



CHAPTER 17

The Evolution of the Light Bulb Spider



**A rainbow trout attacks a Long Jawed Orb Weaver spider (Tetragnathidae).
Painting by Marcel Terblanche**

The most common spiders preyed upon by trout in the mountain streams near Cape Town are the web-spinning Tetragnathidae species shown in the painting above and the 'Huntsman' spiders (Sparassidae) which do not build webs but track their prey on the bank or instream rocks or are semi-aquatic and capture their prey beneath the water surface.

This painting mirrors an account in a 2009 article 'The Wolf Spider' by Leonard Flemming which can be found in the 'Terrestrials' folder in the articles archive of the Cape Piscatorial Society.

His Wolf Spider is a more exact imitation of the spiders which frequent the trout streams near Cape Town than Mark MacKereth's more impressionistic Caribou Spider which had preceded it. I felt, however, that its legs, made from pheasant tail barbs, were fragile and that the rubber legs used by Canadian photographer, David Lambroughton, on his spider imitation would be more robust and provide more movement.

Lambroughton, a Canadian spends half the year in New Zealand, taking photographs for his 'Fly Fishing Dreams' calendar which is sold all over the world.

He described this fly on his Instagram page as being 'so deadly it ought to be banned'. This sentiment was echoed by a New Zealand guide, Dean Bell, who wrote I've seen it account for over 20 large browns on a single day on the upper reaches of the Ahuriri' in the book 'New Zealand's Best Trout Flies' (Pheasant Tail Publishing, 2006). It has also deceived trout on the River Test and salmon on the Dean River in British Columbia.

Leonard also tied an imitation of a more commonly seen riverine spider, the semi- aquatic Wolf Spider, *Nilus massajee*, which does not spin a web but runs down its prey. It is easy to recognise because of the parallel white stripes on top of its body



**Nilus massajee. The semi-aquatic huntsman spider found on Western Cape Streams.
Photo P Webb.**



(L) A photo by Peter Brigg of his imitation of the semi-aquatic Nilus massajee fish-eating spider

Peter Brigg -@grizzlyhackle – whose 'Call of the Stream' website is a glorious celebration of small stream fly angling, developed a simpler version of Leonard's Wolf Spider and you can read his chronology of such imitations, 'The Development of the Wolf Spider' in the 'Terrestrials' folder on the CPS website.



My version of Dave Lambroughton's fly with added Ethafoam to mimic the egg sac, a prominent feature of the Huntsman spiders

Lambroughton's fly proved to be a fairly complex tie, adding a poly wing and hackle to the foam rubber body and rubber legs.



Our attempts (bottom left and right) to tie Dave Lambroughton's rubber leg spider with the looped Fettuccine foam rubber version which succeeded it

To emulate the Wolf Spider's prominent white egg sac, I added some white Ethafoam to which Gary LaFontaine attributed magical light-dispersing ability. I was later to experiment with Solarez Buoyant Armour a white, UV light-cured resin

Our version of the Lambroughton Spider proved to be effective on local streams when my friend Campbell Lyons spent a day on a local stream with a visitor from the UK who had never cast a fly rod before. He quickly mastered the rudiments of fly casting but struggled to synchronise his retrieve with

the speed of the fly's downstream drift. This resulted in loose line and missed strikes. He liked our version of David Lambroughton's size 16 spider because its glistening wing of Fishient's Deadly Dazzle made it easy to follow in the drift. A feeding trout was spotted and, in total, Campbell's client managed to get nine casts over its holding position. On each occasion the trout rose to it, but he failed to connect on the strike. Nine rises by the same trout to the same fly in a matter of minutes!



A Wolf Spider in its natural habitat – photo by Campbell Lyons

I wanted to simplify Lambroughton's spider. What succeeded these attempts used stretched and doubled Hareline Fettuccine foam rubber strips for the abdomen. These strips were originally designed by Drew Chicone for his Tuscan Bunny, a salt water surface pattern for targeting ambush feeders.

The front of the new version of the Light Bulb Spider has a Roman Moser Balloon Caddis-style head which is folded backwards using the tip as a sighter. The barred rubber legs are separated by Semperfli Kapok Dubbing. It was tied on a #14 short shank, medium wire Dohiku 303 hook.

A radical transition in the design of this Huntsman spider imitation came when I received a photo in May 2022 from split cane rod artist, Stephen Boshoff.



(L) Stephen Boshoff in his Cape Town workshop – his 'Light Bulb Ant' concept applied to other terrestrial insects was a singular fly-tying innovation

His ant, an old design, has a lacquered thread body. Instead of the traditional rooster hackle in the middle of the fly, he used a palmered CDC feather. What changed it from the conventional was that he flickered the longer tips of the CDC feather with tiny drops of UV-light cured resin. This clearly caught and reflected the ever-changing kaleidoscope of light created between the sun and the braiding water

currents. In my Instagram post at the time, I wrote: 'Kaleidoscope Ant' might be a more appropriate name because it takes the decades-old, lacquered thread ant an innovative step forward.'



(L) Stephen Boshoff's 'Light Bulb' Ant, a concept that could significantly enhance the efficacy of several conventional fly designs

Steve explained the rationale behind this step: 'What led to the 'light-bulb' (thought) in my tying - at first on floating ants - was influenced by several design factors: First, adherence to Tony Biggs's 'free' tying style, the impressionistic rather than exact imitation (further supported by Tom Sutcliffe's quest for the 'working' fly).

Second, images from books that stayed in my mind since my youth, specifically the dimpled image of the natural's legs on the water (I think both Marinaro and Goddard & Clarke's key texts carried such images). Third, my sense that most fly-tying texts over-emphasized wings, at the expense of other insect body 'parts'. Hackle - representing legs - is almost considered a secondary trigger.

