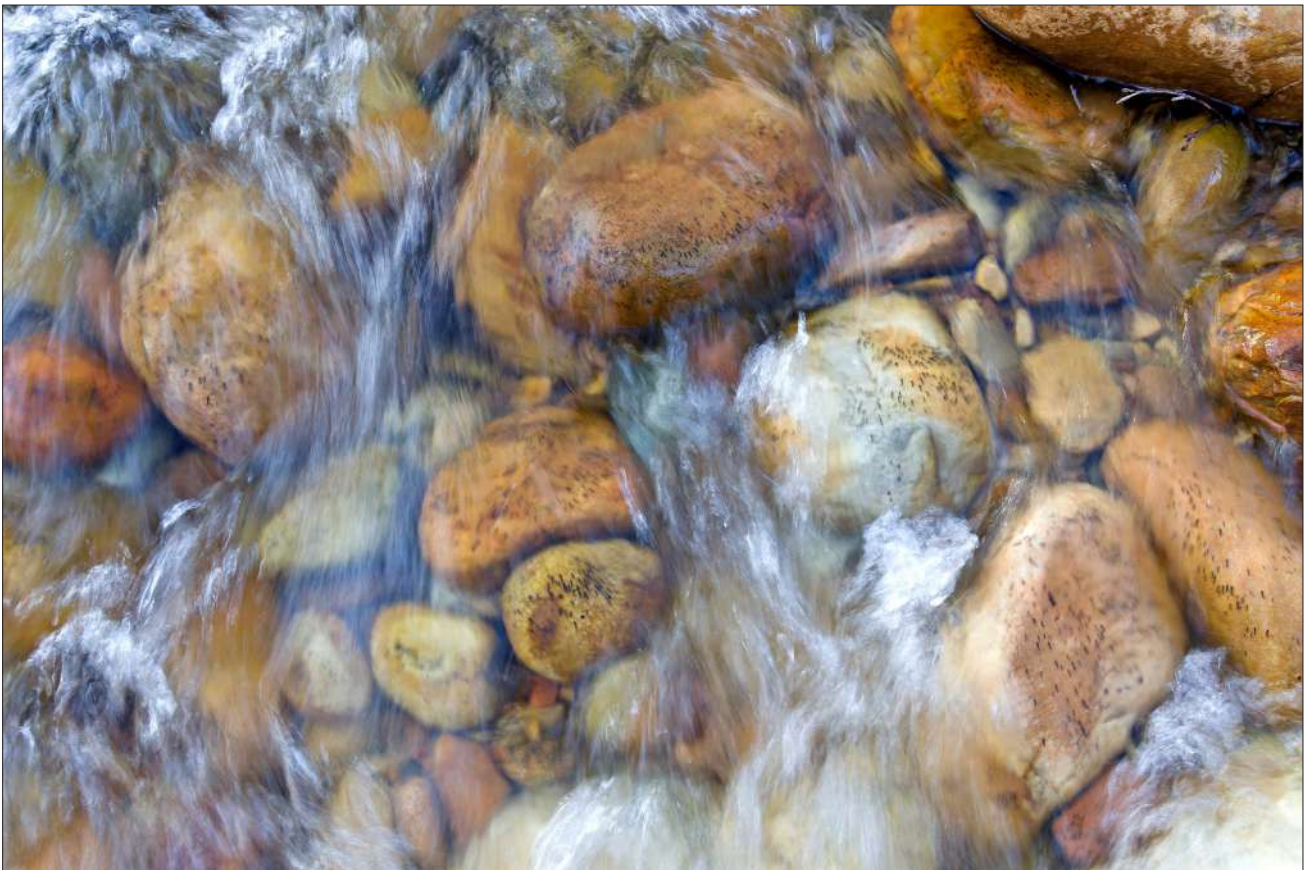




CHAPTER 21

‘Blackflies, Lords of the Rapids’

The Simuliid Nymph



“The black fly, or simuliid, is the least known and understood major trout food in North America. With a staggering wealth of scientific observation plainly accessible to angling researchers, how could the simuliids have been overlooked by experts and recreational anglers for so long?” Jeff Morgan, *“Productive Trout Flies for Unorthodox Prey”* (Frank Amato Publications, 2012) Photo by Brett Leslie

In 1978, having started fly fishing, I ordered a copy of Ernest Schweibert’s double volume book *Trout*, all 1743 pages of it.

It was wise investment because it gave me an appreciation of the ‘match the hatch’ philosophy which had driven fly fishing for trout for centuries.

THE DELICATE FLY FISHER - ED HERBST

The problem was that on the trout streams near Cape Town, there are no hatches to speak of, certainly no hatches of any duration.

This is because, for both mayfly and caddis, most of their emergence and egg laying takes place at night.

The Western Cape province of South Africa has its rain in winter and by 15 October the water level has normally dropped sufficiently for fishing to be feasible and this is the most productive time of the year for fly anglers

Early spring has two brief hatches of short duration.

Two insects, the Net-Winged Midge (*Blephariceridae*) and the Black fly (*Simuliidae*) hatch in substantial numbers but you have, by happy coincidence, to be there when these emergences happen – they are not common occurrences.

