

Dragonflies of North America

A Color and Learn Book with Activities

Kathy Biggs and Tim Manolis



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Publisher's Note:

Dragonflies are colorful, interesting, and beneficial insects. Their colors change with age. You might want to look up how they look at different ages, or in different parts of the country and color them that way, or you can color them anyway you want! To learn more about them, and/or to see more color images of the species in this book and other species, visit one or more of these websites:

California Dragonflies: sonic.net/dragonfly

Dragonflies of the Southwest: southwestdragonflies.net

All of the images colored by the illustrator, Tim Manolis, are shown exactly as on the back page, on the Internet on this book's companion website:

<http://bigsnest.powweb.com/southwestdragonflies/ColoringBook/coloredpages.html>

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For our grandchildren

Bibliographical notes:

Kathy Biggs is the author of

Common Dragonflies of California,

Common Dragonflies of the Southwest,

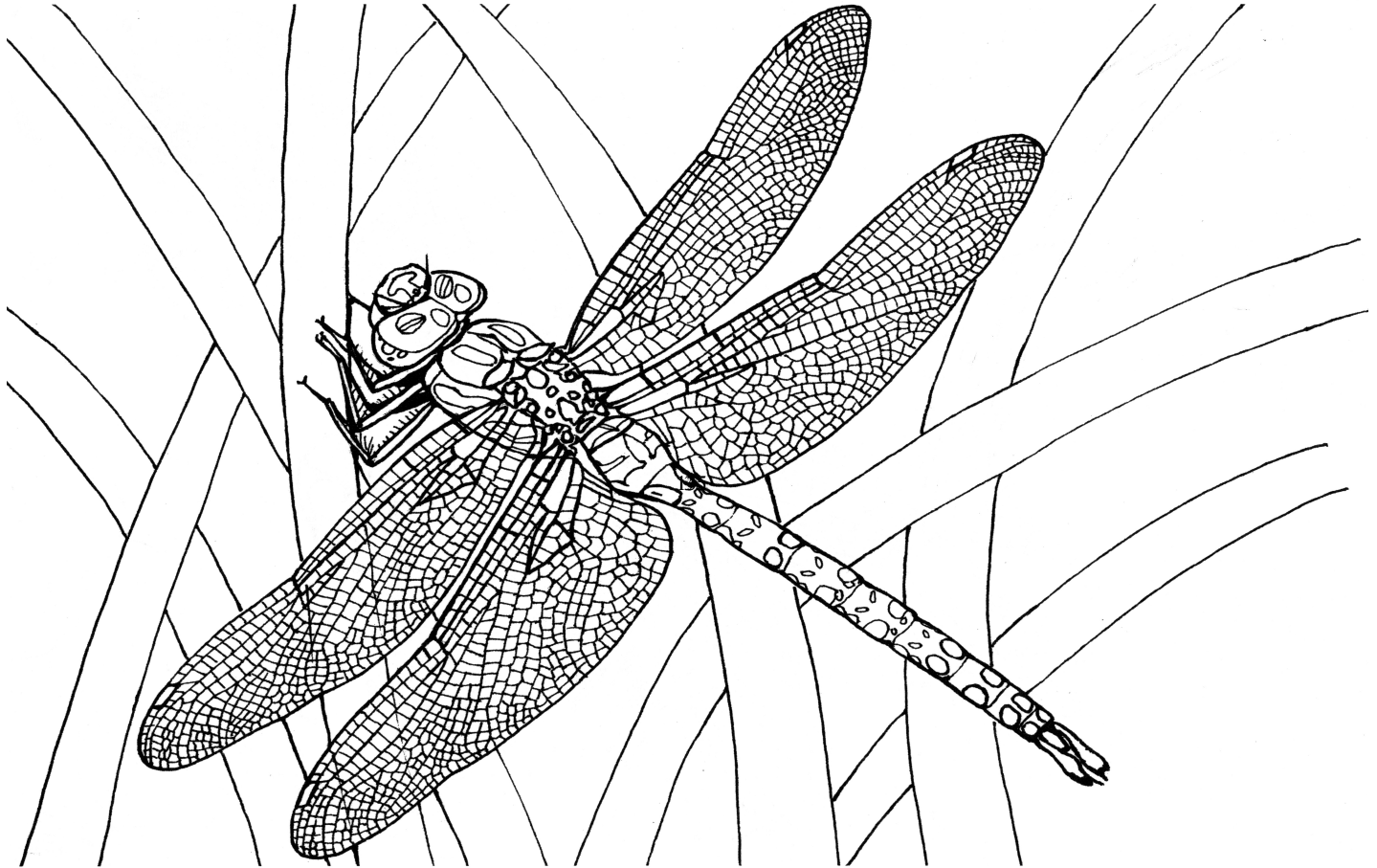
and the on-line *First Guide to the Dragonflies and Damselies of Jalisco.*

Tim Manolis is the author and the illustrator of *Dragonflies and Damselies of California,*

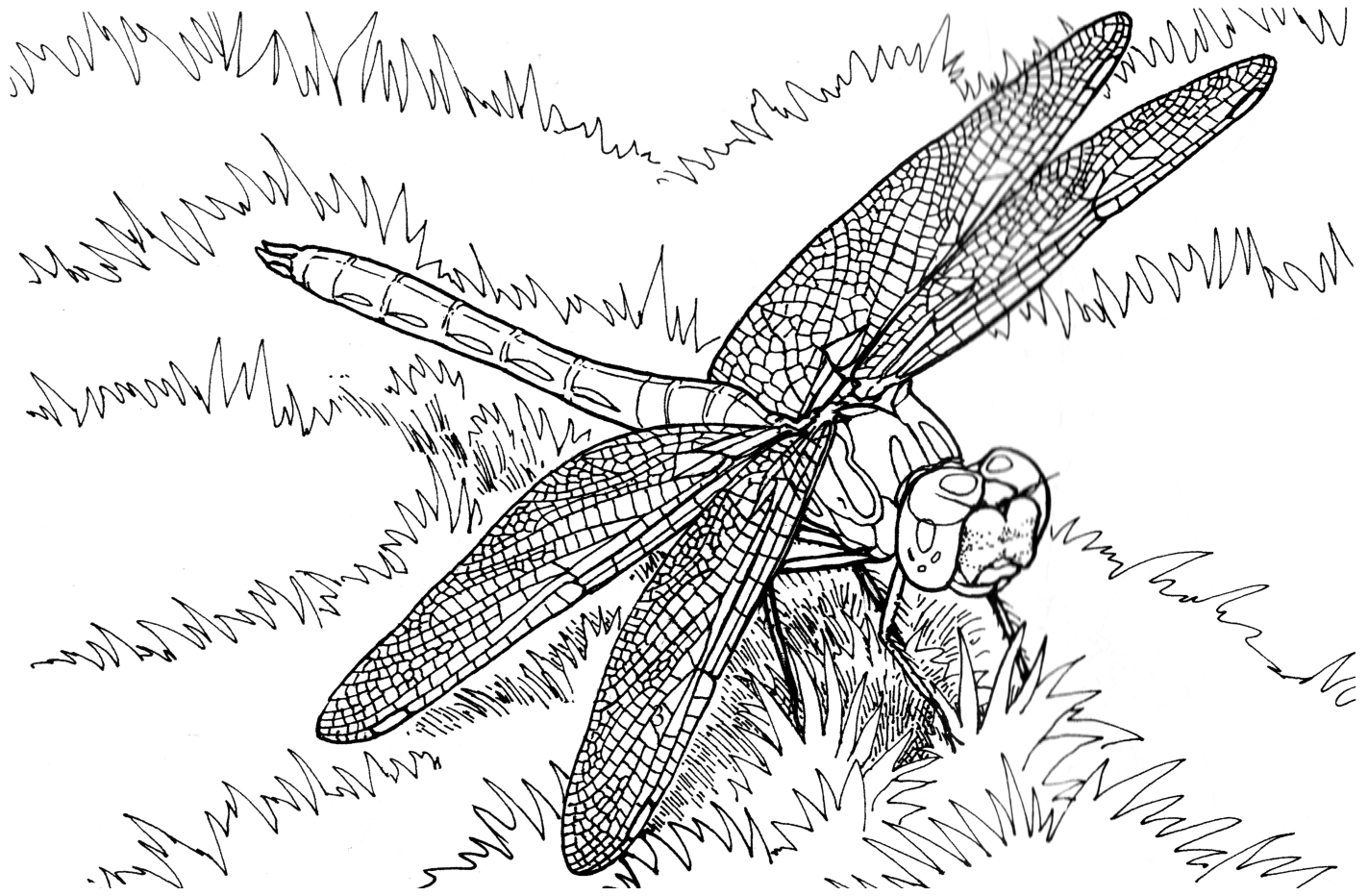
and the illustrator of

Field Guide to Butterflies of the San Francisco Bay and Sacramento Valley Regions

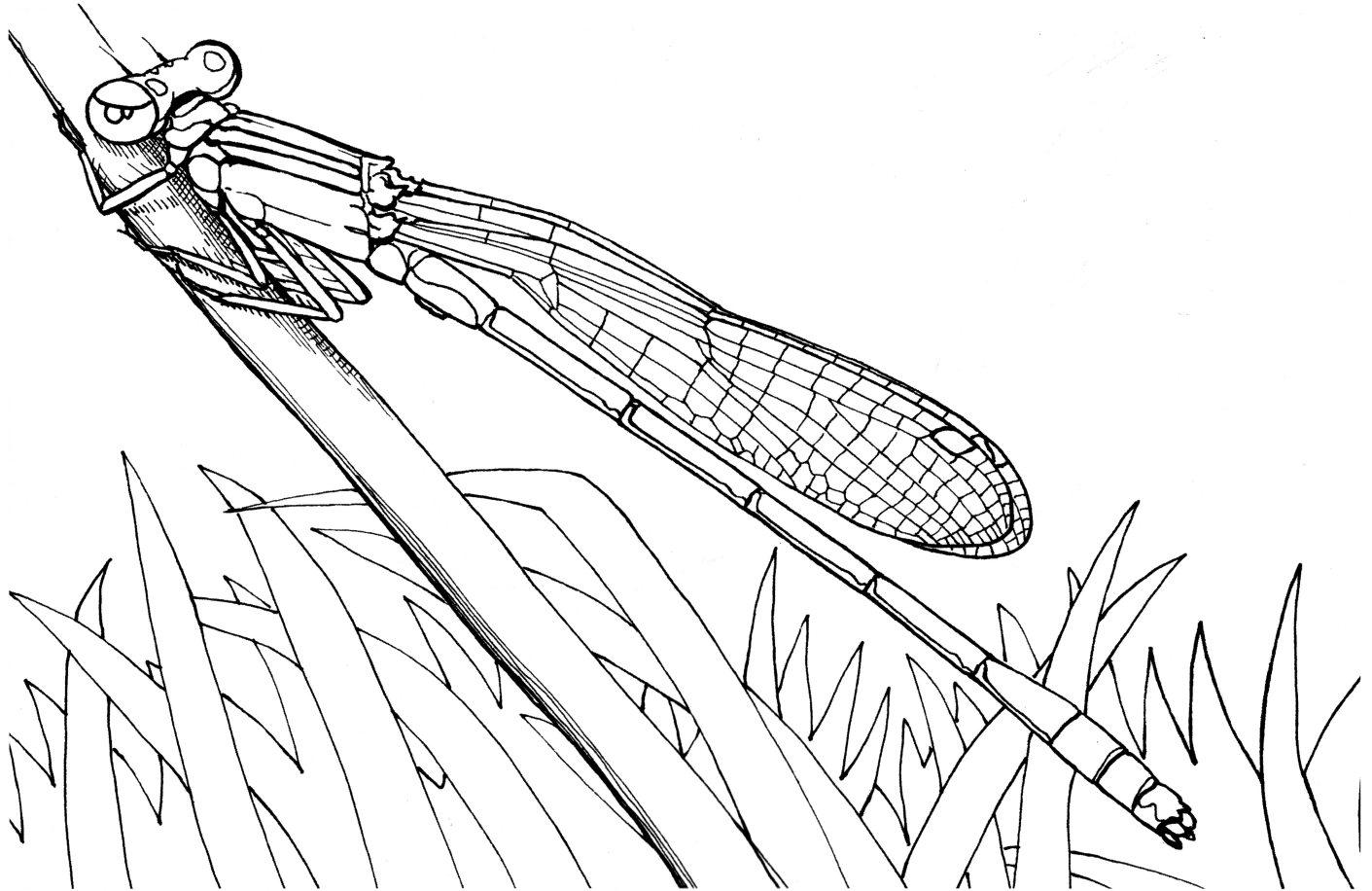
Field Guide to Spiders of California and the Pacific Coast States



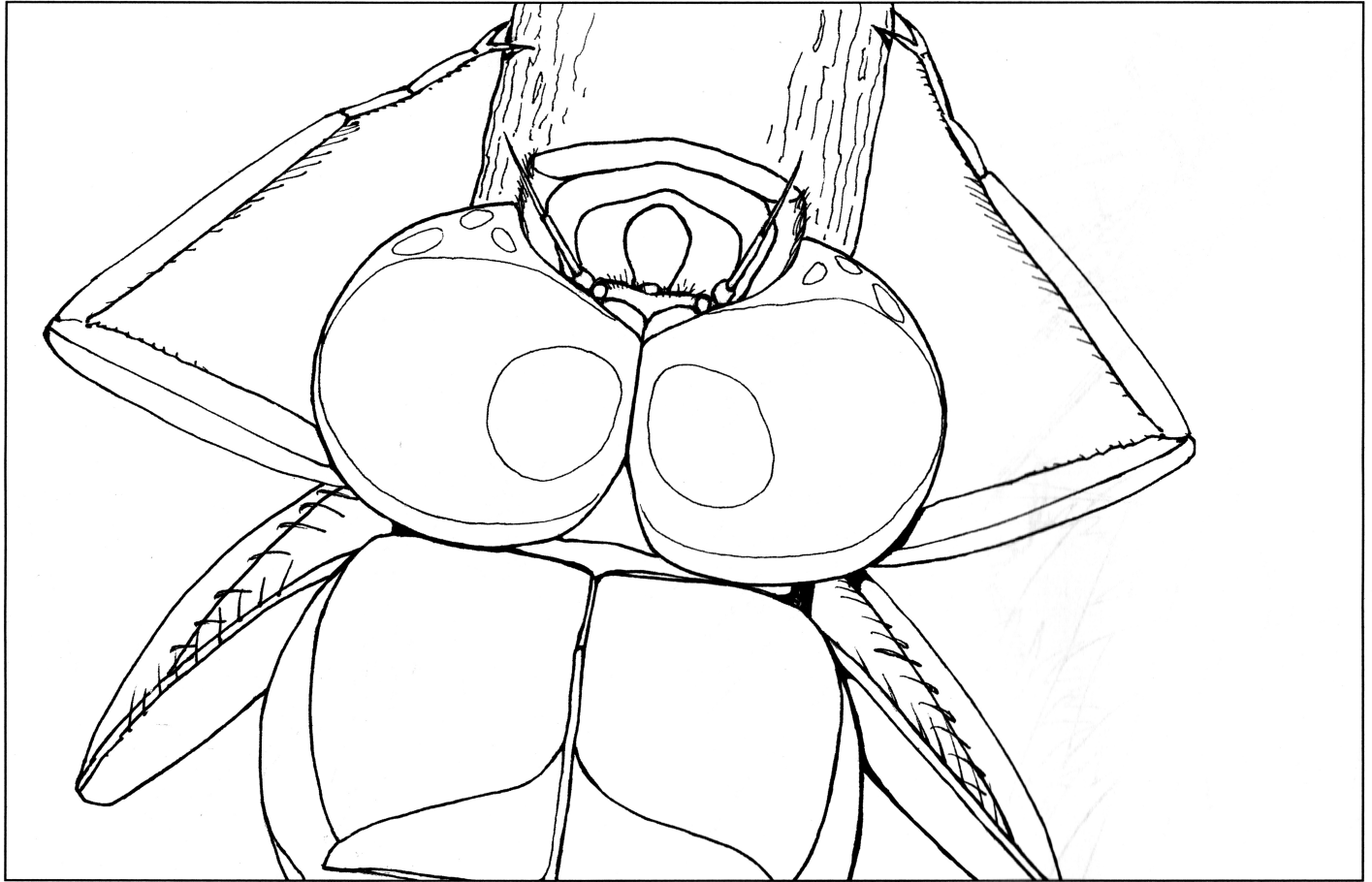
Dragonflies, like this **Lance-tipped Darner (*Aeshna constricta*)**, are insects and have three body parts:
1. The head has large eyes and a mouth. 2. The thorax has six legs and four wings. 3. The abdomen always has ten segments and ends with appendages; the appendages are NOT stingers.



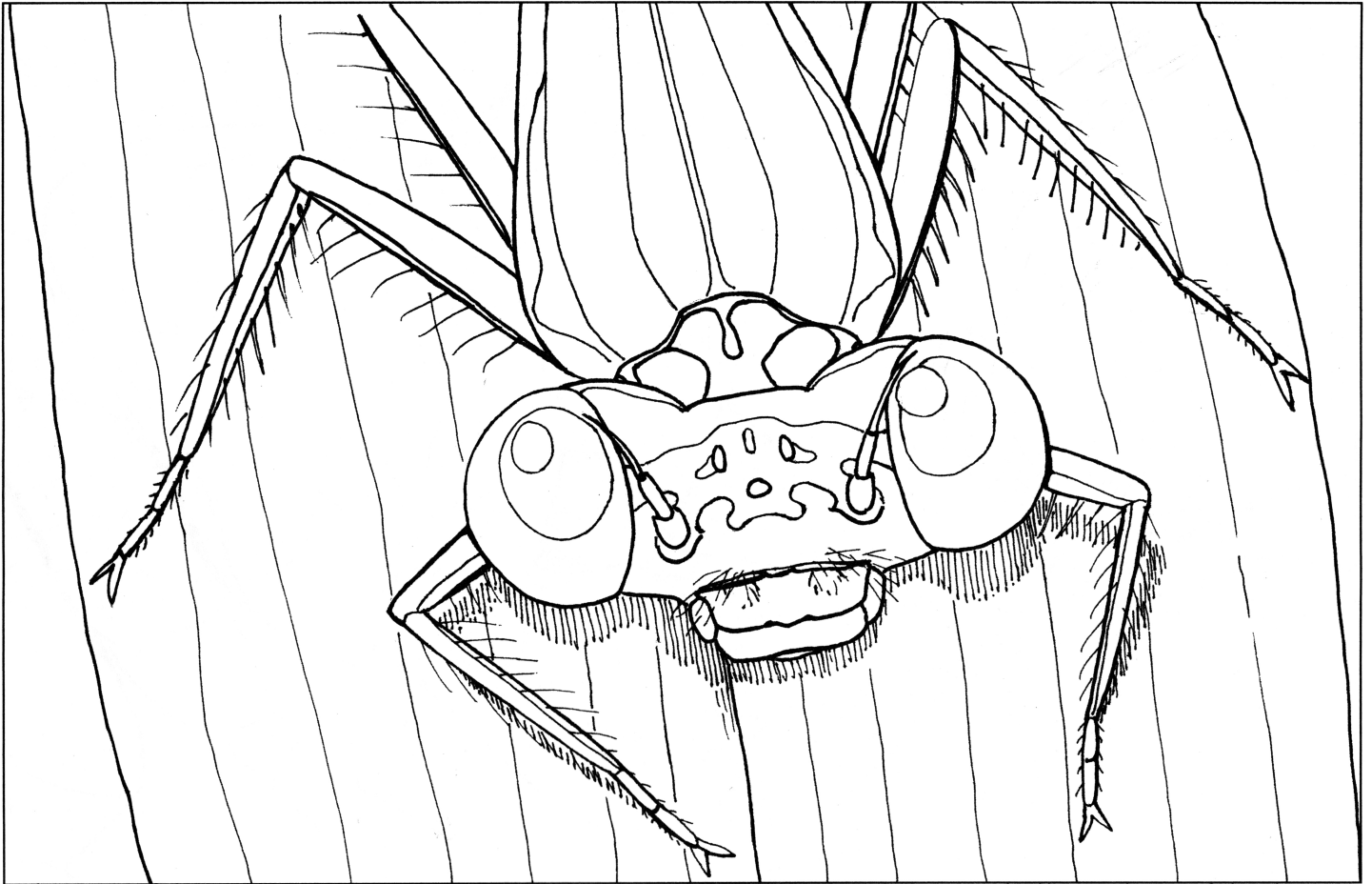
The order Odonata includes two kinds of dragonflies. One is the Anisoptera, the dragonflies, which are large bodied and usually hold their wings out flat like an airplane. There are six families of Anisoptera in North America —1. Skimmers, like this **Striped Meadowhawk (*Sympetrum pallipes*)**, 2. Darners, 3. Clubtails, 4. Spiketails, 5. Cruisers and 6. Petaltails. The Skimmers are the most numerous.