Within a broader belief that most of the drifting flies I encounter onstream are not perfect and lean towards partly 'wasted' - with body parts splayed in different ways (each somewhat unique) - who knows which body part triggers fish interest? Fourth, I think that many 'floating' fly imitations - and especially terrestrial and partly-crippled imitations - drift too high above the water. They should sit in as well as above the water surface (probably the reason why Tony used a heavier hook for RABS).

I just dislike stiff legs on flies, and the tiny blobs of epoxy creates what Ed Herbst calls a 'pendulum' effect, making the legs swing free. Finally, I do not know much about what colours the trout see. So, in one fly, I like to play with subtle variations and, probably influenced by Gary LaFontaine, believe that the light-bulb may reflect and create nuances of colour that may interest a fish, even if not seen by me.'

It was the pendulum factor that intrigued me.

Movement creates the impression of life and the counterweighted but flexible feather fibre, cantilever-anchored at the body, constantly reacted to the pressures exerted by changing current flow. A not-entirely accurate analogy in a fly design context would be Russell Blessing's Woolly Bugger with the weight at the eye of the hook creating a concomitant movement in the flexible marabou tail.

My initial sense was that these sparkling little spheres, to the consternation of traditionalists, might add an additional form of attraction to the tips of the hackle on a North Country soft hackle like a Partridge and Orange.

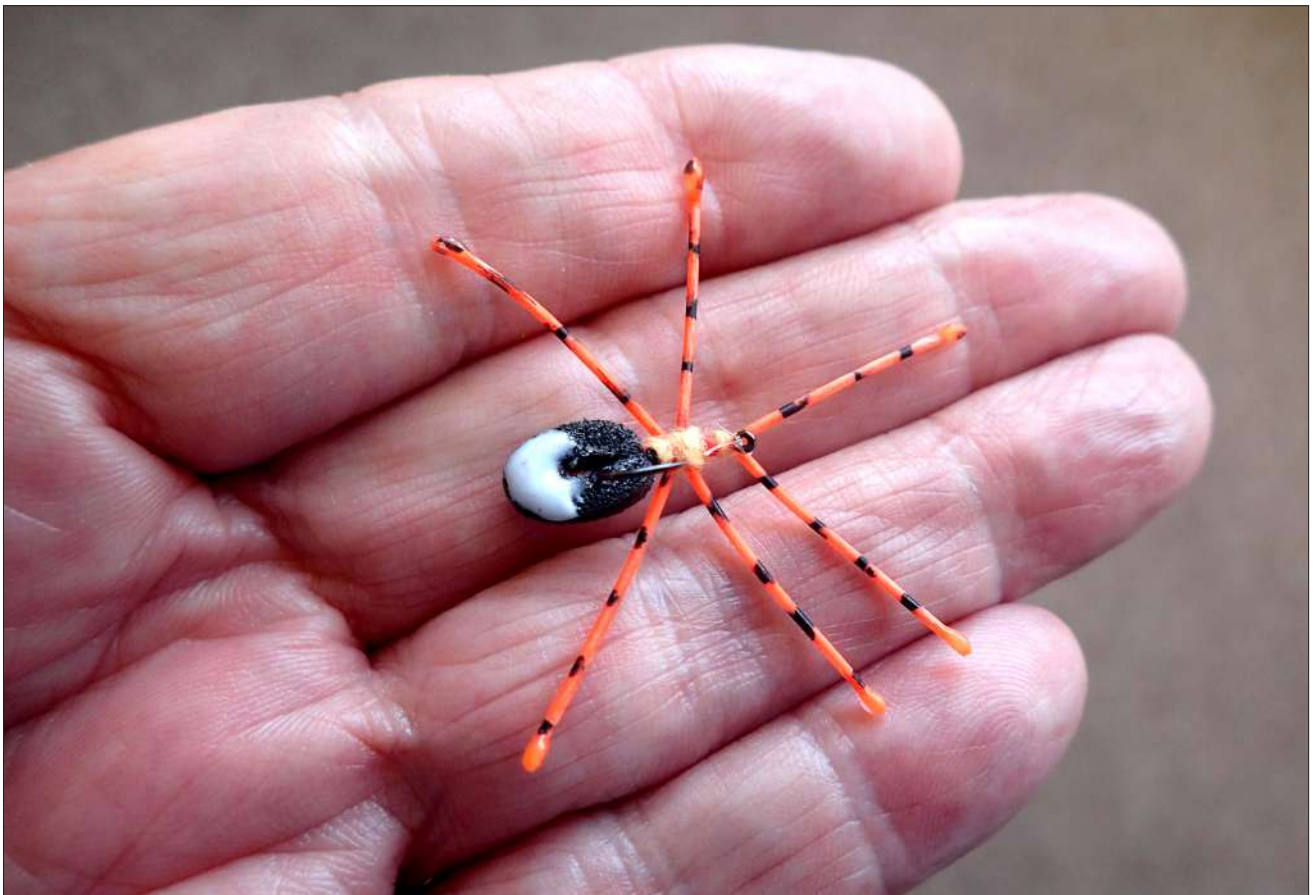
That thought was quickly replaced by reflection about how the added weight could animate the tips of rubber legs on foam rubber spider or hopper imitations, creating a pendulum effect.



Left & Right - The Light Bulb Spider prototype with silicone rubber legs tipped with UV resin

An initial hurdle was that the UV resin (we were later to add glitter dust) would not stick to silicone so we switched to natural rubber legs

When Solarez brought out its white UV light-cured Buoyant Armour resin, my immediate thought was that it would be ideal for representing the egg sac which the stream-frequenting Wolf Spider female carries beneath her abdomen.



