# Collecting Dragonfly Exuviae

## What?

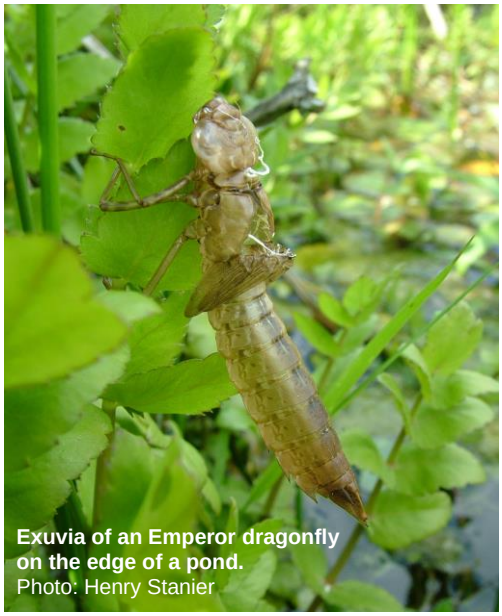
Have you ever had a closer look at your garden pond or nearby river?

It might just give you a fascinating insight into the intriguing life of the dragonfly.

Exuviae are nothing more than the dried outer casing of a young dragonfly. It is what the insect leaves behind when it ends the aquatic stage of its life cycle and turns into the colourful aerial hunter we see during the summer months by ponds, lakes and rivers.

This harmless, dead case provides a clue to what has been living underwater for one or in some cases several years, feeding on the larvae of midges and mosquitoes until the day when something spectacular happens.

While underwater the insect has been changing into the adult form, but still trapped in side the larval case. One morning it climbs up a plant stem, out of the water, the case splits open up the back and an adult emerges and flies away to feed. This emergence can take hours, a slow but amazing process during which an insect the length of a pen or pencil escapes from a case only a couple of centimetres long.

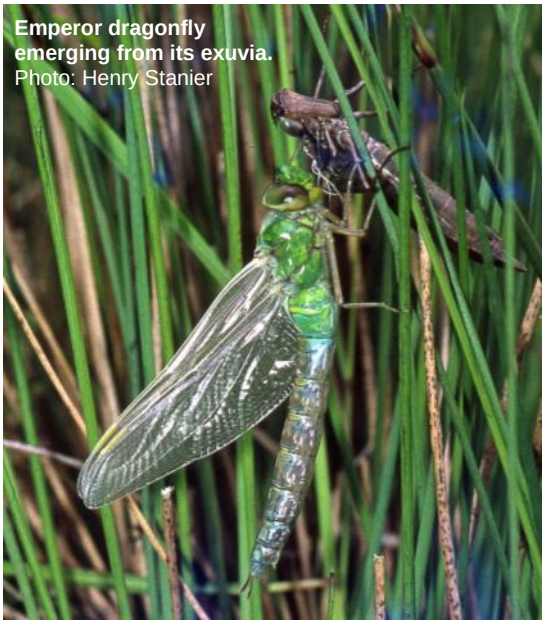


**Exuvia of an Emperor dragonfly on the edge of a pond.**
Photo: Henry Stanier

Dragonflies and damselflies are closely related insects, which are now generally referred to collectively as *Dragonflies*. They use a wide variety of habitats to breed in, from garden ponds to rivers and gravel pits. These are places where you can find exuviae, which can be identified to species level; sometimes it is even possible to tell if they are male or female.

## Where?

- Exuviae are always found near water, usually around the edges.
- Look for them just above the surface from 2cm up to about 60 cm.
- Some species may go further, even several metres from water. Dragonflies prefer vertical supports for emergence (e.g. plants, tree roots, steep banks, rock faces), but may also be found on horizontal surfaces (floating plants, flat banks).
- If you see a freshly emerged adult (which is still very pale, soft and shiny) on the waterside, try to look for the exuvia.