I have seen black flies in their hundreds on the rocks in early spring, mating, then laying their eggs in little pink patches which quickly turn brown and resemble lichen. Many adults end up in the water and this can cause a frenzy of selective feeding.



(L) An adult blackfly laying eggs in spring on a trout stream near Cape Town

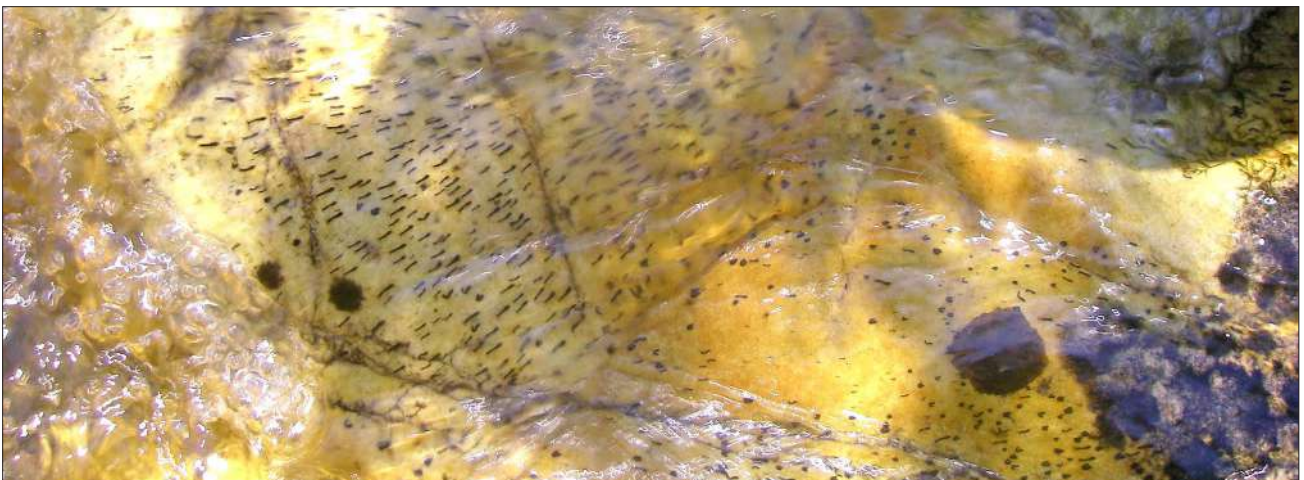
Within a fortnight or so this spectacular hatch is over, repeated later in the year in much smaller numbers.

There are two aquatic insects that were constantly present in big numbers for much of the year though - but no flies existed back in 1978 to match them.

The one was a micro-caddis. The 3mm sand grain larval cases of *Glossosoma Agepetus* are the most visible trout prey on the streams near Cape Town - present on almost every subsurface rock. In summer and autumn, the scurrying adults are everywhere on the waterline of the rounded boulders which comprise the stream bed.

But they are tiny.

The second, even more prolific, are the small black sausages that festoon the rocks in the rapids. The blackfly larvae are so prolific and so distinctive in shape, that I just knew that they would be a highly-recognisable prey image for trout.



Hundreds of blackfly larvae per square metre in the rapids of a trout stream near Cape Town.