Solarez Buoyant Armour white resin used to imitate the egg sac the Huntsman spiders carry beneath their abdomens

CHAPTER 17

The first Light Bulb version was first tried by Matthew Sephton who fished the Three Drifts Stream on the beautiful family farm, Pitlochrie, in Barkly East - @https://www.instagram.com/threedriftsfishing/.



Matt Sephton fishing the Three Drifts Stream on the family farm, Pitlochrie, in Barkly East – photo by Wiebke Langner



It proved to be extremely successful - this from an email he sent me on 12 January 2024:

‘The spider is honestly something special, watching it float down the stream and into an eddy, watching a big bow come up and have a look, deciding carefully whether or not to take the fly and then absolutely engulfing it. Seriously fun skinny stream fishing today. I fished a simulid with a spider dry dropper. For every 2 fish I hooked on the simulid, I hooked one on the spider. After this I couldn’t help myself and fished only a spider or hopper the rest of the day, all on a little 6ft 1-weight and had such fun.’

(L) Matthew Sephton stalking rainbow trout on the Barkly East family farm, Pitlochrie – photo by Wiebke Langner



(L) A Three Drifts stream rainbow trout deceived by the Light Bulb Spider – photo Matt Sephton

Around this time, I received a serendipitous insight into why the Light Bulb Spider was proving so successful – aside from its wide but realistic profile and the increased leg movement facilitated by its counterweighted legs.

On Instagram, I spotted a photo taken by an expatriate South African, Arno Crous (@smallstream_flyfishn) a local small stream fly angler before he moved to Australia.



(L) The Arno Crous photo which made me realise that Stephen Boshoff's 'light bulb' approach had greater ramifications than I had initially realised

It showed a Wolf Spider and what the photo accentuated was the star bursts of light caused by the sun's rays bouncing off the dimples which the spider's feet imprint in the water surface.

Have a look at the article 'Spider locomotion on the water surface' by Robert Suter on the Researchgate website and do an images search using the same key words. Note the star-like light reflections from the dimples created by their eight waterproof feet.

The feet of spiders like Nilus massajee have features which

enable it to use the surface tension of the water advantageously for locomotion.

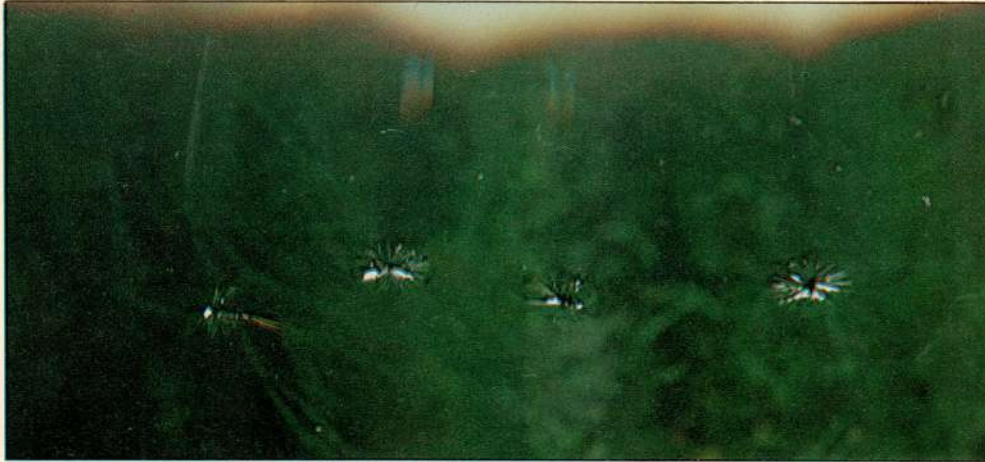
It was John Goddard and Brian Clarke who, through their use of underwater cameras, brought us the information that those dimples created by the feet of floating

insects serve as an early warning to trout of approaching prey being carried towards them by the current. It came in their milestone book 2005 book *The Trout and the Fly*.

The triggers to the rise

1 – THE FEET IN THE FILM

REVEALED . . . exactly what it is that the feeding trout looks for, that triggers his predatory mechanisms, and that launches him on his way to the surface.



On this page . . . the tiny indentations that the feet of the advancing fly make in the mirror. As discussed in the text, the trout cannot see *through* the mirror, and so cannot see the fly itself. But that tiny starburst of light from the feet warns him that a fly is on its way. Who now, having watched fish rising in turbulent water, can believe the trout has less than perfect vision?

A scan from 'The Trout and the Fly' showing how insect feet in the film reflect sunlight, alerting downstream trout to their approach



The Light Bulb Spider proved as effective on dams with Ryan Weaver - @pisscatauryan - and his son, Christopher, doing well on stillwater rainbow and brown trout with the pattern



Christopher Weaver, above, with a dam-caught brown trout, which was hooked on the Light Bulb Spider

The need for further revision became obvious when Ian Cox tested the #14 spider during the 2024 Wild Trout Association annual festival in Rhodes.

Small trout, aggressive and agile, swarmed the spider but could not get it into their mouths and the resulting disturbance frightened the bigger fish.

Dropping from a #14 to an #18 hook, would bring the resulting fly closer to the actual size of riverine Huntsman spiders.



CHAPTER 17

Top-heavy foam rubber dry flies have very specific hook requirements – heavy enough to ensure that they always land upright, balanced with the conflicting need to be as light as possible to promote buoyancy.

We settled on a short shank #18 Grip 12723BL which just barely kept the Light Bulb Spider afloat. Despite this, it was highly visible in the drift.