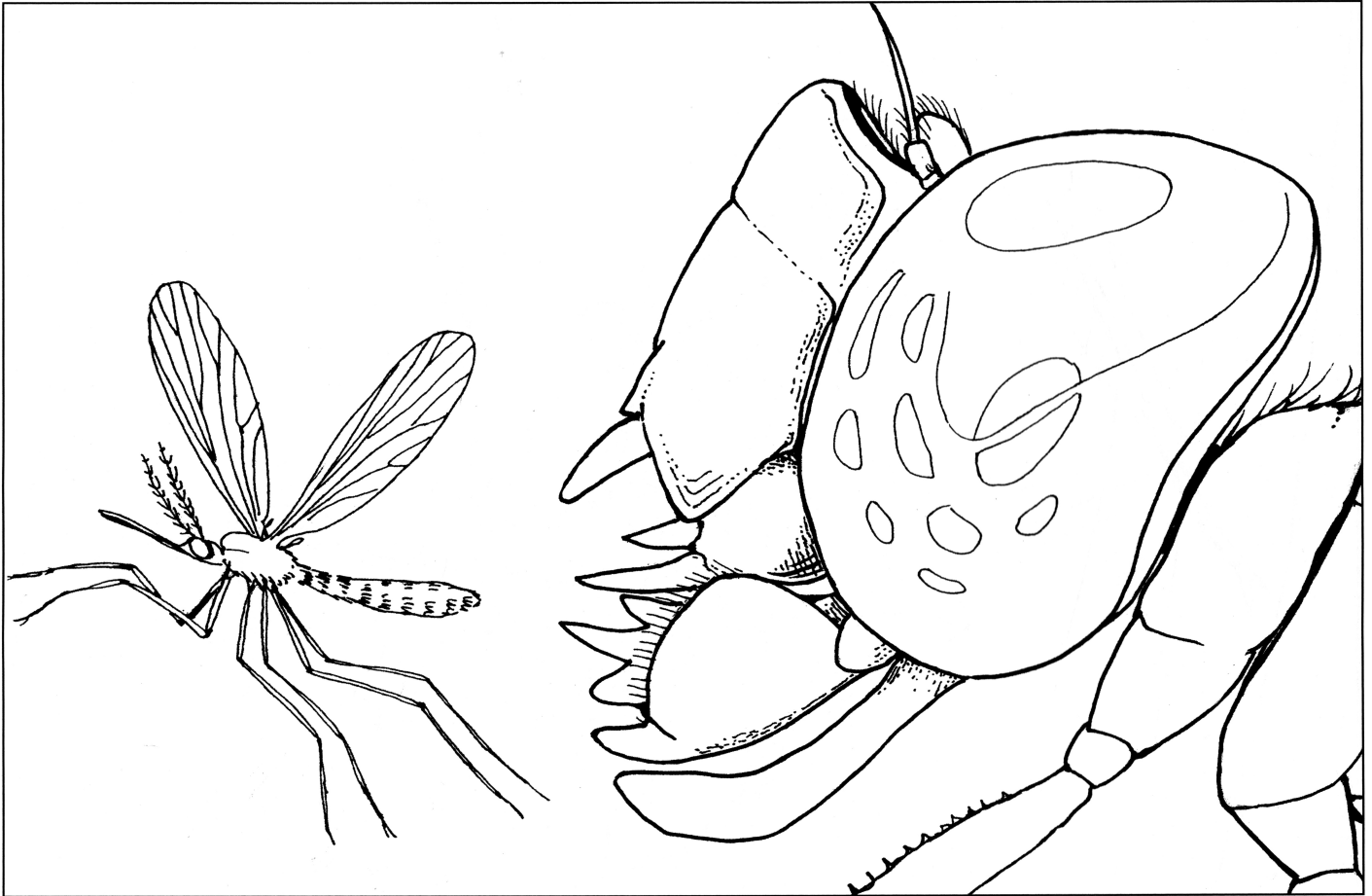
The other kind of dragonfly is the damselfly, Zygoptera. There are four families of damselflies in North America — 1. Jewelwings, 2. Spreadwings, 3. Pond Damsels like this **Rambur's Forktail (*Ischnura ramburii*)**, and 4. Shadow Damsels. Damselflies are smaller and more slender than dragonflies and perch with all four wings held together.



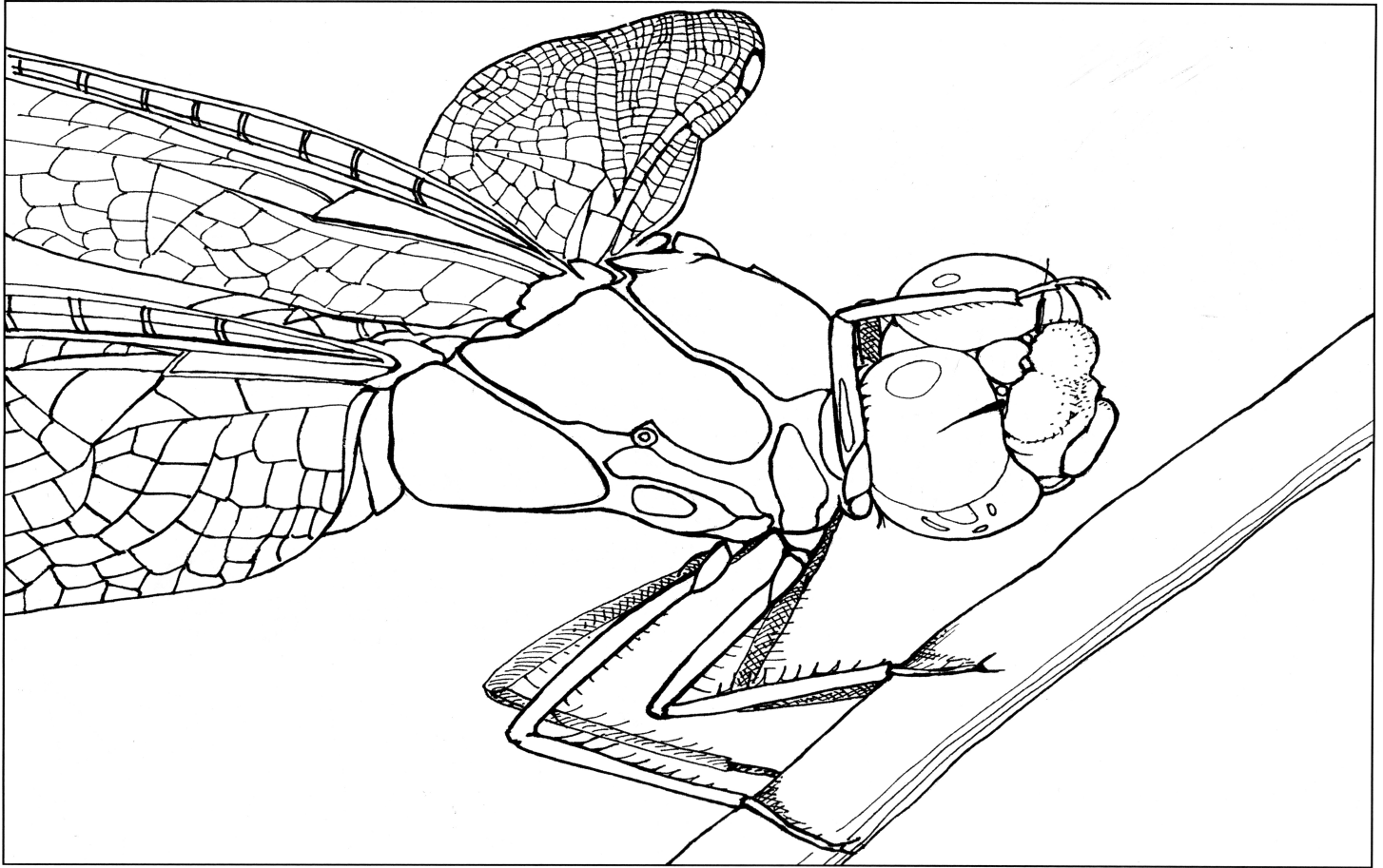
Most dragonflies (Anisoptera), like this **Common Green Darner (*Anax junius*)**, have eyes that are so large that they actually meet in the center and form a seam. Each eye has thousands of small lens and multiple focal points (humans have one lens for each eye and therefore only two focal points). Dragonflies are predators and their large eyes are needed to see flying prey while they are on the wing.



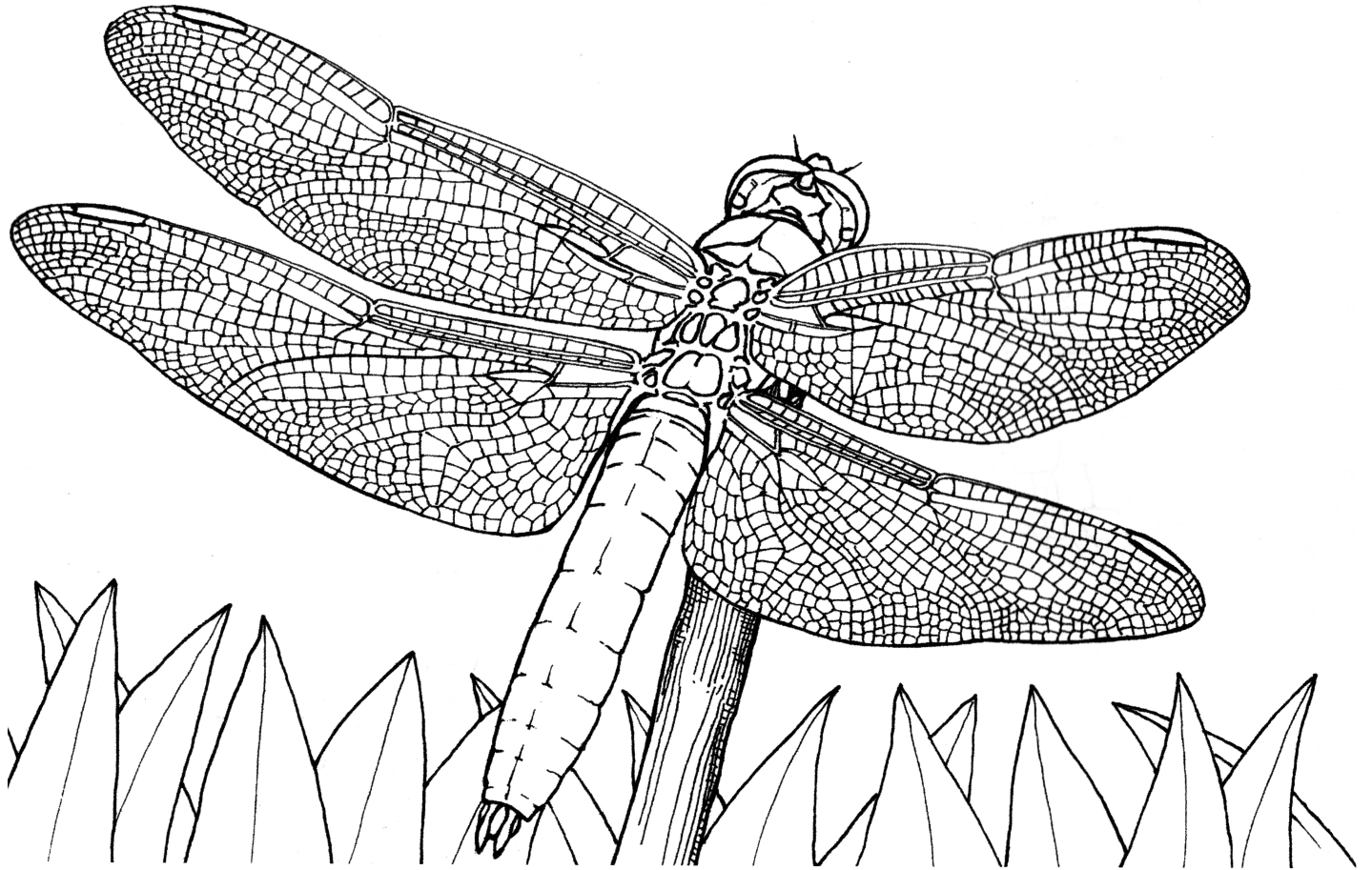
The eyes of damselflies (*Zygoptera*), like this **Vivid Dancer** (*Argia vivida*), are similar to those of the dragonflies, but they are widely separated, giving them a hammer-headed appearance. Damselflies flit around often at about knee height, picking small insects such as aphids and white flies off plant leaves, so it is beneficial to have them in our gardens. Like Dragonflies, their antennae are short.



Both damselflies and dragonflies, like this **Common Green Darner** (*Anax junius*), have mouths below their eyes. Their mouths open sideways, not up and down like ours. Can they bite? Of course, however they bite their prey, not humans! Their usual prey includes mosquitoes, gnats and other small flying insects. But sometimes dragonflies eat larger insects, even other dragonflies. This is often the last view a mosquito sees!

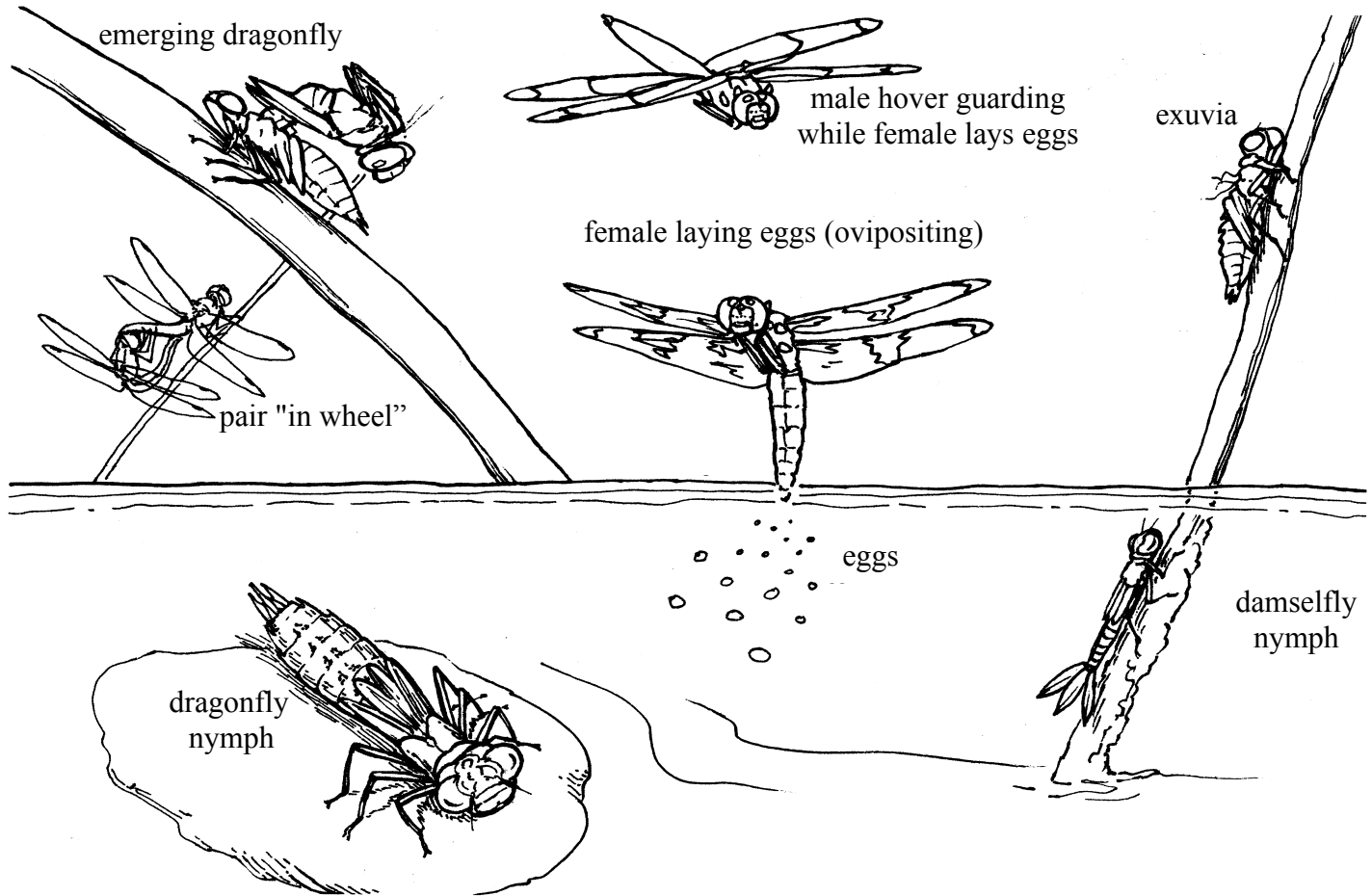


All damselflies and dragonflies have six legs, but many, like this **Comanche Skimmer** (*Libellula comanche*), often use only four when they perch. They sometimes use their front pair of legs like cats use their paws, to clean their eyes. While flying, they form their legs into a basket to catch prey, and then lift it to their mouth while still in flight. But they cannot use their legs to walk or run like we do!

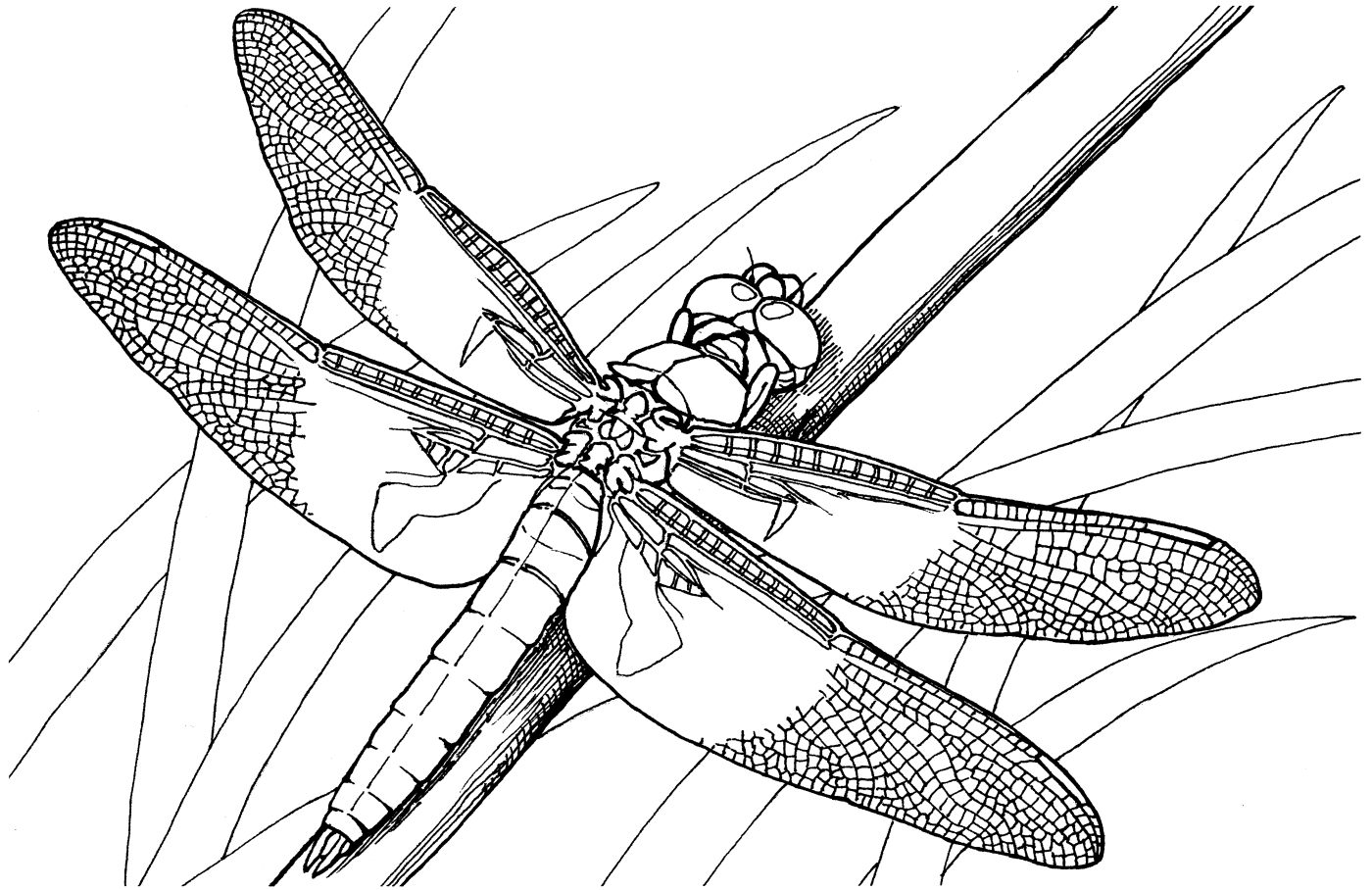


The wings on a dragonfly, like this **Neon Skimmer** (*Libellula croceipennis*), are very strong, not delicate like a butterfly's wings, and they don't have scales. Dragonfly wings are individually muscled. Not only can they fly forward, but also up and down, and they can hover and make sharp turns.

