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## A CONTRIBUTION TO THE STUDY OF THE GENUS *ANACLILIEA* (DIPTERA: MYCETOPHILIDAE)<sup>1</sup>

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ABSTRACT: Two species of *Anacliliea*, *A. winchesteri* and *A. vallis*, are described from Vancouver Is., Canada. These are the second and third species of the genus *Anacliliea* described from the Nearctic Region. A newly noticed characteristic of the tergal portion of the male terminalia, the apical shelf, is used to support separation of these species from each other and the Palaearctic *dispar*. This characteristic is not yet known for other described species of the genus.

The genus *Anacliliea* consists of one fossil species described by Meunier (1904), 3 species from the western Palaearctic Region and three species reported from the Nearctic Region (Vockeroth, 1981), one of which has been described by Bechev (1990). Bechev also described a species from temperate Nepal and reviewed the genus.

The type of the genus *Anacliliea* is *A. anacliniformis* Meunier, 1904, an amber fossil. Johannsen (1909) gave page preference to that species in designating the type of *Anacliliea*. Edwards (1940), after examination of three other Meunier fossil species of *Anacliliea* described at the same time as *anacliniformis*, determined that they probably represented *anacliniformis*.

Subsequently, *Paraneurotelia* Landrock, 1911 was erected for the western Palaearctic *P. dziedickii*; its relationship to *Anacliliea* was noted. Edwards (1914) referred *Boletina dispar* Winnertz, 1863 to the Landrock genus. Later, Edwards (1925) suggested that *Paraneurotelia* was "probably synonymous with Meunier's *Anacliliea*, from Baltic amber" and in 1940 synonymized *Paraneurotelia* (sic) under *Anacliliea*.

Examination of an Edwards specimen of *dispar* from Great Britain and Barendrecht's (1938) specimen from the Netherlands confirm that they are conspecific with *dispar* of Landrock (1927). I have not seen Engel's specimen (1915) from the Faroes. Hutson *et al.* (1980) gave a short review of *dispar*, reporting it from Great Britain and Ireland.

In the Nearctic Region, Vockeroth (*loc. cit.*) indicated that there were three species of *Anacliliea*. Bechev (*loc. cit.*) described a single species obtained from Vockeroth. The present study presents descriptions of the males of two new species from Vancouver Is., British Columbia. It is not known if these represent any of the species known to Vockeroth; material available to him cannot be located. At this time, I cannot correlate females with males.

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## *Anacliliea* Meunier, 1904

Type species: *Anacliliea anacliniformis* Meunier, 1904:146

Designation Johannsen, 1909:70

*Paraneurotelia* Landrock, 1911:161; Edwards, 1940:121, *Paraneurotelia* (sic) synonymy

**Head.** Mouthparts flabellate; vertex, frons and parietal regions with short setae; posterior and anterior clypeus with fine setae; ocelli in a triangular conformation with smaller median ocellus anterior, lateral ocellus about 2x its diameter from eye; compound eye excavated dorsomedially along antenna socket; antenna 2+14 segmented, scape and pedicel with strong dorsoapical setae, flagellar segments slightly compressed, subrectangular; palpus 4-segmented with the apical segment long and thin; thorax with arched mesonotum; mesonotum and pronotum setiferous; pleura bare except pleurotergite with very fine postero-ventral setae; postnotum with fine setae posteriorly; katepisternite much larger than anepisternite; legs with fore and mesocoxae yellowish, forecoxa setose anteriorly, base brown, mesocoxa with some distal anterior setae, metacoxa with a row of posterior setae expanded distally; femora compressed; tibial spurs 1-2-2, tibiae brownish, mid tibia with a dorsal and hind tibia with a ventral paired irregular row of setae; hind tibia expanded distally with sparse lateral apical comb; wing with macrotrichia over entire surface, most heavily in cell R<sub>3</sub>; humeral crossvein, Sc, R, R<sub>1+2+3</sub> and R<sub>4+5</sub> setose, Rs bare; setation on M and Cu and their branches not as robust; C ending beyond tip of R<sub>4+5</sub>; 1A represented by a fold parallel to Cu<sub>2</sub>; 2A reaching level of fCu; abdomen setiferous, subcylindrical, with eight apparent segments; sternites divided longitudinally by two membranous areas into a broad median and narrow lateral sclerites; eighth segment not modified and shorter than seventh.