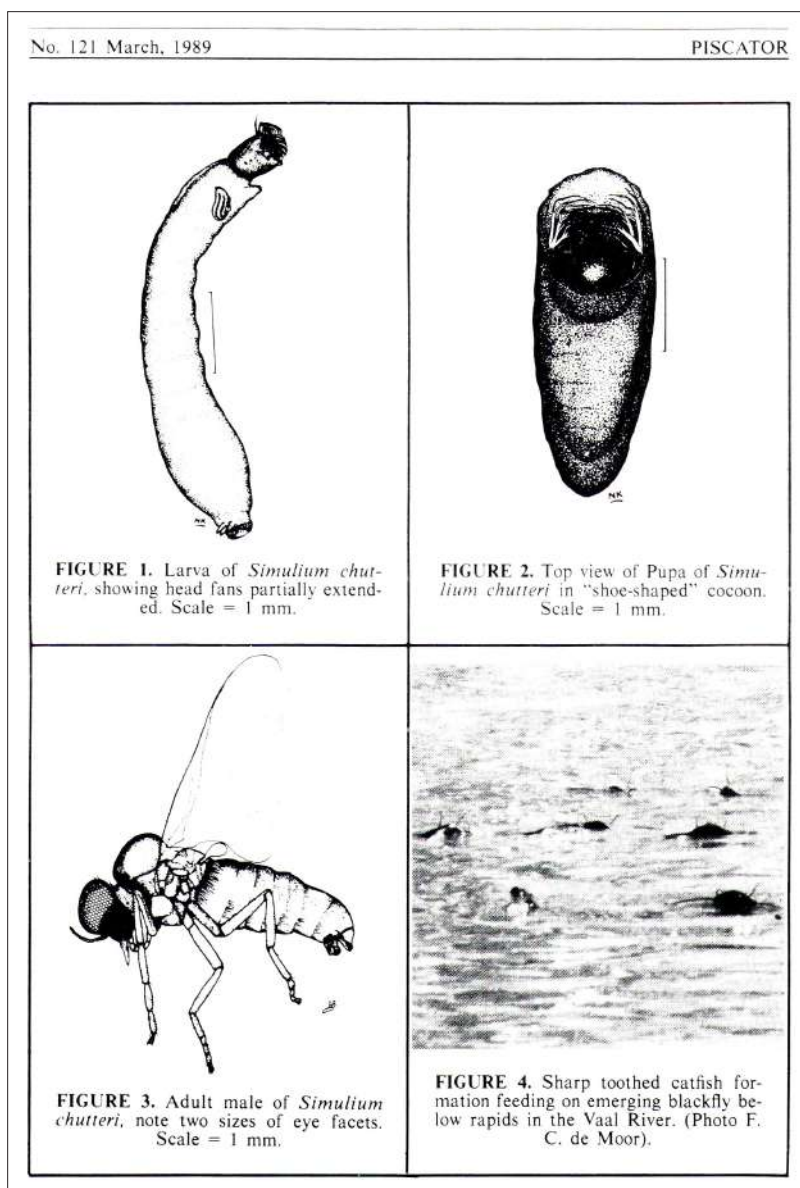
Photo by Brett Leslie

Trout have the ability, among the myriad particles coming towards them in the current, to discern and differentiate what is prey and the very distinctive shape and translucence of the Simulid larva would make it stand out. It has a slightly larger abdomen than head, but the hourglass shape is distinctive. There is always the possibility that trout assume it to be an ant.

This belief was bolstered when I read that simulum larvae, along with Baetis nymphs, are the most significant components of behavioral drift and members of the Cape Piscatorial Society told me that trout had been seen grazing these insects from the wall of a weir on one of our trout streams.

Somewhat to my surprise, no imitation existed and the insect did not feature in the extensive research on our trout stream aquatic insects undertaken by A C Harrison, one of the founders in 1931 of the CPS.

I commissioned Dr Ferdy de Moor of the Albany Museum in Grahamstown, the pre-eminent South African authority on these insects, to write an article for the CPS journal, *Piscator*, of which I was then editor.



(L) An illustration from the article by Dr Ferdy de Moor

His article confirmed the important role that the most prolific insect plays in the small stream food web:

'Blackflies, Lords of the Rapids' appeared in the March 1989 issue of the magazine and it remains the definitive angling-related article on the species in South Africa.

His article confirms studies elsewhere in the world of the density and numbers of this species in streams. Here is a quote from his article relating to the population density of blackfly larvae in the rapids and runs of swift, high gradient mountain streams.

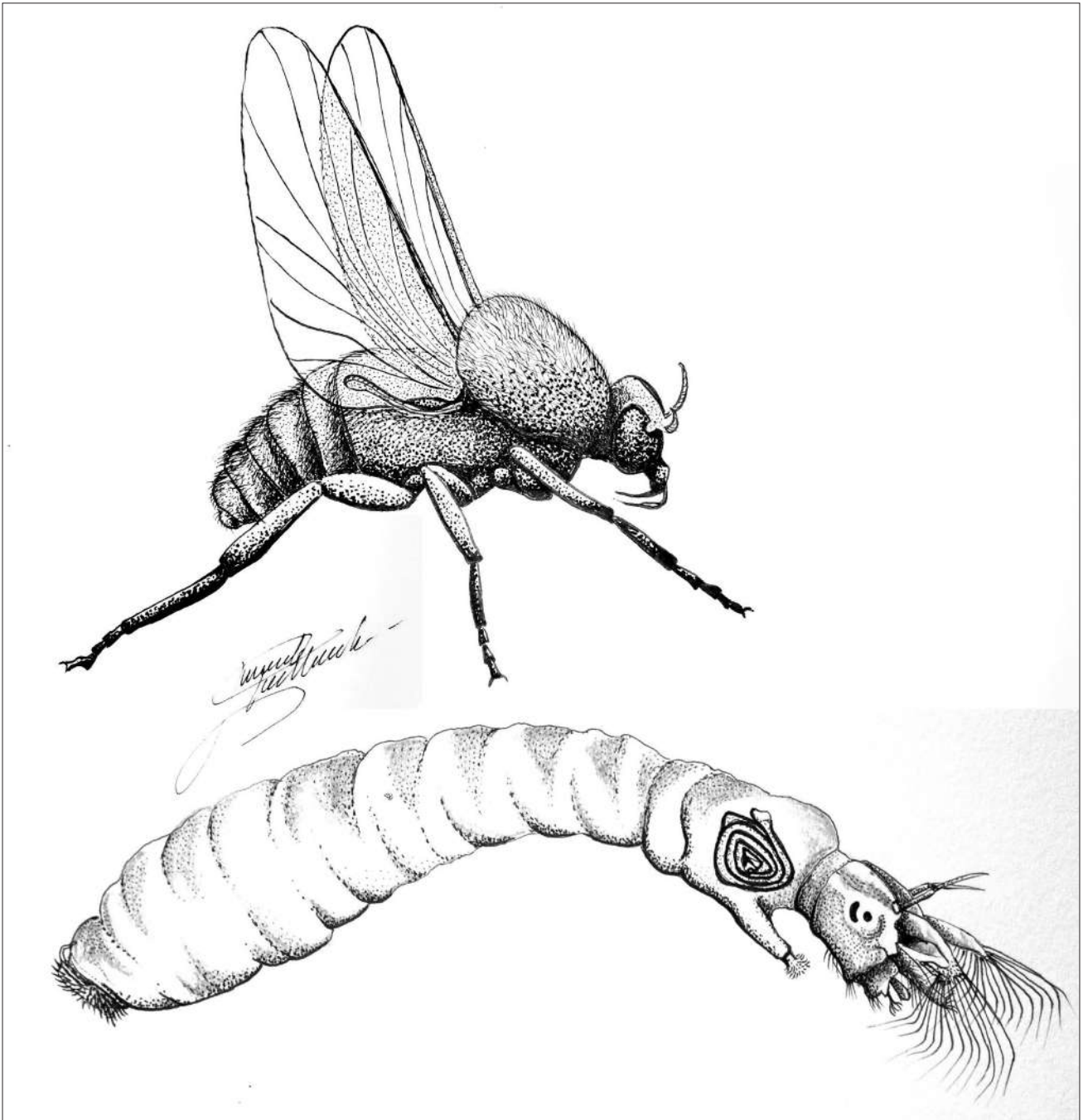
'Simulium chatteri, a species which lives in the swiftest of flowing water currents in rapids can, at certain times of the year, be found in densities of up to 400 000 individuals or 600 gm of black fly per square metre of river bed (de Moor 1982). In terms of the number of individuals collected from stones in rapids, black fly can form 95% or more of the local animals and hence can truly be considered as 'lords of the rapids'.

