



Erica Blake Community Advisor, Salmon Enhancement Program DFO on Wednesday dropped by for lunch and graciously dropped off the remaining parts we needed “to complete the loop” to start a new chapter in the evolution of our club. Erica dropped off two nets, The Streamkeepers Handbook, laminated field guides and identification keys, field magnifiers, field note book as well as bottles to supplement our existing field and laboratory equipment. These field guides can also be found online at: www.pskf.ca or here at [Streamkeepers Handbook Module 4](#) and in my opinion represent some of the best beginner keys and guides in existent.

We, as a club are now up to speed and can now become involved in a wide range of educational and community programs. [Click here](#) for background information, how we got here and potential scope of our endeavours and commitments going forward.

Bugs from North Nanaimo River (Feb 8, 2017)

On February 8th, a group of IWFFers leisurely collected bugs from Deadwood Creek (aka North Nanaimo River) to understand which invertebrates the fish are likely feeding on and identify to genus and species (where possible) in order to tie imitation flies to match the dominant nymph and/or larvae stage present now and to be ready to match the hatch of emerging duns and returning egg laying adults in the weeks to come. Knowing which genus and genera we are dealing with is not essential, but having this knowledge gives us a great deal of information about insect behaviour such as; seasonal emergence timing, time of day or night to expect hatch or emergence from the stream, drift pattern if any, number of generations emerging per year and when etc.

We collected our bugs from 2°C, lotic, erosional habitat or fast flowing medium depth-cobble sections. Over 90% of the invertebrates collected were Mayflies, belonging to two well known genera: *Rhithrogena* and *Ephemerella*. In addition, Stoneflies were represented by the genus *Skwala*. Other organisms collected included one Oligochaeta (Round worm) and one Chironomidae (midge larvae).

Rhithrogena sp.

Although we keyed these critters to genus only, in all probability they were *Rhithrogena morrisoni*. In the west, this Mayfly genus and species are notoriously known as Western March

Browns and form the first major mayfly hatch of the year. The literature reports nymph body length in the range 9 -12 mm, not including their 3 tails or cerci. For the tiers, our specimens measured 8 to 11 mm and were 3 -4 mm wide at the widest point of the head and tapering down to 1-2 mm at the end of the abdomen. Cerci length ranged 5 – 6 mm. In Coastal areas the emergence (hatch) of duns occurs February to April, at higher elevation, in the Rockies, the hatch occurs a month to two later. The nymphs are well adapted to lotic (swift water) conditions, having gills modified to form a suction cup under its abdomen to facilitate clinging to the bottom substrate in strong currents. Nymphs are clingers and collectors and scrapers (gatherers of detritus and diatoms). Nymphs are also distinctly flattened which further facilitates an aerodynamic form with low center of gravity for maintaining position in fast



flowing water.



***Rhithrogena morrisoni* nymph appear distinctly flattened**

***Ephemerella* sp.**

This genus contains the legendary Hendricksons and Sulphurs of the East and the equally important Pale Morning Duns of western waters. The Taxonomy of *Ephemerella* has changed over the past few years and a description of this change is presented in (<http://www.troutnut.com/hatch/28/Mayfly-Ephemerella-Hendricksons-Sulphurs-PMD>).



According to this source, *Ephemerella* species inhabit most types of water and can be found at any time of the season depending on locale. This genus is very important in the East and Midwest, where the major species hatch in the spring and a few continue into the summer. In the West, the species comprising the Pale Morning Dun complex produce the superhatches of international fame that can be found somewhere in this vast region virtually the entire season. Hatching behavior of *Ephemerella invaria*, which is very likely our local species (but not keyed) is summarized in www.troutnut.com as follows:

Time Of Day (?): Flexible based on weather. Generally mid-afternoon at first and later as the season progresses.

Habitat: Almost anywhere, but best near fast runs and riffles.

Water Temperature: 52-60°F

Ephemerella invaria nymphs drift for some time just below the surface as they begin to emerge, and these floating nymphs cause rises to the surface which may fool the angler into thinking the trout are taking duns.

Emergence itself takes quite a while, making emerger patterns more important for this hatch than for most. This importance is heightened by the lower availability of the fully formed duns. These duns take to the air more quickly than most of their *Ephemerella* kin, but anglers should still be prepared to imitate them if need be.

Nymph Biology

These are among the most adaptable of mayflies, thriving in many types of habitat. They inhabit warmwater streams as well as cold and are found in lotic erosional habitats (riffles) as

well as Stillwater (lentic-vascular hydrophytes). They are *most* prolific in deep, gravel-bottomed riffles, where they are primarily Collectors – gatherers of detritus and diatoms, scrapers, some shredders, herbivores living on filamentous algae.

In the West, they hatch in late morning, usually from 11am to 2 pm. In the days and hours before the hatch these nymphs become especially active, so their imitation is especially useful. They clamber to better emergence sites where they rest in plain view of trout, fisher and photographer. They also make apparent "practice runs" to and from the water surface. Trout love them!

The nymphs are a little bit difficult to recognize because their base color ranges from brown to olive and they're adorned with many possible color patterns. Fishers should be prepared with imitations in brown and olive, hook sizes 12 through 16. Use a Hare's Ear for these larger varieties and a Pheasant Tail for the smaller ones (size 18 to 22). These flies will catch trout quite easily an hour before the hatch (Rosebauer, 2014).

Skwala sp. Common name is *Spring Flies of the West* and was the only Stonefly genus represented in the sample. These stoneflies are most common in the late winter through Spring and are often confused with their cousin, the Golden Stones or Perlidae which normally hatch or emerge later in the season.



Skwala prefer lotic and lentic erosional habitats or cobble bottomed riffles and runs of larger mid to low elevation rivers. They are generally clingers as well as predators (engulfers).

The female nymphs run 18 to 22 mm in body length with tails and antenna as long as their bodies. The males are substantially smaller. In build and markings, they superficially resemble the larger [Perlidae](#) (Golden Stones), but are less stout and colored a bit differently with greater contrast between **ventral** and **dorsal** surfaces.

Fish love feeding on them as they are prone to floating long distances as they placidly oviposit. There is usually no challenge to them for the fishes attention until [Rhithrogena morrisoni](#) (March Brown) mayflies begin to appear a few weeks later. Their flights occur during the warmest part of the day which usually means in the afternoon, though impressive flights have been observed around the lunch hour. Regardless, they finish well before dark.

So that's it for the first edition of the IWFF Bug Page which will be continually updated as new information emerges (pardon the pun). Your comments and improvements will be appreciated. This is your page so, one of the things club members can do is record your observations regarding feeding habits of fish, insect emergence or hatch timing relative to water and air temperature, time of day or night, are fish bottom feeding on nymphs, subsurface on emerging duns or surface feeding on duns and returning adults. So much to do....so little time.....

Cheers,

Bruce