**Male.** Terminalia: tergal portion (tgt) a truncated triangle, setiferous with a bare, lightly pigmented apical shelf (as) at a right angle which is distinctive from species to species when observed from a posterior view.

**Biology:** The population of British Columbia *Anacliliea* collected in Malaise traps between 3 July and 9 September peaked on 15 July. Records from the literature indicate that in all other areas where *Anacliliea* has been found, it appears one or two months earlier.

### *Anacliliea vallis* Coher, NEW SPECIES

(Fig 1)

**Male.** A small yellowish-brown fly with the following characteristics in addition to those for the genus: Antenna with flagellar segments concolorous. Thorax with disk of mesonotum chestnut-brown. Legs with fore and mesocoxa yellowish, forecoxa with base brown, metacoxa brown; femora yellowish, with metafemur darkened distally, mesofemur less so. Wing (2.5mm) with C projecting beyond tip of R<sub>4+5</sub> half the distance to M<sub>1+2</sub>; base of M<sub>1+2</sub> much weakened, fM slightly basad of fCu; Sc ending in C before level of fM. Halter cream colored with an oval pilose knob. Abdomen chestnut. Terminalia with subtrapezoidal shelf (Fig. 1b) of tergal portion less than twice as wide as high, basal lateral margins rounded; Synsclerite (Fig. 1a) with median ventral margin entire.

**Material examined:** Holotype, male, CANADA: British Columbia, Vancouver I., Carmanah Valley, March 7- July 11, 1991, N. Winchester. Deposited in the Canadian National Collection, Ottawa.

Paratopotype. June 4 - July 15, 1991. In my collection.

**Etymology.** The name *vallis* is derived from the Latin for valley.

**Discussion.** Taken during the maximum flight time of *winchesteri* n.sp. (Comparison of the wings of *vallis* and *winchesteri* show macrotrichia of the former slightly more dense, wing broader. These characteristics are not placed in the descriptions since minor variations would cancel them as separational charac-

teristics. Like *winchesteri*, this species is separable from all other known species by the coloration pattern of the coxae. The male terminalia readily separate this species from all others presently known.

### *Anacliliea winchesteri* Coher, NEW SPECIES

(Fig. 2)

**Male.** A small chestnut brown fly with the following characteristics in addition to those for the genus. Antenna with first two flagellar segments lighter than remainder. Legs with fore and mesocoxa yellowish, forecoxa with base brown, metacoxa brown; femora yellowish, with hind femur darkened distally, midfemur less so; tibiae brownish. Wing: (2.0-3.0mm), C projects beyond tip of R<sub>4+5</sub> less than half way to M<sub>1+2</sub>; the base of M<sub>1+2</sub> much weakened, fM virtually level with fCu; Sc ending in C slightly beyond level of fCu. Halter whitish with an oval pilose knob. Abdomen chestnut with segment eight appearing darkened. Male terminalia with apical shelf of tergal portion subtrapezoidal (Fig. 2b), about 3 times as wide as high, basal lateral margins broadly connected to tergite. Synsclerite (Fig. 2a) with median ventral margin with a roughly U-shaped median depression.

**Material examined:** Holotype, male, CANADA: British Columbia, Vancouver I., Carmanah Valley, June 4 - July 15, 1991, N. Winchester. Deposited in the Canadian National Collection, Ottawa.

**Paratotypes.** June 21-July 3, 1991 (3m); July 4 -15, 1991 (36m); July 31-August 11, 1991 (1 m). Canadian National Collection and my personal collection.