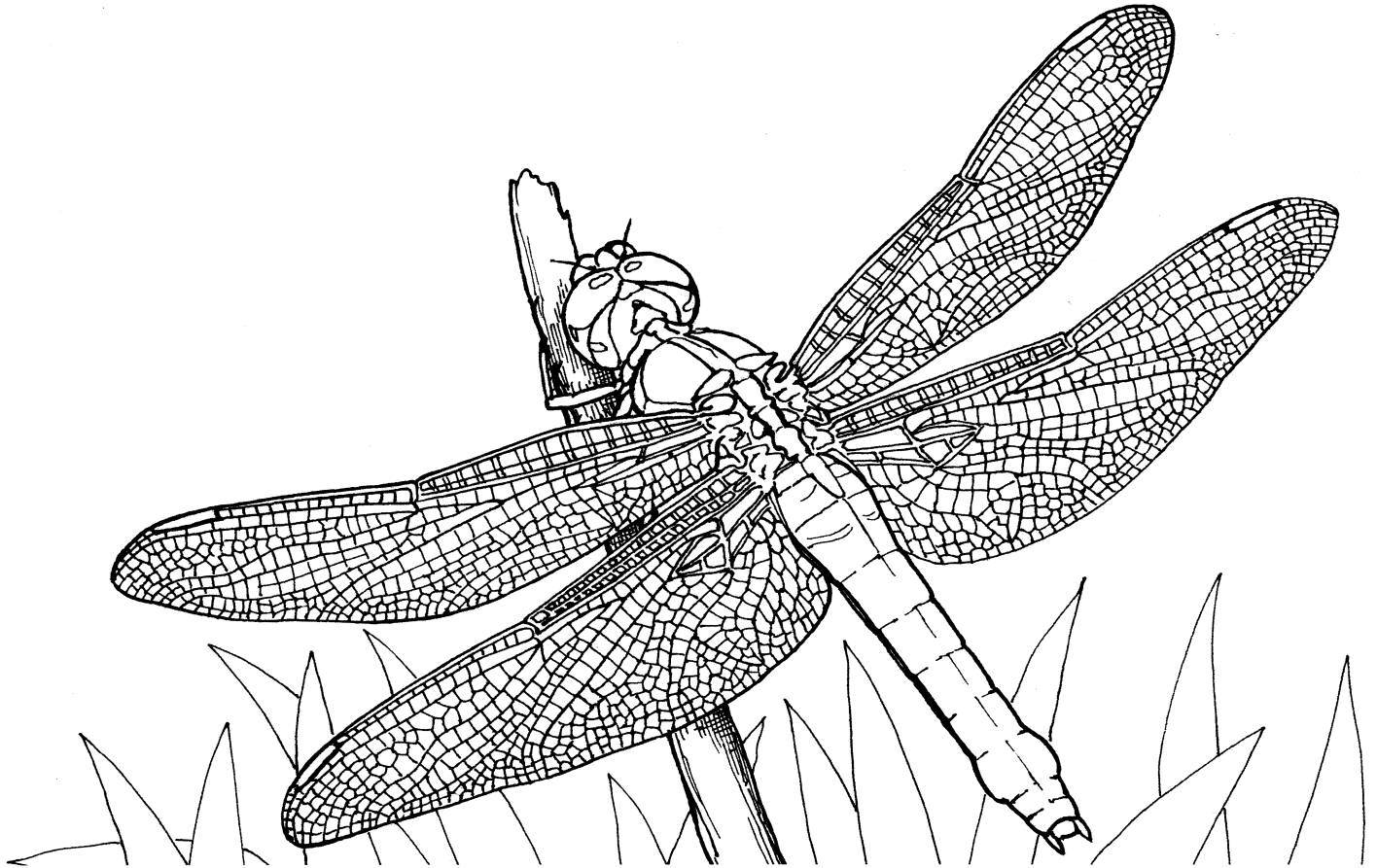
It is difficult to keep an eye on them as they zigzag about!



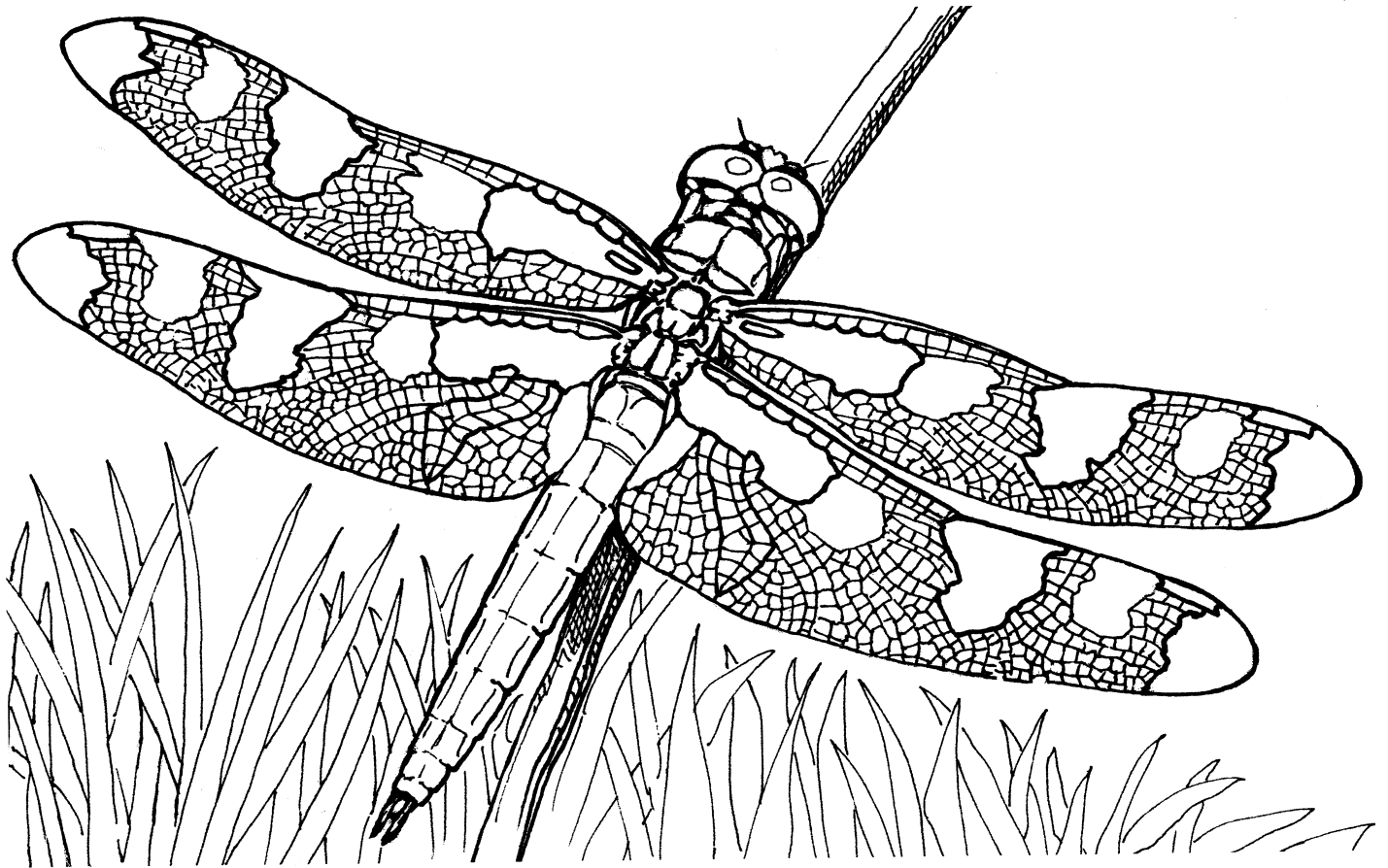
Dragonfly life cycle: Dragonflies start their lives as eggs laid in the water. The nymph that hatch live underwater for about a year as aquatic creatures before emerging as flying insects. An exuvia, the exoskeleton, is left behind when a nymph emerges to become a flying adult dragonfly.



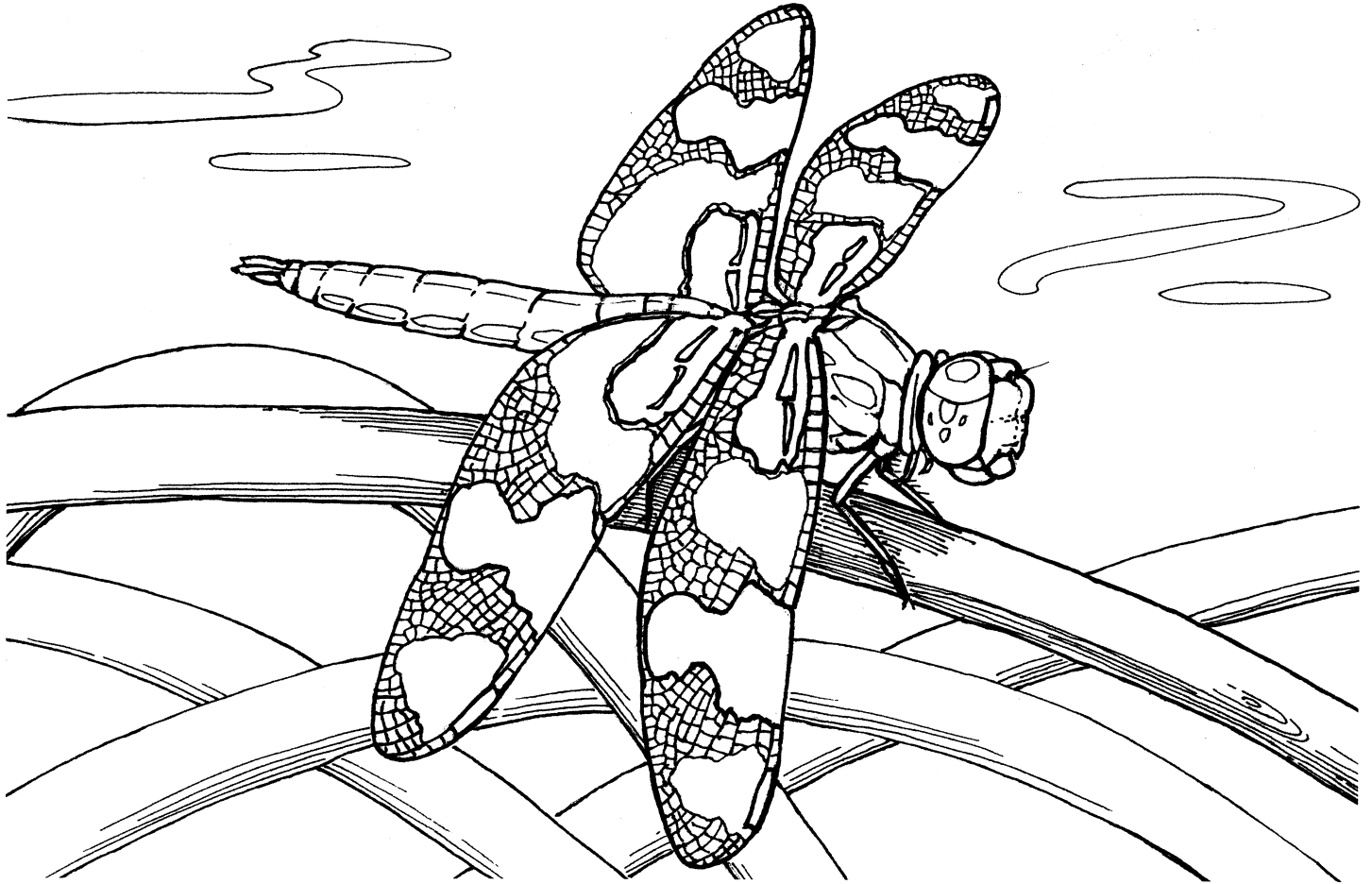
There are about 500 species of dragonflies and damselflies in North America. The most common are the Skimmers. The **Flame Skimmer** (*Libellula saturata*) is found throughout the western United States. The males claim territories on ponds, lakes and the quiet backwaters of creeks and rivers, often perching at the top of a stick or stem. If you'd like to take a photo of one, try placing a stick near water and pre-focus on it.



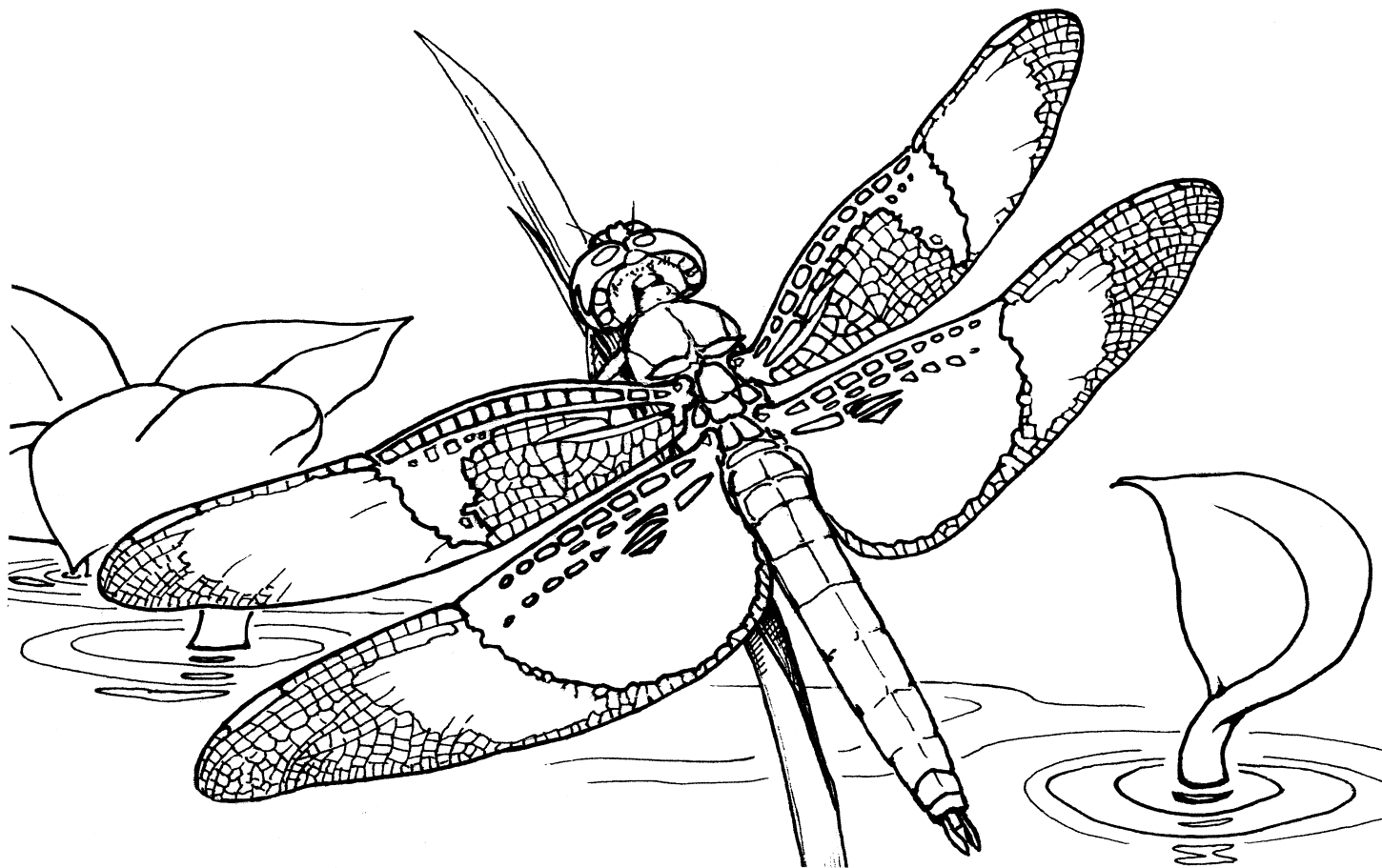
Female dragonflies are less colorful than the males. This female **Flame Skimmer** (*Libellula saturata*) is not as saturated with red-orange color as the male. Females are also more often found away from the water, usually going to the pond or stream only when they feel the need to lay eggs. Female dragonflies can often be found in your garden, even if you don't have a water source for them to breed in. Use of pesticides may kill them.



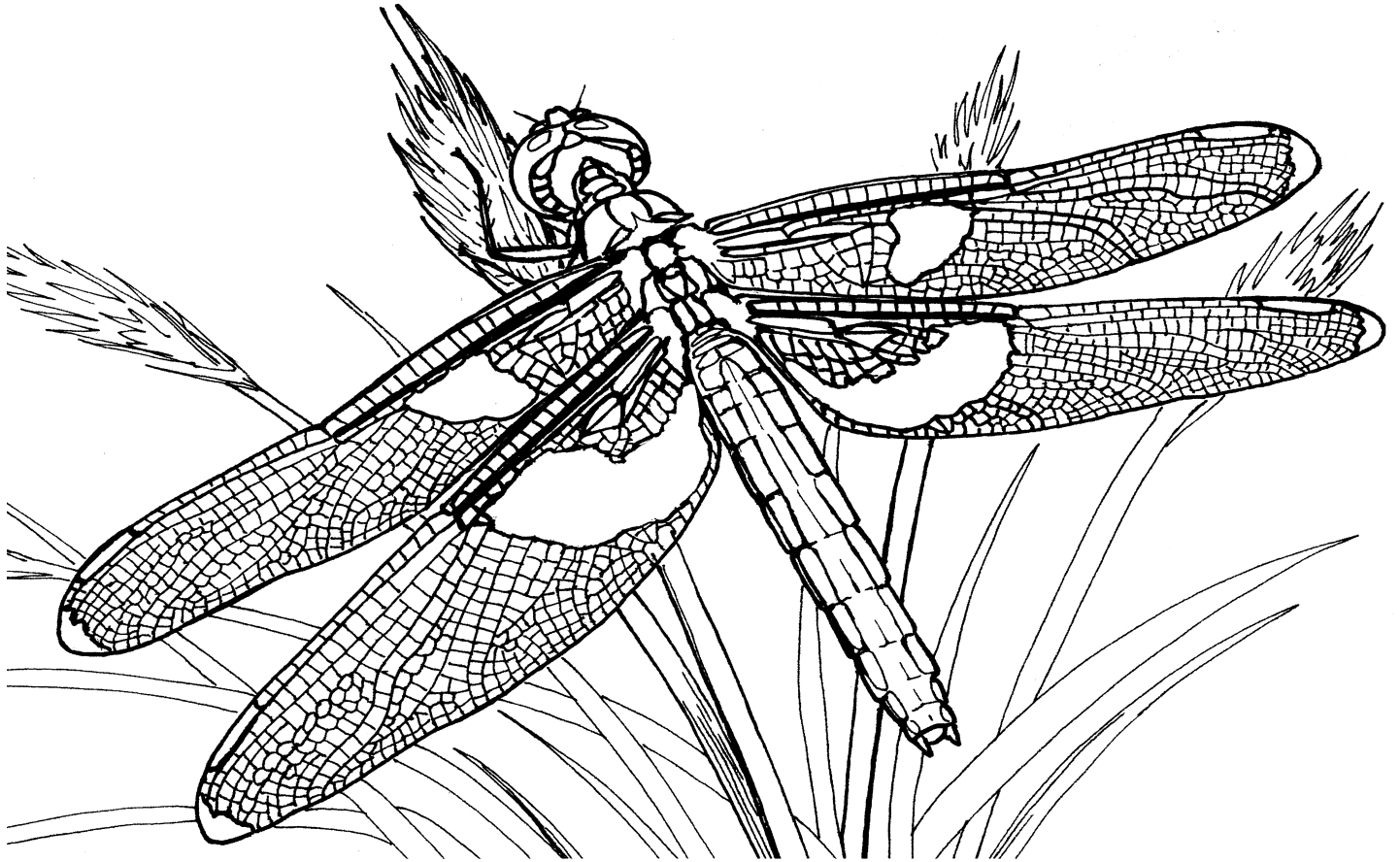
The **Twelve-spotted Skimmer** (*Libellula pulchella*) flies throughout the United States and can be found at many still water sites. It received its common name because the three dark spots on each wing, times four wings, equals twelve spots. Its scientific name, *pulchella*, means beautiful. Do you agree? The male's blue color is a waxy coating he secretes as he matures. Most females and all young males are brown and yellow.



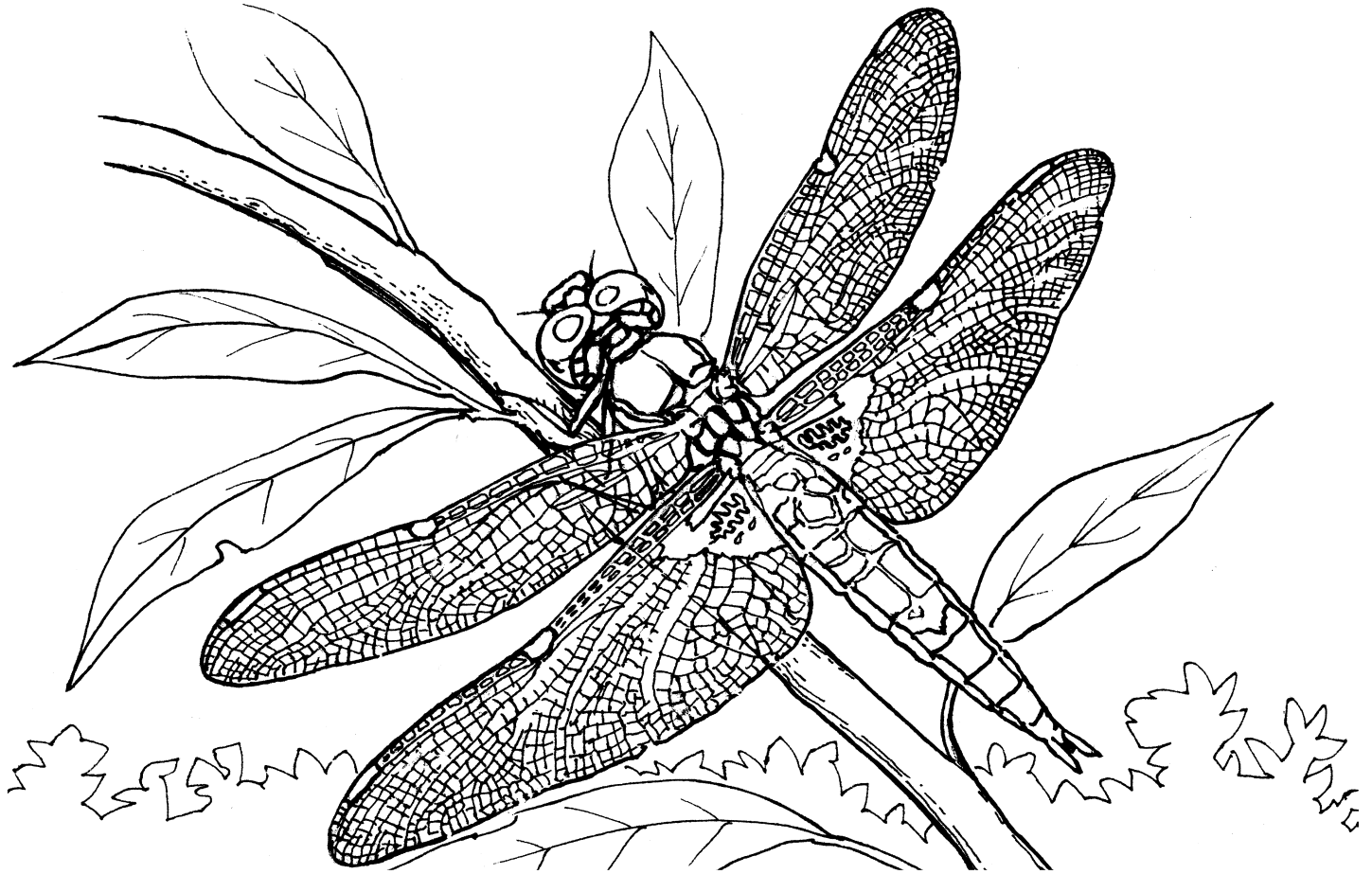
The **Eight-spotted Skimmer** (*Libellula forensis*) flies in the western United States at many calm water sites. It is often found in early summer and is named for its two dark spots on each of its four wings. The female's wings are similar, but her coloring is brown and yellow.



