

Dragonflies

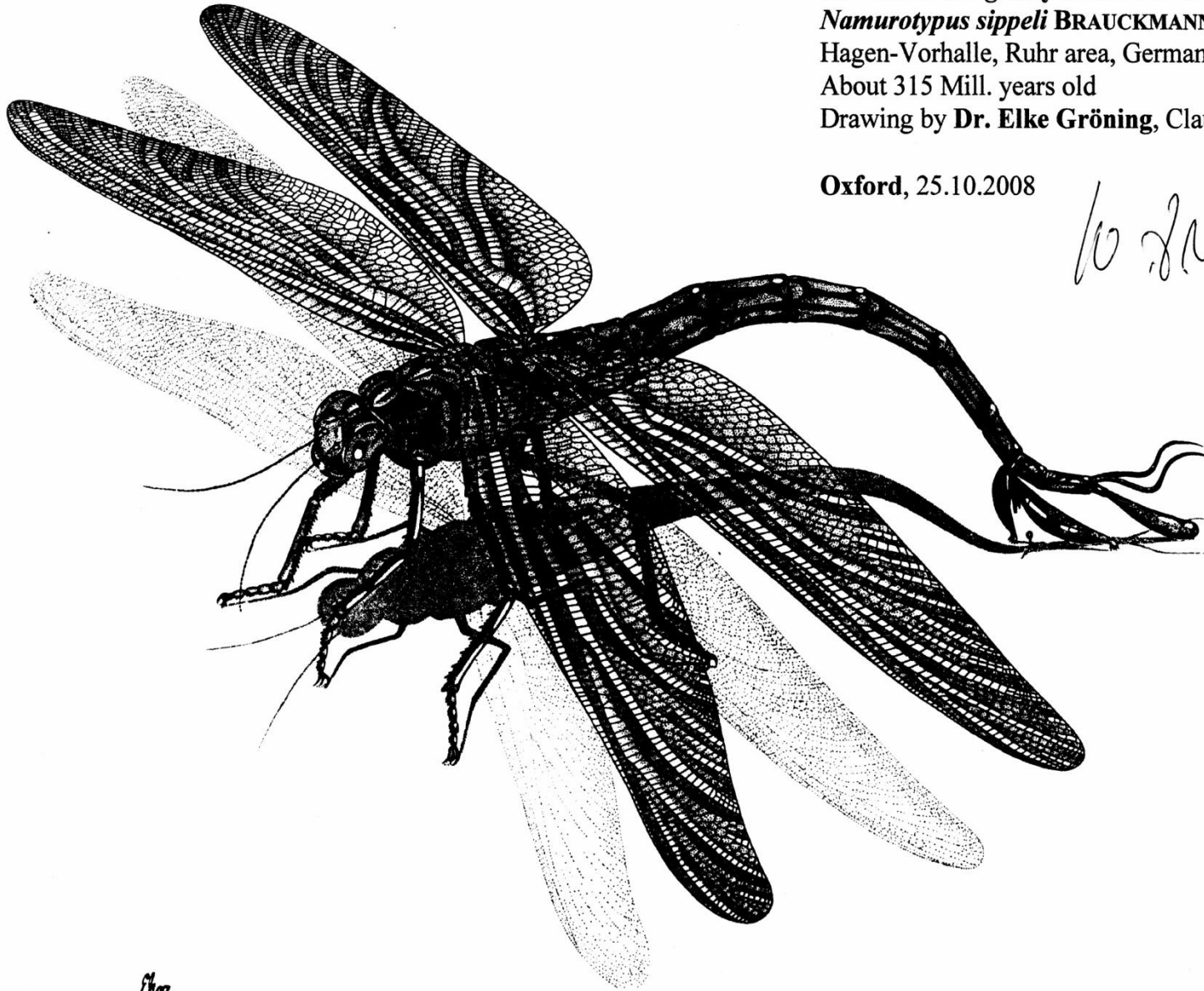


Protodonata

The oldest dragonfly of the world
***Namurotypus sippeli* BRAUCKMANN & ZESSIN, 1989**
Hagen-Vorhalle, Ruhr area, Germany
About 315 Mill. years old
Drawing by **Dr. Elke Gröning**, Clausthal-Zellerfeld

