

# Companions of the ‘fun-loving’ fireflies in the wild: friends or foes?

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The Environmental Management and Policy Research Institute (EMPRI), Bangalore, Karnataka, India initiated a study on fireflies in January 2022. The firefly’s team interacted with more than a thousand persons from urban, semi-urban and rural areas on the sightings of fireflies in their backyards. All persons affirmed with conviction that the populations of fireflies have dwindled from the past 4-5 decades. “Earlier, we use to commonly come across these enigmatic beetles in the open but not now”, they asserted. In the childhood days, *i.e.* during 1960s, it was fun-catching, collecting and watching these insects glow. Children would collect these beetles in empty match-boxes, plastic containers, pickle-glass bottles and if nothing was accessible / available, fireflies were held in hand-kerchief (hanky) or shirt pockets. Unaware of the feeding habits of the beetles, children use to offer grains, leaf-bits as food to the beetles. The glowing fireflies use to raise a great deal of inquisitiveness and the phenomenon eluded everyone- a source of joy and fun! (Sara Lewis, 2016).

At the outskirts of the Bangalore city (12°58’, 20.7912”N and 77° 34’50.3148”E, 962m amsl) during 1960s and 1970s quite a few pools, wells, marsh, paddy fields and wetlands existed. A visit to these patches would invariably be accompanied by a chorus of chi...chee....chee, the noisy singing chorus of the male Baya weaver birds, *Ploceus philippinus* Linn. (Ali and Ripley, 1983). These birds in flocks, breed in colonies on bulrush (*Typha sp.*), grass reeds in marsh or on trees at edges of wetlands. Males, year-round engage in nest-building activity. The nest- a dome-shaped purse with a long, down hanging entrance tube is usually made of finely woven strips of leaves from rice plant, weeds or grasses. Stuck inside this dome-shaped structure would be blots of wet clay mud. The Baya would catch the fireflies and glue them on to these clay blots. The glows of firefly would help the mother bird to tend and rear the chicks. Even the Baya streaked weaver birds (*plreceus manyas* Lesson), that co-inhabits with the Bayas were found using fireflies

to lit their homes!

Mr. Aiyappa, a forester in Melkote, Mandya (12°31’270012”, N 76°53’44.998E 679m amsl) toward south Bangalore has been observing fireflies for over 20 years in the Melkote wildlife Sanctuary (17 square Km.). He has sighted fireflies during post-monsoon period (*i.e.* after October- November) in and around paddy fields, marsh and at edges but not deep into the forest in 8-10 numbers at a spot at about 10-20m from ground. He has observed the Indian Jungle Nightjar (*Caprimulgus indicus*, Latham); launching aerial sallies to catch the glowing fireflies. Bills are used to handle the beetles and the birds take the beetles to the nest site- dark crevices in rocky edges or hill slopes. The bird has no nest (Ali and Ripley, 1983). Female lays eggs on the bare stone in a well-hidden niche near or on rock or along stony slope. The dark nest-site gets lit-up enabling the mother-bird to incubate eggs and rear the nestlings. Mr. Aiyappa has also observed the Spotted Owlet (*Athene brama*, Franklin) issuing out at dark to associate with the flying firefly to locate and pounce on the unwary insects prey.

During February 2023, the firefly team made explorations at Swarna River, Bramhavar (13°25’41.618” N, 74°44’434796” E 7m. amsl), Mangalore, and coastal Karnataka for presence of firefly. The team sighted eight fireflies at Muddalkatte mangroves surrounded by brackish water- ponds. The team recorded a spider with a large web trapping four fireflies along with a grasshopper.

Generally, fireflies are distasteful to several lizards, birds and mammals. But certain birds like the Nightjars (Caprimulgidae), Spiders (Lycosidae, Araneidae), Potoos (Nyctibiidae) and Anole lizards (Iguanidae) can metabolise and digest fireflies. So, Nightjars not only pick, but also devour the fireflies. Toads and frogs are the prominent predators of fireflies (Lloyd, 1973), while Phorid and Tachinid flies (Diptera), mites and nematodes are proven parasites. Infact in



Fig. 1. Baya weaver bird



Fig. 2. Baya weaver bird nests



Fig. 3. Phorid fly

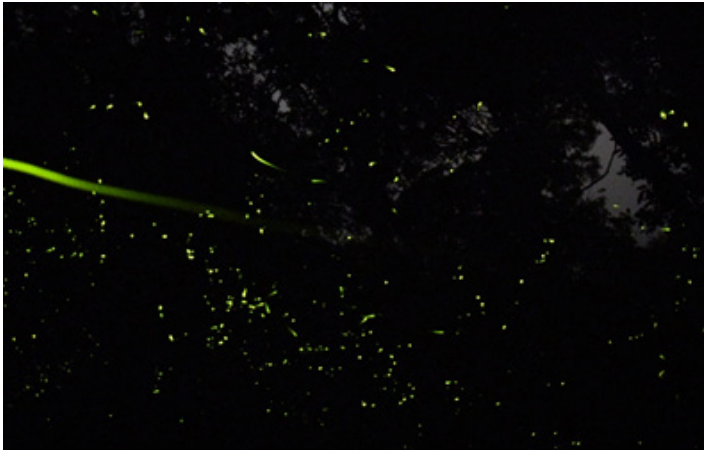


Fig. 4. Its amazing – Congregation of fireflies at Charmadi Ghats- Mudigere, Chikmangalur



Fig. 5. Fireflies in the spider web.

laboratory rearing of fireflies at EMPRI, Bangalore, we recorded phorid flies parasitizing the larvae. As we see there is documentation although largely speculative and anecdotal on natural enemies but not on those that help firefly to thrive. Further research is needed to identify and understand the bio ecology of these fascinating creatures. (See Leslie Ballantyne websites).

## References

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- <https://lesleyballantyne.com/> (Website of Dr. Lesley Ballantyne)

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