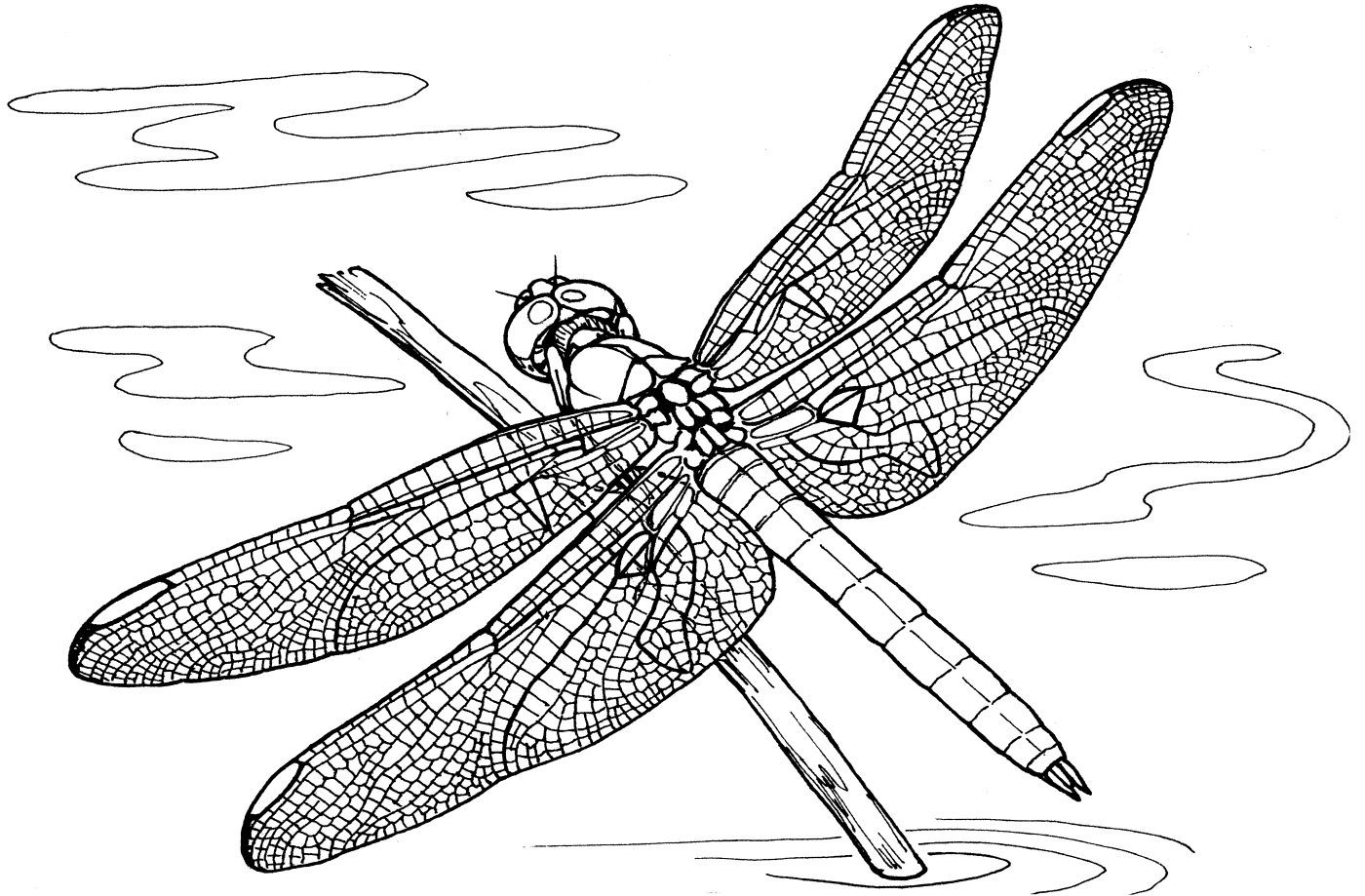
The **Widow Skimmer** (*Libellula luctuosa*), found on quiet waters, has expanded its range and is now known to fly throughout North America. The “Widow” gets its name from the black wing bands that reminded people of the mourning cloak that widows wore long ago. Its abdomen turns a bluish white with a waxy coating called pruinosity.



The female **Widow Skimmer** (*Libellula luctuosa*) has the same dark patches on her wings as the male, but she also has dark wingtips. The females don't usually develop the white pruinosity (waxy coating) on their wings or the bluish white coating on the abdomen that males do. Young males' abdomens are like the females', but they never develop the dark wingtips. The thin connection between the head and thorax shows here. 17

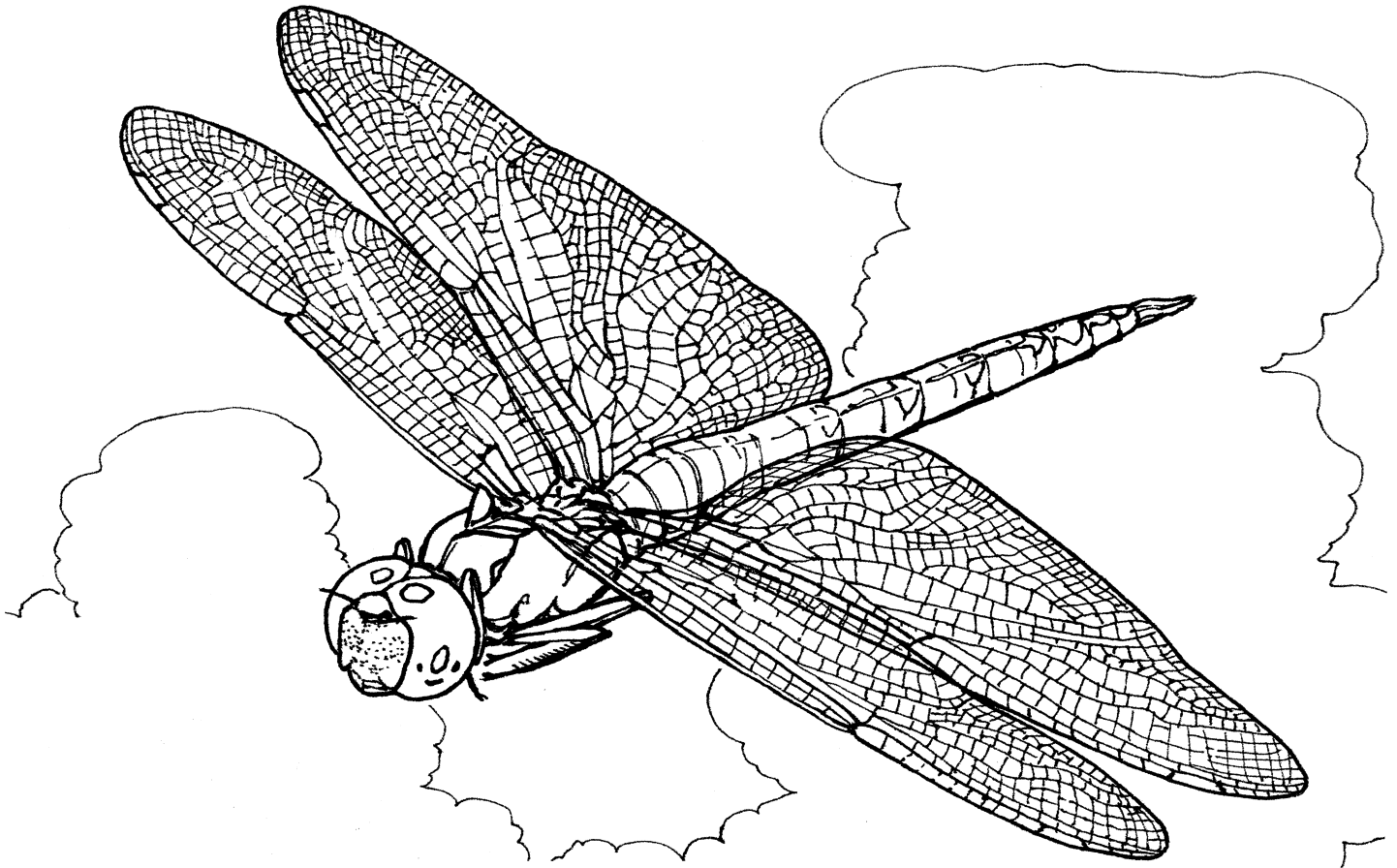


The Four-spotted **Skimmer** (*Libellula quadrimaculata*) flies throughout the Northern Hemisphere, including Europe and Asia. It is usually found at quiet waters such as ponds and bogs in the mountains. Males and females look almost alike. Many people consider this species as rather homely (not very pretty). Do you?

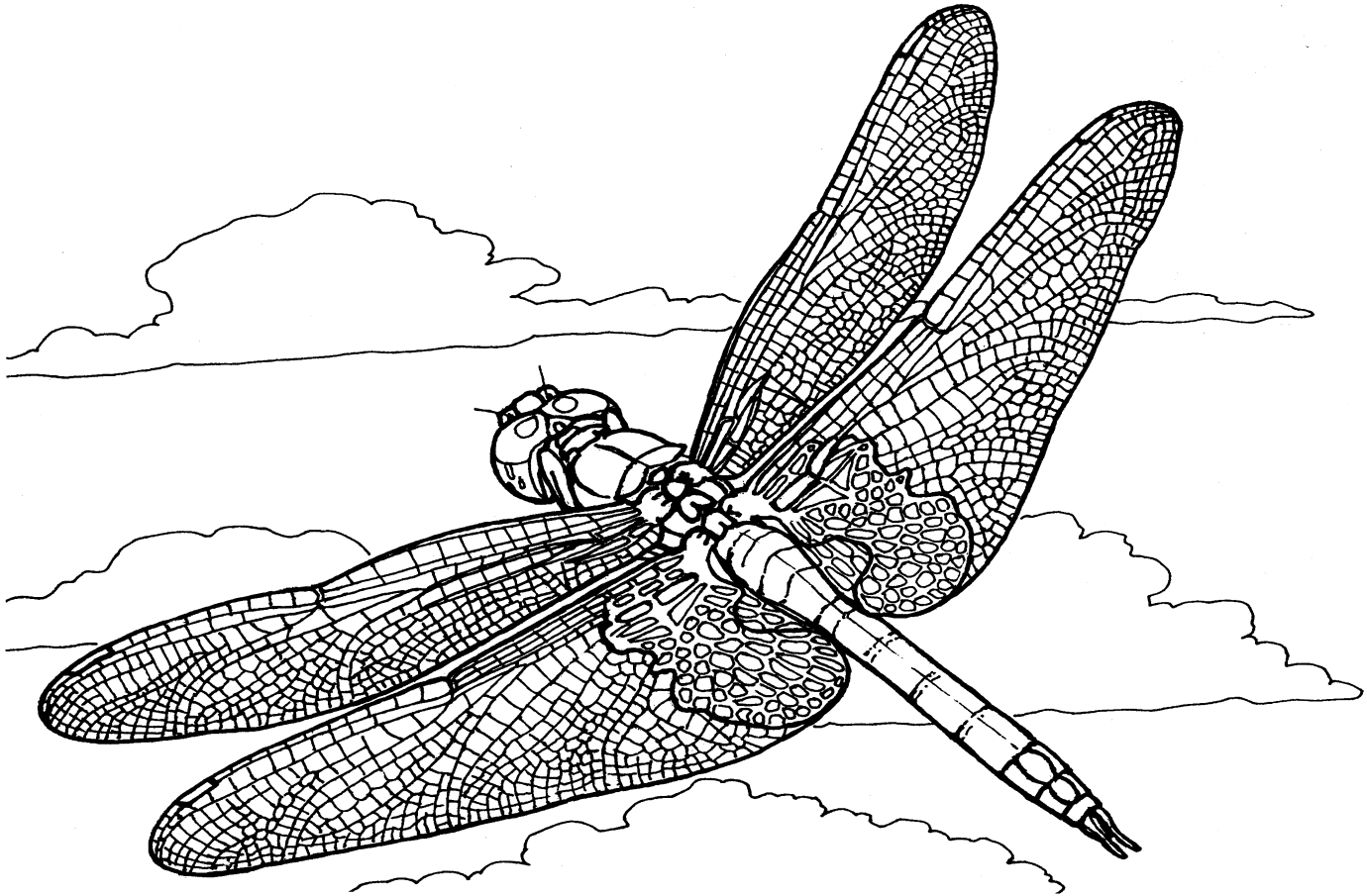


America's only pink colored dragonfly, the **Roseate Skimmer** (*Orthemis ferruginea*), prefers the warm areas of North America. It is found on still water in the southern parts of the United States and along the East Coast.

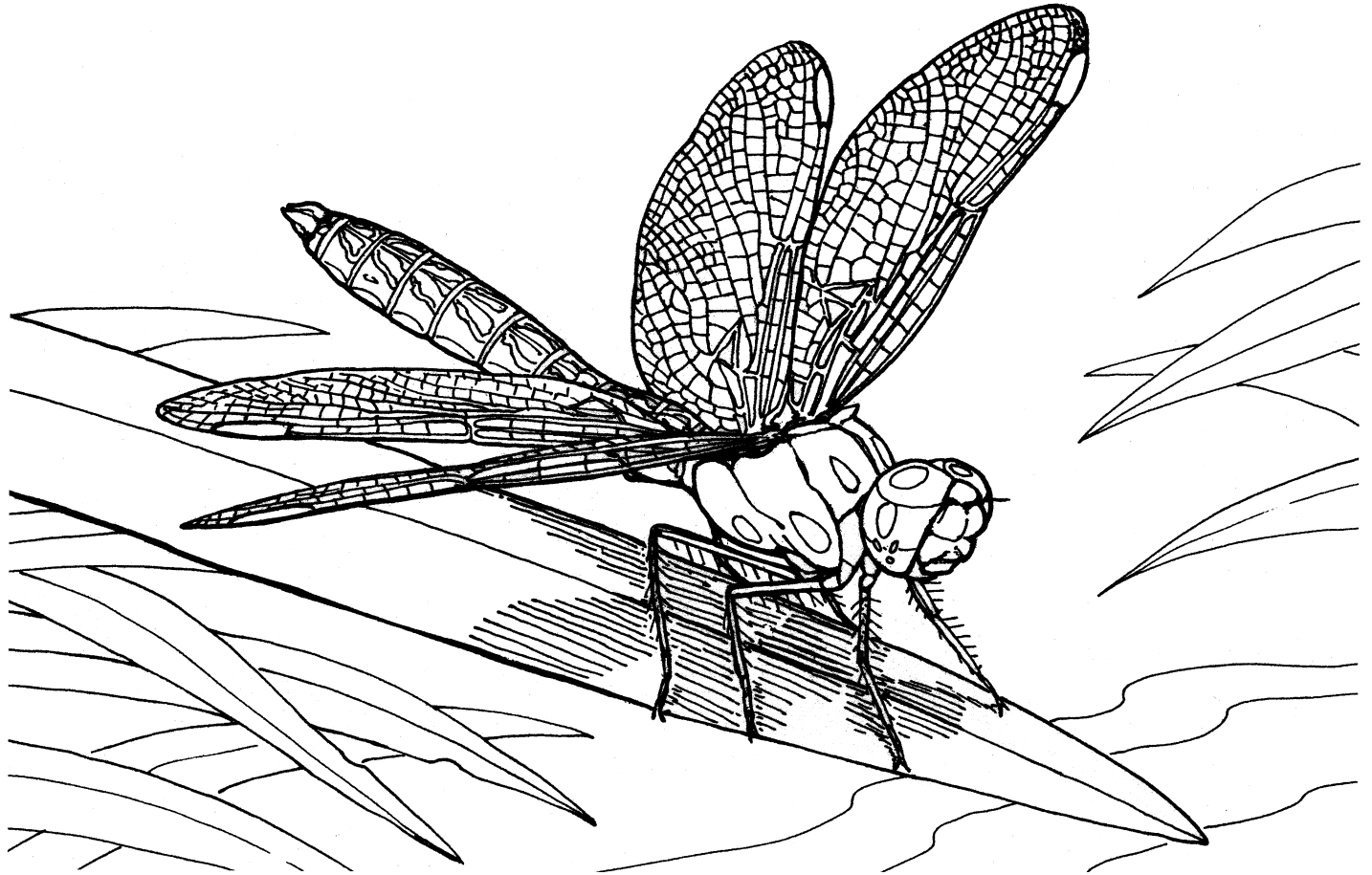
While the male shows pink and purple colors, the female is a rich, not drab, brown. This species is found as far south as Costa Rica. Seeing this species is often high on a dragonfly watcher's list.



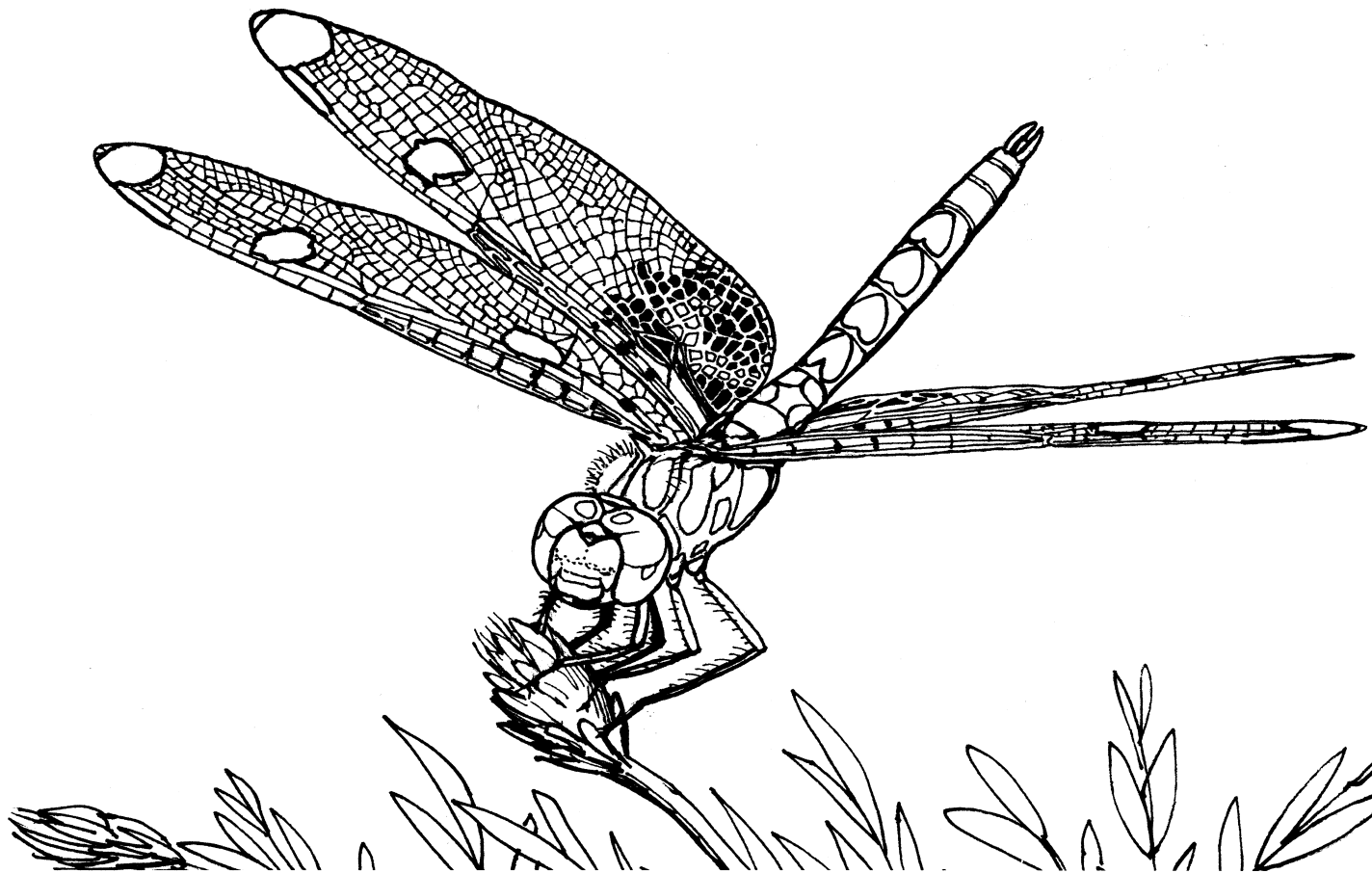
The **Wandering Glider** (*Pantala flavescens*) flies on all continents except Antarctica. It is the one truly worldwide species, and often can be found following weather fronts. It is a known migrant and has the longest migratory route of any insect. Another similar Glider that is found in North America is the **Spot-winged Glider** (*P. hymenaea*) which looks similar to the Wandering Glider but is browner and it has a dark spot on each hind wing near the base.