Oxford, 25.10.2008

W. S. S. S.



EG

Order – Odonata – “Toothed Jaw”

Devil’s Darning Needle



Eye Perforator

Horse Stinger

Water Butterfly

Golden-ringed Dragonfly (*Cordulegaster boltonii*)

Dragonfly Facts

5700 Species worldwide

120 Species in Europe

42 Breeding species in Britain

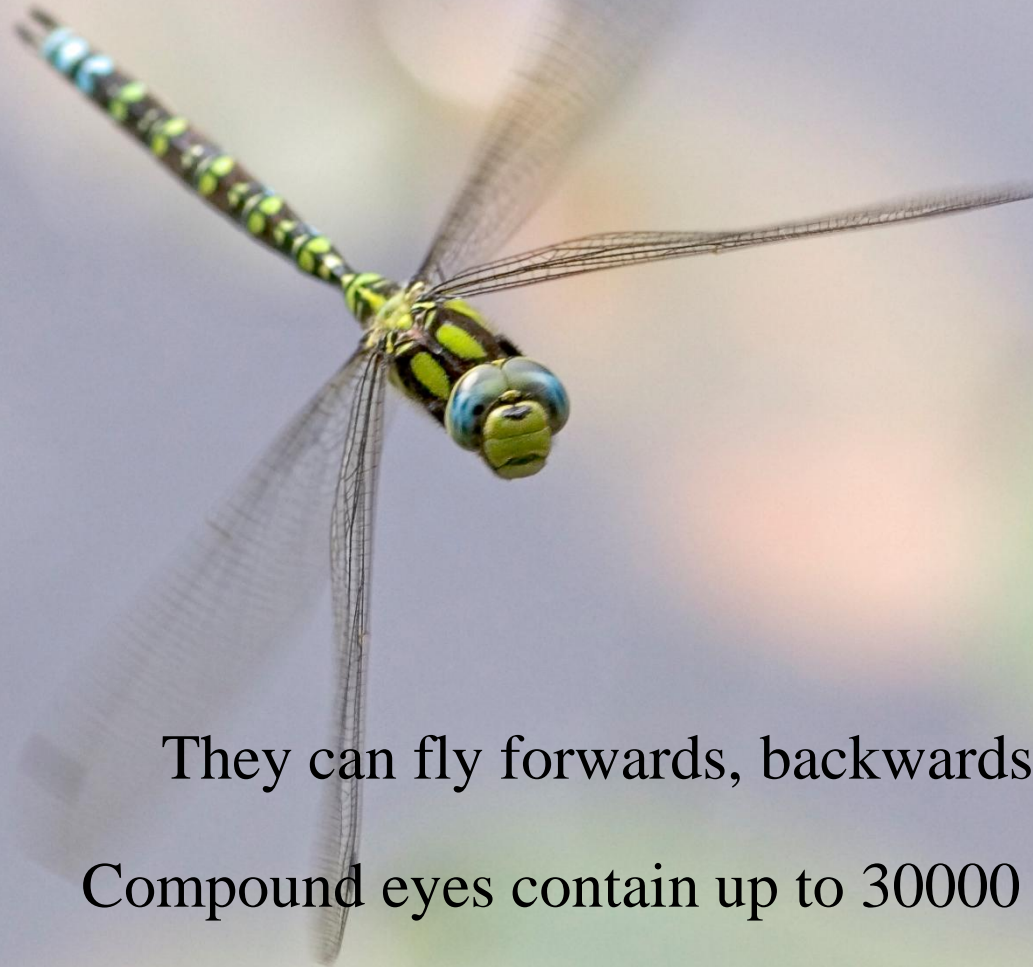
24 Breeding species in Yorkshire

Migrant Hawker (*Aeshna mixta*)



Hawker Dragonflies – Fly at 22mph(36kph)

Damselflies – Fly at 6mph(10kph)



They can fly forwards, backwards and sideways

Compound eyes contain up to 30000 Ommatidia

Southern Hawker (*Aeshna cyanea*)



Habitat

Shelter

Marginal Vegetation

Unpolluted Water

Floating and Submergent Vegetation

Sata Pond, The Arboretum, Castle Howard



Garden Pond

Woodland Pools
Kilburn Woods





Lakes
(The Arboretum,
Castle Howard)



