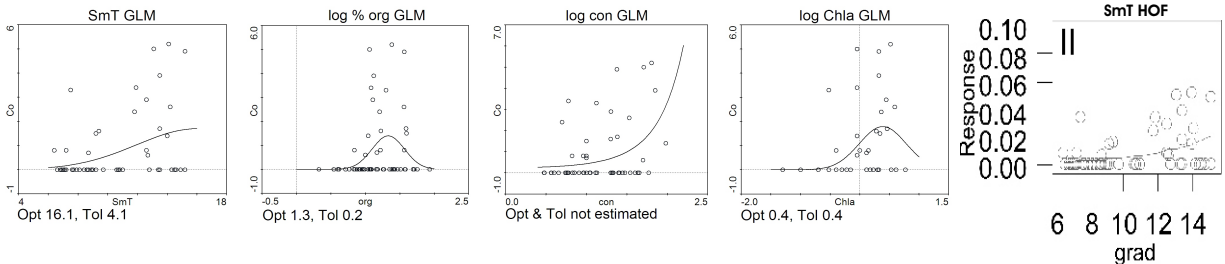
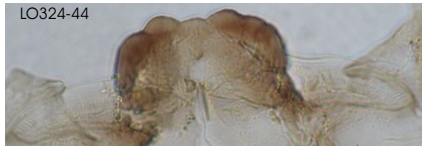
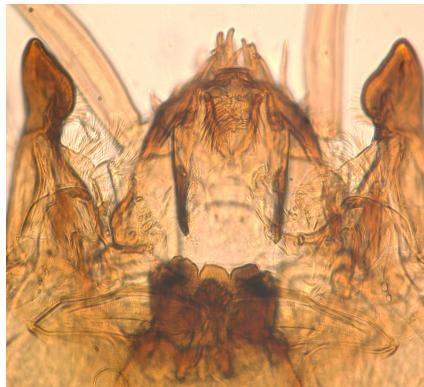
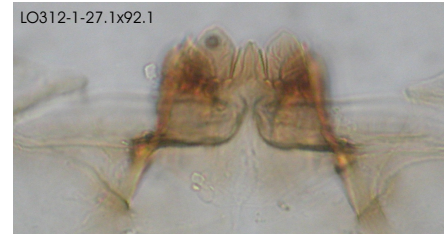
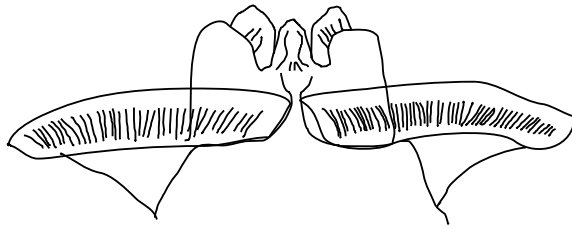


# Corynocera

# Chironominae Tanytarsini



## Diagnostic characters:

Mentum has 3-5 clustered teeth. Median occasionally notched. VMPs long and narrow, nearly touching but distinctly separated. Mandible without distinct teeth, bluntly rounded.

