

THE DRAGON FLIES...

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Figure 1. Dragonfly and damselfly (from Needham and Westfall, *A manual of the dragonflies of North America*, 1955).

The dragon flies, or so it must seem to a mosquito about to be grasped by a dragonfly for its next meal. Dragonflies and damselflies are closely related groups of insects (collectively called odonates and

often referred to solely as dragonflies). They are most easily told apart when they perch: the bulkier dragonflies keep their wings straight out from the body, whereas the more delicate damselflies bring theirs back together above the body (Fig. 1).

The 5500 species of odonates are distributed around the world. They are most abundant in the tropics but also occur within the Arctic Circle. In the prairie provinces there are some 25 kinds of damselflies and 60 dragonflies. The smallest of the small is about 25 mm long and the largest, the Green Darner (mostly blue), about 80 mm with a wingspread of 110 mm and one of our most common dragonflies (Fig. 2).



Figure 2. Eight of a cluster of eleven darners on a fence in Saskatoon, July 1996

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Figure 3. Dragonfly drawing on a slice of tree branch by a Quakiutl Indian, Queen Charlotte Islands, British Columbia.

Dragonflies have been around for 300 million years. Back then they were bigger, with a wingspread of 700 mm. More recently they have become part of native cultures, have served as nose ornaments in Colombia and been relished as food and used for medicinal purposes in southeast Asia (Fig. 3). They have appealed to artists and sculptors and in many countries have been the subjects of stories, poems and songs.

In the March 1975 *Blue Jay*, Dennis Lehmkuhl produced a well-illustrated article on identifying prairie province odonates to families. In the last few years their popularity has increased rapidly among naturalists, with several regional field guides

appearing, those closest to the prairies being British Columbia, Ontario and Wisconsin. Can the Peterson series be far behind?

In this story the egg comes first, dipped by some species into fresh or alkali water from the end of the female's body as she is carried along by the male and then left to sink into vegetation (Fig. 4). Other species lay eggs in a hole pierced in a plant stem just above or below the water. If below, the female may stay submerged for up to an hour by absorbing air trapped between her body and wings. The wetland chosen must be fairly permanent because the eggs take one to four weeks to hatch and the strictly aquatic larval stages (nymphs) of fast-developing species need four to seven weeks before they climb out onto a plant stem, split open the "skeletons" holding their bodies together and allow the adults to emerge (Fig. 5). Some species overwinter as eggs while others may spend up to six years under water and ice as nymphs.

When the yellowish adult first emerges (most new emergees are yellow), it remains on its stem as long as an hour until its wings harden and it can fly. Then, for one to four weeks until it matures — doubling its weight and changing its body colour — it wanders away from water, sometimes many kilometres, and often into residential yards

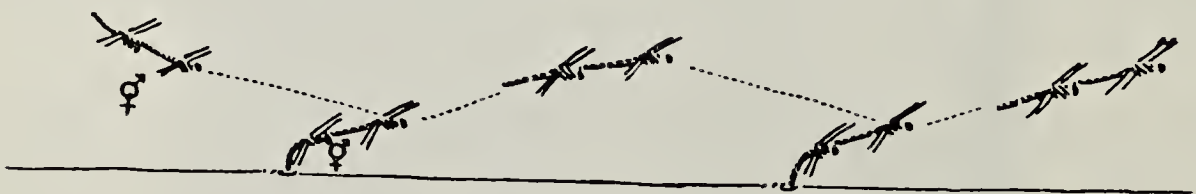


Figure 4. Dragonflies flying in tandem as female drops eggs in the water every few centimetres (from Needham and Westfall, *A manual of the dragonflies of North America*, 1955).

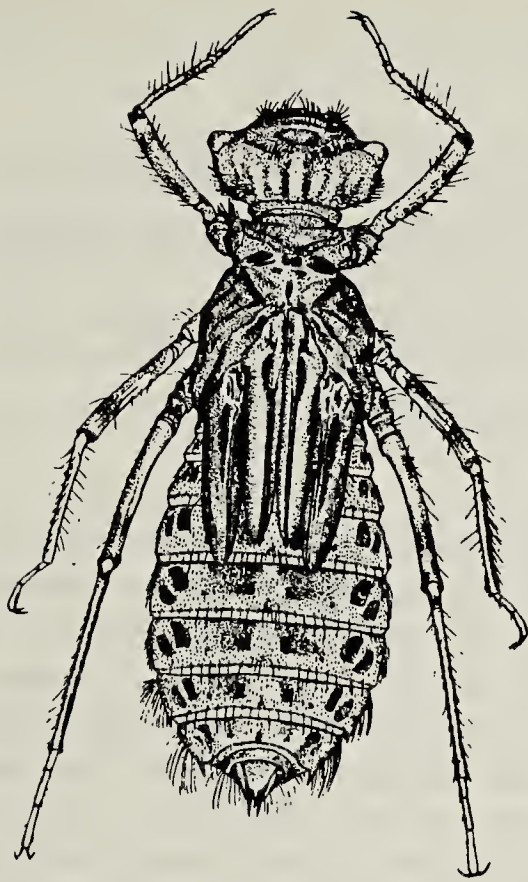


Figure 5. Nymph of dragonfly (from Walker and Corbet, *The Odonata of Canada and Alaska*, 1975).

where you may see one or more patrolling back and forth for insects. In the summer of 1996 dragonflies were particularly common in Saskatoon as well as elsewhere in Saskatchewan, according to Doug Gilroy in his "Prairie Wildlife" column in the *Western Producer*.