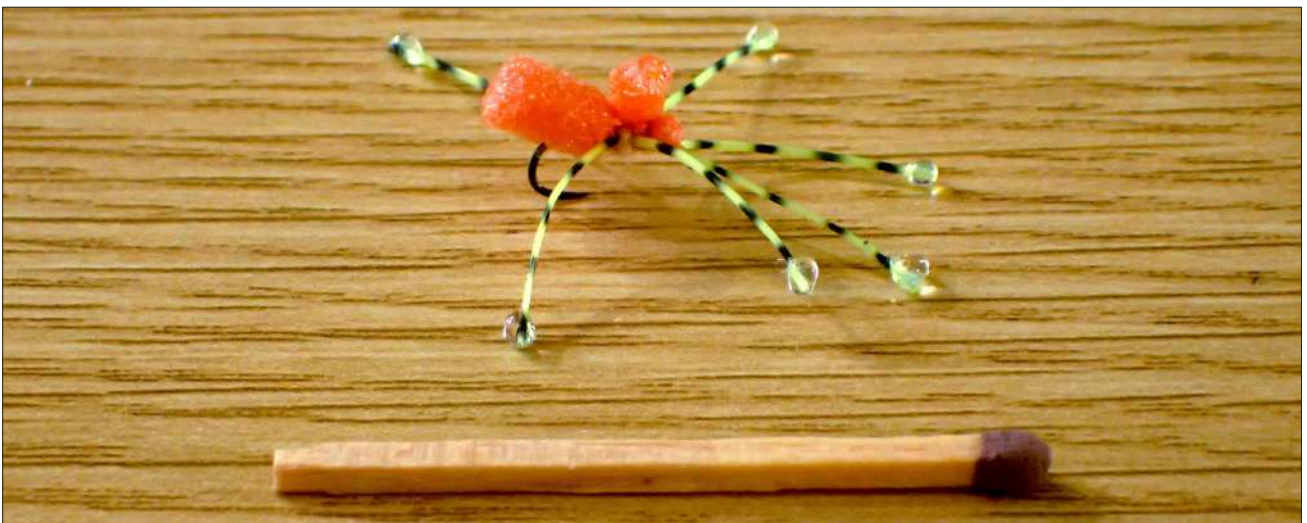
Adding more movement was a new Hareline product, Micro-Flex rubber legs, described by one USA fly fishing shop as oval in shape and ‘wiggles like crazy’.

Wanting to test its buoyancy, Campbell Lyons started in some calm water on the Smalblaar stream near Cape Town with the help of Chris Bateman. It floated (just) but drew slashing strikes when twitched and, if a dead drift does not work, try animating the legs with a subtle line movement.



Chris Bateman testing the LBS in almost still water on the Smalblaar. Photo by Campbell Lyons

It was late in May when I managed to post the new smaller version of the LBS to Darryl Lampert - @cape streams - who would use it on the Smalblaar and to Jan Korrubel who fishes one of the closest trout streams to KZN cities like Pietermaritzburg and Durban, the Bushmans. A Wiki search for ‘Giants Castle’ will illustrate the area of the Drakensberg Mountain range through which the Bushmans flows.



The latest and smaller iteration of the LBS using Hareline Micro-Flex legs before adding purple glitter dust to the second coat of UV resin

Both streams are among the most pressured in the country and thus ideal for testing the latest version of the Light Bulb Spider. Furthermore, with winter approaching and water temperatures dropping, trout in both streams were starting to spawn, making them less focused on prey capture.



Darry Lampert fishing the Smalblaar stream, an ideal testing venue for the Light Bulb Spider

Darryl fished the first weekend in May and his response was overwhelmingly positive. He phoned to say 'I think you have a winner here'.

On his Facebook page he wrote: 'Ed's Light Bulb Spider was a revelation. Fish ate it slowly and confidently all day and I was sad to finally lose it under a rock - ordered some more'.



A Smalblaar stream rainbow trout deceived by Light Bulb Spider fished by Darryl Lampert

To make it more visible, we had coated the top of the sighter post with a mixture of orange glitter dust and Loon Water-Based Head Cement which we had found was the best combination for this approach, but Darryl felt that the orange fly was visible enough without this mixture.

He said that, after the first cast, the leg tips dipped under water, which I feel is advantageous because fish can spot the spider before it enters their window - which is small on shallow streams.

Jan Korrubel - @jankorrubel_anglerfish – professional guide and fly tyer, who runs the Kingfisher shop in Pietermaritzburg, only managed to get away during the last weekend in May, by which time the brown trout in the Bushmans stream had already spawned. The rigours of spawning had left them lethargic, but Jan brought several to hand and one drifted below the spider for the full length of a run, then followed over the lip into the next run before taking it decisively!



(L) Jan Korrubel's photo of the Bushmans, the most iconic brown trout stream in South Africa

Jan provided some useful feedback saying that, after only fishing in the morning, to rest the post-spawning fish, all the UV resin 'lightbulbs' had come off the Microflex legs.

They would be easy to replace, but I now use a double layer method. The first is Loon UV Clear Fly Finish which adds a subtle blue glow in bright sunlight and the second is a mixture of Solarez Flex or Glowman mixed with purple glitter dust.



(L) A Bushmans stream brown trout which followed Jan's Light Bulb Spider for some distance before taking

(L bottom) We have tried two other adhesives to create the bulbs – Aquaseal which is used to repair neoprene wetsuits and Pattex Repair Extreme

These adhesives are slow to cure and lack the convenience of UV light-cured resins which are well proven in fly tying application.

