

Meet the Writers

Ashan Karunananda

Meeting with a Butterfly:

Common (Papilo polytes)

Narmadha Dangampola

Meet the locals:

Feeding plants of the Common Mormon larvae

Amila Prasanna Sumanapala

Dragonflies and Damselflies:

Introduction and morphology

Thejani Tennakoon

Ant plant relationships

T D K A Prasanna

පරිසරකාරයාගේ කොලම

Vasura Jayaweera

Field visit to Nilgala

Ramalka Kasige

Event report - B&D race 2019

Editing Staff

Imaduwa Priyadarshana (Chief editor)

Chinthaka Wijesinghe

Narmadha Dangampola

Ruwangika Gunawardana

Thejani Thennakoon

Subject editors

Amila Prasanna Sumanapala

Himesh Jayasinghe

Tharindu Ranasinghe

Nuwan Chathuranga

Photo Credits

Himesh Jayasinghe - Cover Photo

Cover Design

Imashi Opatha

Chinthaka Wijesinghe

What is BCSSL

Butterfly Conservation Society of Sri Lanka is non-government, a organization non-profit that established to create awareness and connection between insect fauna humans, mainly specializing about the Lepidoptera species of the The society consists island. of scientists, as well as enthusiasts who are spread around the country and throughout the world, spreading knowledge and awareness conservation of Lepidoptera, other insect fauna and the flora groups related with their ecosystems.

Editorial

On the rocky and sandy beaches rimming the northern Sri Lankan coastline, you are greeted to a platter of ample plastic to feast your eyes upon, frolic about amidst and collect to your heart's content from all shapes, forms and sizes. Lay among this was a carcass of a Green Turtle rotting away very slowly in the midday sun. I bet never in your lifetime you would have thought you will read a sentence starting with the word "beach" to end in such bewail. Yet this was the sight I was treated to in one of the recent visits to the coasts.

The once abundant sea shells, pieces of coral to perfectly rounded smooth pebbles that we collected so gaily have gone. The barnacles and the sea anemones that crowded the rock pools lazily waving there tentacles back and forth to the occasional crab that scutter around hurriedly taking a bend to disappear in to thin air as the curious mind in us try to follow are no more.

It is unbearable as well as heart breaking to know that the wonderful environment in our country we love and dearly cherish, is being abused, vandalized, stripped naked mercilessly being beaten, raped and murdered by our own people, while still receiving the life sustaining elixirs from the same Mother Nature. It is an extremely sad and disappointing situation to know that we, as a nation has an over 90% of a literacy rate but do not understand many of the vitally life sustaining factors in the immediate vicinity. An education system that has been mooted to create economically superior and socially acceptable employment, has hardly been directed towards the protection of our life giving environment and its major stake holders such as the Flora and Fauna that creates our most important life

sustaining components, Oxygen to equally important water and food. And lastly they provide the shelter from the harsh elements and yet, we have forgotten all that and many had come to believe that life is sustained by the money with a value that has been created by the greed of the man himself. This, a mindset that has been nurtured over centuries that we as one of the bright minded species have been unable to break out of. Put you can't, a prize, a value, on mothers' love, put you can't a prize on nature, "Mother Nature". Good people with a sense of environment and who know and believe that we are a part of this web of natural world, must come forward in the name of the environmental protection so that we as ambassadors of the nature could educate and motivate the most gullible and ignorant to environmentally friendly and protectionists. This, a task that has been delayed too long, nevertheless, has to get kick started from somewhere most effective, and for this reason the most effective education would be to our younger generation that would always be the victims of the wrongs of their forefathers. The strictest law and order enforcement with political and socio-economical inducement front must be the carrot and stick approach to the older but not so wiser citizens of our society.

Education is one of the most powerful tools we have in solving environmental problems. Therefore, the need of the hour must be to create and practice an education system that appreciates the wonderment in nature that understands our place in the web as well as creation of a socio-economic culture that benefits the practitioners to be environmentally sensitive and be the beneficiaries of an economic bonanza or carrier edge to be the best.

