

Biodiversity in my Bengaluru Backyard

Title	An unexpected backyard visitor – A member from the Nose-fly family (<i>Stomorphina xanthogaster</i>)
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Grade (you must be grade 9-12)	9
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These days with the current Covid situation, I am noticeably spending more time in my backyard than usual. Although I have been documenting and photographing birds and creepy-crawlies in my backyard for months, this extra time has resulted in a greater number than usual of new visitors but none more interesting than a fly I found one late afternoon on the 30th June.

Strolling around the shrubbery, mobile phone in hand, I spotted an insect I didn't recognise, an attractive fly with very alien-looking eyes resting on a pavement tile. Intrigued, I immediately clicked a few snaps and having exhausted my field guide resources, sent the images to Karthikeyan, chief naturalist, Jungle lodges & resorts.

To my surprise, Karthikeyan reported back being clueless on what it was. This drove me into research mode, scouting the web, spending endless hours foraging for information about this fly. It turned out to be tougher than I anticipated, almost defeated in my endeavour, I reached out to my dad, a self-proclaimed naturalist. He thinks he is the next David Attenborough, and I can't help but laugh out loud when he enacts him.

With my dad's assistance and a renewed energy, our joint research then continued. After thorough inquiry it turned out to be a fly from the Nose-fly family (Rhiniidae). Rhiniidae is a family of flies in the order Diptera, and formerly included in the Calliphoridae. There are around 30 genera and 370 described species in Rhiniidae. And my recorded specimen is a species called *Stomorphina xanthogaster* that belongs to the *Stomorphina Rondani* genus, distributed across India, Celebes, Indonesia, Malaysia, Nepal, Sri Lanka, Taiwan, Saudi Arabia, China, Australia and New Guinea. This species is different from the other species of the genus because of having its first posterior cell (R5) petiolate and sternopleura densely yellow dusted. It has been reported from many Indian states and is widely distributed in the Oriental region.

Globally, representatives of *Stomorhina* breed in locust egg-pods and are associated with the nests of Isoptera (termites) and Hymenoptera (ants), where they are probably ectoparasites. Another species *Stomorhina discolor* larvae, for example, are reported to feed on the broods of both ants and termites to complete their development.

Recent reports of *Stomorhina* feeding on flowers and demonstrating effective pollen transfer in a number of crops suggest that some species from this genus may be important pollinators of horticultural crops. Globally, approximately 80% of crop plants are dependent on, or have their yield enhanced by, insect pollinators - mostly by bees, while flies are the second most important visitors of flowers. Flies can be as efficient as, or better than, bees for pollinating some crops, and are often responsible for transporting high pollen loads in both natural and modified systems. The *Stomorhina xanthogaster* is no less a candidate when it comes as an ace pollinator, as they were identified as potential pollinators of horticultural crops in Australia. Their foraging behaviour is largely unknown, although in Northern Australian mango crops, this species feeds on pollen, contacting the reproductive structures of the flower in the process. This strong evidence for the importance of flies has already led to some attempts to boost or support fly populations on mango orchards. For example, In India, this species along with other blowflies and fleshflies have been reared and released into mango orchards. Pieces of meat were hung from mango branches in bags to support fly breeding, and the same "carrion approach" was adopted by mango growers in some parts of Australia in 2019.

I can never stop to be amazed by these incredible small insects and their importance in the larger ecosystem. As I pen this entry, I wonder what will turn up next to surprise me in my backyard?!



Additional Comments

I am grateful to Karthikeyan, chief naturalist JLR, Bhakta Prasad, Manager JLR for their enthusiastic encouragement and support in helping me write this article.

My parents for letting me loose in my natural world exploration and supporting me to make sure I achieve greater heights in my interest area.

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