

Research Note

On the predation of fly, *Chrysomya rufifacies* (Macquart) by a spider, *Oxyopes sp.* Latreille (Oxyopidae)

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Abstract. During a forensic entomological study conducted in a palm oil plantation in Tg.Sepat, Selangor in September 2007, a spider (Arachnida), *Oxyopes sp.* (Oxyopidae) was found to predate on a calliphorid fly (*Chrysomya rufifacies*). The female spider laid a silk thread, or “drag line”, behind it as it moved. This spider bites its prey by using a pairs of chelicerae, and injecting venom into the fly. The fly was moving its wing trying to escape, however, it succumbed to the deadly bite.

Spiders are a large and very varied order. They can be large in size, up to 10 cm long or very small, less than 1 mm. Nearly all spiders are able to give a venomous bite. Very few are dangerous to humans and these are not, in general, found in South-East Asia, although a *Lactrodectus sp.* was found in Singapore (Frances & Murphy, 2000).

In September 2007, a pig carcass was hung on a palm tree to study the insect succession process and the rate of decomposition. In the afternoon of 6 September 2007 (Day-3), there were many calliphorid flies (approximately 220), consisting of *Chrysomya megacephala* (Fabricius), *Chrysomya rufifacies* (Macquart), and *Musca domestica* (Linnaeus) were attracted to the decaying pig carcass. They were resting on a fence, which was placed to surround the dead pig as a protective guard against wild scavenging animals. A spider, *Oxyopes sp.* (Oxyopidae) was seen preying on a blowfly, *C.rufifacies* (Diptera: Calliphoridae); the fly tried hard to escape from its clutch (Figure 1). As no

report of spider predation of medically important flies is extant for Malaysia, here such an incidence is reported, for the first time.

Oxyopids are free ranging spiders that do not make webs. They live in grass and low shrubs, or even the branches of trees near the ground. Their colour patterns vary



Figure 1. A spider, *Oxyopes sp.* (Oxyopidae) preying on a blowfly, *Chrysomya rufifacies* (Diptera: Calliphoridae).

considerably, but provide excellent camouflage for their chosen habitat. Their long legs are exceedingly spiny. *Oxyopes* is rarely seen at the tops of surfaces of plants (except females guarding egg sacs). They are often seen to move around in the middle layer by casting air-borne threads to nearby twigs or stalks and then walking along these threads. The threads serve various purposes, enabling the spider to belay itself and to fall safely and even to climb back up again (Frances & Murphy, 2000).

The shape of the carapace of *Oxyopes* sp. is characteristic. It is high and rounded with the front face vertical and then continues almost level for most of its length to a steep thoracic part. The eye pattern is 2,2,2,2 with the very small anterior medians being over half way up the front face and the posterior medians just beyond the top of the front face. This is a light coloured species, with a thin, black, straight line starting from each of the anterior median eyes, down the vertical face and continues on down the center of the long, pale chelicerae to the tip. The abdomen is long and thin, rounded and widest at the front and then tapering all the way to the spinners. Long dark stripes both above and below the abdomen are not unusual. It has a striking cephalothorax and extremely spiny legs, which enable one to identify oxyopids in the field. Numerous *Oxyopes* sp. occur worldwide, from the tropics to the temperate zones (Frances & Murphy, 2000).

Sulaiman *et al.* (1990) found five species of spiders, namely *Araneus theisi*, *Araneus* sp., *Neoscona* sp., *Plexippus petersi* and *Plexippus paykulli* acting as natural predators of *Aedes aegypti*. All of them were identified serologically using precipitin test. Sulaiman & Jeffery (1986) studied the predators of *Aedes albopictus* Skuse in rubber estates and found *Heteropoda venatoria* playing the role of predator. Sulaiman *et al.* (1996) using serologic methods, identified four species of spiders comprising *H. venatoria*, *Heteropoda* sp., *Pardosa* sp., and *Leucauge decorata*, collected from the cemetery, and five species comprising *Passiena* sp., *Leucauge grata*, *H.*

venatoria, *Cyclosa insulana* and *Nephila maculata*, collected from rubber plantations as predators of *Aedes albopictus*. All of these spiders' species represented new host records as predators of *Ae. albopictus*. In England, spiders such as *Lepthyphantes leprosus*, *Meta segmentata* and *Tegeneria silvestris* were reported to be predators of *Culex pipiens* (Sulaiman & Service, 1983). Onyeka (1983) also detected the spiders *Meta segmentata*, *Pirata piscatorius* and *Theridion ovatum* as predators of *Culex* spp. using precipitin test.

There are some species of spiders that are of medical importance to human, such as *Lactrodectus* spp. and *Loxosceles* spp. Their venoms are neurotoxic and necrotoxic, respectively. Another important spider is *Tarantula*, which is a large sized hairy spider. It is usually associated with entomophobia. Its bite is non-dangerous but induces localized pain (Noor Hayati, 2006). *Cyriopogon thorelli* is Malaysia's biggest and rarest Tarantula spider.

In Malaysia, bite of *Lempropelma violaceopedes* (bird-eating spider) on human has been documented. It was reported to cause edema and erythema on the fingers of the victim (Lim & Davie, 1970). To date there are no fatal cases reported in Malaysia (Noor Hayati, 2006).

At this time it is not clear what role this spider may play in predation of flies and other insects in the field. However, behavioral studies on spiders in this country should be conducted for a better understanding of the role it may play as predators of flies of medical importance.

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