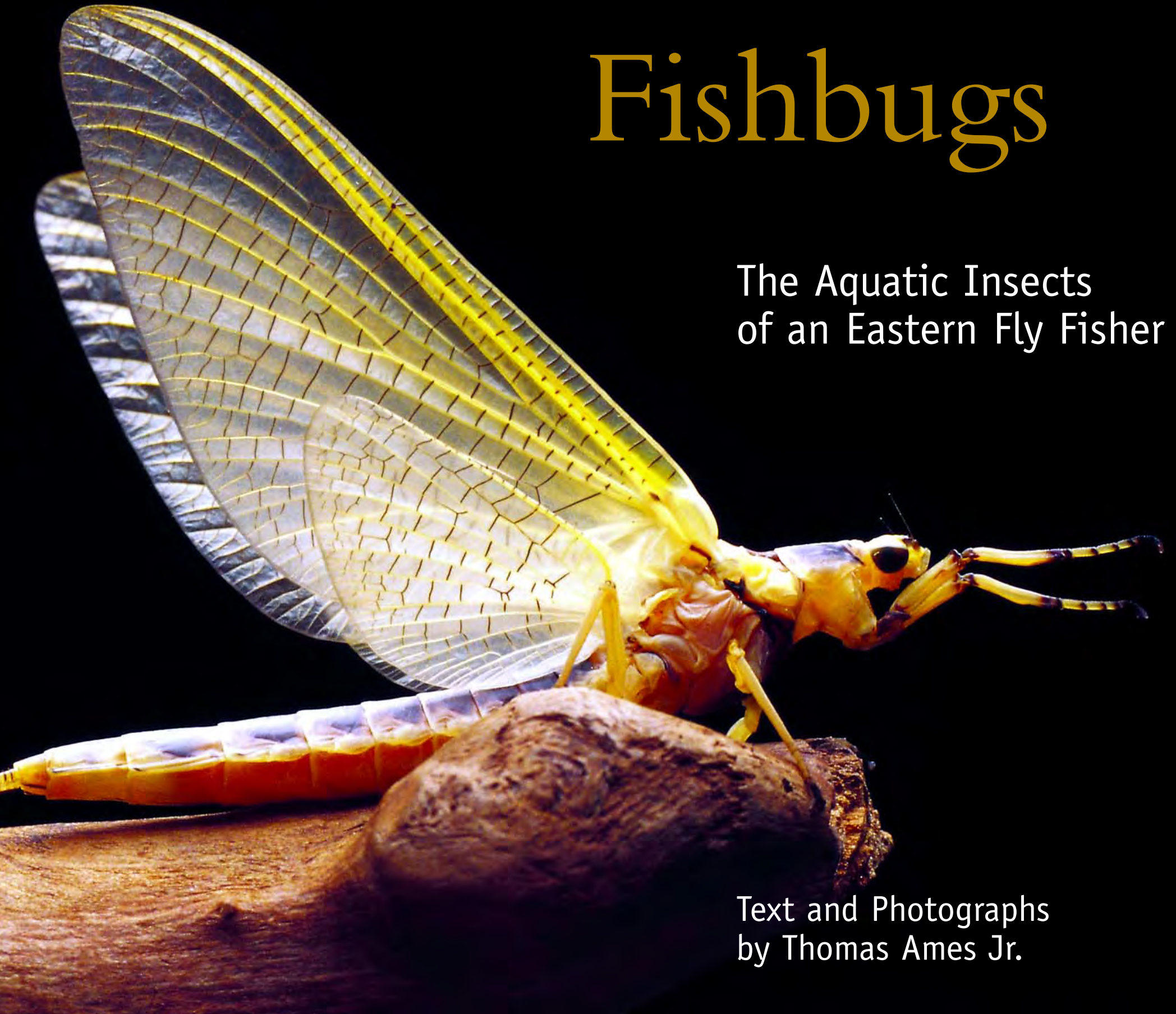


# Fishbugs

The Aquatic Insects  
of an Eastern Fly Fisher



Text and Photographs  
by Thomas Ames Jr.