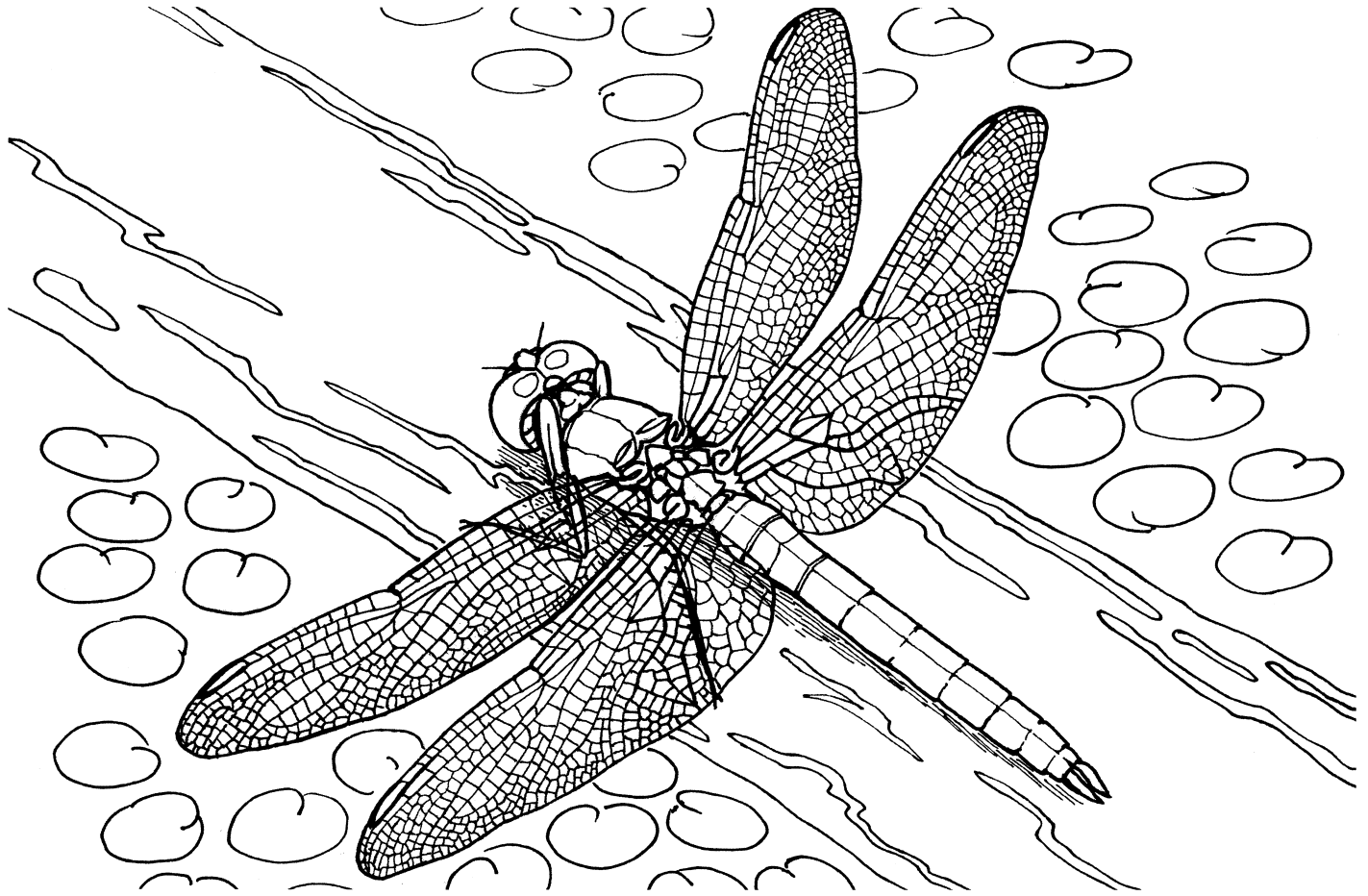
The **Red Saddlebags** (*Tramea onusta*) flies throughout much of the U.S. It can be found at many shallow still water sites. The Saddlebags are known to be migratory. The **Black Saddlebags** (*T. lacerata*) is another boldly marked member of this genus. In the eastern U.S., another red colored Saddlebags is **Carolina** (*T. carolina*). The **Striped Saddlebags** (*T. darwini*) also shows red and is named to honor the scientist Charles Darwin.



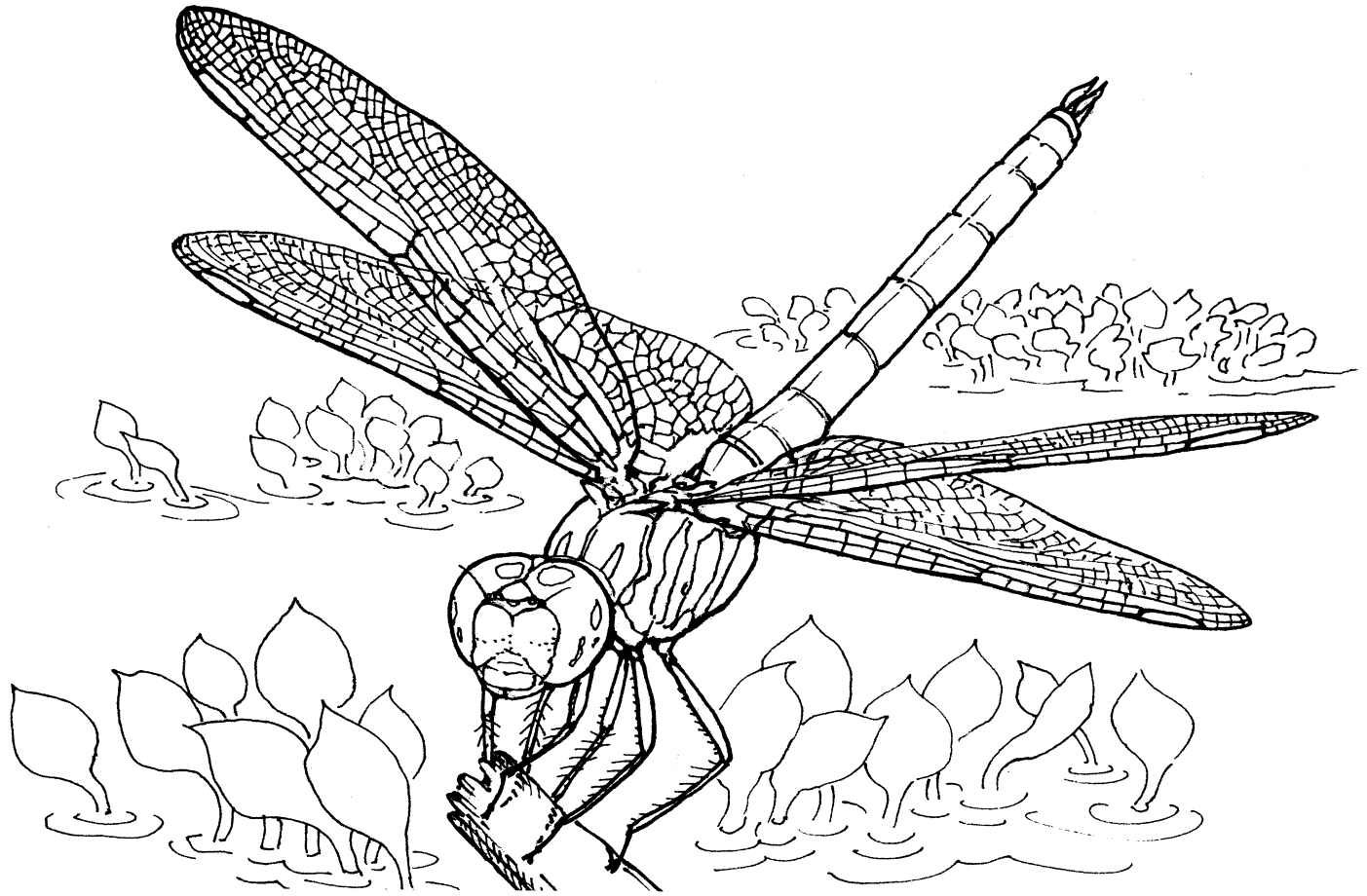
At less than one inch long, the **Eastern Amberwing** (*Perithemis tenera*) is one of the smallest dragonflies in North America. It mimics wasps by pumping its “tail” up and down. Other Amberwings include the **Mexican** (*P. intensa*) and **Slough** (*P. domitia*) Amberwings. All Amberwings occur in warm habitats on ponds, lakes and quiet back waters. If you find one, you’ll see that its shadow shows the wings as orange!



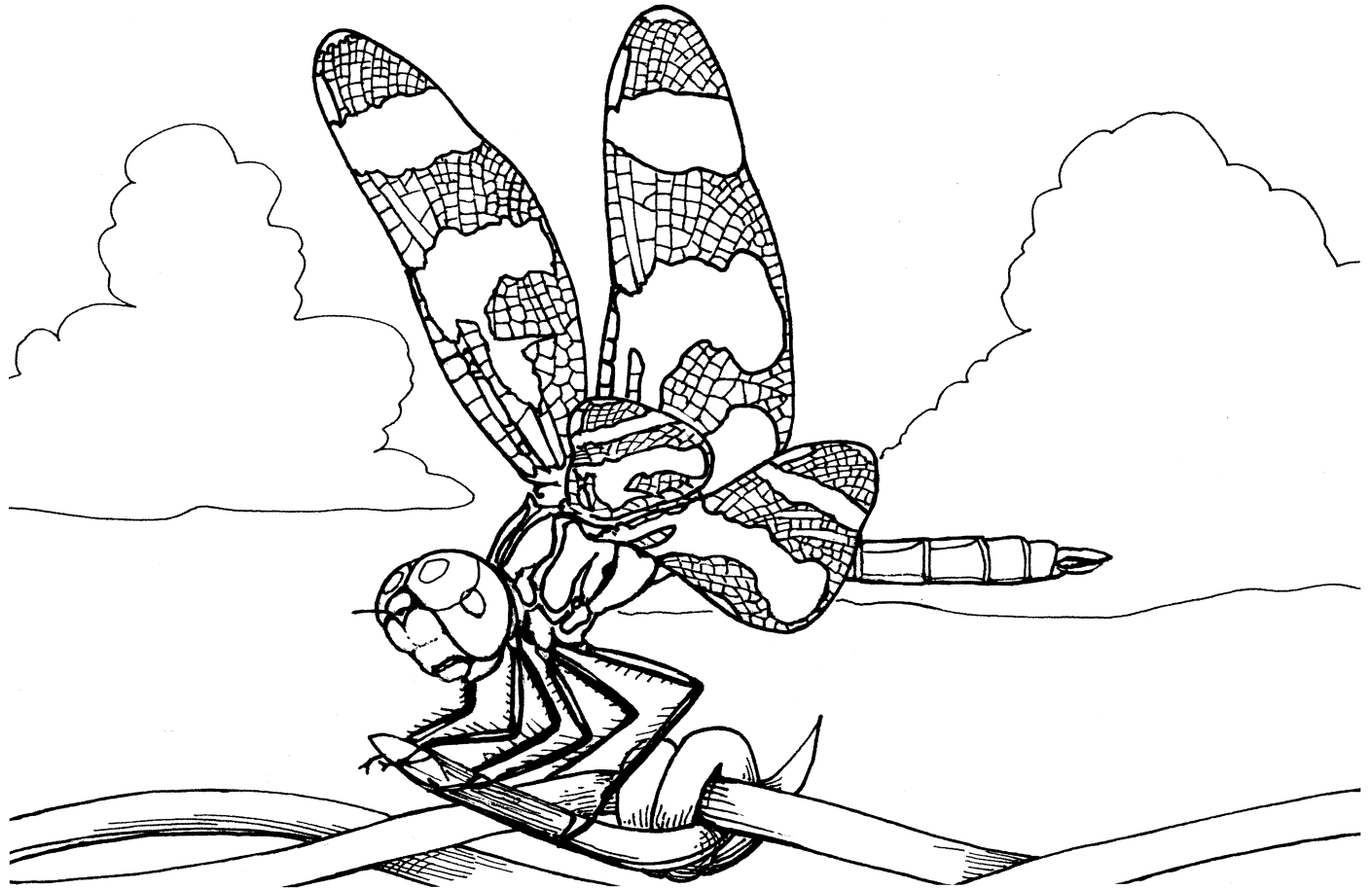
The **Calico Pennant** (*Celithemis elisa*) is found east of the Rocky Mountains in the U.S. When it is young, the heart shaped marks atop its abdomen are yellow, but as it matures these turn red. Which way will you color it? Perhaps this species should be called the Valentine Pennant! A beautiful species, it is found on ponds that have shallow edges with plants that emerge from the water.



The **Eastern Pondhawk** (*Erythemis simplicicollis*) flies throughout the eastern U.S. In the West, the very similar **Western Pondhawk** (*E. collocata*) flies. Both like to perch with their wings down and forward but the Eastern Pondhawk also does an aggressive circling duel with other male pondhawks, holding its white appendages bent straight up. The western Pondhawk doesn't do this with its black appendages.

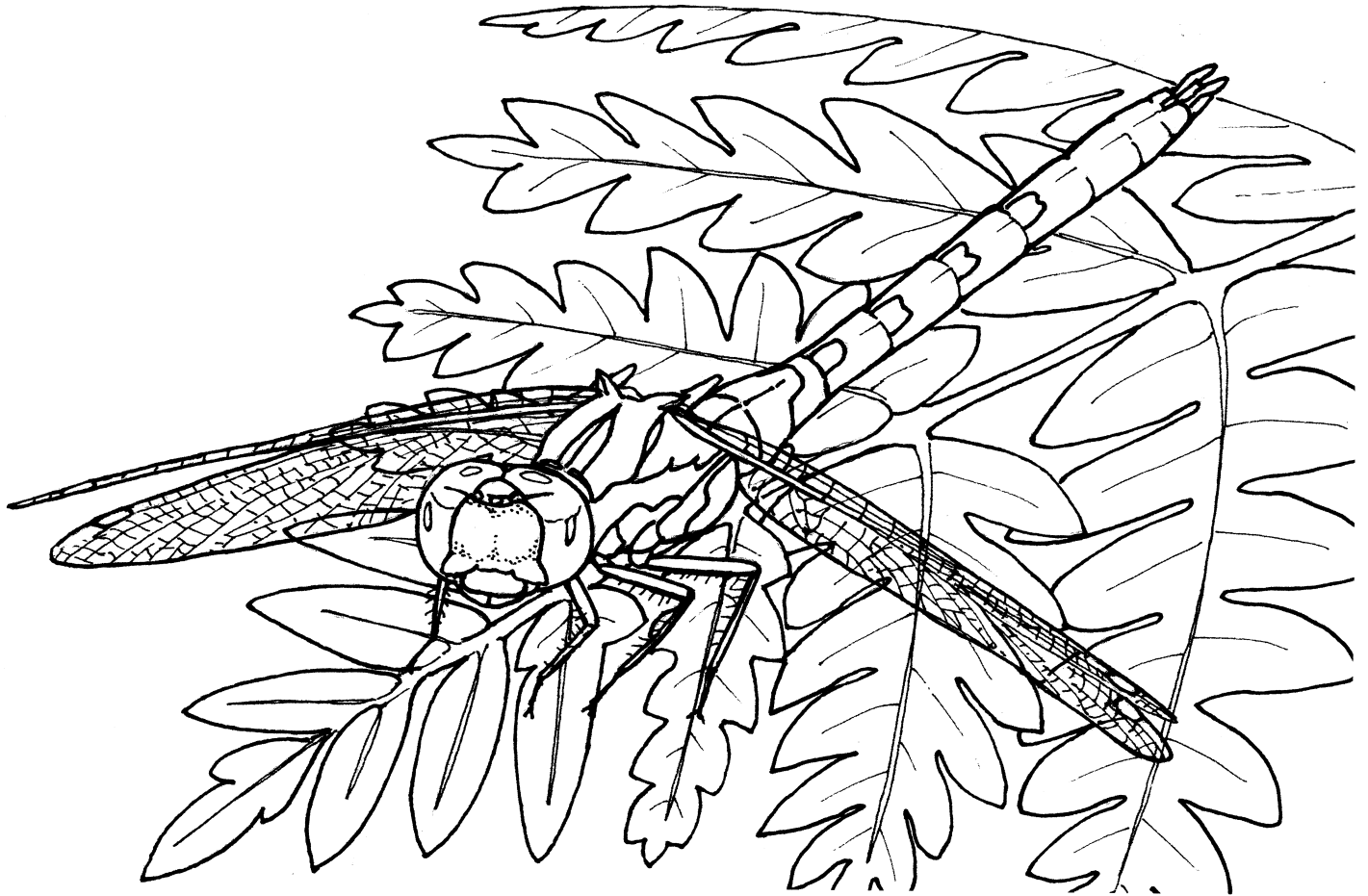


The **Blue Dasher** (*Pachydiplax longipennis*) flies throughout America. In the West, Blue Dashers have clear wings, but in the East their wings can be brown at the base. Very mature males may turn dark at the end of the abdomen. Dashers can be found at many still waters. With its black nose-like spot and white face, it always seems cute. Females makings are “plaid” but they have the matching white face and black nose-like spot.

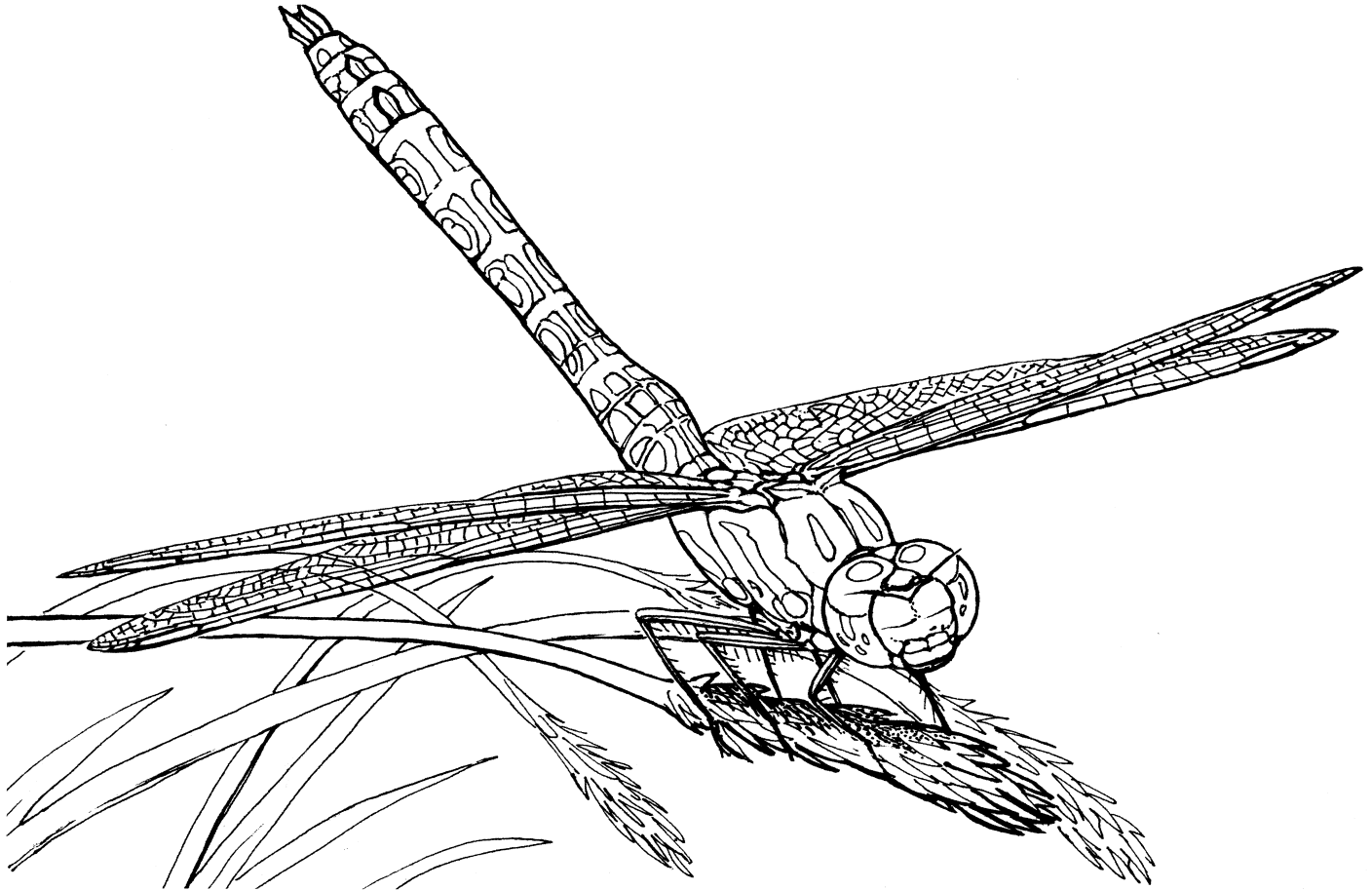


The beautiful **Halloween Pennant** (*Celithemis eponina*) is found east of the Rocky Mountains. It occurs at still waters and is aptly named for the orange and dark brown colors on its wings. This one looks like he's about to say "Trick or treat!" At only an inch and a half long, it won't be able to carry too many treats!

Like many other dragonfly species, it likes barbed-wire as a perch just fine.