When they return to water, males set up territories, from as small as 2 m long and a metre wide up to several hundred square metres, along slough, lake or stream. The variation depends on species, size of the dragonfly and population density. On the other hand, some species have no territories and males usually hunt for females over land. After a brief courtship, the pair mates, with the male taking hold of the heavier female just behind her head by using the claspers at the end of his body. Copulation follows and may last from a few seconds to five hours, during which time the female receives

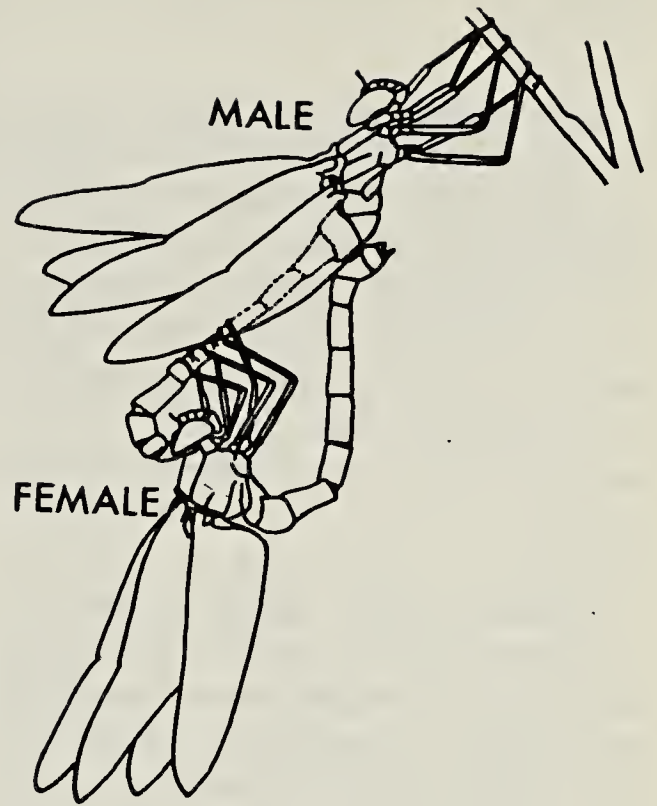


Figure 6. Damselflies copulating (by Art Brooks from Lehmkuhl, in *March* 1975 Blue Jay).

sperm from the male (Fig. 6). Between May and October she may lay from 200 to 2000 eggs of which about one in 100 becomes an adult with a life span of six to ten weeks — all depending on the species and environmental conditions.

Some dragonflies move great distances, sometimes unpredictably, as in the invasion of Ireland by "countless thousands" of a subspecies found only in Spain and Portugal, 800-1000 km (500-600 mi.) away. Other movements are regular migrations, north and south, reported mainly from the east coast where dragonfly-watches, like hawk-watches, are being set up. Near New York City, 13 species of dragonflies (no damselflies) migrated southward between 30 July and 14 November, with the highest one-day count for a species being 2420. If anyone knows of odonate migrations in the prairie provinces, I would appreciate

hearing about them (phone 306-343-1027).

Like butterflies, the majority of odonates are at their best in warm weather, being most active on sunny afternoons and usually landing if a cloud casts a shadow. However, some species fly at dawn and dusk, while a few are actually nocturnal. Overnight they rest, usually perched vertically, from grass-height to tree-height.

Fierce as they appear up close, dragonflies are incapable of stinging and bite only when they consider themselves adequately provoked. With larger eyes in relation to body size than any other animal and able to fly with great agility forwards, backwards and sideways, as well as to glide and hover, they are particularly adept at preying upon any insect small enough to catch with their legs — larger dragonflies even eating smaller ones. They have been seen hovering carefully in front of

spider webs and plucking off the weavers, flying up and down tree trunks and checking crevices in buildings for prey. They probably see in colour and detect small flies at much lower light levels than humans can detect even the dragonflies. They can carry up to 2.5 times their own weight, usually feed in flight and fly up to 35 km (22 mi.)/hour.

For adults, the major mortality factor is weather — prolonged rain or cold upon emergence (death coming from starvation or predation) or strong winds at any time, blowing them over large lakes where they die from exhaustion. In addition, they are preyed upon by animals varying in size from ants (eating adults emerging on the ground) to crocodiles (really!). Frogs are major predators on adults, and birds that eat them range from hawks to sandpipers, kingfishers to swallows. Wasps, robber-flies, spider webs and even the carnivorous sundew plant can also slay the dragon.



The Reddish Buff moth, *Ascometia caliginosa*, once thought to be extinct in Britain, is saved. Nine years ago a tiny group of moths was discovered on the Isle of Wight. Conservationists cleared land and re-introduced its food plant, Saw-wort, and now there are seven successful breeding sights. This includes a location in adjacent Hampshire, where the moth has not been seen for thirty years. *Daily Mail* (Britain), 17 October 1996.