

Dragonflies

By Shalini Mukerji

This new series focuses on the bio-diversity of Singapore and its urban environment, a dynamic habitat revealed through nature, architecture and the arts, and through people who continue heritage trades and community traditions. In this issue we focus on a deceptively slight species in Singapore's habitat – dragonflies and damselflies, an ancient order of insects classified under the species *Odonata* that date back more than 300 million years. Their study reveals their importance for our environment and how they've inspired the imagination and the arts.

Ecologists study dragonflies and damselflies as measures of eco-system quality since their presence indicates non-polluted bodies of water and controlled insect populations. Sightings have been recorded in parks around Bishan, Toa Payoh, Kent Ridge and Labrador, and in Sungei Buloh Wetland Reserve. Singapore's urban park ponds are critical habitats for dragonflies and damselflies since they breed in or near lakes, ponds, streams and wetlands. Most of a dragonfly / damselfly's life – ten to eleven months – is spent in its larval or nymph form beneath the water surface, where it uses internal gills to breathe and extendable jaws to catch mosquito larvae, tadpoles and fish. Adult dragonflies and damselflies, with two pairs of multi-veined wings that move *independently* of each other and ginormous multi-faceted eyes that may each contain 30,000 individual lenses, are agile and fierce predators. *Odonata*, is in fact derived from *Odontos* ('tooth' in Greek), which refers to the mandibles with which adult dragonflies and damselflies crush prey – mosquitoes, midges, flies, bees, butterflies and other small insects.

Robin Ngiam Wen Jiang, Manager (Biodiversity), National Biodiversity Centre, National Parks, and author of *Dragonflies in Our Parks and Gardens*, wrote that although five species are locally extinct, new records reveal that the current population numbers 131 species, up from the 124 recorded in 2010. Robin provided photographs of the dragonflies and damselflies that she considers to be the most important markers of Singapore's success in adopting green practices to create 'a city in a garden'. You can find out more from *Dragonflies of Singapore* by Tang Hung Bun, Wang Luan Keng and Matti Hämäläinen.



Libellago aurantiaca (Fiery Gem), a damselfly found in our forest streams, photo by Robin Ngiam Wen Jiang

Robin describes how to tell dragonflies and damselflies apart. "The fore-wings and hind-wings of a damselfly have the same shape and wing venation. The fore-wings and hind-wings of a dragonfly are different in shape and wing venation."



Tyriobapta torrida (Treehugger), a dragonfly found in our swamp forests, photo by Robin Ngiam Wen Jiang



Podolestes orientalis (Blue-spotted Flatwing), photo by Robin Ngiam Wen Jiang

Contemporary urban design and planning have been inspired by these creatures as well. To express their importance in our environment as indicators of the purity of freshwater habitats, dragonflies are featured in the recently opened Gardens by the Bay, where there is a Dragonfly Lake and a Dragonfly Bridge. A row of five dragonfly sculptures looks out over the often murky waters of Alexandra Canal, near where it disappears under Tanglin Road. They are part of an eco-garden constructed over the canal, which today is an extension of the Singapore River.



One of five dragonfly sculptures overlooking Alexandra Canal, near Tanglin Road, photo by Andra Leo

Odonata feature in many of the stamps Singapore Post has issued to celebrate Singapore's bio-diversity; it's a way of 'seeing' come to us from nature poems and popular sayings that reveal how dragonflies have traditionally been seen as indicators of ecosystem quality and weather diviners.



Ceriagrion cerinorubellum, Bi-coloured Damselfly/ Ornate Coraltail, with bluish green head and orange base, is the most abundant species of damselflies in Singapore; it can be easily spotted around ponds, drains, canals and open streams as it rests on dry twigs or submerged vegetation. 5¢ stamp, Sing Post, Insect Definitive Stamps, issued 24 April 1985

Trithemis aurora, Crimson Drowwing, medium-sized dragonfly commonly found in our parks and gardens, breeds in streams, rivers, canals, ponds and tanks and its technicolour brilliance quite sets the male of the species apart. \$5 stamp, Sing Post Insect Definitive Stamps, issued 24 April 1985



Rhodothemis rufa, Common Redbolt, dragonfly species commonly found in Singapore, particularly in weedy ponds, lagoons in lowland and water channels. 30¢ stamp, Sing Post Low Value Definitive Stamps around Pond Life, issued 13 April 2011

A keen eye will spot them at the Peranakan Museum – they are an auspicious Peranakan motif woven into wedding embroideries, cherished as *kerosang* design and painted on exquisite Nyonya porcelain (it was believed that vessels painted with insect motifs will overflow with food just as insects fill gardens in favourable weather).



Beaded dragonflies on beadwork tablecloth, probably used on the 'Choon Tok' or 'Spring Table', in the wedding chamber, now exhibited in the first gallery, middle floor, the Peranakan Museum, Singapore. Photo by Ingeborg Hartgerink-Grandia

Should you wander around Singapore's local markets you will see how dragonfly/damselfly symbolism in Southeast Asia reflects the region's history of trade and interdependent ecology. In Chinatown, for instance, you'll find lacquerware with dragonfly/damselfly motifs in mother-of-pearl and eggshell inlays and also 'bamboo dragonfly' décor from Vietnam. Chinese porcelain frequently has dragonflies as motifs.



Detail from hand-painted Chinese porcelain vase, photo courtesy of Patricia Bjaaland Welch

The best time to spot a dragonfly is when the sun is up. Should one ever alight on you, remember to smile since in many cultures it is said to be a sign of good luck. Perhaps, when you next see one, you may wish to hold out your hand for a blessing from this jewelled creature that contributes so much to our world.

Shalini Mukerji has recently moved to Singapore and is enjoying the opportunity to discover this part of the world.