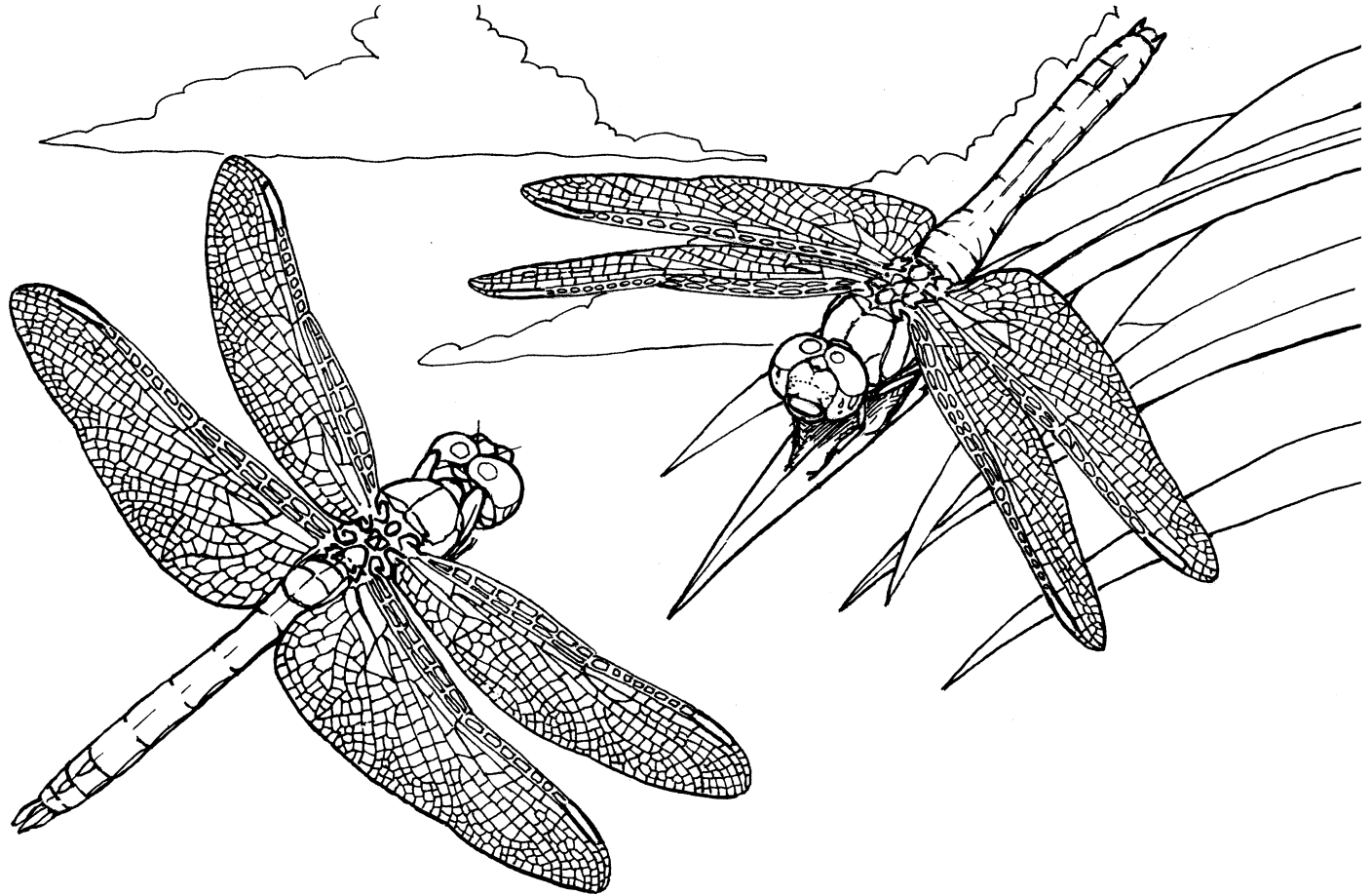


The **Hudsonian Whiteface** (*Leucorrhinia hudsonica*) is found in Canada and the northern states in the U.S. It can be seen flying at mountain lakes as can the related **Dot-tailed** (*L. intacta*), **Crimson-ringed** (*L. glacialis*), **Boreal** (*L. borealis*) and **Belted Whiteface** (*L. proxima*). All are named for their very bright white colored faces.

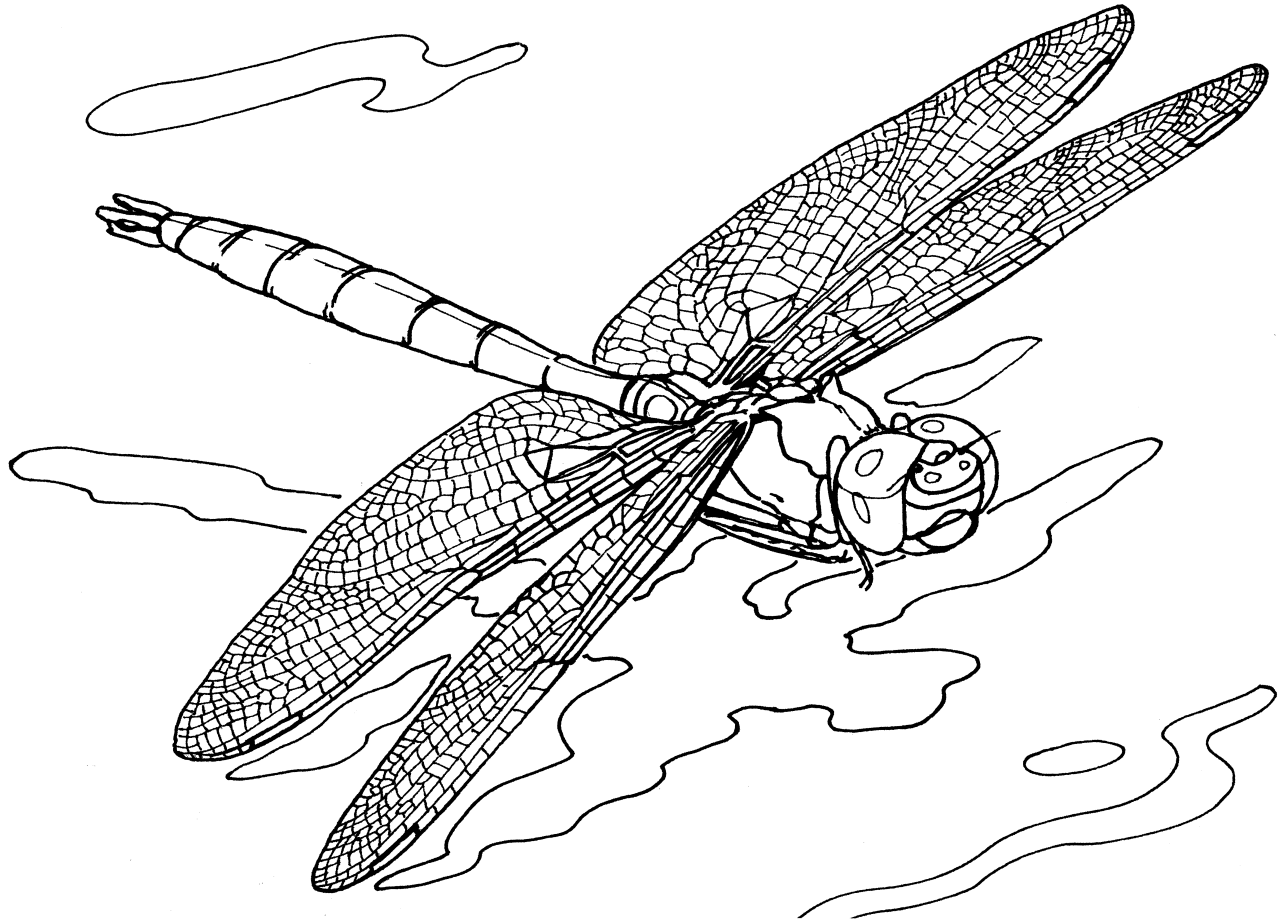


The **Variegated Meadowhawk** (*Sympetrum corruptum*) is very common in the western states, southwest Canada, and south of the border. Often found in the fall and even well into the winter months, it is now known to be able to survive a winter by migrating. Several dragonfly species are known to migrate.

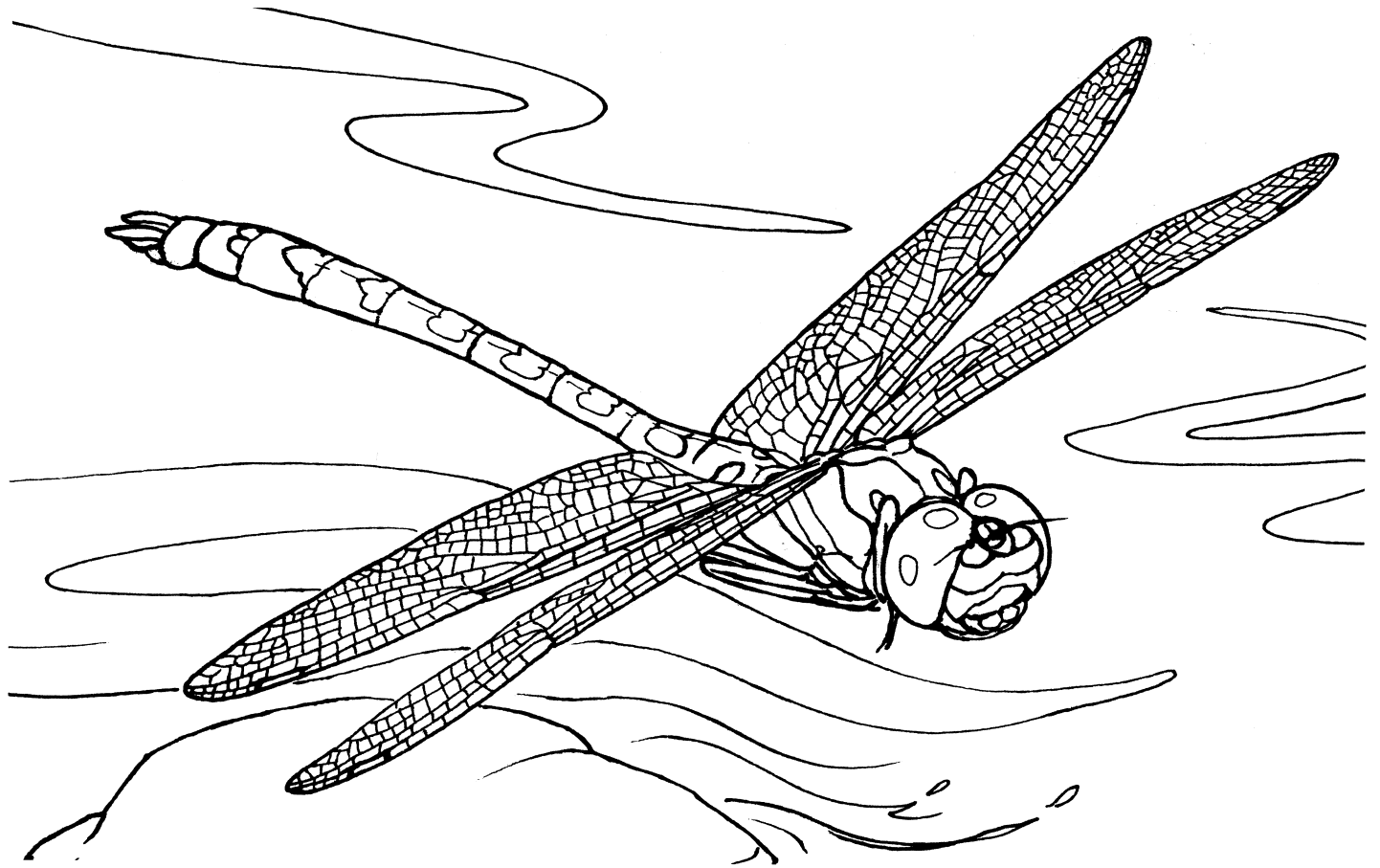
Dragonfly migration is not yet well studied. Maybe you can help.



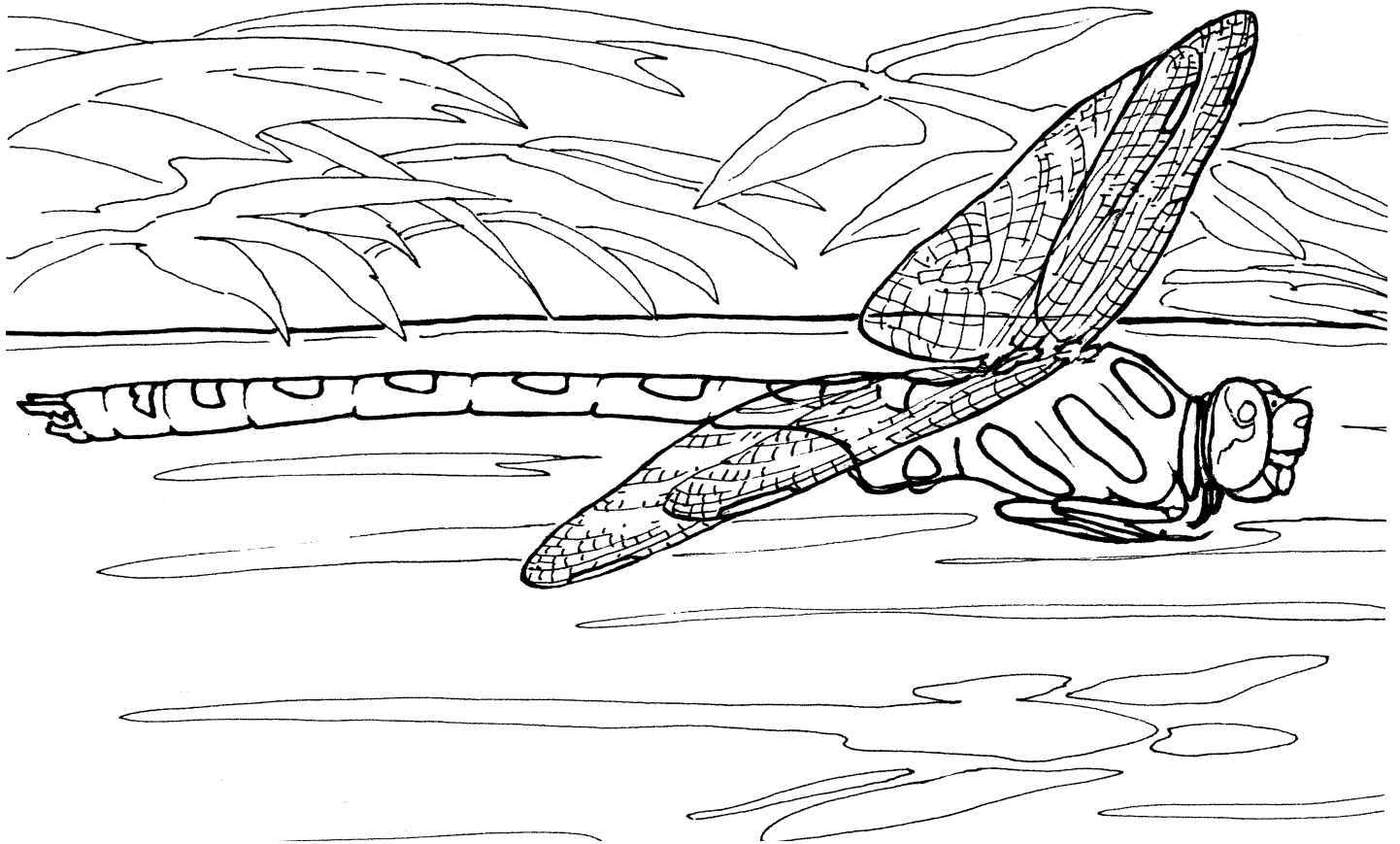
The **Saffron-winged Meadowhawk** (*Sympetrum costiferum*) is found throughout the North. The female and the young male are a beautiful saffron yellow color, while the mature male is dark red. Like other meadowhawks, it likes to perch with its wings held down and forward. It is found in the mountains on ponds, lakes, marshes, bogs and in meadows.



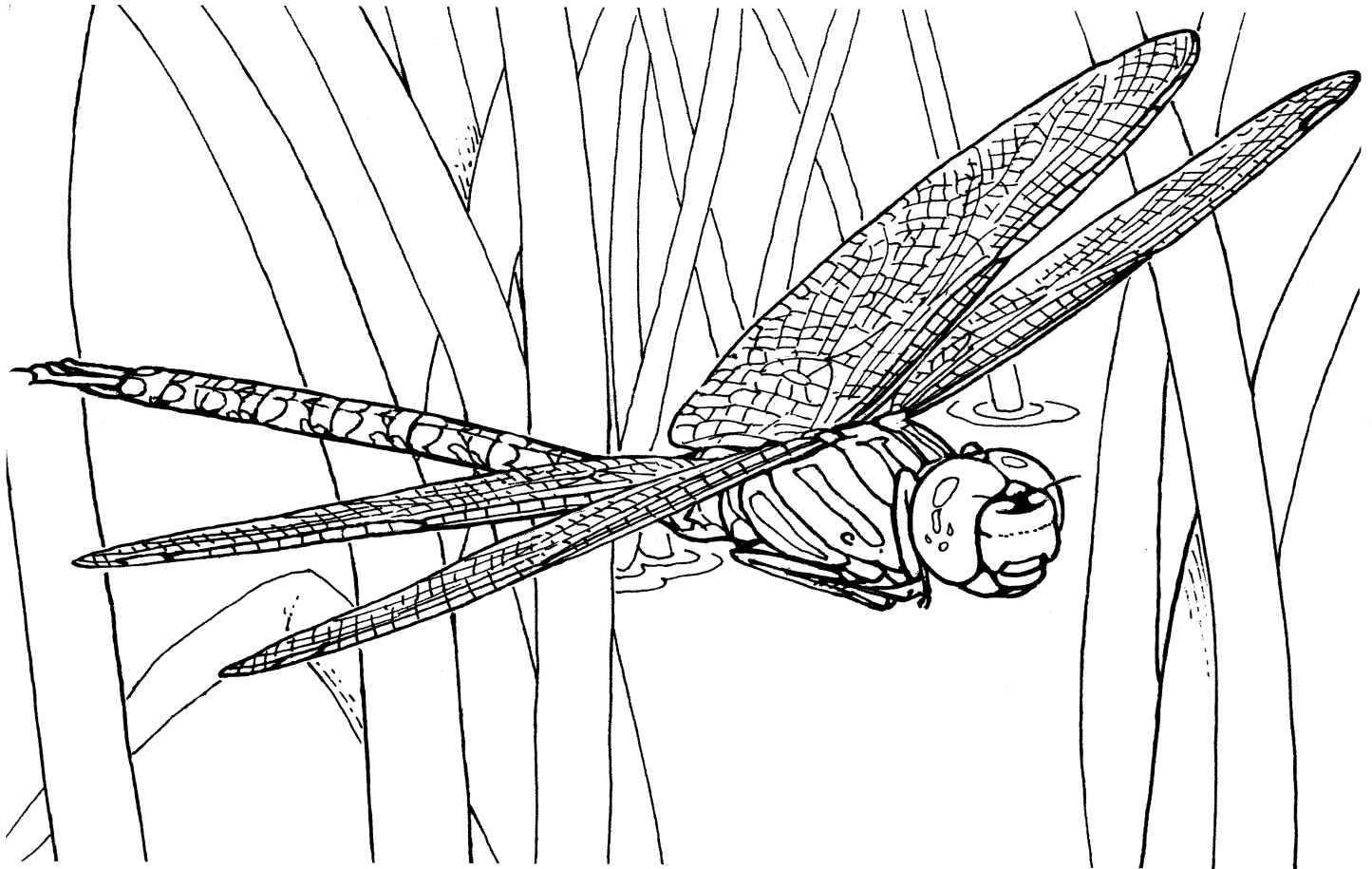
The **American Emerald** (*Cordulia shurtleffii*) is found on ponds and lakes in the northern U.S. and Canada, usually at higher elevations. Emeralds have brilliant emerald green eyes and spindle shaped bodies. There are many similar species of Emeralds, and they are all very fast fliers. In one genus, the Basketttails, the slightly less colorful females lay their eggs in strings of jelly, attaching the strings to floating plants.