In February this year while doing an internet search for 'Spiders running on water,' I had the good fortune to come across a definitive work, the product of a lifetime of passionate research.

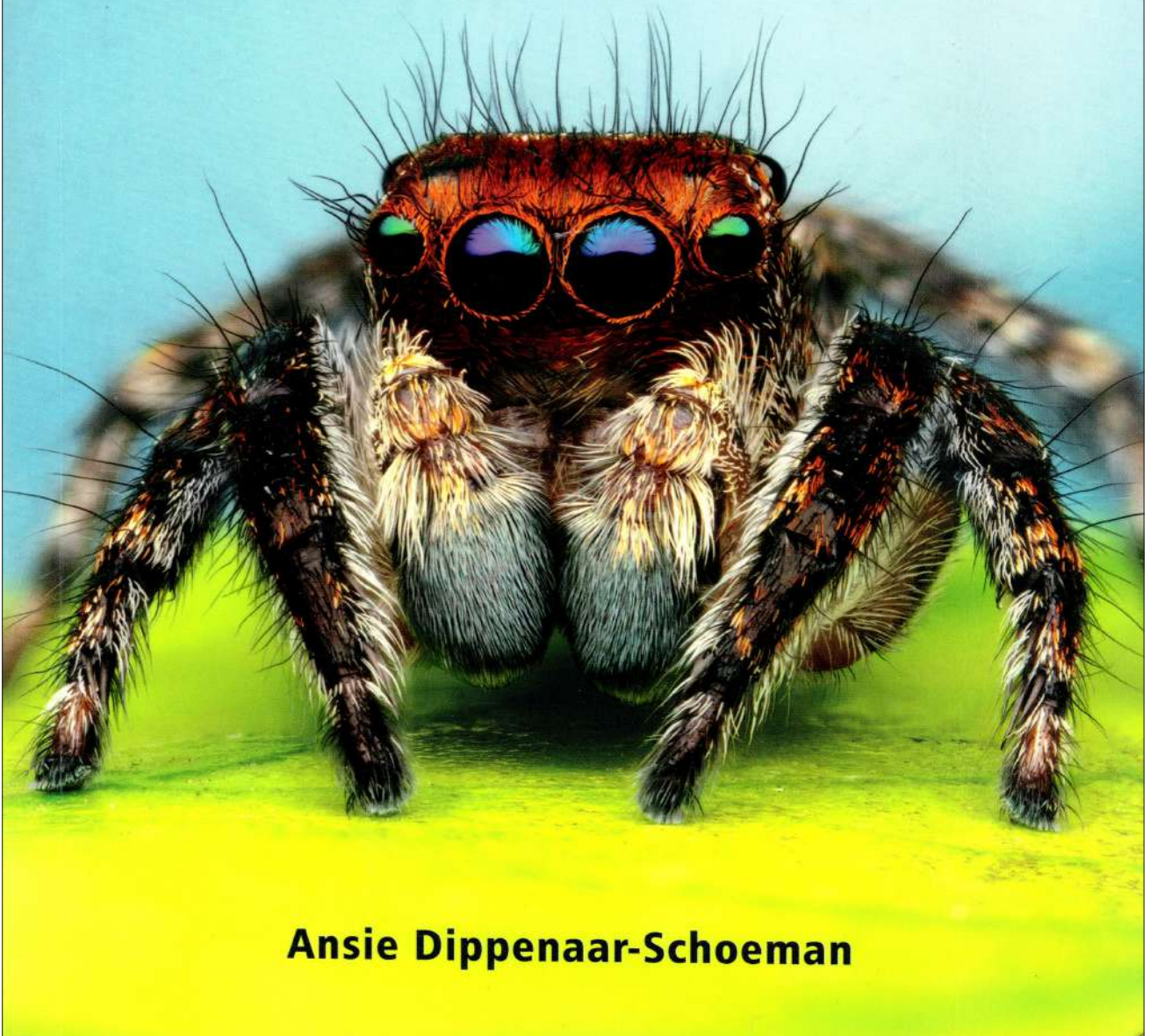
Professor Ansie Dippenaar-Schoeman's 'Field Guide to the Spiders of South Africa' contained several photos of the light dimples that the waterproof feet of Huntsman spiders leave on the water surface, dimples that reflect light.

She happily agreed to let me use the



photos and was intrigued when I told her that South African fly anglers had been tying flies to imitate these fascinating creatures for more than half a century.

Field Guide to the **SPIDERS** of South Africa



A definitive guide to South African spiders

She asked me to write a brief, illustrated article for the newsletter of SANSA – South African National Survey of Arachnida.

The Evolution of the Light Bulb Spider

Ed Herbst (edherbst346@gmail.com)



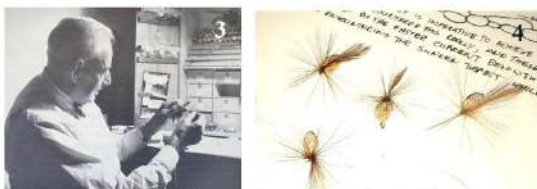
Drawing by Marcel Terblanche 2019 of a trout leaping clear of the water trying to grab a long-jawed water spider

Historians agree that fly fishing for trout originated in the northern hemisphere where mayflies and caddis play a large role in trout diet. In the southern hemisphere, terrestrial insects such as ants and beetles play a far more important role for trout in our streams. Trout are ambush predators detecting prey by its movement and, in this regard, there is no more obvious prey than a spider with its eight legs and waterproof feet leaving little dimples in the water surface which reflect light.