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## Spring

Spring does not come all at once to northern New England. It is cruel that way, a lover who teases, offering hope and warmth one day, only to turn distant, harsh and cold on the next.

The first sign that the icy grip of winter is breaking is the arrival of the winter stoneflies. The tiny Capniidae appear on the windows of my studio in late February. Some are wingless and have to crawl up the thirty feet of brick that separates my windows from the river below. The snows are receding, the days are warmer, and the sugar houses are busy making syrup, but it is still winter. More snow will fall, and an icy blast can come down from the north at any time. There will be at least one more good nor'easter in the forecast.

True spring arrives on a fragrant breeze when fields and forests come alive and fill the air with their scent. It can arrive at any time of day. I might notice it when I let the dog out in the morning, during a midday errand, or while driving home in the evening. Within days, the tips of crocuses and daffodils are pushing their way up through the softening soil. The songbirds return on the same wind and fill the mornings with their chatter.

The trout waters respond more slowly. Even as the warmth of the April sun penetrates the depths of the rivers it fills them with the icy runoff of melting snows. Lakes and ponds stay cold under their frozen caps. I wait on the banks of the Ottaquechee for the Quill Gordons and watch for the first rise of spring.



Sawyer's Pheasant Tail Nymph

# The Little Olive

*Baetis tricaudatus*, family Baetidae, order Ephemeroptera

For generations, seasoned members of the fishing fraternity on both sides of the Mississippi knew the first spring olives as *Baetis vagans*. In 1987 the academics took a close look at the morphological relationships within the family of swimming mayflies known as the Baetidae and re-sorted the species list. *Vagans* turned out to be the same species as *B. tricaudatus*, and the latter name, an apparent reference to the larva's three tails, prevailed. Some of the early season *Baetis* nymphs that appear in my seine net are two-tailed, and I assume these to be the distinct species known as *B. bicaudatus*. In both species the middle tail of the adults is imperceptible. As far as fishing is concerned, it's one bug, and it's a Blue-winged olive. The old timers will go to their graves with *vagans* on their lips.

The little olives are the harbingers of the dry fly season. Compared to the miniscule caddis and midges that hatch in the late winter, and to the tiny olives that close out the fall season, *tricaudatus* duns are giants at seven or eight millimeters, the equivalent of a size eighteen hook. They are also notorious for hatching in lousy weather.

*Baetis tricaudatus* larva

It is common to confuse the spring olives with the true BWO's that appear in the summer.

Although they are roughly the same size as *B. tricaudatus*, the summer olives are of a different family, Ephemerellidae, whose adults have three tails and more fully developed hind wings. The misnomer was imported with the English patterns. Halford and his compatriots used the term exclusively for their three-tailed *Ephemerella ignita*, and referred to their Baetid flies as "olives," "iron blues" or "pale wateries." Their pattern, however, conveniently matches our small, domestic, two-tailed, slate-winged, olive-bodied mayflies, and so the name has stuck. The use of the term "rusty spinner" to describe the final adult stage is common to both continents.

In the middle of the twentieth century, American fly fishers began to acknowledge the importance of imitating the larval stage as well as the hatching duns. They discovered that Baetid nymphs were one of the largest components of the daily downstream migration known as behavioral drift, and they welcomed a new pattern that had made its way across the Atlantic, the Pheasant Tail Nymph. Frank Sawyer, an English river keeper, designed it without any suggestion of legs, to imitate a nymph in the act of swimming. Sawyer's pattern and its American descendant, the Troth Pheasant Tail, have endured as classics that are still found in almost every fly box, including my own.



# The Quill Gordon

*Epeorus pleuralis*, family Heptageniidae, order Ephemeroptera

The mayfly that has inherited the title of Quill Gordon is a staple of the earliest writings on American fly-fishing entomology. It is one of several species, including *Iron fraudator*, that the ancestral authors described in detail but which have since been determined to be synonymous. Most regarded its emergence as the first important event of spring. They waited eagerly for the water temperature to reach the magic threshold of 50°F, when the hatch, and the season, would begin.

