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TROUT STREAM INSECTS

by

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Before the grip of Winter is fully relaxed, hundreds of fishermen will be wading about through the trout streams of the state, unheeding of occasional snow flurries, or squalls of icy rain. Wet flies and spinners, dragging through the black water of swollen streams, will be serving notice to the trout that their long vacation is over, and that it is time for them to go to work again. And the dry-fly enthusiast, half-heartedly maneuvering the submerged bait thrust upon him by weather conditions, will be scanning the stream with eager eye, hoping to see an early "hatch" of insects.

It will surprise many trout fishermen to learn that, in reality, "hatches" proceed the year around. There is no month that does not see at least a few hardy insects emerge from the comparative warmth of the water and, ignoring the sub-zero air, go about making fruitful their brief span of adult life. One such insect is the little stonefly Allocapnia, which leaves its nymphal home among small pebbles near the bank as early as January. Heedless of the cold, these fragile creatures creep about on the bark of trees, feeding upon lichens. As soon as they have mated, and the females laid their eggs, they

perish. Nor is Allocapnia alone in the cold. During any of the winter months one can find small chironomids, or midges, (non-biting cousins of the mosquitoes) resting complacently on the snow at the stream edge. On the 18th of December, while walking along the Salmon Trout River, in Marquette County, the writer lifted an exposed stone from the top of a stream-improvement deflector and found, on its under surface, a dozen or more adult caddis flies. Similar adult caddis have been found in the lower peninsula in January, February, March and April.

It is unlikely that many adult insects appearing in winter are taken by trout. They seldom appear in large numbers, and the trout seem to prefer to feed on the bottom then anyway. In fact, it is only during the warmest part of the summer that surface insects form an important part of the food of trout. For this reason, a brief discussion of bottom-inhabiting insects may be of interest to sportsmen.

The Order Neuroptera includes the alder flies and the fish flies. The larva of the fish fly (Fig. 1) is known as the "hellgrammite" or "dobson" and prefers to live in the faster portions of streams, where it lurks about under stones, feeding on the nymphs of stoneflies and Mayflies, and on other aquatic insects. The larva of the alder fly resembles the "hellgrammite", but is much smaller, and is found more often in quieter water near the shore, among trash and weeds, than in the swift current preferred by the fish fly larvae. The alder fly larva usually transforms into an adult within a year, while the "hellgrammite" frequently spends three years in the larval state.

The Order Ephemeroptera is one of the most familiar groups of insects so far as trout fishermen are concerned, for it includes the Mayflies. Few sportsmen would care to take time to learn to recognize all of our Mayflies--a recently published book dealing with them lists 507 distinct species in North America north of Mexico--but it is not difficult to learn to recognize the major groups. Buried deep in silt bars and weed beds, along stream sides and in the shelter of obstructions, live nymphs of the Family Ephemeridae. They

are quite large, often near two inches long when fully grown, and immediately recognizable by the large, feathery gills on each side of the abdomen (Fig. 2). Nymphs of the Family Heptageniidae are especially adapted for life in the swiftest current, where their flattened bodies permit them to clamber about over stones with little danger of being swept away (Fig. 3). Heptageniids are found in trout stomachs more often than ephemerids, both as nymphs and adults, probably because they are more available. Nymphs of the third Mayfly family, Baetidae (Fig. 4), may be found in almost every type of stream situation. Some creep about through chinks between stones in fast current, others cling to stems of aquatic plants, while still others abound in trash-filled eddies, or move about over barren sand. It is safe to state that more baetid nymphs go to nourish our trout than all other Mayfly nymphs combined; and adult baetids make up the majority of early-season "hatches."

The Order Odonata is made up of two groups of insects familiar to all-- the dragonflies and damselflies. Although more numerous around lakes, there are certain species which appear along streams in great numbers. One of these is the black-winged damselfly, which emerges from June to August. Its metallic-green body and blackish-bronze, irridescent wings make it a thing of beauty as it flutters about in alder thickets, perches on a protruding stone, or even alights on the fisherman's hat. Its nymph (Fig. 5) is a long-legged, awkward appearing creature, which inhabits quiet sections of the stream, crawling about through aquatic plants, trash and debris, feeding on smaller insects. The nymph of the large yellow-and-black dragonfly Cordulegaster lives among the stones in fast water. Although it feeds few fish, it should be regarded with affection by anglers, for in its adult stage its life is devoted to the devouring of mosquitoes.