Hunting spiders like the Wolf Spiders (Lycosidae) (Fig. 1) and Fish-eating spiders (*Nilus massajee*) (Fig. 2) are ubiquitous on the trout streams near Cape Town. The first person to tie a fly in attempt to imitate one was an expatriate Englishman, Mark Mackereth, some 60 years ago (Fig. 3).

Mark, a bass player by profession, had met his South African wife in London and decided to pursue his career here. He joined the Cape Town Symphony orchestra and the Cape Piscatorial Society (CPS) in 1961 and his Caribou Spider – made from caribou fur – was an instant success.



Mark Mackereth's and the parachute-style Caribou Spiders.

Mark was the originator of the first South African fly to imitate the Wolf Spider (Fig. 4). Unlike conventional floating flies which have the supporting feather at the eye of the hook tied vertically, Mark used what is called a 'parachute hackle' which is tied in horizontally. It was tied in a style which we call impressionistic because it could be taken by trout for several insects, such as a beetle.

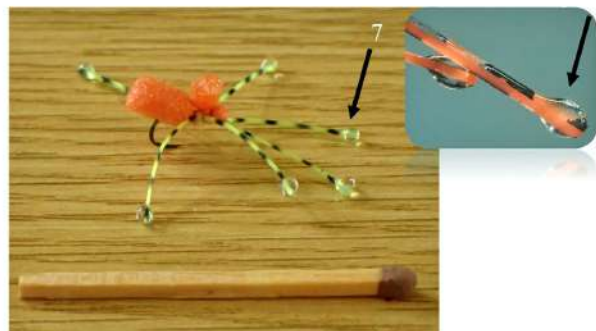
The next step in the quest for a more realistic imitation of the Wolf spider came decades later when a young University of Stellenbosch student, Leonard Flemming wrote in *Piscator*, journal of the Cape Piscatorial Society (: I recall an incident while fishing a small Cape stream during the late season. I watched the pale figure of the trout glide to and fro in the current while I was tying a fly to my tippet. A movement to the right of the inlet caught my eye and almost instantly the trout leapt clear of the water and grabbed a long-jawed water spider - that was dangling by its silken thread from a streamside bush - in midair!'

Leonard's Wolf Spider was quite a complex tie and Peter Brigg tied a simpler version which was a huge success.



Peter Brigg, webmaster of the 'Call of the Stream' blog, tied a simpler version of Leonard Flemming's Wolf Spider imitation (Figs 5 & 6)

I had been experimenting, with some success, with a spider which used a body made of foam rubber and rubber legs. I then spotted a photo of *Nilus massajee* (Fig. 2) taken by the late Peter Webb in the outstanding book 'Field Guide to South African Spiders' by Professor Ansie Dippenaar Schoeman and realised I could replicate the light dimples by adding a tiny drop of UV light-cured resin to the tips of the rubber legs. (Fig 7).



This is work in progress as, at the time of writing the 'Light Bulb Spider has yet to be tested. Orange is a colour that has proved particularly attractive to trout and I'm hoping the light reflected from the resin will also trigger a reaction from them.

For more see the Instagram of Ed Herbst

https://www.instagram.com/p/DFISxmiM7Kd/?utm_source=ig_web_copy_link

What I gleaned from her book was that the spiders that I see most often on our streams are the semi-aquatic Nilus massajee, identifiable by the two parallel white stripes on its abdomen and the more cryptic Lycosidae Wolf Spider. Also vulnerable are the orb weaver spiders (Tetragnathidae) which spin their webs in close proximity to the water

Tying the Light Bulb Spider

I have found the Olfa rotary cutter and mat useful for cutting foam rubber strips for fly patterns and they have facilitated the development of the Light Bulb Spider.



Here is the material list and a step by step tying sequence of the Light Bulb Spider:



Hends ultrafine orange thread, a preferred option for the Light Bulb Spider

Hook: Grip 12723 BL size 18

Thread: Orange Hends Ultrafine or UTC 70 denier orange or white Textreme Extreme coloured orange with a permanent marker

Abdomen: Stretched and doubled foam rubber strip – Hareline Fettuccine foam rubber preferred