The article can be found in the 'Trout Behaviour and Diet' folder on the CPS website.

In his outstanding book *'A Field Guide to the Freshwater Macroinvertebrates of Southern Africa'* (Jacana, 2021 – now sadly out of print) Christian Fry lists the length of the larva as 7 mm whereas, de Moor says, the final instar blackfly larvae can reach 13 mm.

That dictates a nymph the size of a standard-length size 16 hook - but how to mimic the hourglass shape of the semi-transparent grey/green/brown body?

I was not alone in the search for an answer.



The adult blackfly (above) and the larval stage below – illustrations by Marcel Terblanche

Ernest Schweibert wrote extensively on what he called the 'Reed Smuts' and drew on the earlier work of J C Mottram, but his larval imitation had a dubbed body and was opaque.

Tom Sutcliffe, a surgeon in his time and Rhodes-based guide, Fred Steynberg, are adept at using a stomach pump to gently extract from larger trout, the insects upon which they have been feeding. The results are always the same – Baetis nymphs in slightly greater number than the Simulium larvae and a smattering of terrestrial insects, mainly beetles and ants but the occasional inchworm and hopper.



(L) The stomach contents of a trout caught by Fred Steynberg in Rhodes. Mayfly nymphs exceed blackfly larvae by a small margin

Trout in mountain streams elsewhere in Africa are no different.

Vernon van Someron spent two and a half years studying trout for his 1950 PhD thesis, *'The Biology of Trout in Kenya Colony'*.

He was based at the Kenyan Government's River Research and Development Centre situated on the Upper Sangana River, but his study also encompassed 15 other rivers and streams in the country which held trout.

His finding, based on stomach content analysis, is unequivocal:

'Simulium larvae are eaten in the greatest percentage, form the greatest bulk of the aquatic food taken, and are found in the greatest percentage of stomachs. Together with Simulium, Baetis nymphs constitute a major portion of the aquatic food eaten.'

Much the same situation pertains in the USA. In his book, *Productive Trout Flies for Unorthodox Prey*, (Frank Amato, 2012) Jeff Morgan writes: ***"I located more than 20 studies where black flies were, at least for a month or two, by far the most important food resource for trout, not to mention dozens more where black flies 'only' were more important than every single mayfly species with the exception of Baetis!"***

"Female black flies can swarm and concentrate egg laying in a relatively small section of stream. One study found a 10-metre section of a small stream with 3 million eggs, the result of 3750 females laying eggs synchronously!"

Morgan says that on many US trout streams black fly is the predominant food source in June and July – the height of the American summer.

For me, the breakthrough came in 2010 when the UV-light cured epoxy resins derived from dentistry appeared on the local market.

Thread is not used in the Simulid Nymph, just ultrafine wire from companies like Semperfli, UTC and Lagartun and two glass beads, the bigger one at the rear because the abdomen of the larva is slightly larger at the rear



I found that if I used two smoky-grey beads, a 15/0 Toho Silver-lined Grey (TR-15-29B) bead at the bend of the hook and a slightly smaller 16/0 Preciosa-Ornela glass bead at the eye, separated by widely spaced turns of wire, in black, green or brown, the resin sagged in the middle, replicating the shape and translucence of the blackfly larva which tapers from a bulbous rear to a small head.

(L) Early examples of my Simulid Nymph – Photo by Peter Brigg

If you need more weight, you could combine a 2mm and a 1.5 brass or tungsten bead available from Hareline in mottled olive.

