

# Experiments with a Berlese Funnel

Paul J. Palmer

Trying to figure out what to call a Berlese (or Tullgren) Funnel takes more time than describing what it does. It is an apparatus for collecting microfauna from soil or leaf litter samples. The history is hard to pin down, but the earliest mention seems to be from Berlese (1905) and Tullgren (1917) so it appears that Berlese was the first to describe the apparatus, using a water bath as a heater, and then Tullgren simplified the overall arrangement by using an electric lamp as a source of heat. I'm going to stick with "Berlese Funnel" for now.

The general principle involves providing a funnel with a fine-mesh lid, an inner coarse mesh upon which the sample material is laid, and a slippery funnel leading to a receptacle with a liquid preserving agent. The use of a lamp to warm and dry the sample is an optional extra in these days of high energy costs, especially if you keep the apparatus in a warm, dry place. Mine was set up in the greenhouse with a small lamp to dry the material (See Figure 1) and a tube filled with 100% Mono Propylene Glycol (MPG) to catch the microfauna. I'm a fan of MPG as it is a good preservative, slow to evaporate, non toxic, preserves colours, and keeps specimens fairly supple. I found that most of the catch appeared after three days and little ever appeared after a week.

For my experimental trial, all the material came from locations on the nature reserve at Rutland Water: So what did I find?

My favourite and a personal first was the Pseudoscorpion *Chthonius ischnocheles* (Common Chthonid) Figure 2. It turned out that the keys to woodlice are quite easy to use so Figures 3 and 4 show the common woodlice *Trichoniscus pusillus* Ag. and *Philoscia muscorum*. All the by-catch was separated and logged.

Oxypselaphus obscurus X2 Agonum fuliginosum X3 Anotylus rugosus X2 Stenolophus mixtus X1 Acupalpus dubius X1 Ochthebius pusillus X1 - just 1 previous record 1936 (STET Ochthebius pusillus) Dacryla fallax X1 - 3 previous records, last Rutland Water 2021 Habrocerus capillaricornis X1 Lathrobium brunnipes X1

After this encouraging start I shall be expanding



Figure 1: Berlese Funnel set up in the greenhouse.

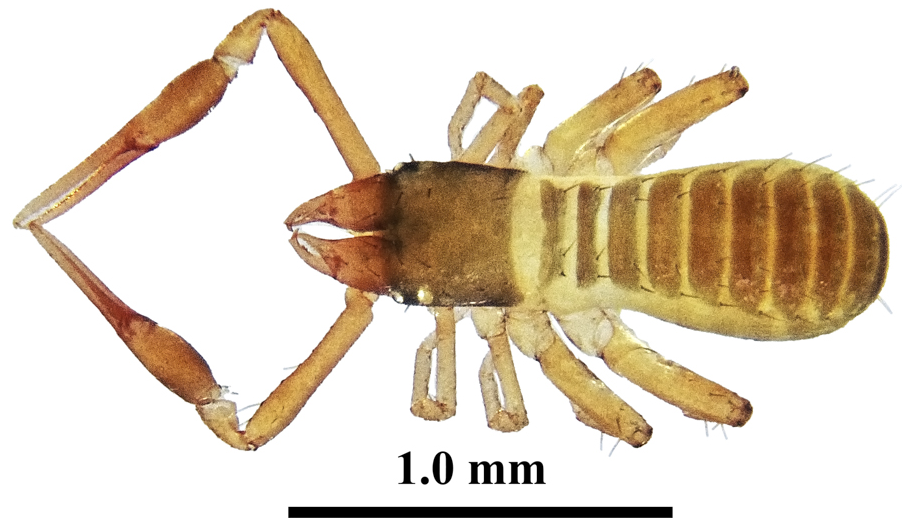


Figure 2: *Chthonius ischnocheles* Common Chthonid

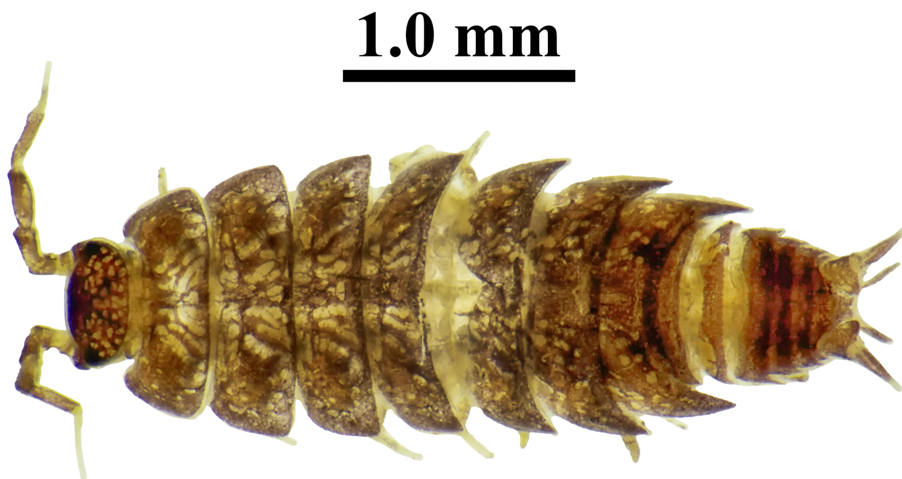


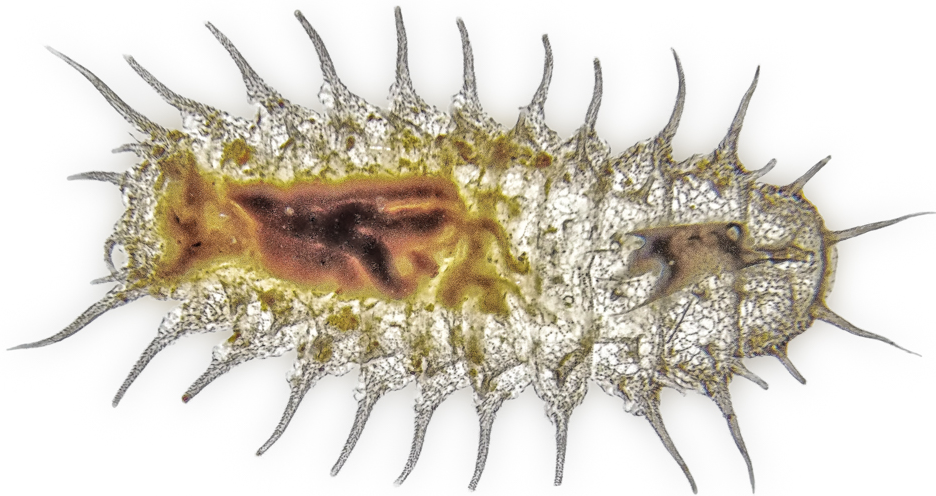
Figure 3: *Trichoniscus pusillus* Ag. Common Pygmy Woodlouse



**10.0 mm**

---

Figure 4: *Philoscia muscorum* Common Striped Woodlouse



**1.0 mm**

---

Figure 5: Unknown *Coccinid* Scale Insect, mobile stage.

## Bibliography

This short bibliography covers sources that helped to inspire this article.

Berlese, Antonio. 1905. “Apparecchio Per Raccogliere Presto e in Gran Numero Piccoli Arthropodi.” *REDIA* – *Journal of Zoology*, 85–89.

Tullgren, A. 1917. “En Enkel Apparat För Automatiskt Vittjande Av Sällgods.” *Entomologisk Tidskrift* 38: 97–100. <https://www.biodiversitylibrary.org/item/42375#page/124/mode/1up>.