How *pleuralis* got its nickname is open to interpretation. Preston Jennings coupled the insect with the pattern in his Book of Trout Flies, but he also recommended the Quill Gordon to imitate *Rithrogena impersonata*, a much darker insect of the same family, Heptageniidae.

The nymph is of the type known as "clingers" that live in very fast water. It is a marvel of hydrodynamic engineering. An *Epeorus* larva is utterly flat, with eyes set on top of its head like a flatfish. Large, overlapping, plate-like gills extend along its sides to harness the force of the current by pressing

the insect onto any surface it cares to traverse using its strong legs and claws. But because these gills are designed for fast, cool water, they aren't very efficient, putting *Epeorus* at risk in any habitat where the oxygen has been depleted, either by pollution, overheating or from a lack of current.

Unlike the majority of mayflies, *Epeorus* species accomplish their transition from nymph to dun while still on the bottom of the stream. By the time they reach the surface their bodies are fully expanded and three dimensional, like a self inflating rubber raft. It takes another moment or two before they have the use of their wings.



A Quill Gordon



# The Hendrickson

*Ephemerella subvaria*, family Ephemerellidae, order Ephemeroptera

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The Hendrickson hatch is the homecoming of the fly-fishing season. There are other, earlier hatches, such as the little olives and the blue quills, certainly, and in some places the Gordon quills. But *Ephemerella subvaria* is the first big game of the year. After a winter of waiting for the season to kick off, no one who calls himself a fly fisher can possibly remain on the sidelines.

An angler living in central New England must maintain a heightened state of awareness in the early season. Only when leaves appear on the wild honeysuckle shrubs do the Hendricksons begin to come off. That's as many as three weeks later on my home waters than on the fertile rivers of north western Connecticut. The hatches there are explosive. I check web sites daily and make frequent telephone calls. I preserve open spaces on my calendar.

Roy Steenrod, a New York state game warden and the only person known to have received fly tying instruction directly from the legendary Theodore Gordon, was a direct link in the Catskills lineage of the dry fly. Steenrod designed a pattern that fish took consistently during the dense spring hatches of *E. subvaria* in the Delaware River watershed. The traditional dressing calls for fur dubbing from the urine stained belly of a vixen. He named his artificial fly after his friend Hendrickson, who thus became the namesake of an insect. It is to be hoped that the gesture made no reference to the man's appearance or personal habits.

Preston Jennings lumped several similar *Ephemerella* species together "as a type," but in modern terms only the female *subvaria* is properly called a Hendrickson. She is a rather dowdy thing whose attire is limited to bland shades of tan, beige and gray with the merest hints of olive. The more vividly hued male, which anglers will tell you hatches in separate microhabitats and at separate times, is called the Red Quill.



*The Hendrickson*





# The Hendrickson Spinner Fall

*Ephemerella subvaria*, family Ephemerellidae, order Ephemeroptera

A second molt in the winged state is unique to the order Ephemeroptera, which includes all of the up-winged insects that today are known as mayflies. Fly fishers call this true adult stage the "spinner," and biologists call it the "imago." At mating time the males swarm over the stream and wait for the females to arrive. They convene over habitat similar to that where the insects spent their lives as larvae, and where newly laid eggs will thrive. Some spinner swarms, like this flock of *Ephemerella subvaria* males, are quite thick, but if you're not on the river, looking at the right place and in the right light, you might never see them.

If you do find yourself standing streamside at mating time, and chance to glance up to the air space above you, you'll see what appears to be a squadron of insects with tails spread wide and forelegs outstretched, all facing upstream. They bob up and down, like horses on a carousel, and occasionally dart downstream. Into this pack a female will fly, chose her mate, and couple with him. The embracing pair slowly loses altitude, but manages to remain aloft until the act is complete. For the male, life has ended. Within the hour the female will lay her eggs and she, too, will die.