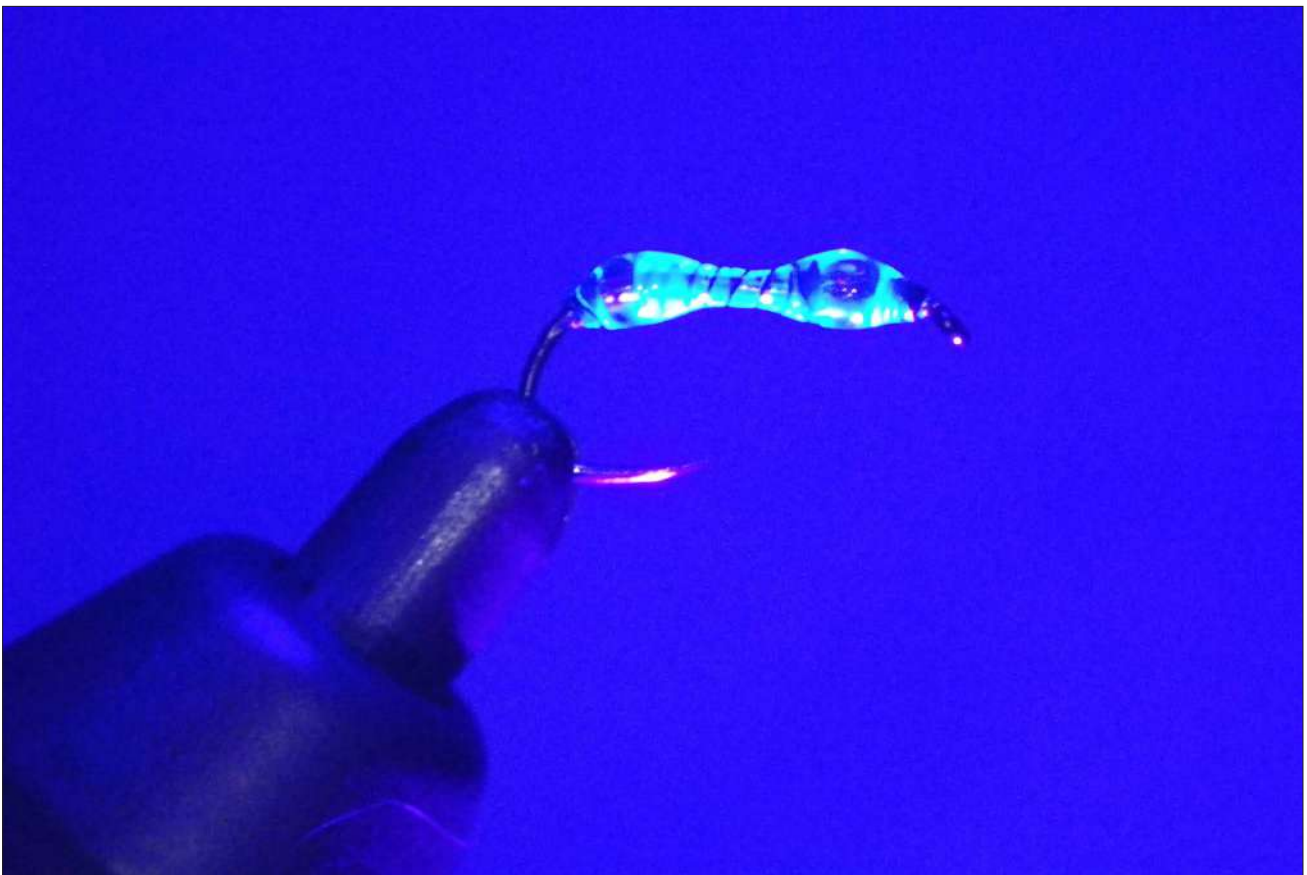
I put the wire spools on a Stonfo Bobtec bobbin holder because I find this offers me more control.



(L) Two stages in tying the author's Simulid Nymph – no thread, just wire is used

Here's the tying sequence:

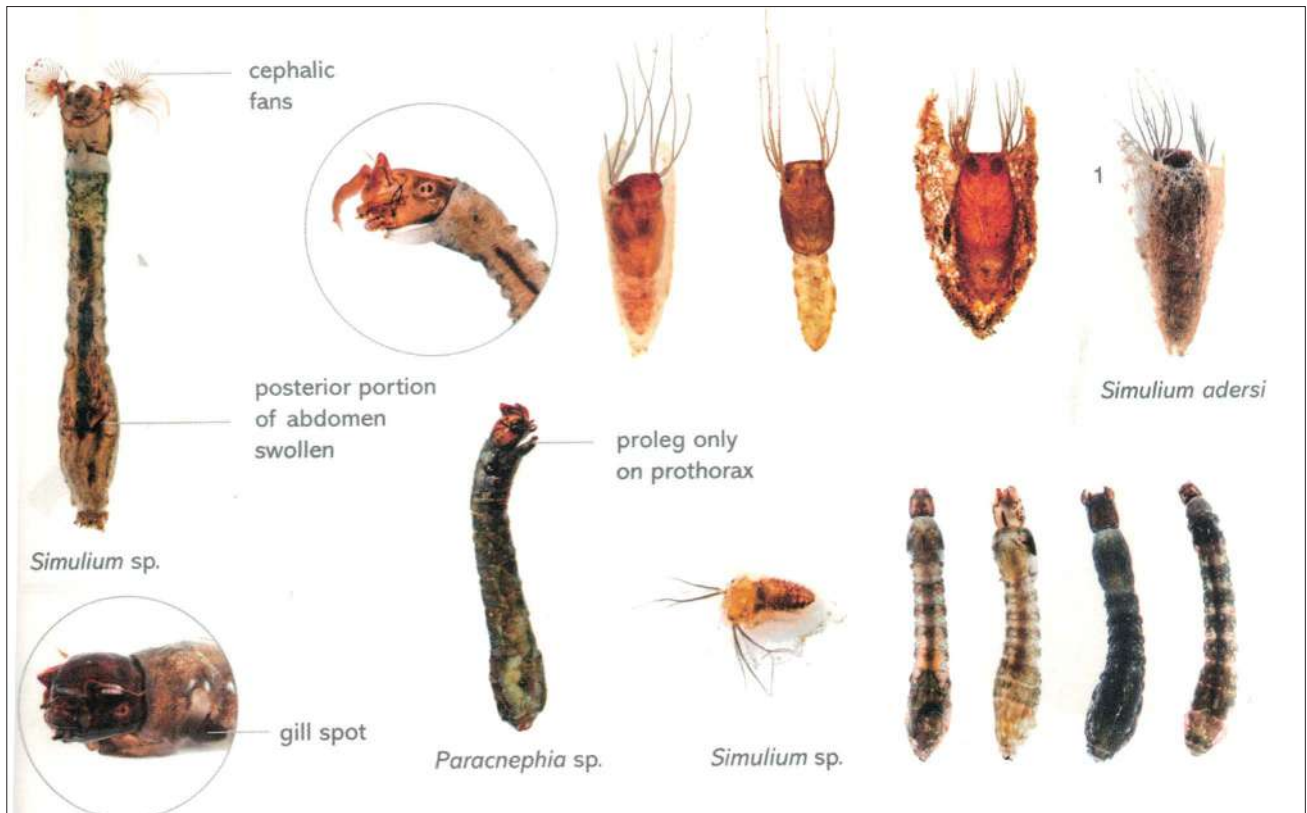
1. Create a small cone of wire at the hook eye and slide two beads onto the hook shank, the small bead closest to the eye. Snap off the wire.
2. Create another cone of wire at the hook bend and slide the bigger bead backwards against it. Snap off the wire.
3. Create a cone of wire in front of the bead at the rear and spiral the wire forward in open turns to the front bead.
4. Create a final cone of wire behind the front bead and whip finish. You now have two beads, encompassed by wire, creating two oval segments, the one at the rear being slightly bigger than the one at the front – thus imitating the shape and silhouette of the larva.
5. Apply the UV light-cured resin and cure.



A Simulid nymph under ultra-violet light showing its construction features

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The page on *Simuliidae* in Christian Fry's book shows that the colour of the semi-transparent larvae is not uniform although, from above and looking through the water, they appear black.



A scan from Christian Fry's book (above) and a photo (below) showing what they look like in their natural habitat. A striking visual feature of the larva, aside from its characteristic shape, is the prominent banding on the body



As a fly tyer I have derived great benefit from joining Instagram and one of those benefits improved the Simulid Nymph.

I follow #wgpenny on Instagram and, from him, I got the idea about blending different colours of UV resin and using permanent marker pens to achieve subtle shades. I now combine, for example, Gulff Motor Oil with Loon Olive and add some black glitter dust to create a mottled effect. Loon Smoke is also useful because when you look at the larvae on the rocks, they all seem a greyish black. Glitter dust can be added to these resins to create more sparkle.



A Simulid Nymph showing the effect when different colours of resins are mixed

Initially I used black wire for contrast. Our major yellowfish rivers such as the Vaal and Orange have significant populations of the apple green *Macrostemum capense* caddis larva. Professional fly tyer, Yaqoob TarMohammed -@Jozify – had significant success on a small tributary of the Vaal using a Simulid Nymph tied with green wire. Perhaps the fish he caught took it for an early instar of the caddis larvae known locally as 'Green Rockworms'.



A Simulid Nymph tied with green wire by 'Jozify' proved effective on yellow fish

Black Fly life cycle

The life cycle of the black fly from egg-laying to emergence is takes about three weeks and, in the Western Cape, there is a massive peak in early spring.

Breeding occurs throughout the year however and we probably have about six annual generations.

As far as behavioural drift is concerned, black fly seem to be more important than Baetis nymphs according to the Blue Quill Angler Blog in a post headlined '**Black Fly Larva and Their Importance to**

Trout Fishermen':

'In a recent study, black flies were consistently consumed by trout at a much higher rate than their proportion in the drift. While Blackflies composed about 10% of the drift, they made up nearly 70% of the trout diets in June and July! (The American summer).

If that isn't enough for you, consider that on the same stream, Baetis—the orthodox angler's security blanket – made up 70% of the drift and contributed a mere 20% of the total trout diet while other common drifters Ephemerella (PMD) mayflies, were nearly unscathed.'

Behavioural drift occurs at dusk and dawn with the major peak at dawn.

In this regard the Simulid Nymph should excel with its contrasting dark and clear sections and the ability of the latter to transmit and reflect light.