CHAPTER 17

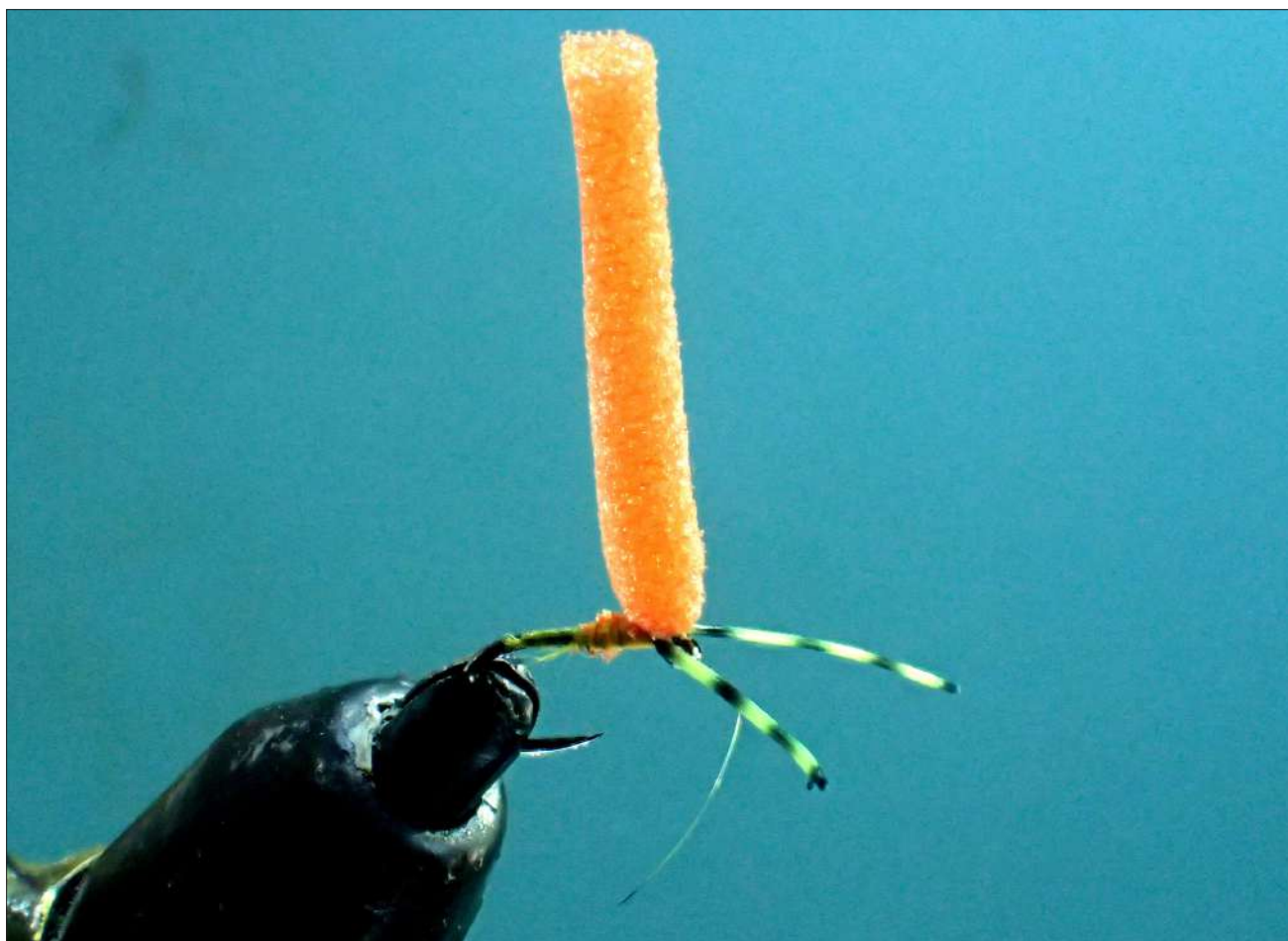
Head: Wapsi Evazote foam rubber or similar