## Ecology:

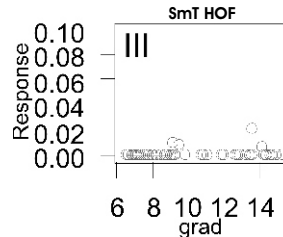
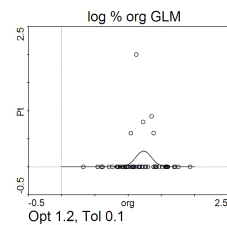
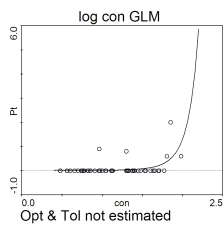
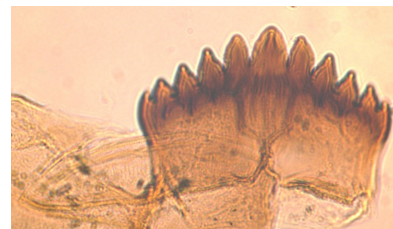
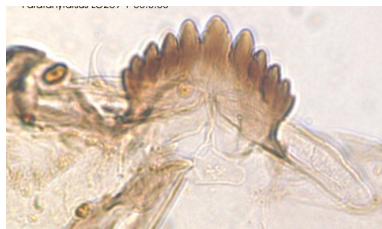
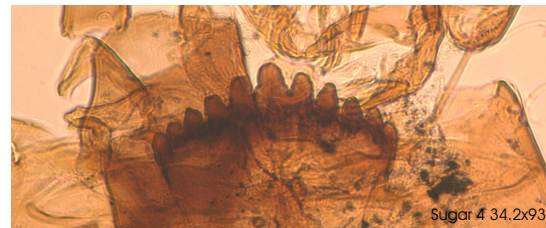
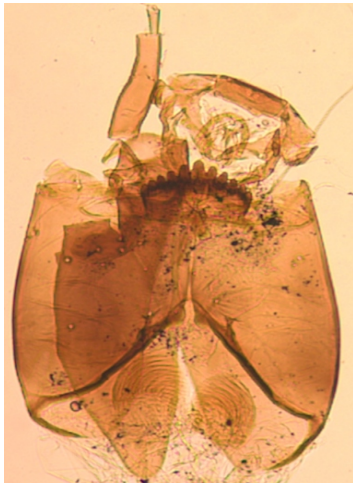
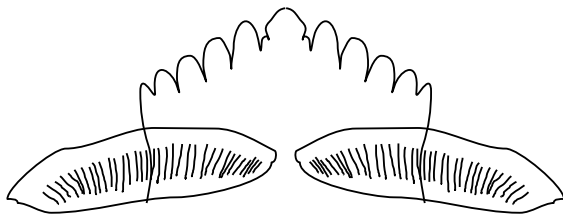
**Subfossil:** Common, but more abundant in warmer, relatively productive sites (Dieffenbacher-Krall et al. 2007). Often dominate subfossil assemblages above tree-line (~ 1300 m a.s.l.), but may also occur in high abundances below tree-line and in oligotrophic and mesotrophic lakes (Woodward and Shulmeister 2006).

**Organism:** Lakes and ponds throughout NZ (Boothroyd unpub.).

Boubee (1983): Found in clear water up to 1 m deep, in organic substrate with a high concentration of algae and decaying reeds. Larvae build tubes up to 10 cm long with a distinct silk lining. Cases overlay each other to form an intricate series of tunnels with one opening at the sediment surface, and the other in the sediment or at the sediment surface. Tube openings are as much as 2 cm above the sediment surface. Tube is irrigated. A larvae can move up to 4/5 of its body out of the tube, reaching out to collect detritus. Feeding mode is changed if necessary. May eat other chironomid larvae.

**Taxonomic references:** All the *Corynocera* we have found to date (Dieffenbacher-Krall et al. 2007, Woodward and Shulmeister 2006) have been of the *ambigua* type (Brooks et al. 2007).

**Lakes containing taxon:** 26 Dieffenbacher-Krall et al. (2007) sites, often in large numbers. 7 of 15 recounted Woodward and Shulmeister (2006) sites.



**Diagnostic characters:**

Median notched on sides or near bottom, not at top, uniform in color. Notch often quite subtle. 5 laterals graduating downward in size. Mentum convex. VMPs stubby, each slightly wider than mentum, just barely separated medially. Distance between top of POP and mentum is short. Antennae pedestals short.

Similar taxa: Distinguishable from *Tanytarsus vespertinus* by notches on median, and from *T. funebris* types by uniform color of median, strongly convex shape of mentum, short POP-to-mentum distance, and short antennae pedestals.

**Ecology:**

**Subfossil:** Found infrequently in small numbers in our sites, most commonly in sites with moderate sediment organic content.

**Organism:** One species, *P. grimmii*, known from New Zealand (Boothroyd and Forsyth 2007). Found in shallow, standing waters, artificial fish ponds, water distribution systems. *P. grimmii* is recorded from shallow ponds and lakes in the northern third of North Island including the geothermal region (Stark and Winterbourn 2000).