Early tests with my UV epoxy blackfly nymph by friends show that the fly seems to have a lot of potential. It is streamlined and smooth so sinks quickly, its translucence is exceptional and it is very durable

Andrew Ingram – Elandspad stream

Apart from a stiff downstream breeze on the Elandspad, conditions were perfect. As there was no obvious movement of fish, I decided to start fishing with the size 16 Black-fly nymph made for me by Ed. The first cast gave me my length and second was placed in a bubble line and in an instant my first fish of the season was on. From there things happened fast. Every couple of casts produced a fish, one which was blind in one eye!



Despite being blind in one eye, this trout took the Simulid Nymph avidly

About an hour later the fly, tied on with 7X tippet, was taken by possibly the biggest rainbow that I have seen on the Elandspad and after half a dozen cartwheels out of the water, the knot gave and the fish kept the fly. After that I tried Ed's #16 green and then red brassies for about an hour ... no luck ... and so decided to risk the second and last black fly nymph. Two fish later it was also broken off ...

Tom Sutcliffe - Lourens

We were on a low, gin clear mountain stream above Lourensford farm in Somerset West. Robin Douglas was using a small Para-RAB and I stuck with the Ed's nymph, both of us on a metre-plus of 7X tippet.

The first thing that struck me is that the glass bead version sinks really fast given its totally smooth surface, but in the fine flow the tungsten bead version tended to hang up a lot on stones. Then I also

noticed that the pitch-black fly was easy to follow in the drift, of course other than when I placed it in the fast, white water at the head of runs. This is where I thought I'd get most of my takes, given that the naturals prefer fast water. But I was wrong. The fly did best in the smooth-surfaced glides and tail-outs.

There were two notable fish. The first was a trout I saw swing at least a metre to grab the fly. The second was a trout hanging well back in the smooth, crystalline flow at the tail of a wide pool. He was swinging side to side as he fed, looking as light as a feather in the water and it really was a beautiful thing to watch. I unhooked Ed's nymph, stepped to one side to get a better line on the fish, slipped and went in with a splash. I got up cautiously, looked for the fish, and saw he was still feeding!

I threw a cast that dropped the fly ahead and to the right of fish and in a second the current had swept the fly past him. But the fish swung around and chased the fly at least two metres, took it and I hooked him.

At the end of the day, I guess the scores between the Para-RAB and Ed's nymph were about even, but this little pattern shows serious promise.



A Deon Stamer net provides the backdrop to one of the two trout which chased the Simulid Nymph downstream. Photo by Tom Sutcliffe

Robin Douglas - Lourens

*We'd fished for about three hours and on approaching the penultimate pool on the beat, I noticed a trout feeding strongly in the tail of the pool. Tom quickly spotted it and commenced the stalk. He had his eyes firmly locked onto the fish and consequently took a tumble into the stream. Tom never missed a beat though and soaking wet, with his eye still firmly locked onto the feeding fish said, "I'm going to catch him for you, Robin". This was a difficult fish to cast to as it was sitting right at the tail of the pool in very clear and calm water. I was convinced Tom would line him but the cast was perfect. The fish turned and followed the fly, decided it did not want it and swam back to its station. Then it changed its mind, decided that it definitely **DID** want that fly, raced after it and ate it. I cannot remember when I have enjoyed the catching of a trout more. Nymph fishing at its best.*

Stephen Dugmore – Elandspad

But the Simulid! Wow, that was something. I fished it on a dropper under a Paraloop dry. The fish ate it like mad. I got a few on the dry, but the fish clearly really liked the Simulid more. On almost every cast the Paraloop would dip under. What a treat. It is definitely going to be my go-to dropper fly from now on.

Tom Sutcliffe says that the light transmitted through the clear sections of resin is a striking feature of the pattern.



In direct rather than reflected light, the distinctive shape of the Simulid Nymph is emphasised

Metal or glass beads?

As Tom Sutcliffe indicated, the Simulid Nymphs tied with tungsten beads tended to hangup on the bed of our shallow, boulder-strewn streams, but there is another reason – translucency – why glass beads are preferable. Under magnification, such is the transparency of Simulid larva that you can see its internal organs.

Colorado guide Pat Dorsey has proved the efficacy of clear, silver-lined beads with his Mercury line of flies and a review of the 1997 book 'Tying Glass Bead Flies' by Joe Warren can be found on the Global Fly Fisher website. The translucency of glass bead flies is a definite trigger for trout.

Orange River Simulium



**Daniel Rossouw with an Orange River yellowfish in the Richtersveld.
Would the Simulid nymph work here?**

‘In 1996 the Northern Cape Agricultural Union estimated that blackflies accounted for up to R88 million per annum in lost sheep production along 800 km of the Orange River, and a further R19 million in lost taxes. The main pest is Simulium chatteri Lewis, a species endemic to Southern Africa. This species disperses up to 80 km on either side of the Orange River, depending on wind direction, and is a problem from approximately Hopetown to the mouth of the Orange River, including the Richtersveld and Southern Namibia.’

That is the introductory paragraph of report by Ernest Myburgh of a government agency, the Water Research Commission, in a paper (WRC Report No. 1019/1/0)) headlined ‘FACTORS THAT INFLUENCE ADULT BLACKFLY (DIPTERA: SIMULIIDAE) SURVIVAL ALONG THE LOWER ORANGE RIVER, SOUTH AFRICA’.