New Sites (Seamer)



Canals and Ditches (Wood Walton Fen)



Acidic Pools (Strensall Common)

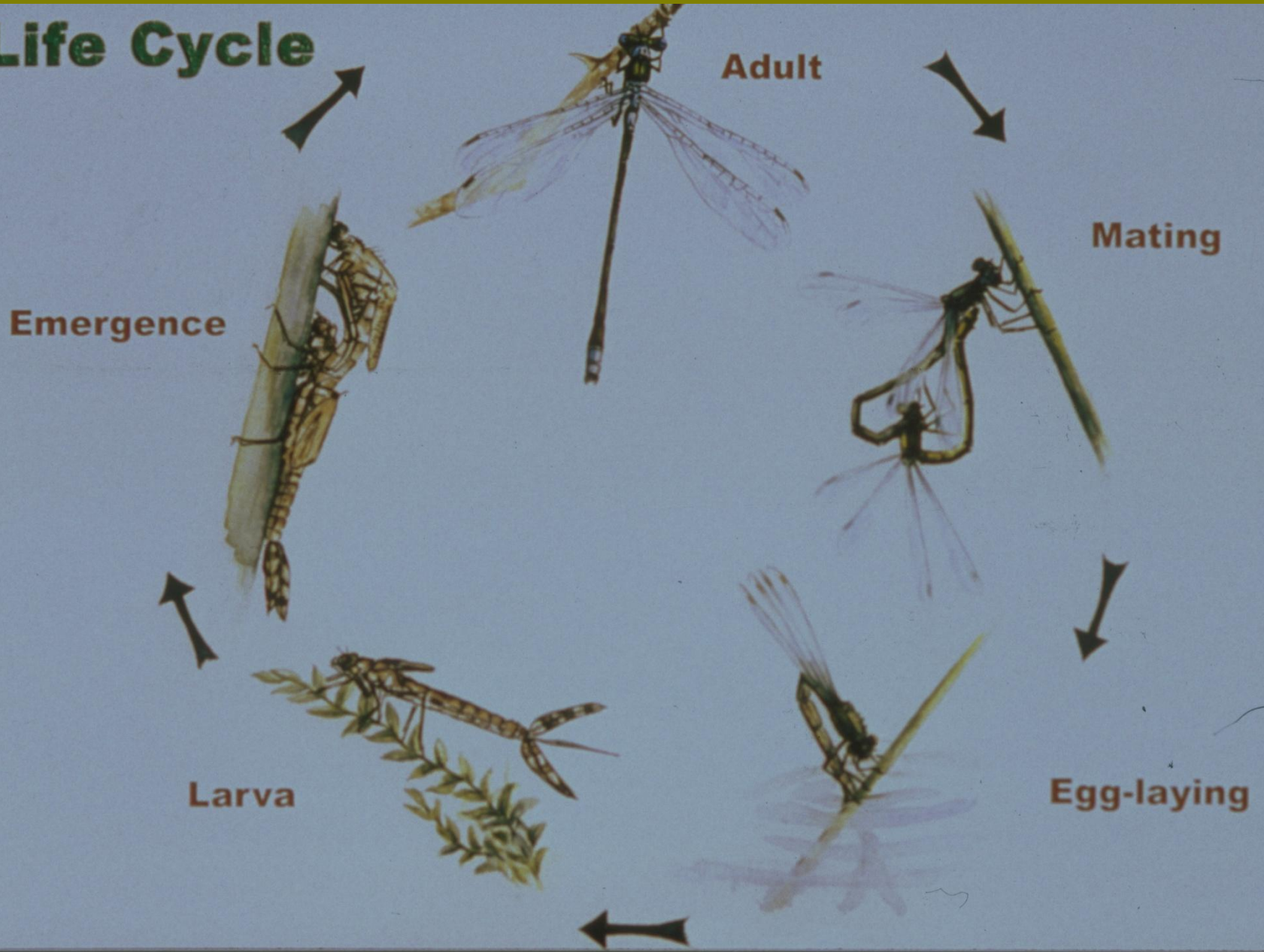


Rivers
Foss nr Strensall

Moorland
Streams



Life Cycle



Copulation