Meet the locals

The Common Mormon (Papilo polytes, Cramer [1775])

The Common Mormon belongs to the family Papilionidae which is also known as 'The Swallowtails'. It is a common species of butterfly and is found throughout the year. In fact it is the most common and widely distributed Swallowtail butterfly in Sri Lanka. Its distribution spreads from sea level to higher elevations, but the population density becomes low at hills. Unlike many other butterflies, it favors both forested and non-forested habitats or even urban habitats where various species of Citrus are grown.

most abundant, therefore Common Mormon mimics Crimson Rose in its romulus form abundantly. Both the Crimson Rose and the Common Rose are found equally in the intermediate zone, hence, the mimicking forms appear in equal frequency as well.

The female butterfly of the Common Mormon lays eggs singly on the tender leaves of Citrus plants or in both tender and older leaves of Murraya koenigii (Karapincha). Usually the eggs are yellow in color and globular in shape



(a) The form cyrus

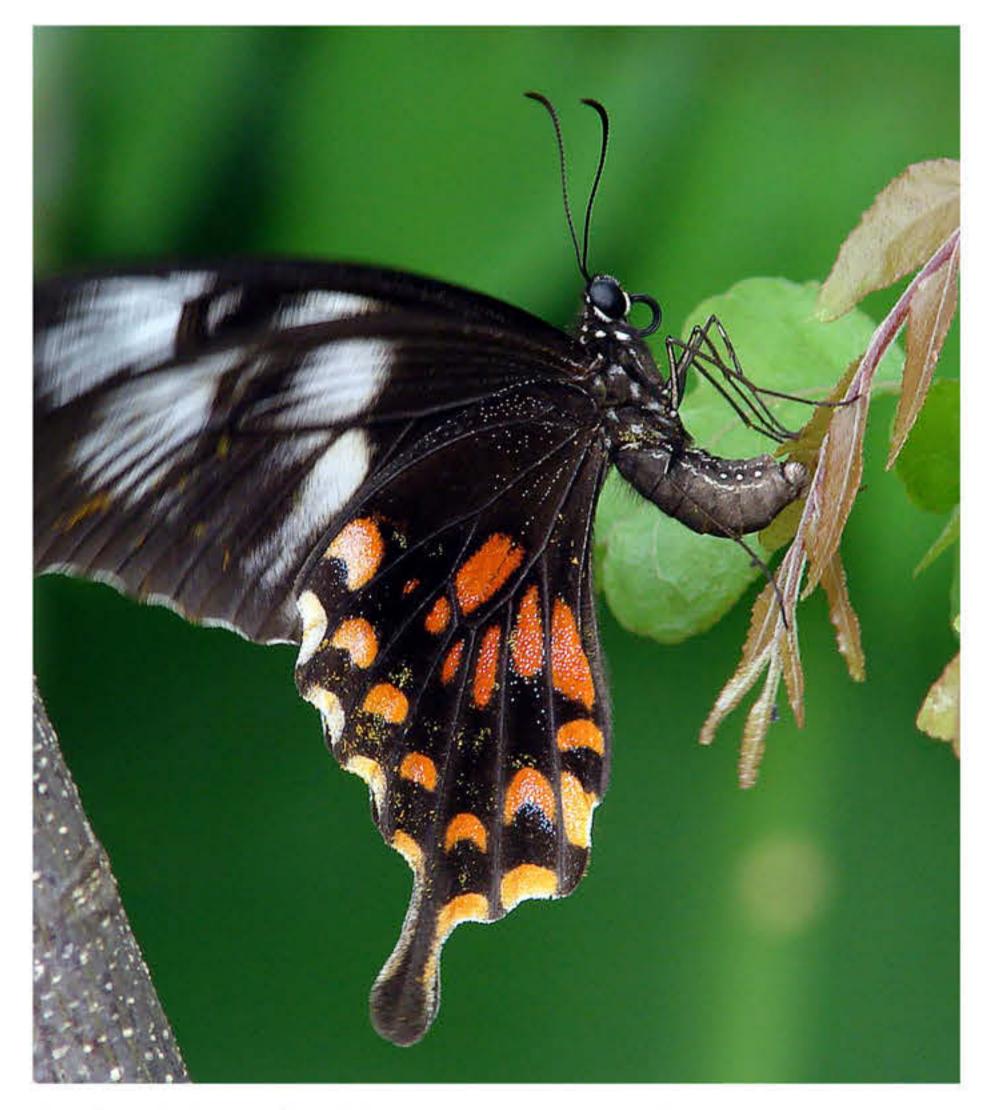


(b) The form stichius



(c) The form romulus

The Common Mormon is a good example for sexual polymorphism and Batesian mimicry. There are four forms of this species, three female forms and one male form. The female form cyrus is almost similar to the male form, but with quite larger white patches. The form *stichius* mimics the Common Rose and the form romulus mimics the Crimson Rose. This mimicry helps them to survive from predators, since their models are not eaten by the predators due to bitter taste. Furthermore, studies have proved that the distribution of the mimicry forms vary in distribution according to their models. The Common Rose and Crimson Rose (the models) are found rarely at the highest elevations, as a result the form cyrus is found abundantly. The Common Rose is the most abundant model in mid-elevations in wet zone. Therefore the form stichius of Common Mormon mimics Common Rose. In the dry zone, the Crimson Rose is the



The female butterfly of the Common Mormon laying eggs.

Meet the locals

Contd...

The eggs tend to hatch more quickly in regions where the temperature is warmer. However, once the larva is fully developed it emerges from the egg. After emerging, the larva consumes the remaining eggshell as its first meal, which provides it with nutrients such as calcium.

The larva of the Common Mormon usually stays in the upperside of the leaf throughout its larval stage, as a result it is prone to predators such as birds. However, the mimicry that it has helps it to survive. During the early stages the color of the larva resembles a fresh bird dropping. A bird looking at it from a distance will find it difficult to recognize whether it is something edible or inedible therefore it might not feed on it.

However, as the larva grows this strategy is not effective. It uses different strategies during these stages. The larvae move to a location where it is covered; usually to regions among larger mature leaves. The green colour of the larva helps it to be well camouflaged within it.