Its basis is that while the adult male blackfly lives on nectar, the female requires blood to complete the breeding cycle. In Southern Africa it gets this blood from animals and birds, further north it preys on humans in 30 African countries resulting in millions of people being affected by what is known as river blindness – Onchocerciasis.

Figure 4 in the *Piscator* article by Dr Ferdy de Moor of barbel taking emerging blackfly adults in the Vaal River indicates that Simulium are not confined to clear, highly-aerated mountain streams and this opens the possibility of imitations being used in the Richtersveld section of the Orange River – although such a fly would need to be tied on a heavy wire size 16 hook to cope with the power of the yellowfish in this area.

The blue-spectrum Simulid Nymph



(L) A size 16 Simulid nymph tied with translucent glass beads and 0.01 purple wire

In his seminal 2002 book, *‘Trout and Salmon of North America’* Robert J Behnke writes of the trout’s eye: *‘The cones located in the retina are sensitive to wavelengths associated with ultraviolet, blue, green and red light. Their perception is greatest towards the blue end of the spectrum’.*

Purple is a combination of red and blue.

Both, on their own, are attractive to trout.

Blue appeals to trout. T C Kingswell Moore, in his 1960 book *‘A Man May Fish’* wrote that there were three mystery colours, gentian blue, claret and orange – rarely found in nature – which had a special appeal for trout. Claret is defined as ‘a deep purplish red colour’. In their 1973 study, *Choice of Colors of Food Items by Rainbow Trout (Salmo gairdneri)* Ginetz and Larkin fed fish eggs in different colours to rainbow trout and their preference was, in order, blue, red, black, orange, brown, yellow, and green.

In 1985, Charles Meck used blue Flashabou instead of peacock on his Royal Patriot and substantially increased his catch rate. In 1988, Australian guide Ken Orr fished an effective black seal’s fur nymph with a hot orange tag, but its success rate increased so radically when he added a rib of blue wire, that he called it the 007 Nymph because, as a client remarked: “It’s a licence to kill”.

In his classic book, *‘Rod and Line’*, Arthur Ransome wrote of how he took trout after trout on a bright day on an ant pattern he had devised but, a few days later in grey, overcast weather, they completely ignored his ant tying - although they responded well to other flies.

This ties into Gary LaFontaine’s ‘Theory of Attraction’ about how ambient light affects the way fish see prey.

In May 2024 I was given information that water colour can also be a factor.



Trout streams near Cape Town have tannin-stained water. A photo of the Elandspad by Brett Leslie

Marcel Terblanche - @driftflyfisher- an artist whose illustrations add significant value to this book, lives in the densely forested, high rainfall area of the Southern Cape.

As a consequence of the high level of rotting vegetation in the water, many streams in the area are heavily peat stained and the tannins coat trout eggs and smother them.

A 1996 article in the history folder of the Cape Piscatorial Society archive which is headlined **‘Trout in the peat-stained waters of the Southern Cape’** opens thus: ‘The dark, peat-stained and acid waters which extend around the southern tip of the continent for about 300 miles from the Elgin District above Sir Lowry Pass along the “Garden Route” to the Humansdorp district, have been tried with trout on many occasions with but slight success.’

Brown trout survive in a handful of tiny streams here and Marcel found that simply changing from a black to a wine-coloured wire rib on a black soft hackle saw previously impassive trout charge from the opposite bank to attack the purple-hued fly.



The Southern Cape brown trout streams are literally strangled by vegetation, resulting in tannin-stained water and Marcel Terblanche found that flies containing a purple element were a significant trigger

In the USA, trout in streams with a high humic acid content invariably take a purple San Juan worm rather than the traditional red.

In the closeup photos taken by Christian Fry, the predominant shade seems to be a semi-transparent brown so in the photo at the head of this section of the article, I used glass beads in shades of purple, purple wire and covered the nymph with Gulff 'Motor Oil' resin mixed with purple glitter dust. Once cured, I gave it a coat of olive permanent marker ink and then another coat of Loon Smoke because, from the bank, they appear black.

In the trout streams near Cape Town, the water is the colour of whisky and a purple Simulid nymph might well prove very successful – time will tell.

Trees which have a relatively tannin content are wattle, oak, eucalyptus, birch, willow, pine, alder and hemlock but the tannin is most likely to leach into streams in an area where growth is dense and rainfall high. If your trout stream has a strong amber colour and a high population of Simuliidae, then an imitation of the larva containing a strong purple emphasis might well prove highly effective



Dense bush and 47 inches of annual rain create the tannin-stained water of the Southern Cape's brown trout streams. Marcel has created a 2-weight, six-foot rod weighing less an ounce for these conditions

For further reference on Simulid larva imitations, I can strongly recommend the YouTube clip by professional guide, Brian Hilbert, which can be accessed online using the key words 'anglerscovey +bug-of-the-month-all-about-blackfly-larvae'. Another YouTube clip by Hilbert is titled 'How to tie Hilbert's Black Fly Larvae | AvidMax Fly Tying Tuesday Tutorials'

