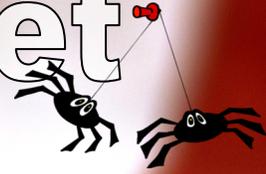


# The Spinneret

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Fall 2016

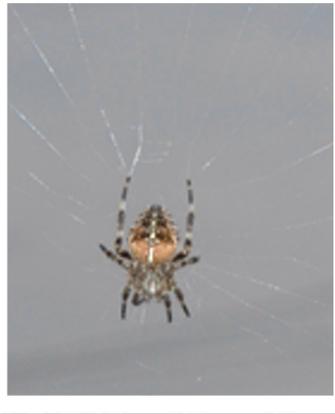


Pontificating politicians posing for pundits, posturing for position to possess the presidential prize. My poor television has been a no man's land since May. Where's a man like Pat Paulsen when we really need him??

Fortunately, the weather has been nothing short of spectacular so it's not as if I've been trapped indoors. A smoking hot grill, a tall glass of sangria, a beautiful autumn sky, a lake like a mirror and the company of a good woman and I can barely hear the tv babbling. -Ed.

## Spider Benefits:

It's hard to believe that here in the 21st century with all the billions of dollars thrown at colleges that something as miniscule as the humble spider could still be teaching humans about the realities of life.



Common European garden spider

But without a doubt, in spite of our combined knowledge, spiders are evolutionarily years ahead of humanity in the imagination department when it comes to solving real world problems.

Almost everything about spiders is amazing.

For instance, anyone observing a spider web may have noticed that you never see a "saggy" web hanging around.

The addition of a simple dab of glue at intervals allows the web to contract into self spooling knots that keep the web taught without tangling.

Materials scientists have only very recently discovered this and are amazed at the implications for new materials like artificial tendons that can change or maintain their shape under different environmental conditions.

Our ancestors have known for millennia that spider web has beneficial medicinal properties but researchers are only now acknowledging the extent of those benefits.

Spider web is naturally hypoallergenic. Most people won't have an adverse reaction to intimate contact with it.

That makes it an excellent candidate for sutures and because it naturally comes in diameters as small as 2 microns it has potential to be used in eye surgeries where larger threads would be destructive.

Imagine a flexible bandage that not only protects a wound but releases antibiotics or other drugs to aid healing of the most difficult infections. Those little drops of glue that spiders apply to their webs can also carry therapeutic drugs.

Continued...

## European Starlings:

On a chilly winter morning in 1890, Shakespeare enthusiast, Eugene Schieffelin marched into Central Park in New York and released 60 European starlings.

Scheffelin, president of the American Acclimatization Society, was bent on introducing all of the birds mentioned in Shakespeare's plays.

However, the bird, mentioned only once by Shakespeare has been so successful that it is believed the 150 million starlings in North America can be attributed to that single release.



European starlings

In these numbers, starlings cause significant damage to crops, livestock (by stealing their grain), and native bird species by competing for food and nest sites.

Birds that depend on knot holes for nest sites are frequently evicted by starlings. Some of the most vulnerable birds are wood peckers, swallows and sparrows.

Starlings are attracted to grassland where they feed on seeds, crane fly larva and other insects. In most respects this would be considered beneficial but because they flock together in large numbers this creates hazards for aircraft and can damage newly seeded and sprouting crops.

For the average person the most significant encounter we will have with them is when they set up housekeeping in our attic.

Because these birds prefer to nest in holes the screened openings in the roof soffit are in high demand. If you have a damaged screen in the soffit it is more than likely occupied by a starling.

Nesting begins in early spring and continues through summer. With sufficient food and good weather it is not unusual for them to rear two broods of chicks.

Starlings acquire avian versions of lice and mites and fleas but even when birds have inhabited the attic for several years the parasites seldom enter the structure.

Continued...

## Spider Benefits:

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How about a bandage that works best under water?

Spider glue actually performs better in the presence of water than our current adhesives. This is particularly useful to clinics dealing with infants and those managing difficult wounds like those associated with diabetes where injuries from bandage adhesives are as difficult to manage as those caused by disease.



Little Spanish jumping spider

Spider web is naturally anti-microbial and is high in vitamin-k (a blood clotting agent). Applied directly to an injury it aids clotting and healing and degrades harmlessly as the wound heals.

Spider silk is in a field of its own when it comes to regenerating cartilage. Current research is working on silk based implants that function like normal cartilage while allowing new cells to populate and replace the implant. That's a huge leap from current plastic based treatments that eventually have to be removed.

Spider silk also shows promise in many other medical therapies: artificial skin for burn victims, brain implants to monitor and help diagnose brain injuries, nerve repair, tendon and ligament repair.

This isn't science fiction. Some of these advances are already in human trials and could be available in as little as 2 years.

While most spiders do not bite humans, up to 40% of them produce chemicals so specific to anesthetizing certain nerve receptors that they are at the forefront of chronic pain research. One day a medicine based on spider venom may eliminate chronic pain without the side effects of current drugs.

Spider venom is showing promise as a treatment for muscular dystrophy where it slows the degeneration of muscle tissue.

You have probably heard about spider web being stronger than steel. While that is partially true, scientists envision ballistic vests for police officers and military that are 10 times stronger than Kevlar.

An American company has recently patented a process for genetically modifying silk worms to produce spider silk. With the availability of useful quantities of silk materials scientists will be incorporating it into all sorts of things.

It's quite possible given the advances in spider research that in the next few years that you will have more spider genetic material in your body than the Marvel super hero without having to get bit by a radioactive spider. ■

## European Starlings:

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The least invasive way to remove these unwanted guests is to catch them between broods in mid summer when the adults are teaching the young to forage and are caring for them on the ground or wait until after the winter migration to seal the openings to the nest.

Good quality wire mesh will keep them out for several years but is prone to rust out in our marine climate.

If you can afford it, the best recommendation is to have a general contractor install a continuous vented soffit.

There several good materials for this application but essentially the attic vents and rafter tails under the eaves of the roof are covered by a solid panel of wood or similar material that has a continuous vent installed along the bottom edge. Some manufacturers like "Hardy" offer panels that are pre-vented just for this purpose.

This kind of upgrade is also effective at keeping out bats and squirrels. As long as the roof is buttoned up tight you shouldn't be disturbed by cheeping chicks or the pitter patter of little feet in the attic. ■



Flock of starlings

## Service Targets:

### Expectations

As we move through fall we also move into the last big flurry of insect activity until spring. Moisture ant and dampwood termite swarms kick off in late August and run into September.

Swarms are generally harmless unless you have a plumbing leak or a leak into the structure. Both of these insects start with large brown wings which they shed shortly after flying away from the nest. Occasionally, wind will collect and pile hundreds of wings against a structure. This is not typically a sign of infestation nor are the troupes of wingless ants and termites that accompany them. Unless insects are discovered actively swarming out of the structure there is little need for concern.

Subterranean termites will also be swarming in coastal areas. These insects are black, less than a quarter inch long with transparent wings which they shed shortly after leaving their nest.

Usually, near dusk following a light rain they swarm out of the ground by the thousands. Once again, unless they are coming out of the structure there is little need for concern.

You may even encounter mated pairs of termites wandering into your home. The male defends his mate from other males by physically keeping his head in contact with the back of the female's abdomen. They appear to be a single black insect. This can be disturbing if you poke at them and they run off in different directions.

If you do encounter them coming out of your home call promptly. ■