However, if a predator such as a bird tries to attack, the larva tries to scare it away. It uses visual and olfactory display for this purpose. The larva has a shield-like structure behind its head that resembles a head of a green snake and it contains eye like markings on it. Within a thoracic shield is a forked organ called the osmeterium. When the larva is disturbed it suddenly projects this, and it would scare away the predator. The osmeterium also emits an unpleasant smell which further protects it from predators.

The larva, when fully grown settles in a small branch or a twig and forms the pupa. The pupa of the Common Mormon is mostly green in color, hence well camouflaged from predators.

The pupa is attached to the branch with a fine thread like structure which holds it securely to the branch. In time the adult butterfly emerges from the pupa and continues its life cycle in order to take its generation forward.



(a) Eggs (b) 1st intar (c) 2nd instar (d) 3rd instar (e) 5th instar (f) Larva displaying osmeterium organ (g) Pupa - green form (f) Pupa - brown form

References:

- Jayasinghe, H., Rajapakshe, S., & De Alwis, C. (2015). A Pocket Guide to the Butterflies of Sri Lanka. Butterfly Conservation Society of Sri Lanka.
- Poorten, G. M., & Poorten, N. E. (2016). The Butterfly Fauna of Sri Lanka.
 Lepodon Books.
- http://www.slbutterflies.lk/explore/butterfly/Papilo%20polytes%20romulus#adult
- http://biodiversitylab.ncbs.res.in/papilio-polytes
- https://upload.wikimedia.org/wikipedia/commons/4/4c/Common _Mormon _-_
 Papilio_polytes.jpg

Larval Feeding Plants of Common Mormon (Papilio polytes)

The Common Mormon is among one of the most common butterflies in Sri Lanka because of the wide distribution of its larval food plants throughout the country. These plants spread in various habitats representing forest areas and even in highly urbanized cities. All these plants that have been recorded so far from Sri Lanka belong to the family Rutaceae. This plant group is commonly known as "Citrus Family" where their leaves and fruits have a unique identical strong scent of smell.

Most of these plants are remarkably well grown in home gardens. Plants of this family, such as Lemon, Orange, Wood-apple and Pomelo are rich with Vitamin C and are highly useful as fruiting plants. Some are used in indigenous medicine and as essential food additives such as curry leaves and lime. Orange Jasmine which grows as an ornamental tree with clusters of small, fragrant flowers, fills the air with a sweet smell of blossoms and attracts bees, birds and butterflies to your garden.

These plants are easily grown and some of them are supported even in pots which suit for a wide range of habitats like well wooded gardens, small backyards and even small balconies in the middle of the busy cities. They are ideal for butterfly lovers those who want to have a mini butterfly garden at home.

The eggs are laid singly and the female only chooses the young stem or the underside of tender leaves of citrus plants while in curry leave plants it chooses both tender and mature leaves to lay the eggs. Following are the list of most common host plants of Common Mormon recorded from Sri Lanka so far.