June Baker

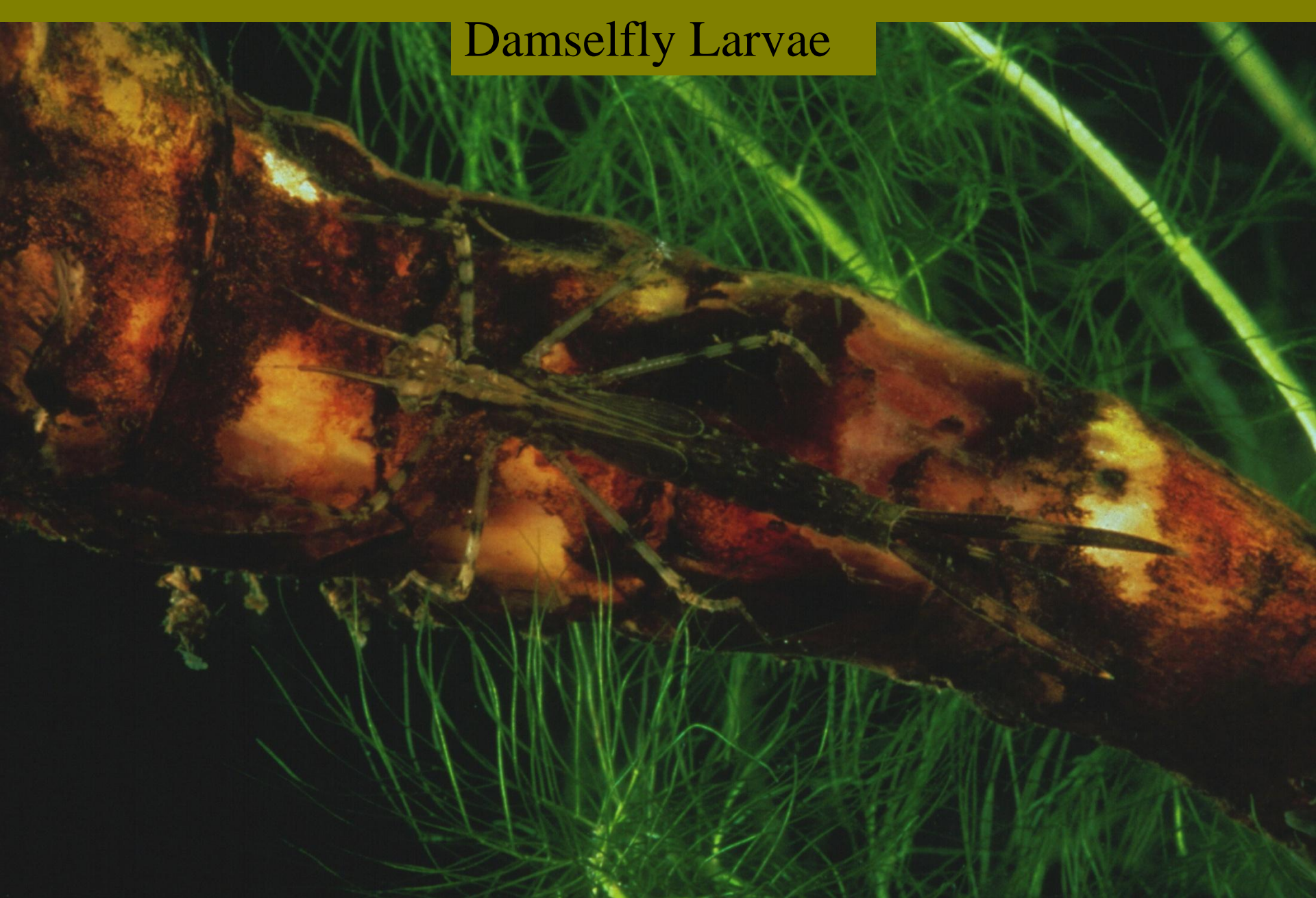
Emerald damselfly (*Lestes sponsa*)

Oviposition



Southern Hawker (*Aeshna cyanea*)

Damselfly Larvae



Banded Demoiselle (*Calopteryx splendens*)