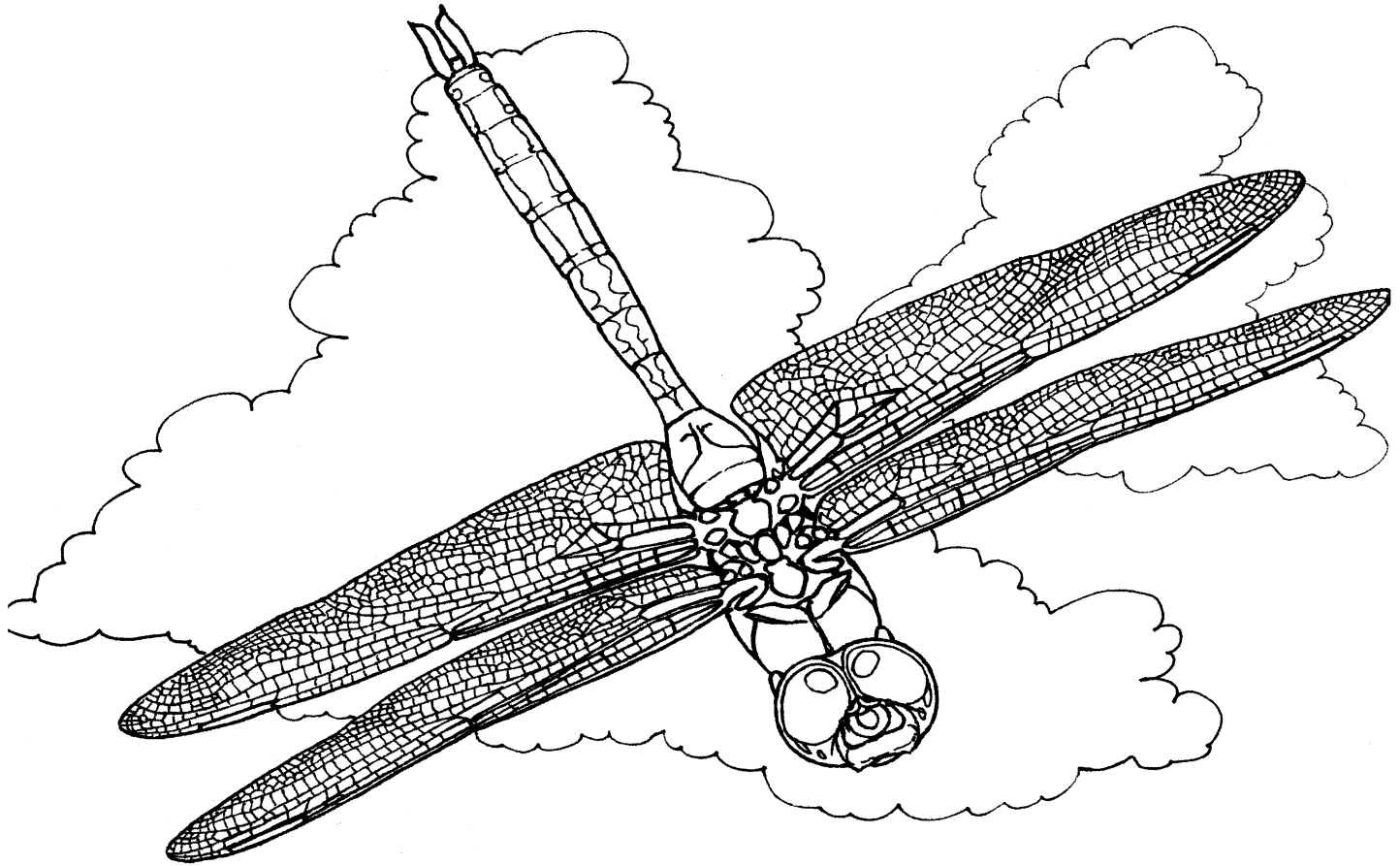
The **Western River Cruiser** (*Macromia magnifica*) is another boldly marked dragonfly. As the name suggests, Cruiser habitat is rivers and large creeks, where the water is moving, not still. It is a species that flies up and down the shoreline, claiming that area as its territory.



Like all Spiketails, the **Pacific Spiketail (*Cordulegaster dorsalis*)** is boldly marked in black and yellow. Spiketails are named because the females have a long spike at the end of their body which they use to place their eggs into the muddy edges of small streams. The Pacific Spiketail flies in the West and several other species of Spiketails fly in the East. All are boldly patterned with black or brown, and yellow.



There are many types of Darners. Most of them are very similar looking. This is the **Blue-eyed Darner** (*Rhionaeschna multicolor*). The Blue-eyed is found only west of the Mississippi River. Other species in the genus *Rhionaeschna* occur from southern Canada south to Argentina and Chile. Most of them live in South America. All are strong fliers and seldom perch. People used to think of them as darning-needle shaped.

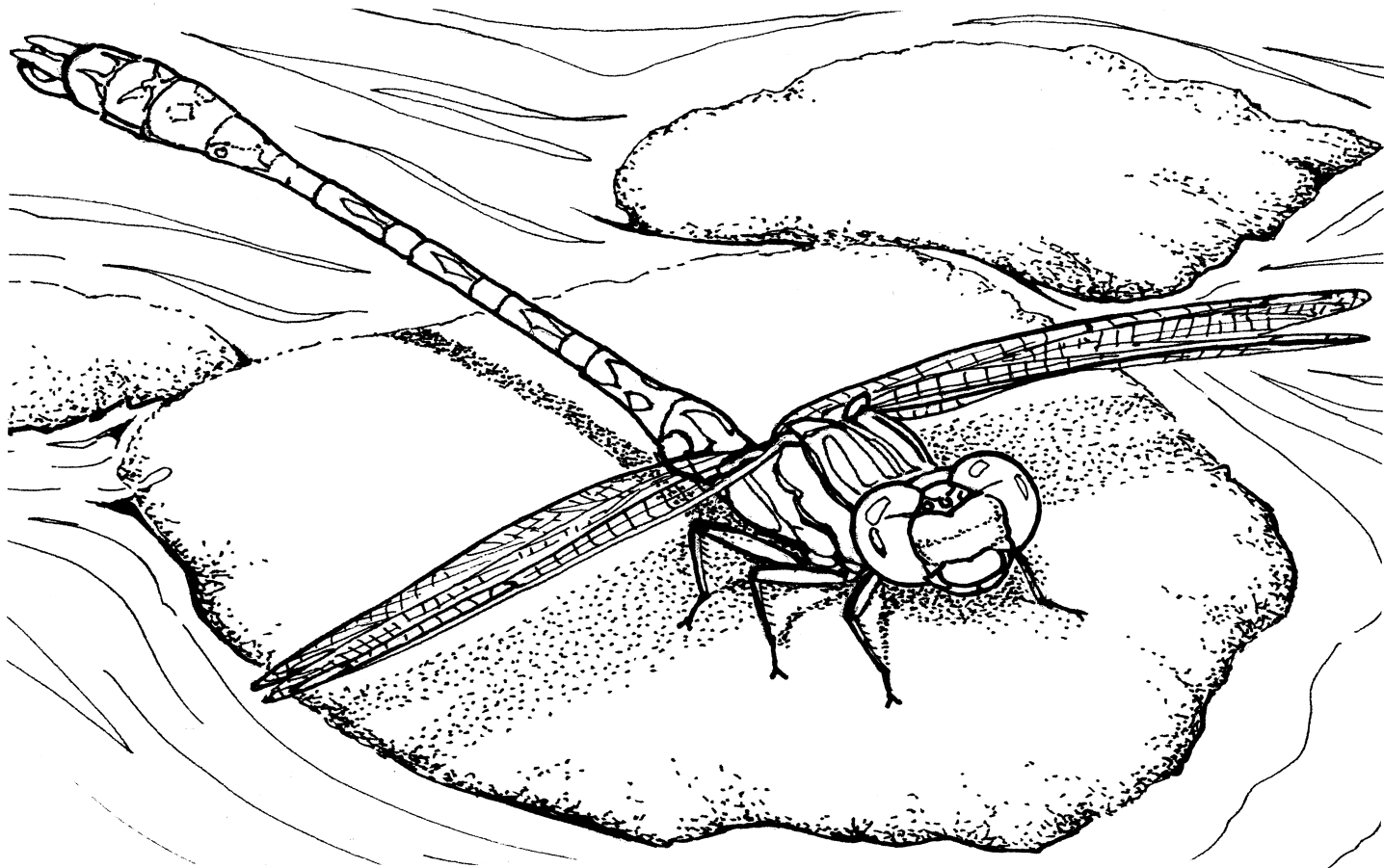


The **Common Green Darner** (*Anax junius*) flies throughout the U.S. and southern Canada. It is found at all still or slow waters and is known to be a migrant. Its scientific name means “Lord and King of June.” Unlike most other darners, Green Darners sometimes lay their eggs while in tandem (one in front of the other).

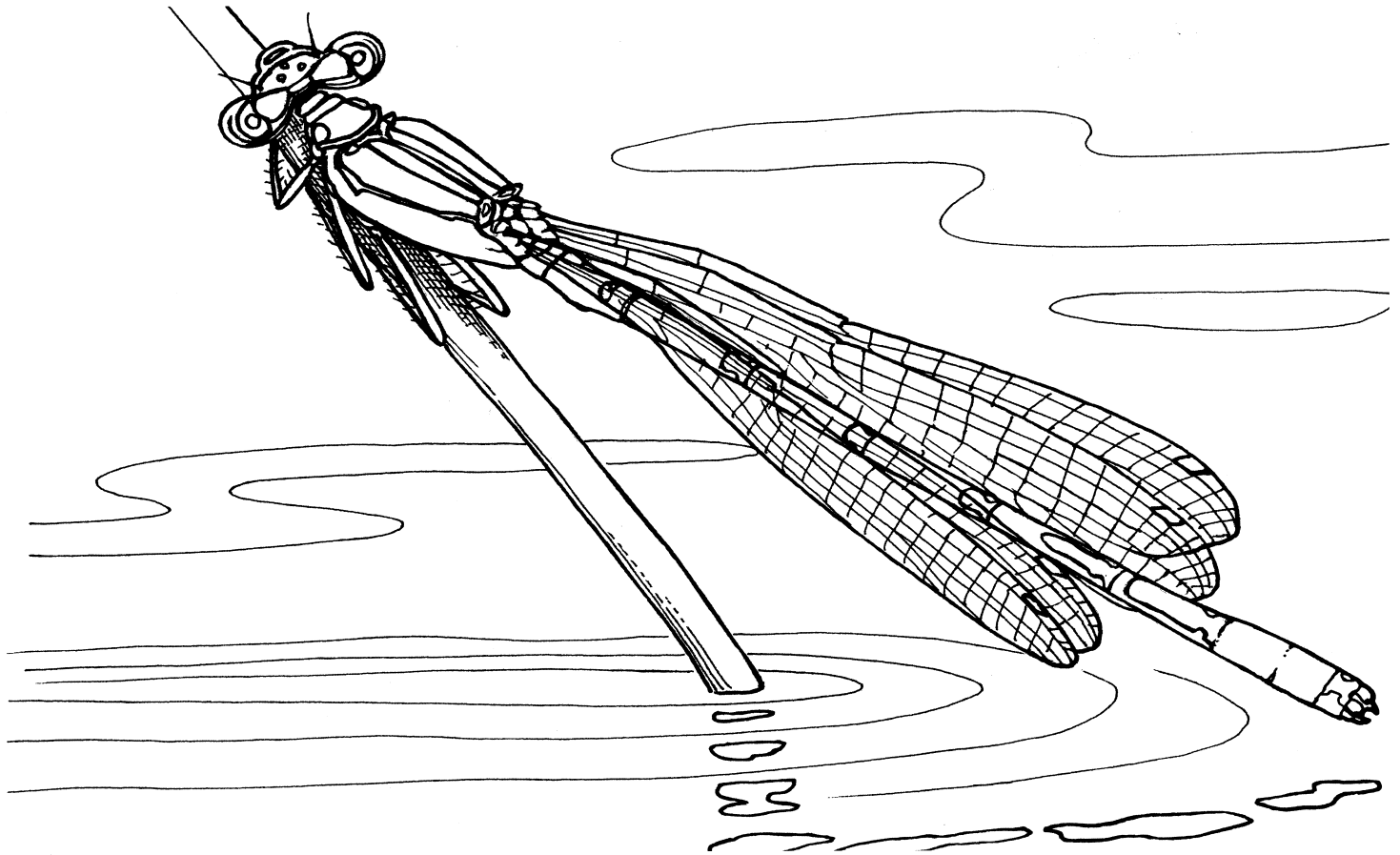
Their nymphs look like little dragons, clambering about on submerged vegetation to ambush prey.



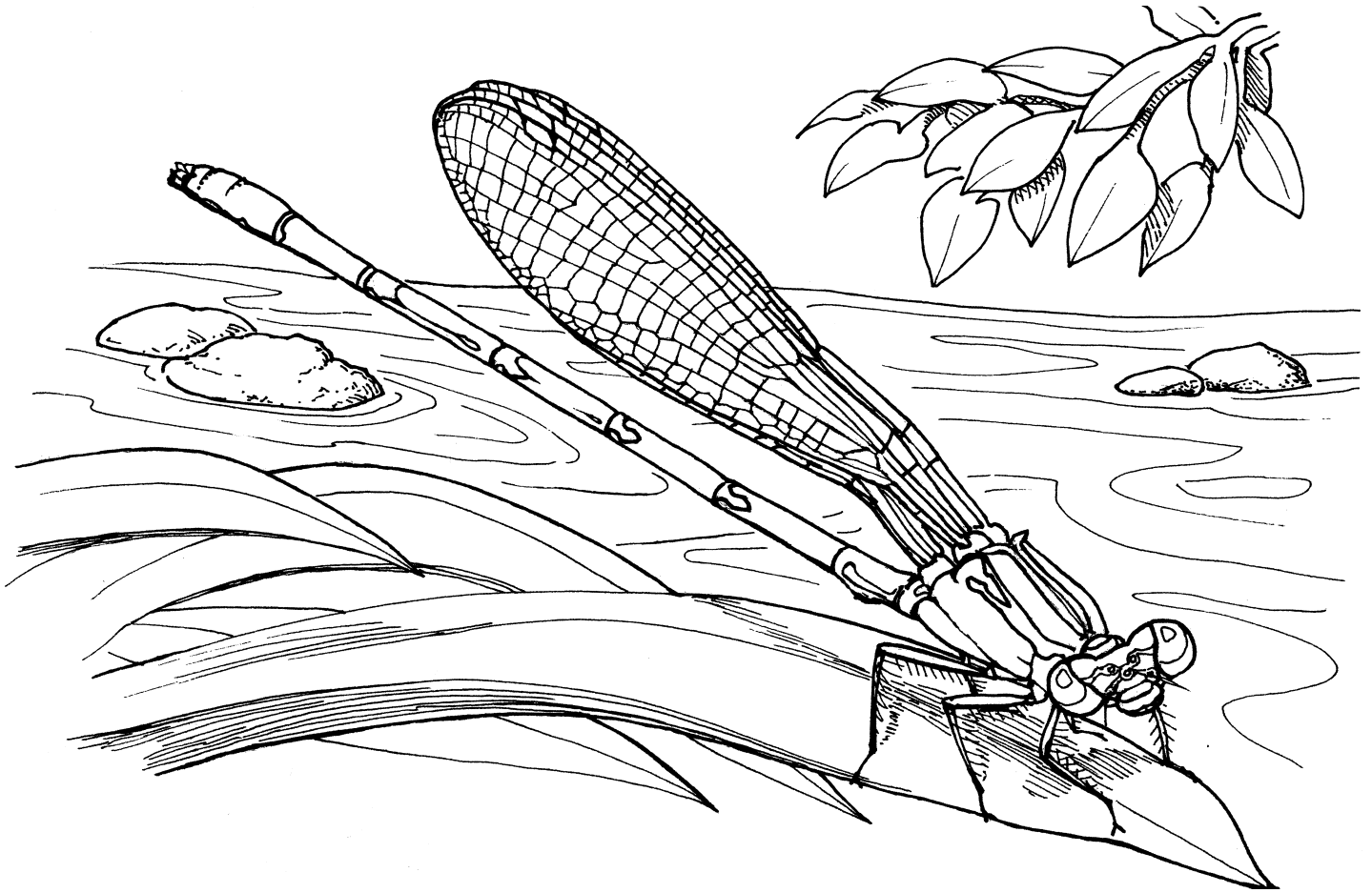
Male Clubtails, like this **Sinuous Snaketail (*Ophiogomphus occidentis*)**, have bodies with many curves. Clubtails usually live along rivers and their nymph dig into the silt at the bottom, waiting to ambush prey. Most Clubtails have brown, yellow and/or green earth-tone colors which helps them hide as they perch on rocks at the river edge, claiming a territory. All clubtails have widely separated, but large, eyes.



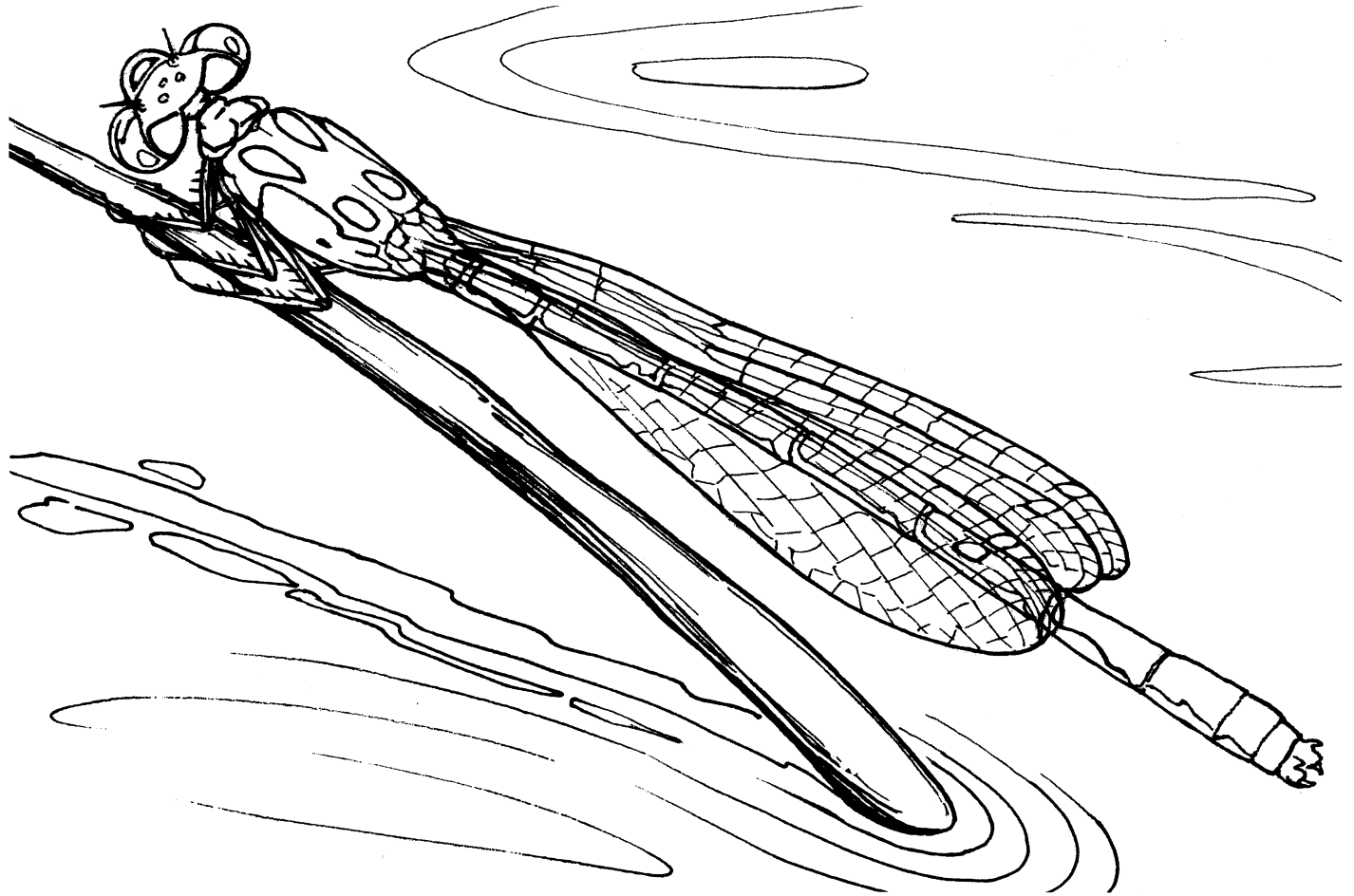
The **White-belted Ringtail** (*Erpetogomphus compositus*) is another species in the Clubtail family. It looks like a composite of several other dragonflies with its pale baby-blue eyes, bold tiger-striped thorax, thin-ringed abdomen and flat golden “tail”. The White-belted lives in the West; in the East, the similar **Eastern Ringtail** (*E. designatus*) flies. In Mexico, there are 19 species of Ringails, all very similarly marked.



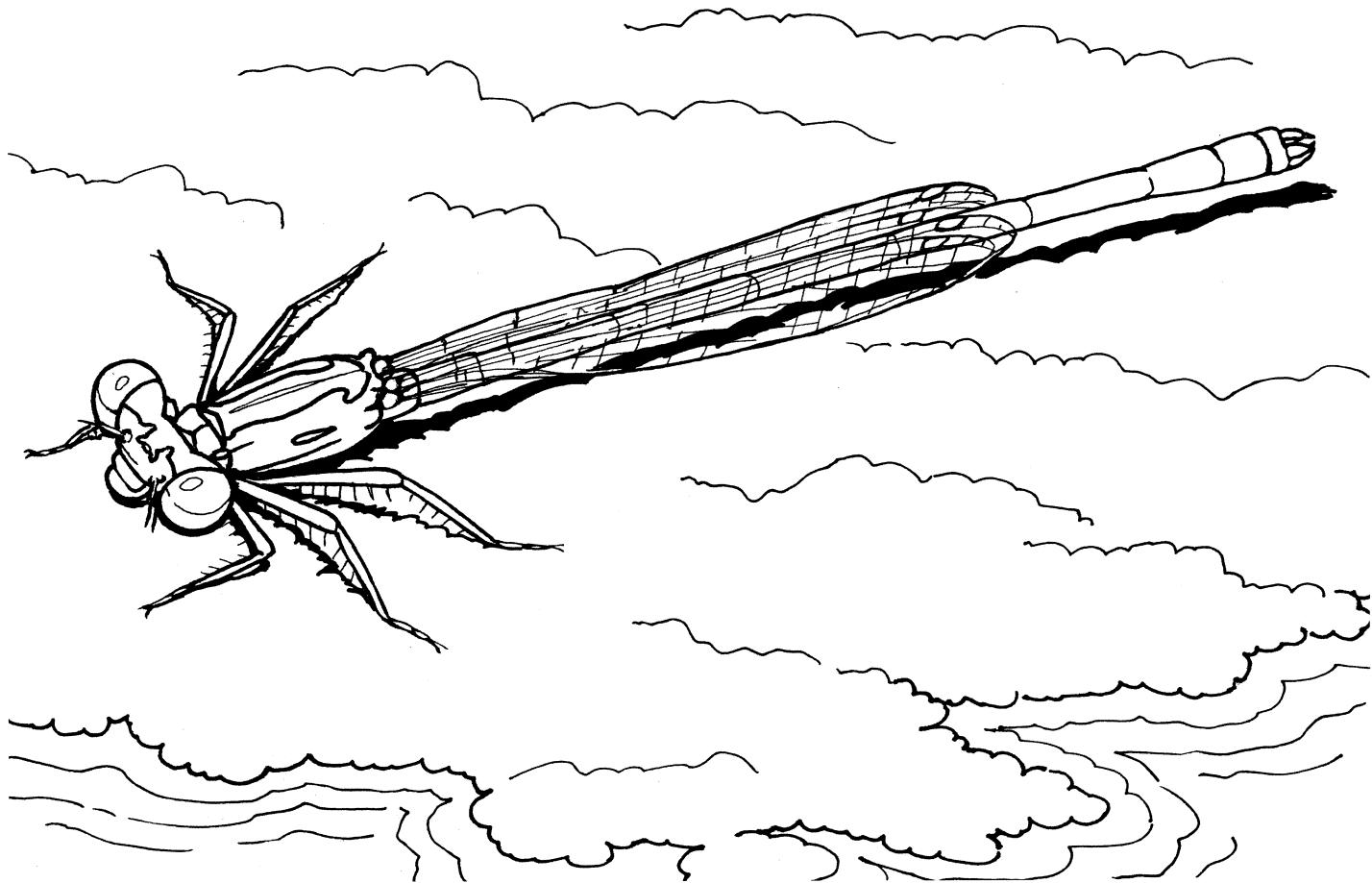
The **Boreal Bluet** (*Enallagma boreale*) is a type of Damselfly in the Pond Damselfly family. It is found throughout the U.S. The Pond Damselfly group includes Bluets, Dancers, Forktails and others. Pond Damselflies are mostly found on ponds, but also can be found on lakes and even in ditches. Many of them are mostly blue and black, but a few have other colors such as orange, red or purple. Bluets hold their wings alongside the body.