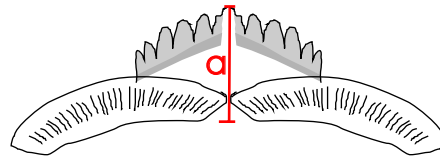
1st instar builds a straight tube of organic material and detritus on sediment or vegetation surface. The larva remains in this tube through its development, increasing the tube size as necessary. The tube may be up to 8 times the length of the 4th instar larva. Much of the tube is eaten prior to pupation leaving a long enough section to protect the pupa (Forsyth 1971).

Boubee (1983) noted that the larvae require oxygen rich water and typically occur in the littoral zone, in high numbers among exotic aquatic macrophytes.

**Lakes containing taxon:** Dieffenbacher-Krall et al. (2007) sites 209, 212, 214, 215, 217, 301, 302, 308, 507. Found in 7 of 15 Woodward and Shulmeister (2006) recounted sites.

See individual types in pages following.

**Generalized *T. funebris***



a = height of mentum  
b = height of antenna pedestal

**Diagnostic characters:**

Median generally notched, but not always in Type A. Median tends to be lighter in center of tooth than edges, although teeth are often uniformly dark in fossil specimens. Dark coloration underneath teeth interrupted under the median. 5 laterals. Mentum tends to be level across but medial and 1st laterals may be prominent (on a higher focal plane). Mentum may be convex in some samples. VMPs long. We found no spurs on antennae of any Tanytarsini.

Similar taxa: *Paratanytarsus* has notches on side of median, uniform coloration beneath median, shorter VMPs, short POP-mentum distance. *T. vespertinus* mentum generally has a curve, median is uniform in color, VMPs generally shorter.

**Ecology:**

**Subfossil:** Given individually for different types on following pages. Note: Types A, B, and C long clustered together on CCA plots, and types A, B, and C short clustered together. Antenna pedestal length may therefore be more significant with respect to ecological differences than A, B, and C mentum and VMP differences. Mentum and VMP differences may be an artifact of preservation.

Note: *T. funebris* types described here may represent subgroup or multiple groups described as *T. funebris* elsewhere.

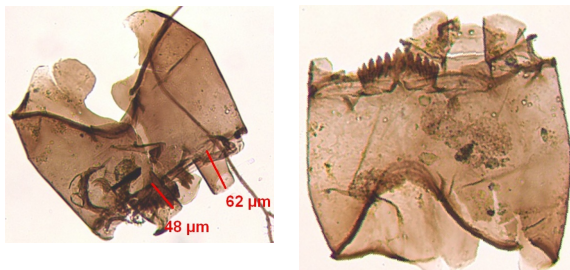
**Organism:** *T. funebris* occurs in rivers, lakes, ponds, swamps, and oxidation pools (Stark and Winterbourn 2000). Forsyth (1983) found *T. funebris* at pH as low as 2.5 and temperatures as high as 25 °C in geothermal waters, and an unidentified *Tanytarsus* sp. in waters as warm as 36 °C.

Boubee 1983: Larvae form long, narrow tubes of algae and detritus on the sediment surface. Nearly 4/5 of the body protrudes from the tube as the larva sways from side to side while feeding on the sediment surface. Feeds on diatoms and algae.

**Divided into types A, B, and C (following pages) based on prominence of median and 1st lateral teeth, and VMP characteristics. Types A, B, and C are subdivided into long and short types based on length of antenna pedestal (b) in relation to the height of the mentum (a).**