Dragonfly Larvae



Common Darter (*Sympetrum striolatum*)

Dragonfly Larvae



Common Hawker (*Aeshna juncea*)

Emergence



Large Red Damselfly
(*Pyrrhosoma nymphula*)



Emergent Damselfly
and Exuvia



Emergent Ruddy
Darter and Exuvia



Four-spotted Chaser
(*Libellula quadrimaculata*)



Ruddy Darter (*Sympetrum sanguineum*)

Feeding Sites



Black Water, Rahoy Hills, Scotland



Natural Predators

Insects /Spiders

Fish

Amphibians

Rodents

Birds



Pollution



Development



Neglect



Dragonfly Threats



Climate Change

Where have our Dragonflies gone?



With **36%** of
UK species in decline,
the **British Dragonfly Society**
has launched the
Dragonflies in Focus
recording programme.

Culminating in a new atlas, **everyone** is invited to join in,
with **free training** available.

Find out more at

www.british-dragonflies.org.uk

www.yorkshiredragonflies.org.uk

Pterostigma

Costa

Antehumeral Stripes

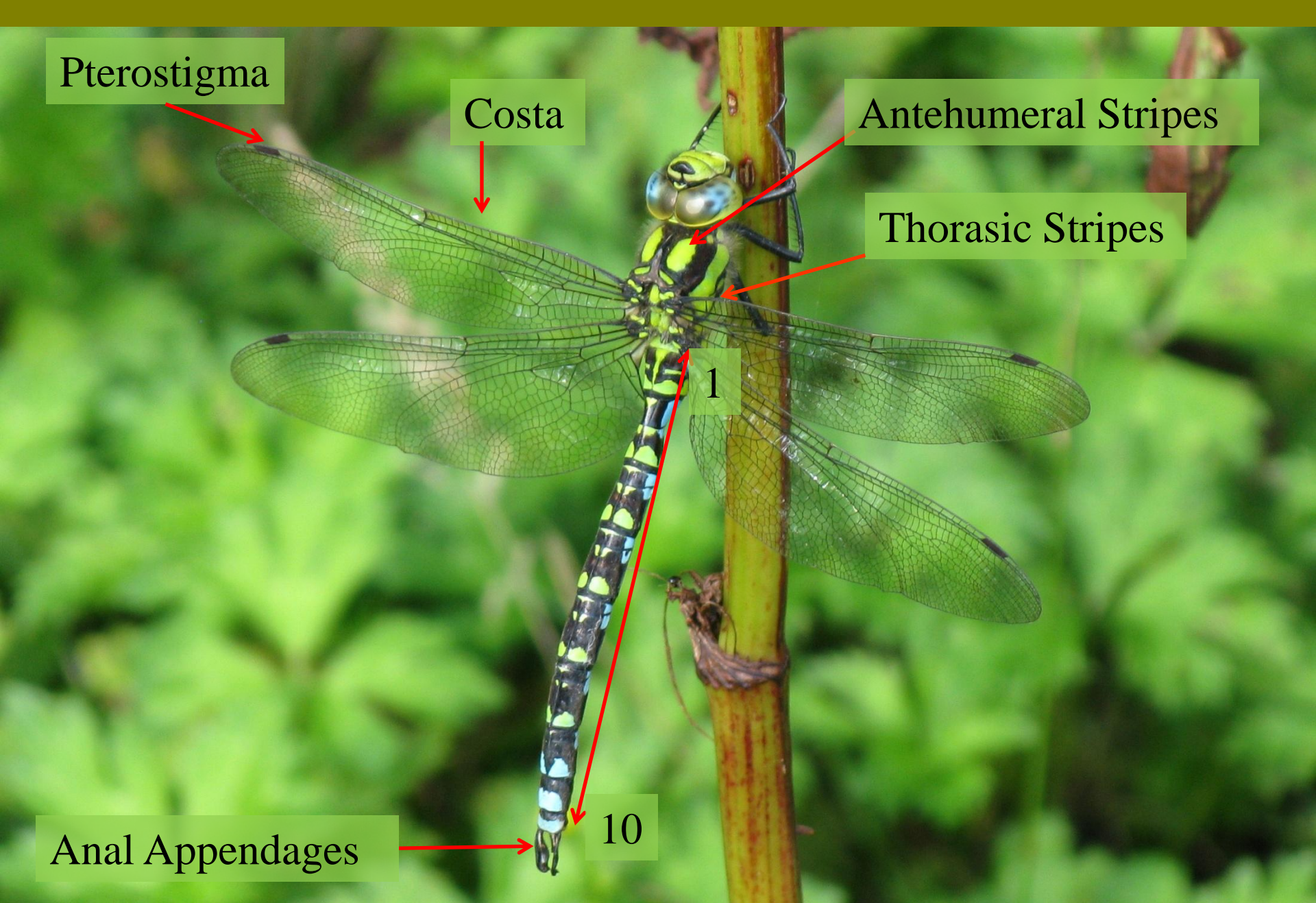
Thorasic Stripes

1

Anal Appendages

10

Southern Hawker (*Aeshna cyanea*)



Zygoptera – “equal winged” – Damselflies



Large Red Damselfly (*Pyrrhosoma nymphula*)

Zygoptera – “equal winged” – Damselflies



Banded Demoiselle (*Calopteryx splendens*)



Large Red Damselfly (*Pyrrhosoma nymphula*) Male



Large Red Damselfly (*Pyrrhosoma nymphula*) Female



Azure Damselfly
(*Coenagrion puella*)
Male



Azure Damselfly
(*Coenagrion puella*)
Immatures



Azure Damselfly
(*Coenagrion puella*)
Female



Common Blue Damselfly (*Enallagma cyathigerum*)



