

A COMPUTER-COMPATIBLE KEY TO THE GENERA OF THE TUBULIFERA (THYSANOPTERA)

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This poster is a representation of a key which could be adapted in a computer program for easy and quick identification of the genera of the Tubulifera (Fig. 1); (Chiasson 1985). The term "computer-compatible key" was given by Williams & Lauck (1982) to describe keys which have the following characteristics:

1. They have the capacity to be multidirectional.
2. They use multiple characters or multiple states of a character.
3. They are easier and faster to use than a dichotomous key and are accurate.
4. Characters can be randomly selected.

The computer compatible key offers several advantages over completely computerized keys since:

1. They can be used with or without a computer.
2. They can be written in a book format.
3. They are easier and faster to use than a dichotomous key and the computerized key. A bank of computer compatible keys can be developed quite easily.

The type of computer compatible key used here is the eliminator key, since it operates through the process of elimination. Here it uses characters that are considered to be diagnostic at the generic level, as well as other characters that show overlap or intergradation among the different genera. This key therefore does not group genera along an established taxonomic hierarchy.

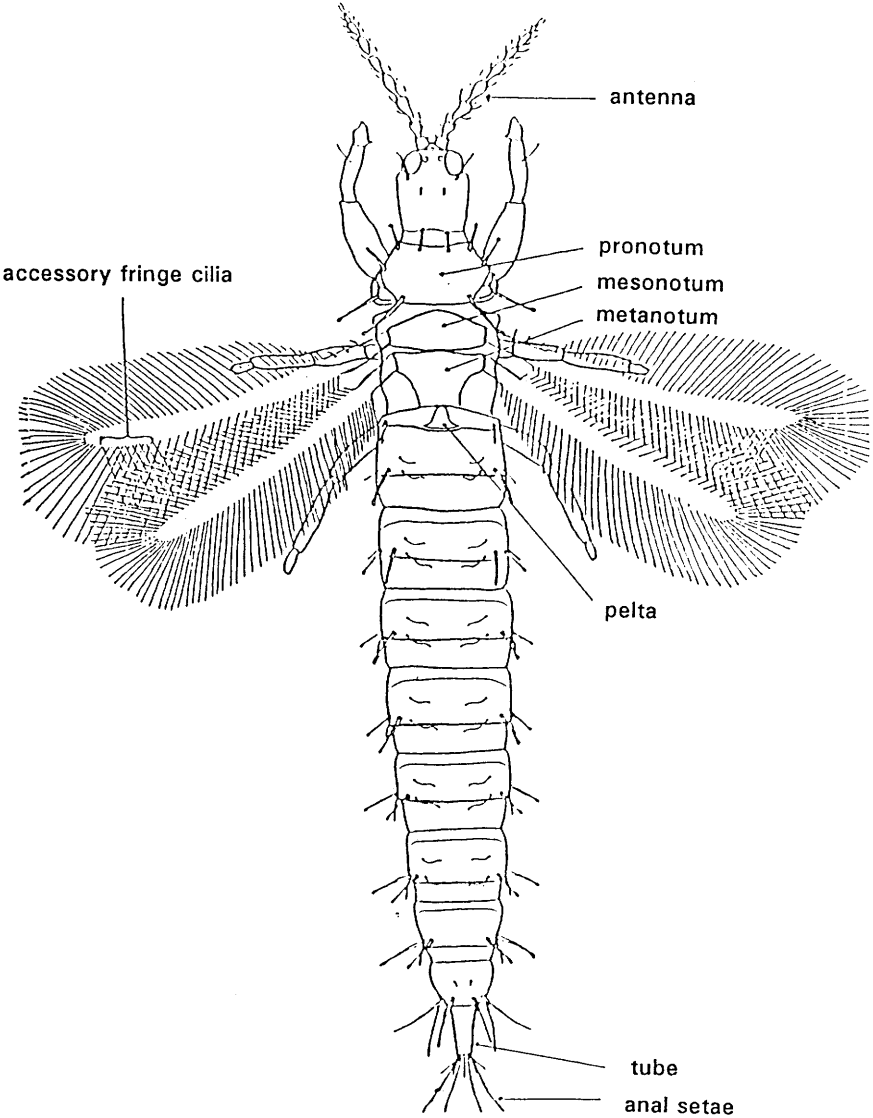


Figure 1. A Tubuliferan Thrips.

The key must start with a good description of the group to be identified. A letter is then assigned to each subgroup (in this case to each genus) (Table 1); these letters represent the genera in the key and all illustrations are identified by these letters. In this key, ten sets of characters or states of a character, are presented. These are followed by verification sheets, which are complete descriptions of the genera used in the key.

The descriptions of the genera of the Tubulifera are not given here but included are the characters used in the key for identification:

Surface sculpturation: from weak transverse striae to deep anastomosing striations, or strong hexagonal reticulation; restricted to a small area or extended over almost the entire body.