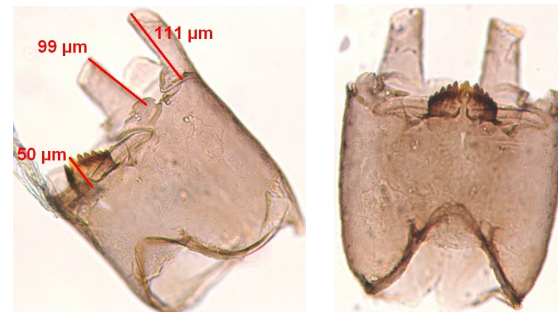
**SHORT**

b=a or up to 1.5x a

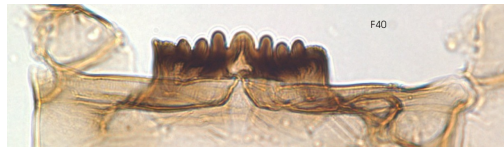
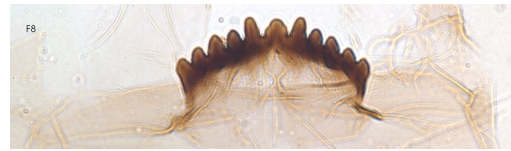
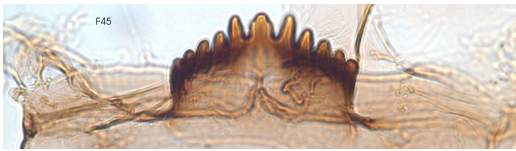


**LONG**

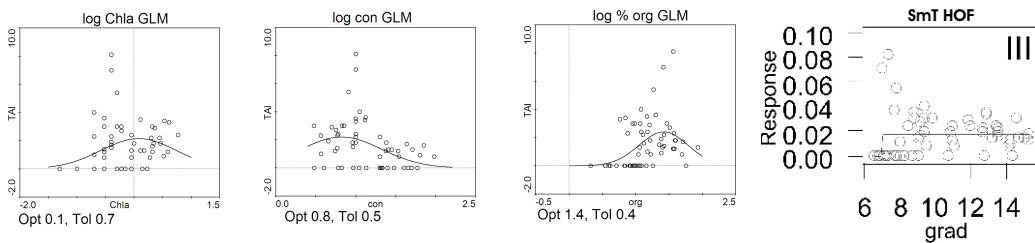
b= 1.5 to 2x a



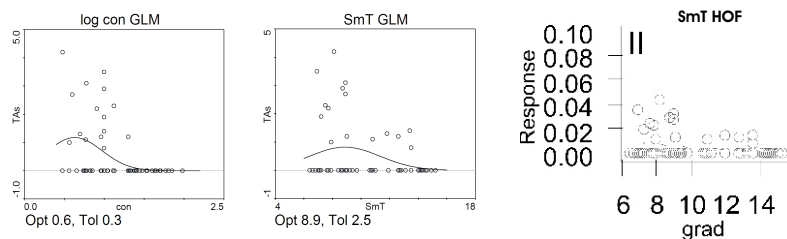
## Type A



### A long



### A short



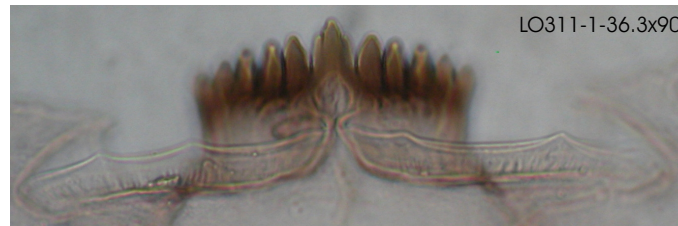
**Diagnostic characters:** 1st laterals taller or equal to median. Median and 1's generally prominent (on a higher focal plane) giving them the appearance of a "hand puppet". Median generally (not always) unnotched. Teeth generally (not always) rounded. 2nd laterals sometimes (not always) shorter than 3rd.

#### Ecology:

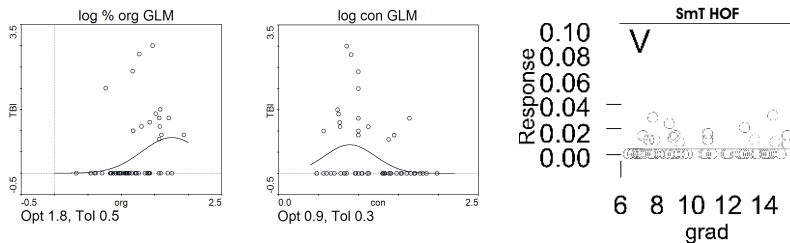
**Subfossil:** Type **A long** is more common than type **A short**. **A short** has a more significant relationship to mean summer temperature than **A long**, although both are found in greatest abundance in cooler sites. **A long** is more abundant in moderately productive lakes. Abundance of **A short** is apparently not related to site productivity.