(c) Glycosmis pentaphylla - දොඩම පනා

- (d) Toddalia asiatica කුඩුම්රිස්ස
- (e) Glycosmis mauritiana බොල් පනා (f) Glycosmis pentaphylla - දොඩම් පතා

Atalantia ceylanica - යකිතාරං Citrus aurantiifolia - ලදහි - Lime Citrus grandis - ජම්බෝල - Pomelo Citrus sinensis - පැණි දොඩම - Orange Citrus limon - ලෙමන් - Lemon Glycosmis angustifolia - බොල් පතා Glycosmis mauritiana - බොල් පනා Glycosmis pentaphylla - දොඩම් පතා Limonia acidissima - ୱିସ୍ଟ୍ରଟ - Wood-apple Micromelum minutum - වල් කරපිංචා* Murraya koenigii - කරපිංචා - Curry Leaf Murraya paniculata - ඇට්ටේරියා - Orange Jasmine Pleiospermium alatum - තුන්පත් කුරුළු Toddalia asiatica - කුඩුම්රිස්ස *Endemic

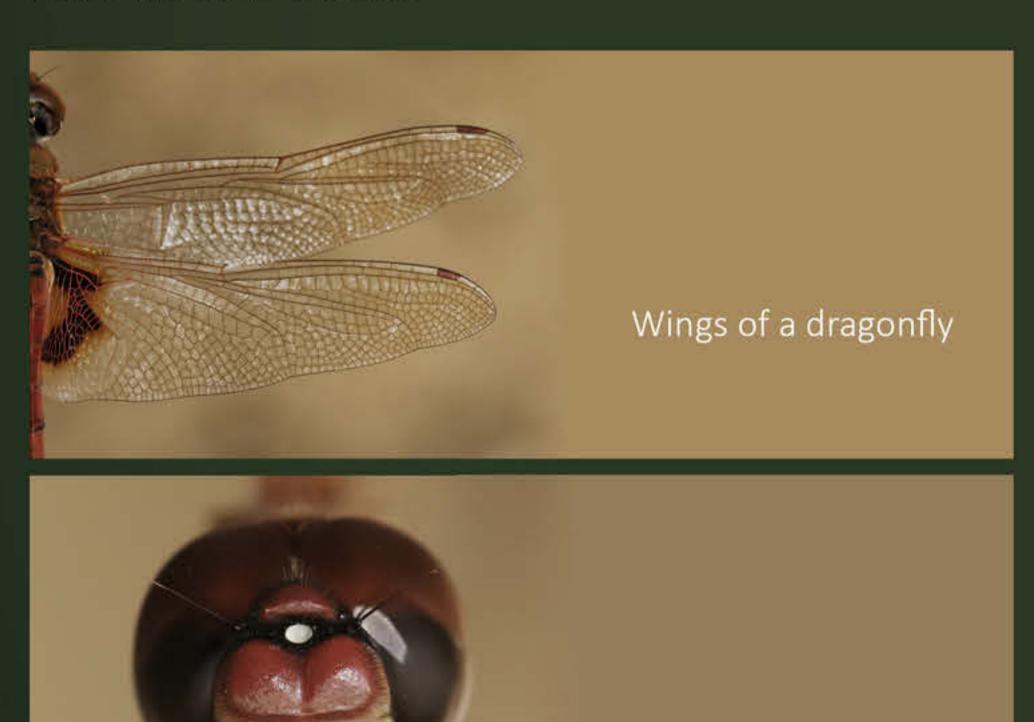
References:

- http://www.slbutterflies.lk/explore/butterfly/Papilo%20polytes%20romulus#plant
- Nitin, R., Balakrishnan, V.C., Churi, P.V., Kalesh, S., Prakash, S., Kunte, K. (2018). Larval host plants of the butterflies of the Western Ghats, India. Journal of Threatened Taxa. 10 (4). pp 11495-11550.
- Van der Poorten, G.M. & van der Poorten, N. E. (2016) The Butterfly Fauna of Sri Lanka. Lepodon Books. pp 301-302.