# The Olive Dun Caddis

*Brachycentrus americanus*, family Brachycentridae, order Trichoptera

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What intrigues most naturalists and fly fishers about the insect genus known on both sides of the Atlantic as the "grannoms" is the bright green gooey ball of eggs that develops at the tip of the adult female abdomen soon after mating. It is the single visible detail that is common to all species of *Brachycentrus* and that appears in most patterns. Charles Bowkler introduced the Grannom wet fly to English anglers in 1780 with his book The Art of Angling as an imitation of a caddis that now carries the "Latin" name *Brachycentrus subnubilis*. The nine species identified in the New World are collectively and patriotically known as American grannoms. They have other nicknames, too, like the shad fly and the Mother's Day caddis, in honor of other events that coincide with their appearance.



The majority of American species are small and have dark brown wings that appear black under most lighting conditions. The Olive Dun, *B. americanus*, is the exception. It is the largest of the grannoms, the last to emerge each season, and is the only species that appears on both eastern and western rivers. It gets its name from the color of its abdomen and its medium, dirty gray wings.

Equally intriguing, to me at any rate, are the habits of the *Brachycentrus* larvae. They build tapered cases with a square cross section, adding progressively larger pieces of twiggy material as they grow, until they remind me of the tapered smokestacks of some old New England mills. The same silk that they use as case building mortar, and to secure themselves to rocks as they forage on the thin layer of algae, provides a means of moving safely downstream. In order to avoid being swept away, they tether one end of the silken cord to a rock and allow the current to carry them down to the next, much the way a climber rappels down a step mountain cliff.

The spring mating swarms of *Brachycentrus* on the Catskills rivers were historically so dense that they rated a mention in the pioneering works of both Rhead and Jennings at a time when mayflies were commanding all the attention. Both writers remained frustrated in their efforts to find a suitable match for the natural. Either they failed to draw the distinction between an emerging caddis and one that was laying its eggs, or they had become so much a part of the dry fly cult that any return to subsurface patterns would have been considered an act of barbarism. When clouds of Olive duns appear over the stream they are merely the visible precursor of the remarkable event that is shortly to take place under water. Adult females swim beneath the surface to paste their eggs on any stationary object they might encounter, whether it be vegetable, mineral, neoprene or Gore-Tex. In order to experience this phenomenon first hand you have to stand in a river wearing waders. You may be hardly aware of their presence until the moment you leave the water and discover that they have liberally garnished your waders with sticky green spots. Many is the time that I have cast dry flies to the few small trout rising to emerging sulphurs and remained oblivious to the intense feeding activity taking place just beneath the surface.





## The Dobsonfly

*Corydalus cornutus*, family Corydalidae, order Megaloptera

The first time I ever laid eyes on a dobsonfly I knew instantly what she was. For starters, she was huge, 80 millimeters from head to folded wing tip, nearly twice the length of the largest stonefly. As she moved she dragged her wings like the eye feathers of a peacock or the train of a royal gown. And in place of the long, gently curving mandibles used by the male for courting or for chasing off other males, this female brandished the shorter, scimitar shaped pair that is an exact replica of those seen on the dobsonfly larva, the hellgrammite.

I had that very evening been photographing a hellgrammite, and lamenting the fact that I had as yet never seen, much less photographed, an adult, when I saw her hanging on one of the black-out curtains in my studio. She had flown in through the open window. Her abdomen was withered, and the tips of her wings slightly tattered, so I guessed

that she had just recently deposited her eggs somewhere over the Mascoma River that flows outside. She moved sluggishly, as have all of the dobsonflies that I have since encountered, but when prodded or annoyed she would rise up in anger and respond with a ferocious counterattack. The larvae are voracious predators, common to the substrate of fast, clear streams. Bait fisherman like them because they stay well on the hook and squirm in a tantalizing way. The adults are of little interest to fisherman of any kind except as an extreme annoyance. I have heard about, but thankfully never experienced, their painful bites on the backs of unprotected necks. Both winged emergence and ovipositing take place out of the water. The larvae crawl out to pupate in the mud and silt beside the stream. When they emerge to unfold their wings for the first time and take to the air dobsonflies are a truly majestic sight. The adult females lay their eggs on overhanging objects like tree branches or bridges. When the new larvae hatch they drop into the water and the cycle begins anew.