**Lakes containing taxon:** Type **A long** found in 44 Dieffenbacher-Krall et al. (2007) lakes and 9 of 15 recounted Woodward and Shulmeister (2006) sites. Type **A short** found in 16 Dieffenbacher-Krall et al. (2007) lakes, and 3 of 15 recounted Woodward and Shulmeister (2006) sites.

## Type B



### B long



#### Diagnostic characters:

Type B is distinguished by coarse scallops along edges of VMP. Median tends to be pointed and 1st laterals tend to be tall and outcurving, but not always. 3 fingered premandible (rarely present on subfossil specimens). All specimens found to date have had long antenna pedestals.

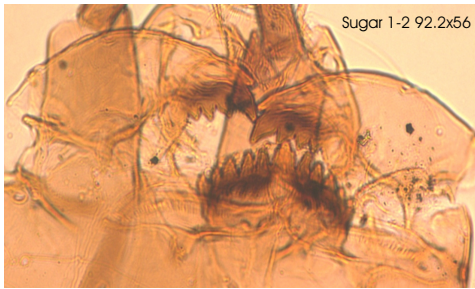
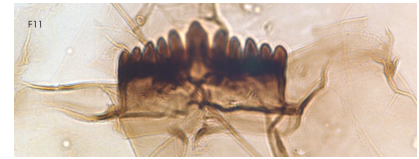
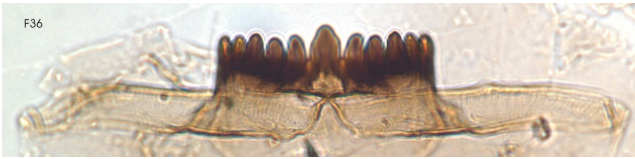
#### Ecology:

**Subfossil:** Type **B long** is most abundant in sites with moderate sediment organic content.

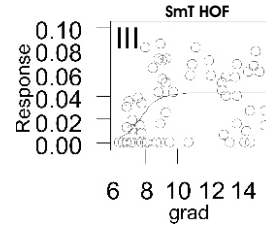
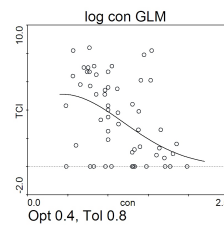
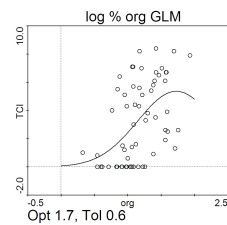
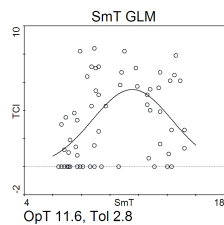
**Taxonomic references:** Type B VMP scalloping may be an artifact of preservation.

**Lakes containing taxon:** 22 Dieffenbacher-Krall et al. (2007) sites.

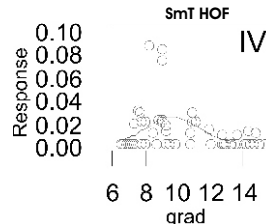
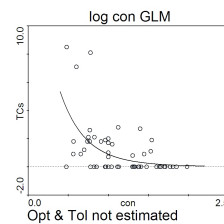
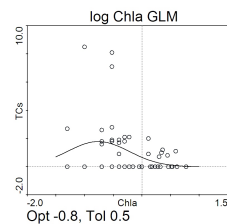
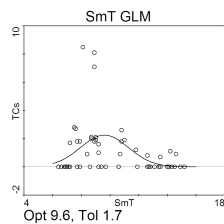
### Type C