Common Blue Damselfly (*Enallagma cyathigerum*) Immature Female



Common Blue Damselfly (*Enallagma cyathigerum*) Immature Male



Variable Damselfly (*Coenagrion pulchellum*)



Blue-tailed Damselfly (*Ischnura elegans*) Male



Blue-tailed Damselfly (*Ischnura elegans*)



Blue-tailed Damselfly
(*Ischnura elegans*)
Mature Female form
Rufescens-obsoleta



Blue-tailed Damselfly (*Ischnura elegans*)
Mature Female form *infuscans*



Red-eyed Damselfly (*Erythromma najas*)



Emerald Damselfly (*Lestes sponsa*) Male



Emerald Damselfly (*Lestes sponsa*) Female



Banded Demoiselle (*Calopteryx splendens*)



Banded Demoiselle (*Calopteryx splendens*)



Beautiful Demoiselle (*Calopteryx virgo*)



Small Red-eyed Damselfly (*Erythromma viridulum*)



Western Willow Emerald (*Lestes viridis*)

Anisoptera – “unequal winged” – True Dragonflies



Four-spotted Chaser (*Libellula quadrimaculata*)

Anisoptera – “unequal winged” – True Dragonflies



Black Darter (*Sympetrum danae*)

Hawkers



Emperor Dragonfly (*Anax imperator*) Male



Emperor Dragonfly (*Anax imperator*) Female



Southern Hawker (*Aeshna cyanea*) Male



Southern Hawker (*Aeshna cyanea*) Female



Brown Hawker (*Aeshna grandis*) Female



Brown Hawker
(*Aeshna grandis*)
Female



Migrant Hawker
(*Aeshna mixta*)
Male



Migrant Hawker (*Aeshna mixta*) Immature Female



Common Hawker
(*Aeshna juncea*)



Hairy Dragonfly
(*Brachytron pratense*)



Golden-ringed Dragonfly (*Cordulegaster boltonii*)



Lesser Emperor (*Anax parthenope*)