Legs: Ultrafine rubber – Hareline Micro-Flex preferred

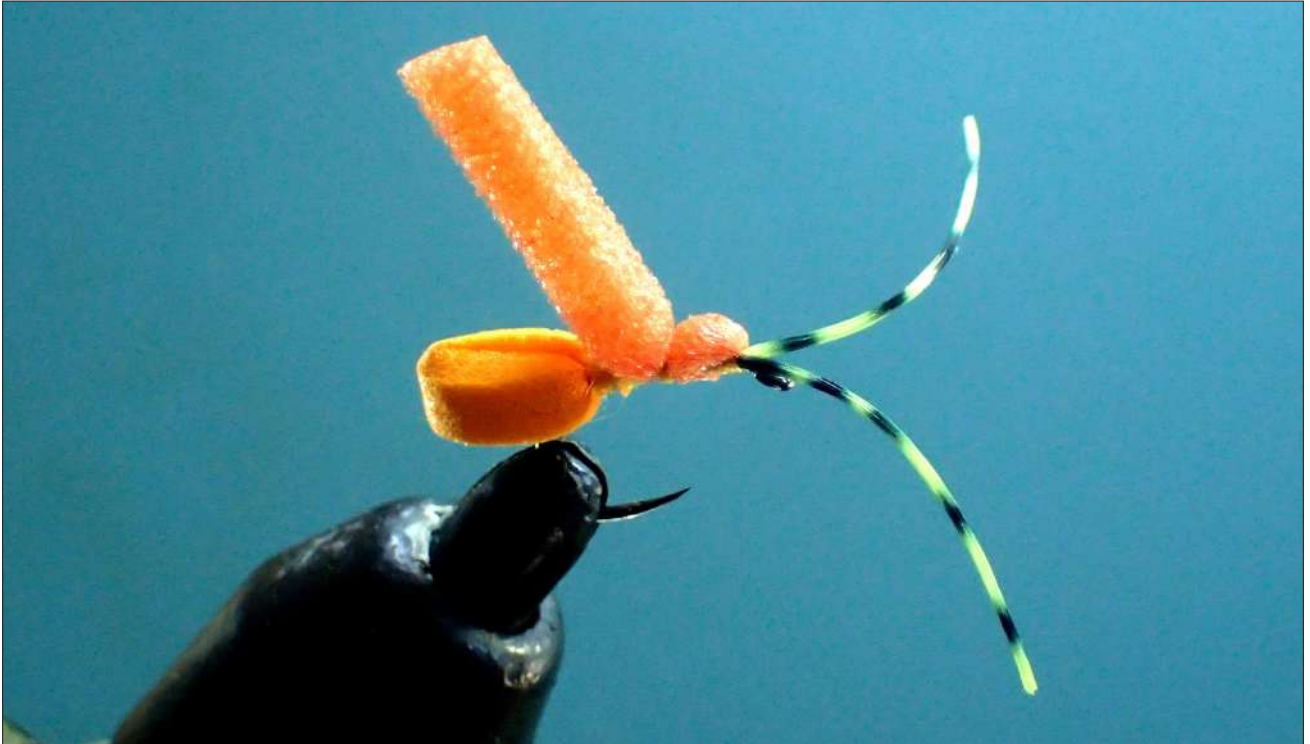
Dubbing: Semperfli Kapok



Step 1: Tie in the pre-barred Micro-Flex front legs



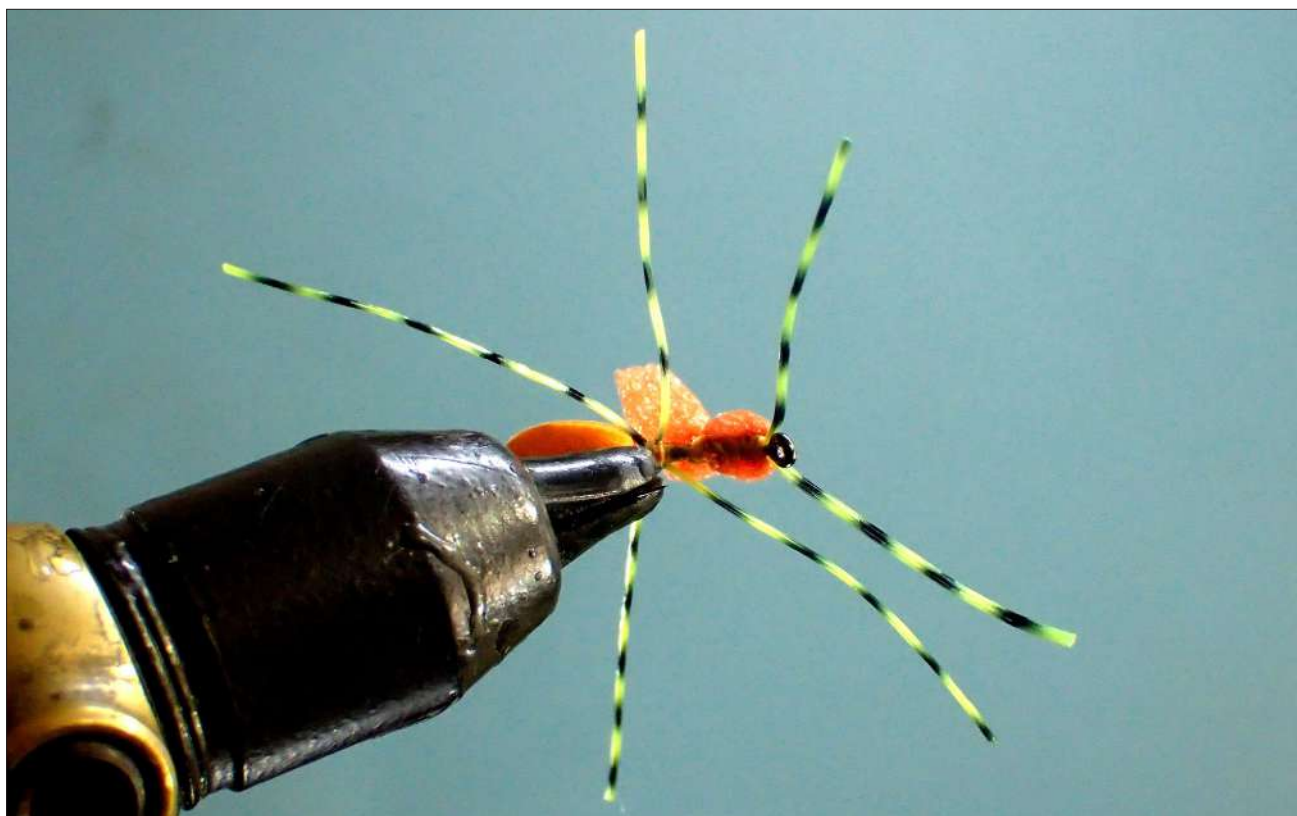
Step 2: Tie in the Evazote strip which will form the head and sighter post



Step 3: Fold the Evazote foam rubber backwards and tie down to form the head and sighter post



Step 4: Tie in the looped Fettuccine foam rubber strip to represent the abdomen of the spider



Step 5: Tie in a rubber leg on either side of the hook shank, dub the thread with kapok and use it to separate and secure the legs



Step 6: Tip the rubber legs with two layers of UV resin, the second layer being mixed with glitter dust

There is room for further experimentation, particularly when it comes to the leg tips. For example, combine Loon Fluorescing Clear Fly Finish as a base layer and cover it with Solarez phosphorescent Glow Man mixed with purple glitter dust as a second layer.

Why purple glitter dust?



Marcel Terblanche found that trout on his home streams charged purple flies having previously ignored patterns using different colours such as black

Marcel Terblanche, an artist whose paintings enhance this article also ties flies, furls Tenkara leaders and builds delicate small stream rods professionally, 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 dormant trout charge from

the opposite bank to attack the purple-hued fly.

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

The trout streams near Cape Town are also peat-stained but not to the same extent and there might be some benefit in using purple glitter dust in the two-layer UV resin mix.

Initial tests shows that the Light Bulb Spider is a promising pattern. Used by Arno Crous, it is proving itself on Australian small streams. It ticks a lot of boxes. Gary LaFontaine said that trout lying deep in strong currents need a 'wide' fly and a 'big chunk' to tempt them into expending energy on a rise to the surface. The LBS has the right silhouette, a lot of movement and its leg tips mimic the real-world starburst of light created when spiders run on the water surface.

There is room for further experiments. I'd like to tie one in dark brown and have it fished with a split shot or soft lead because I believe it would imitate our indigenous Potamonautes freshwater crabs which are eaten in numbers by our freshwater fish when available, particularly in spring when the newly-born crabs are small and more vulnerable.



Where it all began: A painting by Marcel Terblanche of Stephen Boshoff's 'Light Bulb Ant' which inspired the 'Light Bulb Spider'