### C long



### C short

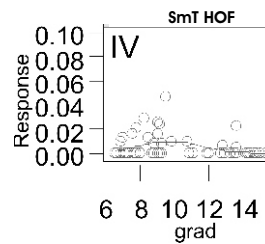
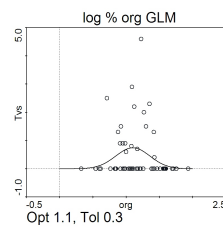
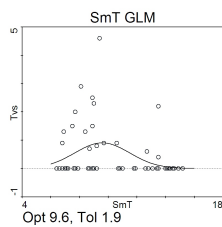
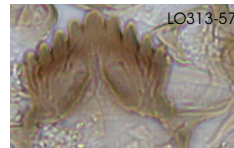
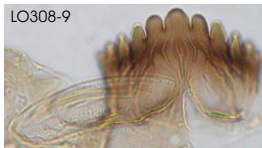
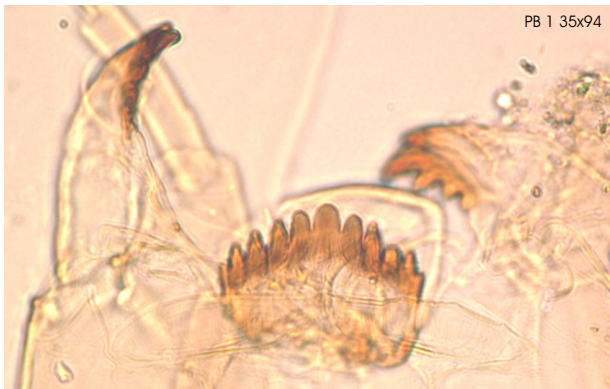
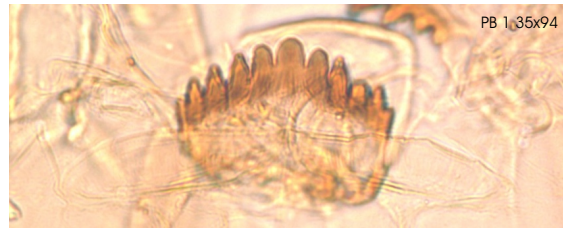
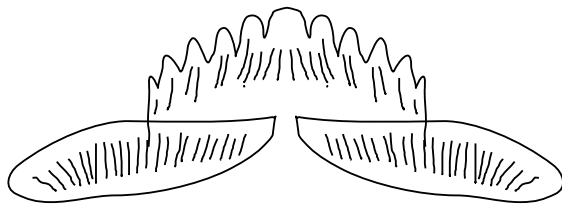


**Diagnostic characters:** Teeth tend to be pointed or nearly so. Median notched. 1st laterals shorter (sometimes equal to) median. Laterals graduate downward in size with 2nd laterals not shorter than 3rd although they may be the same height. Mentum usually on a level plane.

**Ecology:**

**Subfossil:** Type **C short** is more tolerant of cooler mean summer temperatures than type **C long**, and **C long** appears to occur in greater abundance in more productive sites.

**Lakes containing taxon:** Type **C long** was found in 54 Dieffenbacher-Krall et al. (2007) lakes and 10 of 15 recounted Woodward and Shulmeister (2006) lakes. **C short** was found in 25 Dieffenbacher-Krall et al. (2007) lakes and 4 of 15 recounted Woodward and Shulmeister (2006) lakes.



**Diagnostic characters:**

Median not notched at all, uniform in color. 5 laterals graduating downward in size. Mentum convex. VMPs tend to be rounded and small. All of our specimens have short antenna pedestals.

Similar taxa: Distinguishable from *Paratanytarsus* by lack of notches on median, and from *T. funebris* types by uniform color of median, convex shape of mentum (although *T. funebris* fossil heads may have convex mentums), and by smaller, rounded VMPs.

**Ecology:**

**Subfossil:** Found in greater abundance in moderately cool locations.

**Organism:** Known from lakes and rivers in lowland and upland areas (Stark and Winterbourn 2006).

**Lakes containing taxon:** 19 Dieffenbacher-Krall et al. (2007) sites and 11 of 15 recounted Woodward and Shulmeister (2006) sites.