Young Naturalists

Damsels and Dragons

BRENT FLINT

Most dragonflies measure 1 to 3 inches across their wings. One Australian species has a 7-inch wingspan. About 250 million years ago, one kind of dragonfly had a wingspan of 30 inches.

ILLUSTRATION BY DAVID AMDUR

By Janice Welsh

Dragonflies and damselflies are the helicopters of the insect world. With their bulging eyes, long tails, and tapered wings, they look like helicopters. In fact, they maneuver like helicopters too. They can fly backwards and change direction in just one body length of air space. They can glide, hover in midair, and make sharp turns. Some can fly up to 35 miles per hour.

ALLEN BLAKE SHELDON

Dragonfly Design

Like all insects, damselflies and dragonflies have six legs, two pairs of wings, two antennae, and three body parts—head, thorax, and abdomen. They wear their skeletons on the outside of their bodies. This tough outer covering is called an *exoskeleton*.

Dragonflies and damselflies live in and near ponds, streams, and lakes. Of 5,500 species of dragonflies worldwide, 86 are known to live in Minnesota. Minnesota counties with the most known species of dragonflies are Anoka, Washington, Pine, Lake, Clearwater, and Cook.

Try sneaking up on a damselfly or dragonfly and you will find out how well it sees! Its bulging eyes detect the slightest movement. Dragonflies and damselflies look scary, but they do not bite or sting.