**Discussion.** If colorational characteristics are valid, this species, like *vallis*, may be distinguished from all previously described species on the basis of coxal color. The male terminalia readily separate this species from all others presently known.

I am pleased to dedicate this species to Neville Winchester who has done so much to contribute material to the study of the Mycetophilidae in boreal North America.

### *Anacliliea dispar* (Winnertz) 1863

(Fig. 3)

This European species exhibits an apical shelf which has a uniquely forked appearance. Bechev (*loc. cit.*), reports a widespread western Palaearctic distribution for this species.

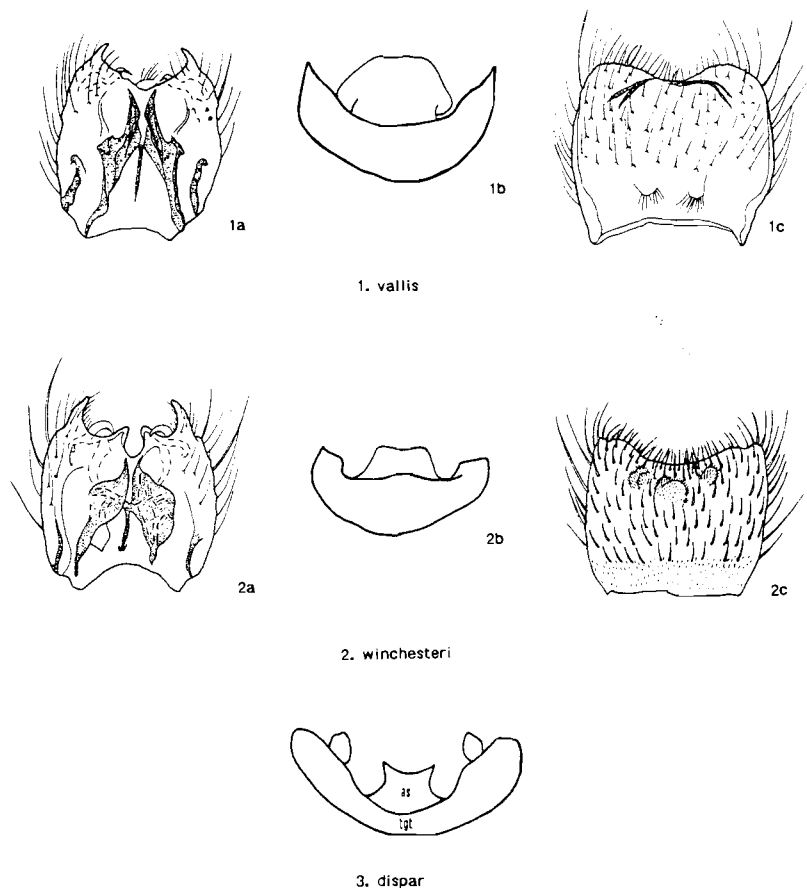
### *Anacliliea vockerothi* Bechev, 1990

The localities given by author of this species are not in Canada as noted but are found in the southeastern U.S.A. Specimens are not available at this time so that characteristics of the apical shelf of this species cannot be given.

### *Anacliliea beshovskii* Bechev, 1960

The remarks for *vockerothi* apply to this species.

Anaclileia



Figs. 1-3 Male terminalia *Anaclileia* spp. Fig. 1. *A. vallis* n.sp. 1a. synsclerite, ventral. 1b. apical shelf. 1c. tergal somites, dorsal. Fig. 2. *A. winchesteri* n.sp. 2a. synsclerite, ventral. 2b. apical shelf. 2c. tergal somites, dorsal. 3. *A. dispar* Winnertz. as - apical shelf; tgt - tergal somite.

CATALOGUE OF SPECIES

*anacliniformis* Meunier, 1904:146 fossil; Johannsen, 1909:86, designated genotype. Edwards, 1940:120; Matile, 1988:233, *anacliniformis* (sic).