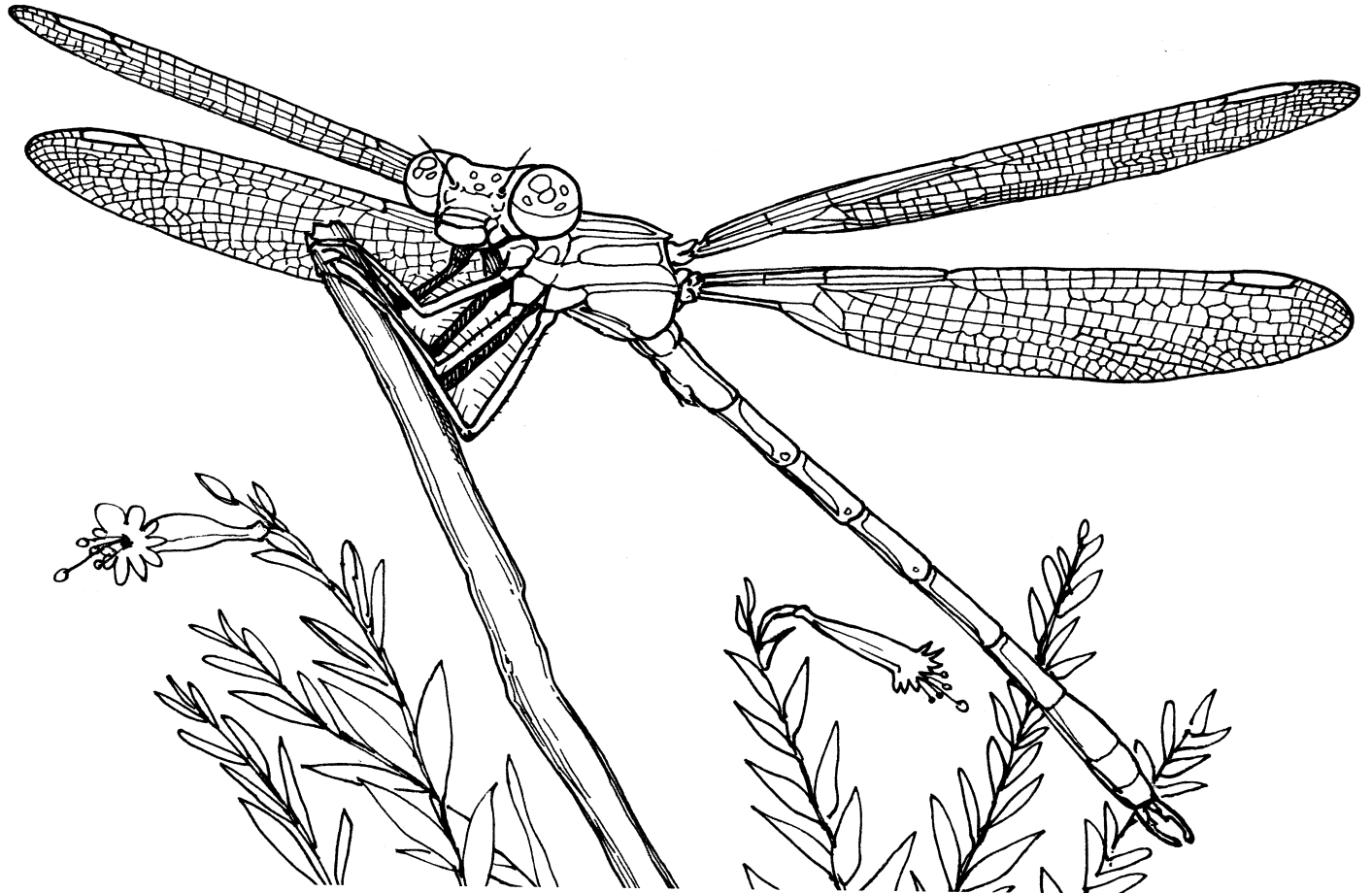
The **Violet Dancer** (*Argia fumipennis*) is found in much of the U.S. It has a forked stripe on the side of its thorax. Its main color is violet, even on most of its “blue tail.” Like most Dancers, it prefers the moving waters of rivers and streams. All dancers hold their wings closed, sail-like, above their bodies.



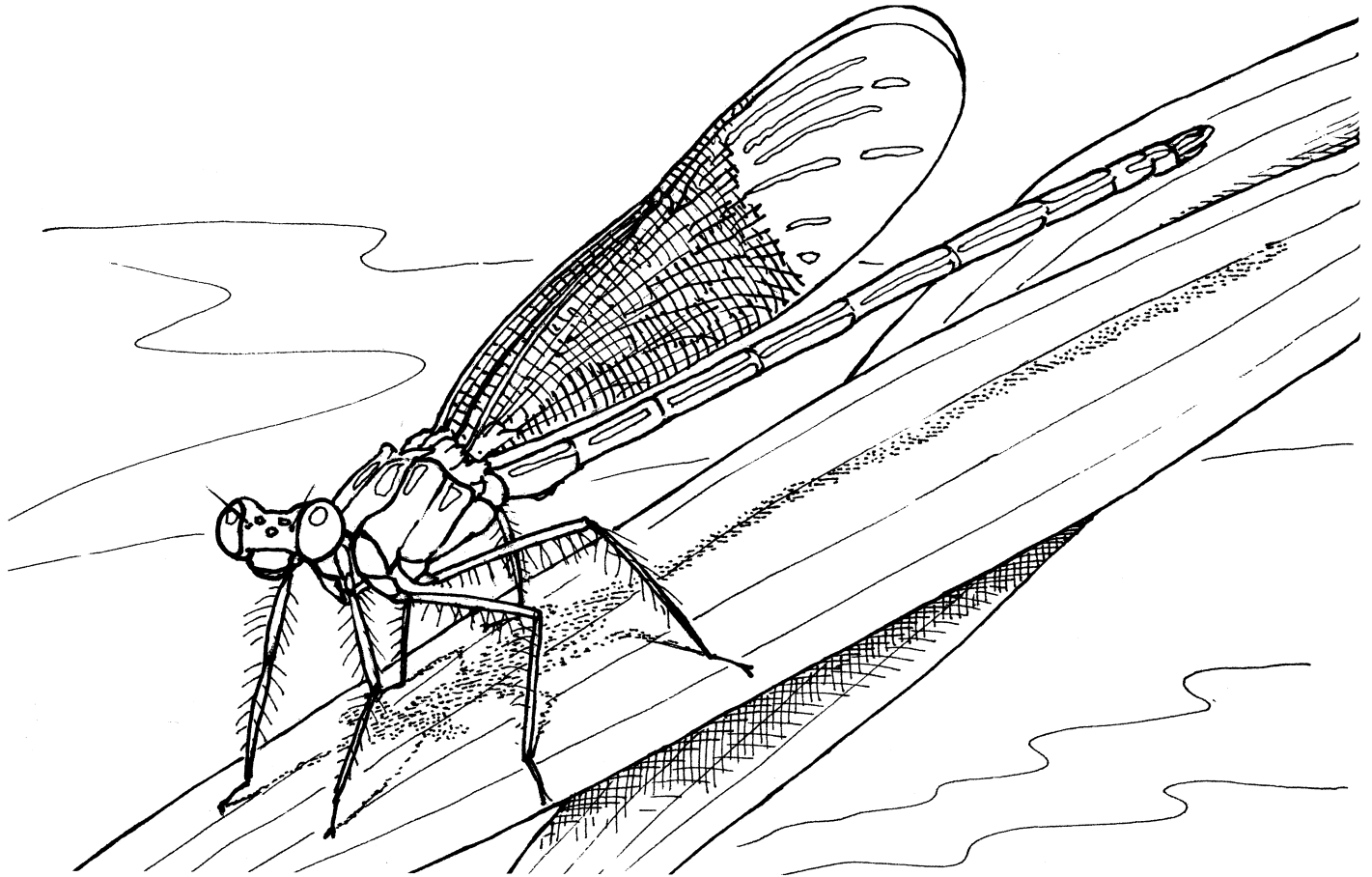
The beautiful **Painted Damsel** (*Hesperagrion heterodoxum*) is found only in the Southwest. It flies around creeks and streams in Texas, Colorado, New Mexico and Arizona. Many photographers are willing to travel long distances to get a photo of one. The mature male has black, red, yellow and blue markings.



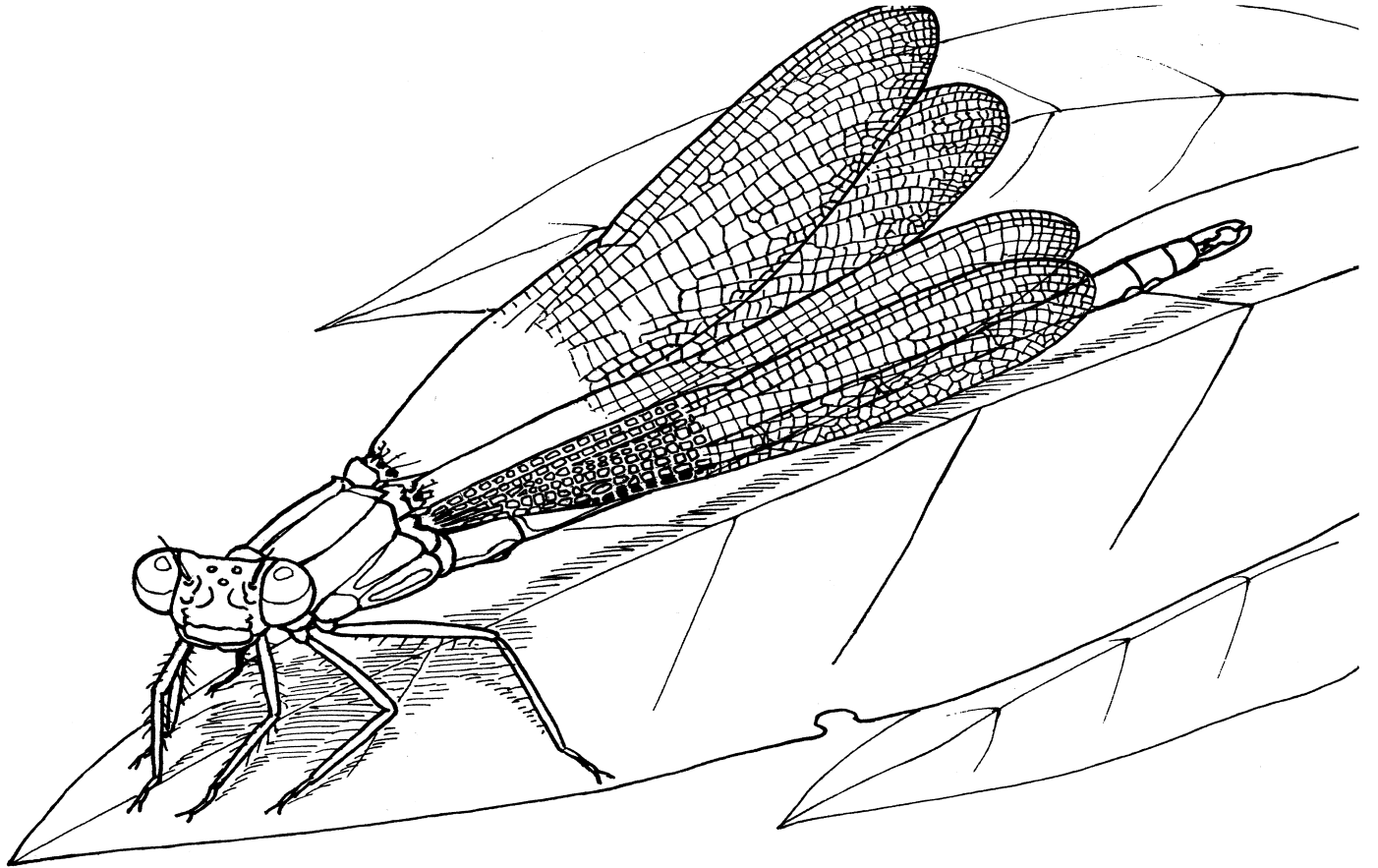
The **Desert Firetail** (*Telebasis salva*) lives throughout the greater Southwest region, including California and Mexico. It prefers to live in dry areas but isn't only found in deserts. This species often perches on the mats of algae that float on shallow ponds. The Duckweed Firetail (*T. byersi*), also red in color, lives in the eastern USA.



The **Great Spreadwing** (*Archilestes grandis*), a member of the Spreadwing family, is found in small numbers across the U.S and Mexico. At two inches long, this is North America's largest damselfly. It can be found in the hillsides where there are creeks and streams. The female lays her eggs in tree branches above creek beds even if the creeks are dry at the time. The eggs are washed into the creek when it first rains.

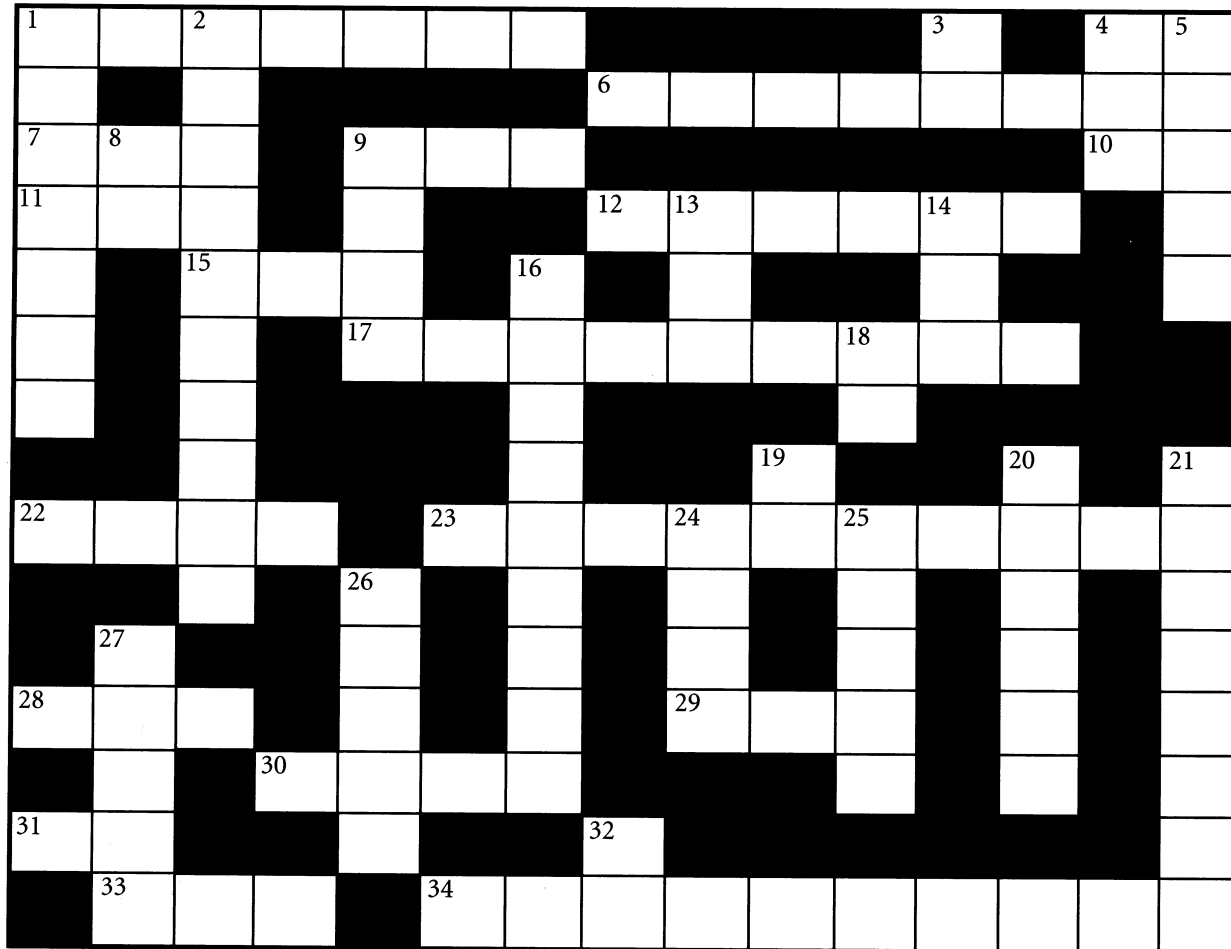


The **River Jewelwing** (*Calopteryx aequabilis*) is a gorgeous damselfly. The beautiful green and blue glittering colors on the body change when you look at it from different angles. They have long spindly legs and the males dance in front of the females in a beautiful courtship display. The nymph climb about in willow roots in streams. There are several species of Jewelwings in North America, some with more black in the wings.



The **American Rubyspot** (*Hetaerina americana*), another member of the Jewelwings, is found throughout the U.S. Named for the jewel-like ruby-red color at the base of its wings, it breeds in moving waters such as rivers and creeks. The female may lay her eggs while underwater, clinging to plants. Other species in the Jewelwing family do this also. There are several members of the Rubyspot genus, all with red in their wings.

Dragonfly Crossword Puzzle: *Answers on last page



Dragonfly Crossword Puzzle Hints: *Answers on last page

Across:

Down:

1. Dragonfly nymph live in the water, therefore they are _____.
4. The exuvia is the exoskeleton __ a dragonfly.
6. A _____ has a clubbed look to its abdomen.
7. Where ___ the dragonfly lay her eggs yesterday morning?
9. A ___ is an animal with a curly tail; we eat it as bacon.
10. Singing: do, re, mi, fa , so, __ , ti, do
11. How you spell the number 1 using letters: _____.
12. A _____ is a blue and black damselfly that holds its wings above its body.
15. A dragonfly has legs, but even so, it cannot _____.
17. A _____ holds its wings out flat when at rest.
22. Spreadwings lay eggs in the _____ of a plant.
23. A _____ holds it wings down and forward.
28. Dragonflies prefer ___ weather, which is the opposite of COLD weather.
29. A Clubtail nymph will ___ into the silt and hide there to ambush its prey.
30. Pruinosity is a _____ coating on a dragonfly.
31. A nymph will grow up to __ a flying dragonfly.
33. A Flame Skimmer is this color on its body, head, legs, eyes, face and wing veins: _____.
34. A _____ has large colored patches on the base of its wings.

1. The _____ is the 3rd part of a dragonfly's body.
2. A dragonfly nymph lives _____.
3. A dragonfly catches a mosquito, and then eats ____.
4. An ___ spill in a river or lake would pollute the dragonfly nymph's water. This could kill it.
5. A _____ Skimmer has a red head, body and eyes.
8. The dragonfly female lays her eggs __ the water.
9. A dragonfly nymph might live in a _____.
13. Dragonflies were on the Earth long _____, even before the dinosaurs were here!
14. An ___ might live in a river and eat a dragonfly nymph for its meal.
16. A _____ has widely separated eyes.
18. Singing: do, re, mi, __ , so, la , ti, do
19. A female dragonfly must __ to the water to lay eggs.
20. A dragonfly family that people once thought looked like darning needles: _____.
21. These dragonflies skim over the water: _____.
24. In the winter, most flying dragonflies are _____.
25. A dragonfly has four _____ and uses them to fly.
26. The _____ Spreadwing is the largest damselfly in North America.
27. Dragonflies can fly forwards, backwards, and can even _____.
32. ___ is short for the word "advertisement."

Dragonfly WORD Puzzle 2 *Answers on last page Unscramble these dragonfly related words.

AUXIVE		YPMNH	
MYLDEASLF		GEEMER	
MONDEBA		LEBUT	
XHOART		ARCEND	
AFRYOGDLN		RISCUER	
EIRVR		NERDRA	
MERSIKM		RYPE	
EDAH		SWING	

Dragonfly Riddle *Answer on last page

1. What has 10 wheels and flies?
