner von Wattenwyl stated that the ♀ specimen in MHNG was very similar to the ♂, but he was not sure if it was the same species and the specimen is therefore not a syntype.

A ♂ in box B31, has labels: “Bugaba, 800-1500 ft., Champion” [printed on white card]; “*Anaulacomera laticauda* var *nodosa* Sss.” [handwritten on green paper]; “PROPERTY MUS. HIST. NAT. GENF” [printed on white card]; “MICH” [typewritten on yellow paper]. Although this specimen is one that was described as a variety in Saussure & Pictet (1897: 344), it was not named in that publication, which means that it is not a type specimen and the name is not available.

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