

# FRESHWATER INVERTEBRATES

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## Introduction

In 2024 the freshwater invertebrate records emanate solely from the research of Alan Rowland, who is continuing his long term study of the Lundy streams, particularly the Millcombe Stream and St John's Stream. He monitored both together with Brambles Pond in March and November. Additional records are from Lundy's largest body of freshwater, Pondsburry, when the LFS Field Course students, led by Alan, sampled Pondsburry and its surrounding streams in June (see separate report, pp 33-35) and again by Alan in November.

A new record for Lundy was the finding of the caddisfly larva, *Limnephilus affinis/incisus* from Pondsburry in November. For more details, see in the Trichoptera (Caddis fly) section.

## Platyhelminthes (Flatworms)

As in 2023 two species, the **white flatworm**, *Phagocata vitta*, and the **black flatworm**, *Polycelis nigra* occurred in both Millcombe and St John's streams. *Phagocata* was particularly abundant in March with 66 being found in St John's Stream between the Quarters and Brambles areas.

## Nematomorpha (Horsehair, Hair worms)

A **Horsehair worm**, carrying eggs, was found in the Millcombe stream in November. Eggs are laid in long jelly streams on water plants. The larvae which develop are parasitic in insect hosts such as beetles or grasshoppers. Adults grow to maturity in the body of the host and then emerge to seek water where mating and egg laying occurs. after which the adult dies.

## Oligochaeta (Segmented worms)

Both streams contained the black *Lumbriculus variegatus* worm and the **Sludge worm**, *Tubifex* sp. which had the largest numbers, 12, occurring in the Quarters region of St John's Stream. Brambles Pond contained the **Square-tailed worm**, *Eiseniella tetraedra*.

## Hirudinea (Leeches)

The **Horse Leech**, *Haemopsis sanguisuga*, which is often seen in depressions near the Quarterwall Gate, was found in the Millcombe Stream Cascade in March. The black leech, *Erpobdella* sp. also occurred in the Millcombe Stream above the confluence.

## Mollusca (Snails, Mussels, Limpets etc)

The small black **Jenkins Spire Snail**, *Potamopyrgus antipodarum*, occurred in very large numbers in both streams. Numbers ranged from 380 in the Millcombe Stream Cascade to 282 in St John's Stream near Square Cottage in March. This very successful small snail (see photo) was also found in large numbers by Long in his 1993 survey of the Lundy streams. (LFS Annual report 1993). This snail was originally a brackish water species in New Zealand but since the late 19<sup>th</sup> Century it has colonised freshwater habitats throughout Europe and the UK. It was first recorded in London freshwaters in 1859.



▲ Jenkins Spire Snail, *Potamopyrgus antipodarum*  
(photo: Alan Rowland).

Its success is due to the fact that it reproduces asexually as well as sexually, with females carrying up to 120 embryos. It can live on damp surfaces and is quoted as surviving being eaten by birds and passing through their guts. Birds could have carried them to Lundy.

Other Molluscs found were the **Wandering Pond Snail**, *Perigrina peregra*, in the Millcombe Stream and Brambles Pond, and the **Pea Mussel** (Family Sphaeriidae) in St John's Stream near Square Cottage.

### **Crustacea** (Shrimps, crabs, water fleas, copepods, ostracods)

Crustacea were represented by the small **seed shrimps**, Ostracoda, found in areas of St John's Stream and Brambles Pond. **Water fleas** of the Family Daphniidae occurred in St John's Stream. The **Water Slater**, *Proasellus meridianus*, was found in both streams and in Pondsburry. This species occurs in almost all of the Lundy freshwater habitats crawling among leaves and debris on the bottom sediments.



▲ Water Spider (*Argyroneta aquatica*) in Pondsburry 1986 (photo: Jennifer George).



▲ Crane fly (*Limoniidae*) larva (photo: Alan Rowland).

### **Arachnida** (Spiders, mites)

A **water mite** of the Suborder Hydracarina was found in the Millcombe Stream Cascade in March. The **Water Spider**, *Argyroneta aquatica*, which was first recorded in Pondsburry by Gallford in 1953 and then found in fairly large numbers in the 1970s, 1980s and early 1990s, seems now to have disappeared from the Lundy invertebrate fauna. Despite several surveys from 2000 to 2024, no trace of this spider has been found. Considerable amounts of dredging of Pondsburry occurred after 1993 with the heightening of the dam on the western bank, and this probably contributed to the loss of this species.

### **Insecta** (Insects)

#### **Fly and Midge larvae**

Millcombe Stream had the greatest diversity of larvae with **Blackfly** (*Simulium*), **Long-Legged Fly** (*Dolichopodidae*), **Trickle midges** (*Thaumaleidae*), **Meniscus midges** (*Dixidae*), **Non-biting midges** (*Chironomidae*), **Crane fly** (*Limoniidae*) and **Mosquito** (*Culicidae*) all being found, with the latter three species also occurring in St John's Stream and Brambles Pond. The **Biting Midge** (*Ceratopogonidae*) was recorded in Brambles Pond and in St John's Stream near The Quarters.