The Plecoptera, or stoneflies, as their name indicates, spend their nymphal life clambering about among stones. They occur in deep and shallow water, quiet or slow current, often in very large numbers. They make a fair contribution to

the diet of bottom-feeding trout. As has been stated earlier, one may find the adults of one species or another during almost any month of the year. Stonefly nymphs are often confused with those of Mayflies. The latter almost always possess three tails, and always have a row of gills down each side of the abdomen. Stonefly nymphs always have two tails (Fig. 6) and rarely possess abdominal gills. In the few species where these are present, they occur only on the first two segments.

One of the most important groups of insects, from the standpoint of the trout fisherman, is the Trichoptera, the Order of the caddisflies. These insects have attracted much attention because of the remarkable protective cases built by the larvae of many species. In quiet, silty backwaters one encounters large caddis larvae enclosed in roughly cylindrical cases fashioned of small twigs and bits of vegetable debris, so artfully constructed that one can scarcely distinguish them from the trash among which they live. In areas where cat-tails grow, one finds cases constructed of bits of leaf, closely resembling a short section of reed-stalk. So marked is this similarity that many fishermen refer to them as "reedamites," (Fig. 7). In faster waters, the stones sometimes bear literally hundreds of the small sand cases of Helicopsyche, cases which are twisted into an excellent spiral mimic of a snail shell. In all parts of the stream, in irregularities of stones or logs, the net-covered cases of Hydropsyche abound. This ingenious larva surrounds itself with a sort of open-top pen of large sand grains and debris, then covers the top with a net spun much like a spider's web. In this net lodge many small organisms, and the caddis larva lies at its ease, subsisting on the bounty carried to it by the current. Caddisflies are apparently greatly relished by trout, both as larvae and as adults.

If one takes a handful of silt from behind some obstruction in a stream, and examines it carefully, a number of small worms, green, white, or red in color, are almost certain to be found. These are the larvae of the Family Chironomidae (Fig. 8) and its allies, belonging to the Order of Diptera, or True Flies.

When fully grown, these larvae emerge as midges--small flies resembling mosquitoes, but fortunately lacking their blood-thirsty disposition. Chironomid larvae occur in great numbers in almost every trout stream in the state. Some prefer to inhabit mucky bars along the stream edge or in the shelter of stream obstructions, others reside in fine gravel riffles, still others may be found in the almost barren bars of sand. And incredible numbers find their final resting place within the stomachs of trout. During the winter months, especially, trout seem to feed on such larvae almost to the exclusion of other forms.

Other true-fly larvae found in the stream bed include those of snipeflies, soldierflies, and crane flies. (Fig. 9), the latter often known to fishermen as "leather jackets."

There are other groups of insects which live habitually in water for at least a part of their lives. Although the ones already mentioned are more frequently found in trout stomachs, it is not unusual to find some of the back-swimmers when running stomach analyses. Back-swimmers belong to the Order of Hemiptera, or True Bugs. There are places in some of our trout streams where they occur in great profusion--usually where the water is shallow and almost motionless, and where the bottom is covered with flocculent silt, into which they can retreat when alarmed. Over the surface of similar locations, and now and then over faster water, dart the swift water-striders, four of their legs propelling them about over the surface film while two others are held poised to seize any hapless terrestrial insect which may fall into the water. Insects belonging to the Order of True Bugs very frequently possess a distinct musky odor (as witness the stink-bug), and it may well be that water-striders are rendered unpalatable by this means, for they are almost never found in trout stomachs.

Beetles, or Coleoptera, are much more plentiful in ponds and lakes than in

streams. However, predaceous diving-beetles and water scavenger-beetles may be found in backwaters and spring holes along streams, though seldom in sufficient numbers to affect the trout in any way. Another very interesting stream denizen is the marl beetle, which spends its entire life, both as larva and as adult, burrowing through the porous marl concretions present in most of our trout streams. For neighbors it has midge, snipe-fly, and crane-fly larve, as well as occasional caddis larvae and Mayfly nymphs which now and then seek shelter in the honeycombed marl.

There is almost no place in a stream bed that does not harbor at least a few of the above-mentioned insects. Some time when the trout are not rising, lay aside your rod for a few minutes, lift some rocks from the water, and see how many of the insects clinging to it you can recognize. It will give you new appreciation of your favorite stream.

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