*beshovskii* Bechev, 1990:68

*dispar* (Winnertz) 1863:777 *Boletina*; Schiner, 1864:455; Grzegorzek, 1873:26; Dziedzicki, 1885:192; Kowitz, 1894:4; Thalhammer, 1900:105; Kertész, 1902:74; Johannsen, 1909:73, 1909:86, *Palaeoanaclina*; Edwards, 1914:361, *Paraneurotelia*, 1925:558, *Paraneurotelia*, 1940:121; Engel, 1915:98, *Palaeoanaclina*; Enderlein 1928:13, *Paraneurotelia*; Barendrecht, 1938:39 *Paraneurotelia*; Landrock 1927:59 *Paraneurotelia* 1940:42 *Paraneurotelia*; Seguy, 1940:89, *Paraneurotelia*; Hutson, et. al., 1980:48; Matile, 1988:233; Bechev, 1990:68.

*dissimilis* Meunier, 1904:148 fossil; Edwards, 1940:121 = *anacliniformis*.

*dziedzickii* (Landrock) 1911:161 *Paraneurotelia*; Landrock, 1927:59, *Paraneurotelia*, 1940:42, *Paraneurotelia*; Edwards, 1940:120; Matile, 1980:95, 1988:233; Bechev, 1990:68.

*gazagnairei* Meunier, 1904:147 fossil; Edwards, 1940:121 = *anacliniformis*.

*nepalensis* Bechev, 1990:69.

*sylvatica* Meunier, 1904:147 fossil; Edwards, 1940:121 = *anacliniformis*.

*vallis* Coher, n.sp.

*vockerothi* Bechev, 1990:71

*winchesteri* Coher, n.sp.

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## BOOK REVIEW

IDENTIFICATION GUIDE TO THE ANT GENERA OF THE WORLD.  
Barry Bolton. 1994. Harvard University Press, Cambridge, Massachusetts. 222 pp. \$65.00 hardcover.

Ants are commonly encountered in most terrestrial habitats. In addition to vast numbers of individuals, they are a diverse group. All belong to the family Formicidae (all ants and only ants). Living species are currently classified into 16 subfamilies and 296 genera. Estimates of species range between 15,000 and 20,000 with roughly 9,000 formally described. Such diversity can be intimidating for those beginning their study of ants; it may account for the relative scarcity of ecological studies of ants (in comparison to other organisms). Barry Bolton attempts "to provide a series of identification keys to the living ant subfamilies and genera of the world." (page 1). I believe he achieved this goal in a superb manner.

Since this book concerns identification of ants, I selected a number of specimens representing different subfamilies and genera from North America, South America, Australia, Europe, Africa, and Asia. Keys are separated by zoogeographical region to speed accurate identifications. I was able to identify all material using the keys. The numerous (over 500) scanning electron microscope photographs helped confirm these identifications. I believe anyone seriously wishing to identify ants can use this work to properly determine the identity at the genus level.

Several sections of this book deserve special recognition. First, there are a number of paragraphs dealing with proper preparation of specimens. When I recall my early experiences pinning ants, no such reference was readily available. Although one eventually discovers the proper way, such guidance should be quite helpful for budding myrmecologists. This section reflects the attention to detail which makes this book an excellent resource. There is also a section discussing how to use the keys. This also should prove exceptionally valuable to those unfamiliar with the use of dichotomous keys. The glossary of morphological terms is thorough and well illustrated. Terms are defined so as to be understandable to the reader. The bibliography of faunistic studies in the rear of the book should help locate pertinent local references in most cases.

Each subfamily is introduced with a diagnosis of the group and a synoptic classification of all genera within that subfamily. A thorough list of references should help those needing species rank identifications. Inclusion of all proposed names from family through sub-genus (with their current status) is also helpful. Discussion of extinct subfamilies with a listing of extinct genera is a definite plus.

It is rare one encounters a truly useful book. This is one. Those wishing to identify ant genera should make ready reference of this work. Those wishing to learn more about this world's ant fauna will find this a valuable addition as well.

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