#### **Odonata** (Dragon and Damselflies)

Nymphs (larvae) of the **Blue-tailed damselfly** (*Ischnura elegans*) were found in Pondsburry in November. A nymph of the **Emperor Dragonfly** (*Anax imperator*) also occurred there. Adults of this species have been recorded around various

ponds in recent years and ovipositing has been observed at Rocket Pole Pond in 2018 and in Quarterwall Pond in 2022. The nymph found by Alan this year is a young instar (see photo) which reflects successful breeding of this species.

### Hemiptera (Water Bugs)

Water bugs are more frequently found in ponds, and **Water Crickets** (*Velia* spp) are more common in flowing waters. One juvenile *Velia* was found in the Millcombe Stream Cascade in March. Bugs recorded in Pondsburry included the **Saucer Bug** *Ilyocoris cimicoides*, found by the students in June (see photo on p35). This broad-bodied flattened bug up to 16mm long with hair-fringed hind legs is a fierce predator on other invertebrates and has a bite painful to humans. The large **Water Boatman**, *Notonecta maculata* and the smaller Corixid bug, *Hesperocorixa linnei*, were found in Pondsburry in November.

### Trichoptera (Caddis flies )

Eight species of caddis fly larvae were found in the Lundy streams and Pondsburry with the most exciting find being *Limnephilus affinis/incisus* in Pondsburry, a new record for Lundy. Larvae of these species build a case of overlapping pieces of plant material (see photo) and feed by 'shredding' (tearing and chewing plant material and debris) with their strong mouthparts, together with possible predation on smaller invertebrates.

This species could either be *L. affinis* or *L. incisus* – adult material is needed for definitive identification as the larvae cannot reliably be separated from one another. However, a clue may lie in where it was found: *L. affinis* lives in brackish as well as fresh water, while *L. incisus* prefers neutral to alkaline waters. As Pondsburry is an acidic water body (its pH has been recorded as 4.8–5.5 over the years), and it can receive sea spray during storms, it is likely that this Lundy species is *Limnephilus affinis*.

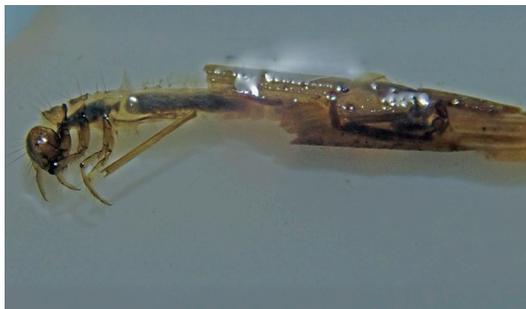
Other caddis larvae found in the streams are the cased larvae, *Sericostoma personatum* in both streams and Pondsburry, *Micropterna sequax*, and a Glossosomatid larva in the Millcombe stream. The caseless caddis *Diplectona felix*, *Wormaldia occipitalis* and a *Psychomyid* species occurred in the Millcombe stream. *Plectronema geniculate* was found in St John's Stream near the Quarters.

### Coleoptera (Beetles)

In St John's Stream a **diving beetle** larva (Family Dytiscidae) (see photo overleaf) was found, which also occurred in Brambles Pond together with an adult *Dryops* sp. – a small beetle covered with a grey/yellow pubescence often found at the edges of streams. Two adult beetles were recorded in Pondsburry in June: *Noterus clavicornis* with its orange/brown strongly convex dorsal surface, and the larger black *Ilybius ater*.



▲ Young nymph of Emperor Dragonfly, *Anax imperator* (photo: Alan Rowland).



▲ Caddisfly larva, *Limnephilus affinis/incisus* emerging from its plant case (photo: Alan Rowland).



▲ Diving Beetle (*Dytiscidae*) larva (photo: Alan Rowland).

## Conclusions

The Millcombe and St John's streams together with the records from Brambles Pond and Pondsburry show that these freshwater habitats have a very diverse range of organisms. The invertebrates have survived the 2022 drought when many of the freshwaters dried up or became much reduced. Alan Rowland is intending to continue with his streams survey and is also now surveying Pondsburry regularly, with the aim of reviewing its invertebrate population since the first records were made over 70 years ago (1953). As in 2023, new records are continually being found in the freshwater habitats, which indicates migration from elsewhere in the UK, and particularly from SW England and Wales.

It is essential that staff and visitors to Lundy record in the Log Book any freshwater animals that have been seen near the water surface or at the edges of the ponds and streams. Common names such as **Water Boatman** or even **Black Beetle** will be helpful, as species determination is difficult without identification guides.

Alan would like to thank Rachel Mackay-Austin for the identification of *Limnephilus affinis/incisus* and the beetle *Noterus clavicornis*, and Kevin Rowley for confirming the identity of the bugs, *Hesperocorixa linnei* and *Notonecta maculata*.

**GREAT NEWS!** The Water Spider, *Argyroneta aquatica*, has been sighted. It was found in both the NE and SW areas of Pondsburry in early April 2025 by Kevin Rowley, and again in late April 2025 in the NE area among vegetation by Mark West.