Setae: presence, form, length and position on body of the setae are all useful in classification at and below the generic level.

Head: the size of the eyes in relation to the head; the number of segments in the antennae; the presence and position of sensory trichomes on the antennae; the position and size of the postocular setae and setae or tubercles on the cheeks.

Maxillary stylets: the width, shape and position of the stylets are considered here in this key.

Prothorax: number, size and position of the pronotal setae.

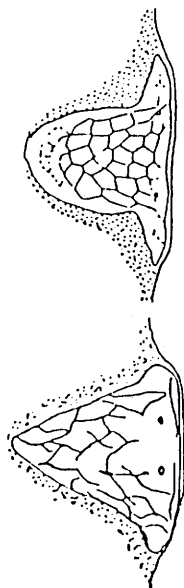
Wings: wings may be fully, partially or not developed in the adults, i.e. macropterous, micropterous or apterous.

Abdomen: the sclerite on tergum I is reduced to a shield-like plate called the pelta. Although not usually considered as a diagnostic character, the pelta is given special consideration in this key.

Table 1. The genera of the Tubulifera in Canada

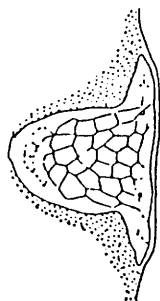
A - Bolothrips	K - Hoplandothrips
B - Compsothrips	L - Poecilothrips
C - Cryptothrips	M - Stictothrips
D - Elaphrothrips	N - Lispothrips
E - Megalothrips	O - Cephalothrips
F - Megathrips	P - Lissothrips
G - Trachythrips	Q - Liothrips
H - Haplothrips	R - Gnophothrips
I - Leptothrips	S - Gynaikothrips
J - Acanthothrips	T - Hoplothrips

a. Triangular



G H I L Q S

b. Bell-shaped



G K O

c. Rectangular



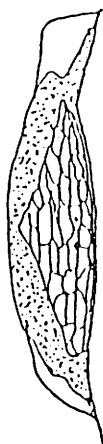
J

d. Broad with squared or flattened top



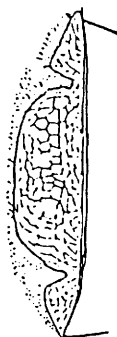
B N O P Q R T

e. Broad with tapered tip or pointed tip



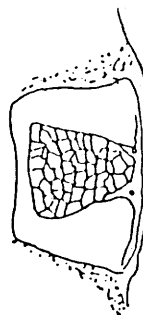
A C O

f. With lateral flanges



D E F

g. Square



M

Figure 2. Size and shape of pelta.

Figure 3. Wing shape and without wing.

Wing Length 5 Times Length of Head

a - entire wing strap-like,
membranous part parallel-sided
throughout, with or without
accessory fringe cilia



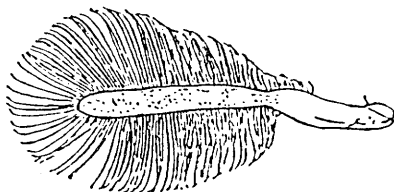
A C D E F G L Q S T

b - entire wing sole-shaped,
membranous part medially
basally enlarged, with or
without accessory fringe
cilia



G H I K

c - bent wing, membranous part medially constricted, basally
enlarged, without accessory fringe cilia



N

Wingless or Wing Length Less than 5 Times Length of Head

d - forewing short,
2 1/2 times length of head

e - brachypterous

f - apterous

R

C D F K N P Q T

A B J P T

How To Use This Key

1. The first set in the key (Fig. 2) is first considered. After finding the correct shape of the pelta, the letters given for that particular pelta are recorded. (If the specimen has a pelta with a shape intermediate between two forms shown in the set, the letters shown under both forms need to be recorded.)

Example: if the specimen observed has a triangular pelta the letters recorded are:

G H I L Q S

2. Any other set can be next selected and the correct state is chosen. The letters that do not appear in both sets are crossed out.

Example: (Fig. 3) the wings of the specimen correspond with state "b" of this set, i.e. wing sole-shaped with or without accessory cilia

= G H I K

G H I

3. Other sets are selected subsequently and the remaining letters are eliminated as outlined in 2, until only one letter remains. As an option the verification sheets can be used when only two or three letters remain and the characters of the remaining genera can be compared with the specimen.
4. Once an answer is obtained this answer can be verified by using additional sets.

References Cited

- Chiasson, H. 1985. A computer-compatible key to the genera of the Tubulifera (Thysanoptera) of Canada. Lyman Entomological Museum and Research Laboratory. Note no. 14. Ste-Anne-de-Bellevue, Quebec, Canada. 34 pp.
- Williams, J. R. & D. R. Lauck. 1982. Computer-compatible keys - for the identification of organisms. Marilyn D. Gibson Publishing, Provo, Utah. 109 pp.