THE GREAT OUTDOORS

Magnification of a drain fly shows its hair like surface which allows it to detect water. Photo: Eric iNaturalist, Salem Co.

Psyched Out...

By fauna in the bath. Our columnist finds an obvious story topic in her shower.

By J. Morton Galetto

I'm in the shower minding my own business when I realize I'm being observed. It is not the first time this quiet little voyeur has had the audacity to join me at such a private and sacred moment. I suppose some of his

relatives have joined you as well, the impertinent devils.

I've wondered where he comes from, showing up only every now and then, clinging to the wall, and rarely leaving unless provoked. Yes, I've ignored an obvious story, fauna in my bathroom: an infrequent and uninvited guest from the *psychodidae* family.

For the older folks *"Psycho"* (1960 movie) and shower are **not** two words we like to see paired, thank you, Alfred Hitchcock. That movie kept people unwashed for months. The plot summary involves a Phoenix secretary played by Janet Leigh who steals from her employer with the intent of running away with her boyfriend. Exhausted by being on the lam, she spends the night at the rundown Bates Motel and meets creepy proprietor Norman Bates (Anthony Perkins - still his best-known role). He is a young man with an interest in taxidermy and a difficult relationship with his mother. The shower scene remains one of the most terrifying moments in movie history.

I needed to consult the internet to remind me of most of the film's details. To this day I pause before entering a hotel shower. Sorry for those of you with keen memories, who can still hear Leigh's scream, and who will now take extremely speedy showers for the

next few weeks. Maybe they should play this movie often during droughts for water conservation purposes.

My Peeping Tom's common names include drain, sink, filter, sewage, and filth flies, or, if you prefer, moth midge or sewer gnat. I like 'moth midge' because it offers a bit of alliteration, but since they are in the fly family I suppose we should go with drain fly. Nature.com asserts there are 2900 described species of drain flies worldwide.

Correctly or not, I've identified my visitor to be *clogmia albipunctata*. They do not bite or sting, which makes my identification ever so much more reassuring.

Clogmia albipunctata, this is the species the author believes occasionally lurks in her shower. In reality this fly is only about the size of a #2 pencil easer's tip or a grain of rice.

Location: Washtenaw Co., Michigan Photo: Phil Myers, Museum of Zoology University of Michigan, Ann Arbor.

So who are these little housemates and do they pose a threat? Thus far, nothing has happened to me, but I will admit their demise has often not been kind under my thumb. Their slow and infrequent flight pattern allows them to be easy to flatten.

They are diminutive at 1.5 - 5 mm, and their comparatively large rounded wings give them a heart-shaped appearance. Being generally gray and covered in fine hairs, they somewhat resemble a moth; however they are in the order Diptera which is more closely related to flies and mosquitos.

Three Saudi Arabian professors from the University of Science and Technology (KAUST) actually did a study about why drain flies don't get washed away or drowned. It turns out it is due to their hairy bodies, which allow them to react very quickly to water. The professors noted, "We find that drain flies' remarkable ability to evade such potentially lethal threats does not stem primarily from an evolved behavioral response, but rather from a unique hair covering with a hierarchical roughness. This covering, that has never been previously explored, imparts superhydrophobicity against large droplets

and pools[,] and antiwetting properties against micron-sized droplets and condensation."

Although they have an avoidance of water their larva, which are aquatic, do well in drain slime.

Evidently like fruit flies they are heavily studied for genetic expression and embryonic development.

Their larva feed on organic decaying matter and humidity in drains, compost piles, septic tanks, and sewage. The female's eggs go through four instars over 18 days and then change to a pupa, followed by adulthood within one - two days.

Adults live about 12 days; they do not eat and their purpose is simply reproduction. However sources do differ on this fact, some suggesting they drink water and nectar on flowers.

Females lay egg masses of 30-100 eggs which hatch in 30-48 hours. The larval or maggot stages are up to 24 days, with the periods of time varied possibly due to species differences. The adult's size is 1.5 – 5 mm in length, the larvae size is 3.5 – 10 mm.

Most information shows drain flies to be of little health concern. Nonetheless Orkin of Canada states, “Drain flies are not known to bite or transmit any diseases to humans. However they can trigger bronchial asthma in susceptible individuals and their larvae can cause myiasis, a parasitic infestation in which the larvae grow inside human tissue.” Gee, that doesn’t sound good!

Orkin goes on to say that one can clean drains, “[b]ut only a professional pest control service can ensure all unsanitary conditions and potential breeding and feeding grounds are properly eliminated.” Just what I would expect an extermination service to say.

The diminutive drain fly on a 4.25” tile.

EarthlingNature.wordpress.com offers another perspective: “The bathroom moth midge is mostly harmless and can even be useful by reducing the accumulation of organic matter that could clog drainage systems. There are a few reports of urinary myiasis, i.e., parasitism by fly larvae in the urinary tract, caused by this species, but they are associated with environments with poor sanitary conditions and very poor personal hygiene. The main concern with this species occurs in hospitals, as its presence in hospital bathrooms makes it a possible vector of pathogenic bacteria carried from the drainage system to the patients.”

Yourwildlife.org also talks about them as decomposers in an article entitled “7 Cool Facts,” the author suggests we might think of them as “little plumbers slowly feeding on organic buildup in your pipes.” Hmmm, I’m not so sure that appeals to me, but maybe Hitchcock would have found material in that thought. This article also seemed to find blood-eating members of the *psychodidae* family medically interesting. I guess I have some maturing to do before putting this in my “Cool Facts” category even on a ghoulish day.

Entomologist Lee Townsend at the University of Kentucky Entomology Department says cleaning drains is the most effective control

measure. As the Saudis found, he too says they are difficult to drown. Furthermore poison, boiling water, and bleach are ineffective. Their eggs can also withstand periods of dehydration.

If you have an infestation, it can be indicative of poor sanitation or a need for action. Cleaning drains, keeping humidity in bathrooms low with proper ventilation, sealing cracks or gaps, and if necessary calling a professional may be in order.

My New Year's resolution is that as long as I continue to see only a couple ever so infrequently, I shall remain status quo – unconcerned and unimpressed.

Sources

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"7 Cool Facts About Drain Flies and Their Kin," by Matt Bertone, YourWildlife.org, September 2014.

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