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ANTING IN SINGAPORE BIRDS

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INTRODUCTION

Anting refers to the use of ants by birds to remove ectoparasites in their plumage. Although well known among birders and ornithologists in the western world (Kelso & Nice, 1963; Whitaker, 1957) the phenomenon is relatively unknown in this part of the world.

There are many theories on why birds indulge in anting (Kelso & Nice, 1963; Osborn, 1998). One theory is that this is a way of getting ants to rid their formic acid before the birds eat them up. Another is that of feather maintenance by supplementing preen oil, helping to remove stale lipids and combating ectoparasites. Formic acid from ants helps get rid of bacteria, fungi, feather mites and louse flies that are found in the feathers. Yet another theory is that anting soothes skin irritation experienced during moulting.

Anting can be active or passive. Active anting involves the bird picking up ants and actively preening them into its feathers, especially the flight feathers. In the process formic acid is released or the ants can be released on to the plumage to do their work. In the West, the red-winged blackbird (*Agelaius phoeniceus*) is known to indulge in active anting (Potter, 1970; Post, 1982).

Songbirds have been observed to use formicine ants (Formicidae: Hymenoptera) as these ants squirt various chemicals, including formic acid as a defensive mechanism when handled (Revis & Waller, 2004). During anting, the bird sometimes appears extremely excited, jumping about or doing a sort of a dance. The ants may be subsequently eaten or discarded.

In passive anting, sometimes called bathing in ants, the bird lies down on an ants' nest and allows the ants to swarm over its plumage. Whitaker (1980) described seeing a common crow (*Corvus brachyrhynchos*) settling atop an ants' mound (*Formica criniventris*) with its wings partially spread out, tail fanned and belly on the ground. Another bird was lying nearby in a similar posture where there were ants swarming. Both birds remained for 10–15 seconds before moving to new spots, to return four to five times, for three minutes each.

Anting may not always involve ants. For example, the 'elepaio (*Chasiempis sandwichensis*), a monarch flycatcher endemic to the Hawai'ian Islands, uses the garlic snail (*Oxychilus alliarius*) (VanderWerf, 2005). A three-striped warbler (*Basileuterus tristriatus*) was observed anting with a caterpillar, probably that of a moth (Wenny, 1998) and a jungle myna (*Acridotheres fuscus*) was seen using a millipede to ant (Clunie, 1976; Ehrlich, Dobkin & Wheye, 1986). This last example is by far the strongest evidence that supports the theory of anting as a means of pest control. After all, millipedes give out powerful defensive secretions when handled, and these are effective against arthropods. Other invertebrates that have been used include beetles, bugs and wasps. The chemical compounds contained in these animals obviously have antibiotic or other properties.

The use of plant parts has also been reported, especially aromatic plants parts like marigold flowers (*Tagetes* sp.) that have pyrethrum (Nero & Hatch, 1984) and the fruit of a Brazilian pepper (*Schinus terebinthifolius*). Other birds make use of discarded items like cigarette butts, peels of oranges and apples, lime fruit and even mothballs (Clayton & Vernon, 1993). Some birds have been seen 'smoke bathing' where they perch on chimneys with their wings spread open and allow the smoke to flow through their bodies. There are also those that use smoking cigarette butts for anting, sometimes setting fire to trees and houses in the process.

Most of the reported instances of anting have come from temperate regions. So far, more than 200 species of bird have been known to partake in this activity (Osborn, 1998). On the other hand, reports of anting among tropical birds are rare.

OBSERVATIONS AND DISCUSSION

This strange but common bird behaviour was observed in 1988 by Kelvin K. P. Lim (pers. comm.) He was fascinated by a Javan myna (*Acridotheres javanicus*) carefully picking up live kerengga ants (*Oecophylla smaragdina*) and placing them one at a time under its wings (Figs. 1 and 2). Each time it did this, the bird went into a curious dance that involved flopping around on the grass with its wings outstretched and beak opened.

Subsequently, other incidents were recounted. Margie Hall, found in her 1989 notebook two records of anting, one in March and the other in May, by Javan mynas. In the first observation the bird picked up seven red *kerengga* ants one at a time and placed them in its underparts and wing feathers. Ashley Ng also reported anting by a blue-rumped parrot (*Psittinus cyanurus*) in the Nee Soon Swamp Forest in 2001. In November 2005, R. Subaraj witnessed another Javan myna anting in the National University of Singapore Kent Ridge campus, not far from where Lim first made his observation so many years ago. Similarly, Morten Strange and myself witnessed separate instances of anting by Javan mynas on the ground as well as on trees.

Jeremy Lee also related his experience when he was in his teens and kept a common myna (*Acridotheres tristis*) as a pet. He related how the bird one day laid on an ant mound, spread out its wings, puffed out its plumages and allowed ants to crawl all over its body. After a few minutes of intent anting, the bird suddenly moved away and preened itself to rid itself of the ants. This anting was to recur every week after that for some time before it stopped.

Anting is likely to be as common in the tropics as in temperate regions and once birders take the time to observe, I am sure there would be reports of anting in more species of birds. However, as the act itself is sudden and rapid, observers need to be aware of what the birds are doing and keep close watch.

Fig. 1. Javan myna (*Acridotheres javanicus*).

Fig. 2. Kerengga ants (*Oecophylla smaragdina*).

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