Janice Welsh *runs Project WILD, a DNR program for schools.*

EUGENE F. O'NEILL

BRUCE EDINGER

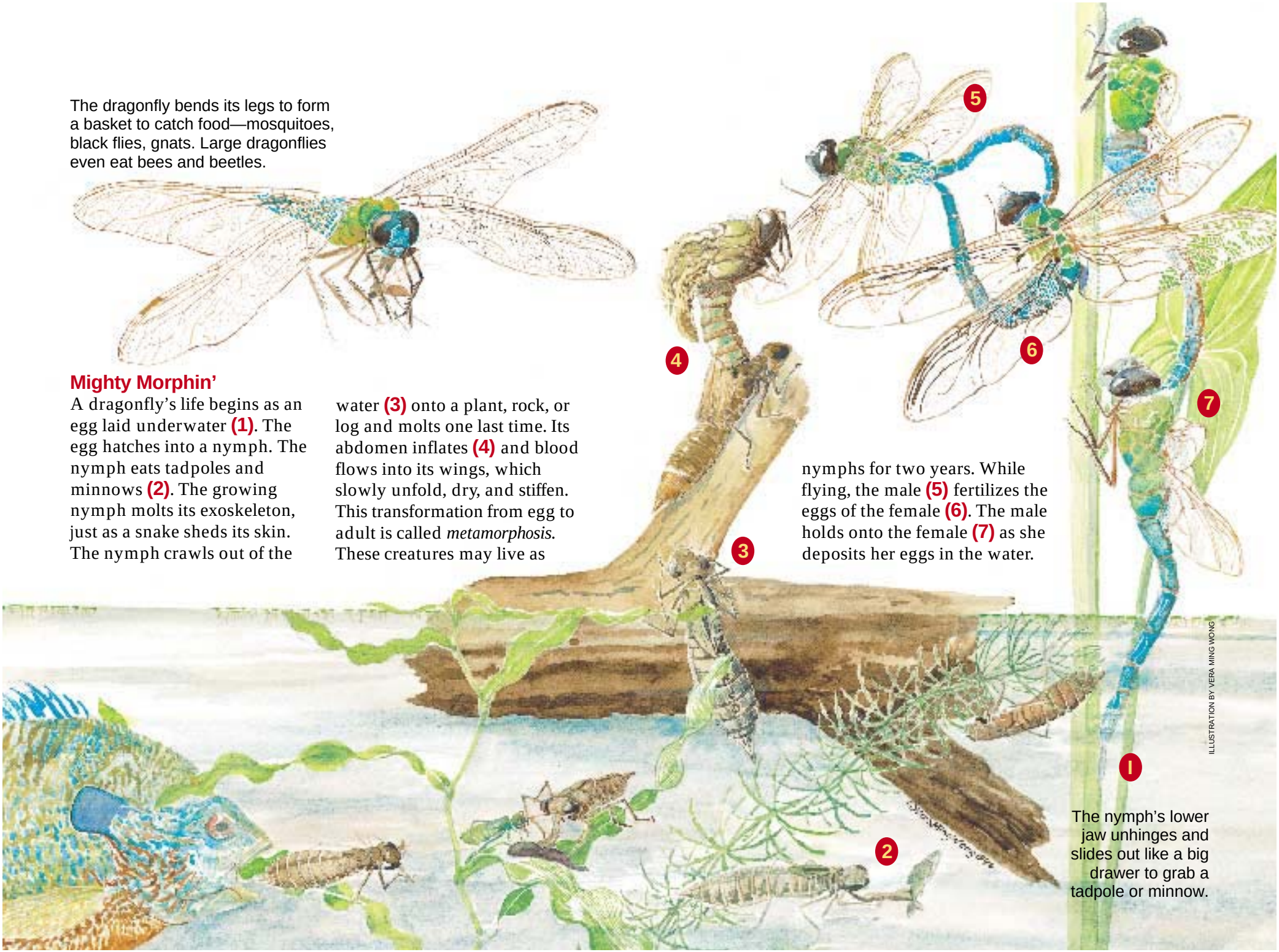
DOMINIQUE BRAUD

Dragonflies *(top two photos)* rest with wings open. The closely related damselfly *(bottom)* folds its wings together. Dragonflies look stronger than damselflies and fly faster with more rapid wingbeats.

The dragonfly bends its legs to form a basket to catch food—mosquitoes, black flies, gnats. Large dragonflies even eat bees and beetles.

Mighty Morphin'

A dragonfly's life begins as an egg laid underwater **(1)**. The egg hatches into a nymph. The nymph eats tadpoles and minnows **(2)**. The growing nymph molts its exoskeleton, just as a snake sheds its skin. The nymph crawls out of the water **(3)** onto a plant, rock, or log and molts one last time. Its abdomen inflates **(4)** and blood flows into its wings, which slowly unfold, dry, and stiffen. This transformation from egg to adult is called *metamorphosis*. These creatures may live as nymphs for two years. While flying, the male **(5)** fertilizes the eggs of the female **(6)**. The male holds onto the female **(7)** as she deposits her eggs in the water.



The nymph's lower jaw unhinges and slides out like a big drawer to grab a tadpole or minnow.

ILLUSTRATION BY VERA MING WONG

Minnesota's Biggest Insect Collector

The University of Minnesota Insect Collection has about 2,865,000 insect specimens, representing 43,000 species found in the United States and many other parts of the world.

The collection started in 1897 with insects and spiders from the North Shore of Lake Superior. Current staff members have made expeditions to collect insects in Costa Rica, Ecuador, Peru, French Guiana, and Trinidad, making this one of North America's major collections.

University research and teaching programs use the collection. For information, call 612-624-1254.

RICHARD HAMILTON SMITH

Dragonflies are also called darners, darning needles, biddies, horse stingers, and bee hawks for their ability to catch bees in midair.

YES: Young Entomologists' Society

People who study insects are called entomologists. The Young Entomologists' Society is a non-profit group that helps young people study insects. For membership information, contact YES, 1915 Peggy Place, Lansing, MI 48910-2553; 517-887-0499; e-mail YESbugs@aol.com.

Also available from YES is *Creepy Crawlies and the Scientific Method* by Sally Stenhouse Kneidel. This book for teachers tells how to study pond ecology in the classroom. The book describes more than 100 hands-on experiments for children.

ALLEN BLAKE SHELDON

A Naturalist's Eye for Dragons

State park naturalist Mark Carroll has been interested in dragonflies and other insects since he was a kid. In the clover fields near his house, Mark and his friends had contests to see who could get the most bumblebees into a jar. Mark's mother made him a butterfly net and turned old shoe boxes into storage containers for his collections. On the kitchen table, he raised monarch butterflies.

As a student at St. Cloud State University, Mark studied all kinds of wildlife. He worked on a study of restored wetlands —ones that people drained of water and later fixed to hold water again. He wanted to see how quickly aquatic insects came to live in the restored wetlands. Mark made maps to show other researchers where different dragonfly species live in Minnesota.

Mark earned a bachelor's degree in earth sciences and a master's in biology, then joined the Department of Natural Resources as a naturalist.

At Sibley State Park in west-central Minnesota where he works, Mark has counted more than a dozen species of dragonflies. This July he will show dragonfly slides and take park visitors on a hike to see what he calls "dragons in the air." To find out more, call the DNR Information Center (see page 59).