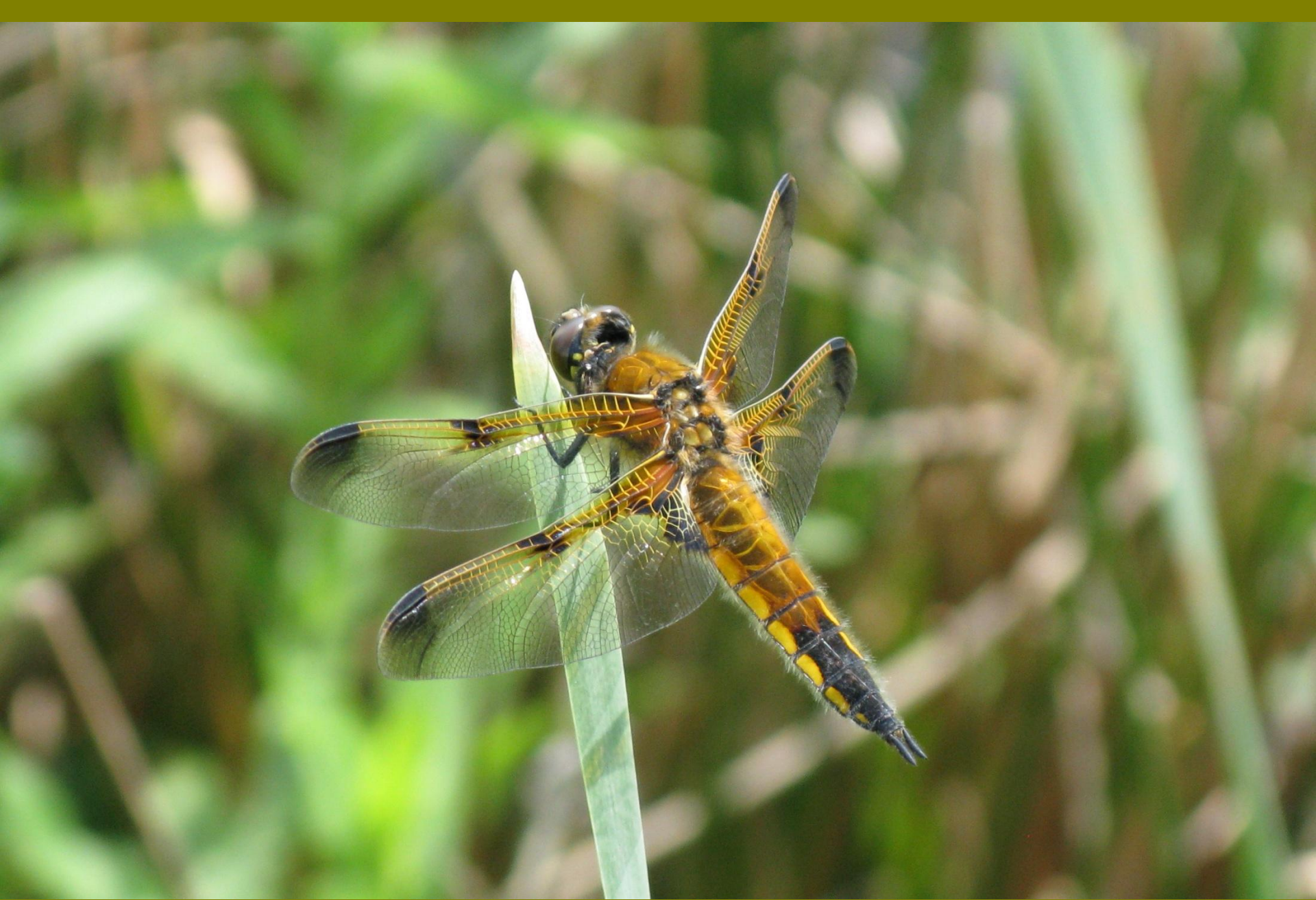
Skimmers and Chasers



Black-tailed Skimmer (*Orthetrum cancellatum*) Male



Black-tailed Skimmer (*Orthetrum cancellatum*) Female



Four-spotted Chaser (*Libellula quadrimaculata*)



Broad-bodied Chaser (*Libellula depressa*) Male



Broad-bodied Chaser (*Libellula depressa*) Immature Male



Keeled Skimmer (*Orthetrum coerulescens*)

Darters



Common Darter (*Sympetrum striolatum*) Male



Common Darter (*Sympetrum striolatum*) Female



Ruddy Darter (*Sympetrum sanguineum*) Male



Ruddy Darter (*Sympetrum sanguineum*) Immature Male



Black Darter (*Sympetrum danae*) Male



Black Darter (*Sympetrum danae*) Immature Male



Black Darter (*Sympetrum danae*) Immature Female



Red-veined Darter (*Sympetrum fonscolombii*)

Thank You



Human Landing Pad!