**Emperor dragonfly emerging from its exuvia.**
Photo: Henry Stanier

## When?

Dragonflies and damselflies emerge from April onwards, often with peaks in May and June but as different species appear throughout the spring and summer a large, diverse pond or lake can support several species of dragonfly. They often emerge during the early hours of the morning, so have a look when you get up and then check again every few hours during the day.

## Why?

A dragonfly exuviae is regarded as proof of breeding, it indicates that a female has laid her eggs, they have successfully hatched and that at least one has survived as a larva to finally emerge from the water and become an adult that will start the cycle all over again. This means knowing where and when an exuvia is found plus the species, is valuable information. Notes about the emergence site (place, height, and substrate) can be useful.

## How?

*Finding exuviae*

Searching for exuviae can be very rewarding as you often find exuviae of species which you may not see as adults.

If you see a freshly emerged adult (which is still very pale, soft and shiny) on the waterside, enjoy the experience but do not disturb it. This is a very vulnerable time for the insect when it can easily be caught by frogs, birds, cats and ants but later, once it has flown away, try to collect the exuvia.

The legs easily break off when the exuvia is picked up: by splashing some water on it, the exuvia becomes moist and more flexible. Otherwise, try to simply slide the insect along the support until it reaches the end.

Always be careful when near water, do not get yourself into a situation where you might get stuck or fall in. Let someone know where you are or go dragonfly hunting as a pair, more eyes equals more success.

Always ensure you do not disturb wildlife when collecting exuviae and ensure you have permission to collect from the site in question, especially if visiting a nature reserve.

*Typical dragonflies found in a garden pond or river*

| **Dragonfly/*Damselfly*** | **Time of year** | **Habitat** | **Exuvia size & shape** |
|---|---|---|---|
| **Emperor** | Spring/Summer | **Ponds**/Lakes/Rivers | over 5cm / long |
| **Southern Hawker** | Summer | **Ponds**/Rivers | 4-5cm / long |
| **Brown Hawker** | Summer | Lakes/Rivers | 4-5cm / long |
| **Broad-bodied Chaser** | Spring | **Ponds** | 2-3cm / broad |
| **Four-spotted Chaser** | Spring | **Ponds**/Lakes | 2-3cm / broad |
| **Black-tailed Skimmer** | Spring/Summer | **Ponds**/Lakes | 2-3cm / broad |
| **Common Darter** | Summer | **Ponds**/Lakes/Rivers | 1½cm / broad |
| ***Banded Demoiselle*** | Summer | Rivers | 3½cm / slender |
| ***Large Red Damselfly*** | Spring | **Ponds**/Lakes/Rivers | 1-2cm / very slender |
| ***Azure Damselfly*** | Spring/Summer | **Ponds**/Lakes/Rivers | 1-2cm / very slender |
| ***Common Blue Damselfly*** | Summer | Lakes/Rivers | 1-2cm / very slender |
| ***Blue-tailed Damselfly*** | Spring/Summer | **Ponds**/Lakes/Rivers | 1-2cm / very slender |

**Exuvia of a Common Darter dragonfly on a decking post.**
Photo: Henry Stanier

*Storing exuviae*

Exuviae must be stored dry. For storage, it is easiest to use photo film containers, as these are small, close tightly and are easy to come by at a local photography processing shop. Alternatively you can use vitamin tablet containers. Ensure they are well washed and dried before use.

Exuviae will often be moist after collecting, and therefore, when put in a closed container, may become covered with fungi. Dry wet exuviae in the sun, or make a hole in the lid, so moisture can escape through it. Never store exuviae in alcohol, as they will become soft, soggy and battered. Do not store them with any material that might contain water (e.g. grass or other plant material).

## Why are we interested in them?

We use the exuviae to help teach people how to identify dragonflies and encourage them to record the species they identify.

We also send our records on to the County Dragonfly Recorder and so contribute to the National Dragonfly Atlas. This type of record is particularly useful since it is considered proof of breeding at a specific site, rather than merely the sighting of an adult that might be passing through without breeding.

**Common Darter dragonfly larva underwater.**
Photo: Henry Stanier

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