# The Coffin Fly

*Ephemera guttulata*, family Ephemeridae, order Ephemeroptera

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No mayfly undergoes a more spectacular transformation in molting from dun to spinner than the eastern green drake. This giant among stream dwelling Ephemeroptera loses all but a hint of its nominal wing color and completely sheds the brownish dorsal covering of its abdomen to reveal a simplified palette of rich, dark brown and a ghostly, pale cream. In the males, with telescoping legs and tails, the effect is especially dramatic.

It is the stuff of legend. Traditionally, the green drake hatch was the height of the eastern fly fisher's season, with a reputation for bringing up large fish. When word of the hatch reached Manhattan, executives cancelled appointments or called in sick. Baggage compartments overflowed with rod cases, and Catskills lodgings became scarce.



*Detle Coffin Fly*

Alas, like many legends, its luster is fading. Today, few anglers have even seen a green drake or its funereal imago. Any creature that lives in the sediment of rivers is at the mercy of the man-made poisons that collect there. Industrial selfishness numerous populations of this grand insect. Efforts to transplant freshly laid eggs to recovering environments, although heroic, have been largely unsuccessful.

Harold McMillan led me to this Coffin fly at a private game preserve in upper New York State. There were no bugs until twilight, and then they rained down by the hundreds. Large fish lost any semblance of caution, and Harold caught one after another while I gathered samples for my camera. The battery on my portable light failed. Had the lodge not been nearby, closed but with an outdoor outlet, I could never have made the picture.





## The Strawman

*Limnephilus infernalis*, family Limnephilidae, order Trichoptera

The portable homes of caddises belonging to the family Limnephilidae, known to anglers and naturalists as the northern casemakers, are frequently described as "rough hewn," as if they had the case-building instinct, but lacked either the talent or skill possessed by more highly evolved families. The larvae of the genus *Platycentropus*, and of a few of the 100 species of *Limnephilus*, build theirs of tiny sticks, pebbles and bits of weed, all layered crosswise, like a crudely woven basket, in contrast to the lengthwise arrangement preferred by others. Such cases are believed to have been the model for a now classic fly pattern, the Strawman nymph. Paul Young, a Detroit taxidermist, fly tier and rod maker acclaimed as the "Stradivarius of the midge rod," used it to catch fish feeding on caddis larvae when surging currents knocked them loose from the safer, quiet margins of Midwestern rivers and propelled them helplessly downstream.



Paul Young's strawman nymph

I have found the larvae of *Platycentropus* in a few New England rivers, but I am more accustomed to finding the clumped cases of the smaller *Limnephilus* species in the shallows of lakes and ponds, and especially in backwaters baked by the summer sun until they are warm enough to bathe in. The heat doesn't seem to bother them as it would most insects in their aquatic phase. In fact, they are so hardy that when I placed one in a box to dry, as part of a collection I was to send to a boy scout in Pennsylvania it remained alive and moving for three days. And yet in spite of their determination to endure I have only once, after numerous attempts, succeeded in raising a *Limnephilus*

to the winged stage. It hatched on a morning in early September, the solitary survivor from a handful of larvae that I had transported from a central Maine pond in June.

The caddis family Limnephilidae is by far the largest in North America, with over 300 species, including several that are transcontinental and some, like the October caddis (*Dicosmoecus*) of the west and the great orange caddis (*Pycnopsyche*) of the east, that are among the most anticipated hatches of the fly fisher's season. Because entomologists are continually plucking here and there from the almost 50 genera and reassigning them to entirely new families, the number keeps changing.



*Limnephilus infernalis* adult caddis