Dragonflies and Damselflies: Introduction and Morphology

Dragonflies and Damselflies are insects classified under the order Odonata and they are collectively known as odonates. The name Odonata was derived from the Greek word for tooth, "odon" as odonates have toothed mandibles. Order Odonata comprises of two main sub-orders. The dragonflies belong to the suborder Anisoptera (anisos = unequal, pteron = wings) and damselflies belong to the suborder Zygoptera (Zygon = attached together, pteron = wings).

As the meaning of the names of their respective suborders suggests, dragonflies and damselflies mainly differ in the structure of their wings. Dragonflies have a pair of wings unequal in size and shape while damselflies have wings similar in size and shape. Apart from this, dragonflies are known to keep their wings open horizontally and damselflies usually keep their wings closed along the abdomen when they are at rest. Further, the position of the eyes also differs significantly among these two groups. Dragonflies have eyes touching each other or separated by a small gap while damselflies have eyes widely separated and located on either side of the head.





Head of a dragonfly

The sub-order Anisozygoptera of Odonata, which shows certain characters of both dragonflies and damselflies, is represented by only four living species. These are found in the Himalayas, China and Japan. Adults of Anisozygoptera resemble large dragonflies with closed wings. They have hind wings which are very similar in size and shape to the fore wings. However, recent studies have shown that Anisozygoptera is more closely related to Anisoptera than it is to Zygoptera. Some classifications even group Anisoptera and Anisozygoptera together into a single sub-order named Epiprocta.

Basic Morphology

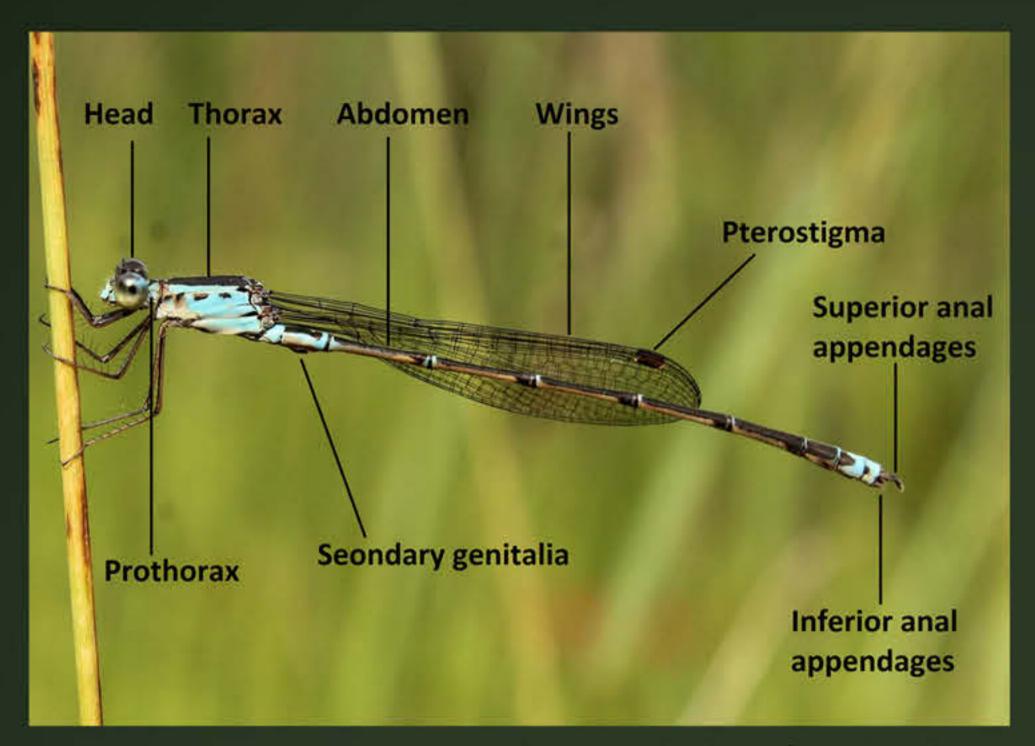
Adult odonates have a body with three well defined tagma namely, head, thorax and abdomen. Head is composed of six segments and bears the mouth parts, a pair of compound eyes and a pair of antennae. The compound eyes are large in size and cover most of the head. Between these there are three simple eyes, which are useful for the very near vision.

Thorax of an adult odonata is made of three segments. The first pair of legs is attached to the first segment, which is known as the prothorax in damselflies. Second pair of legs and the fore wings are attached to the second segment of the thorax while the third pair of legs and the hind wings attach to the third segment. The wings of odonates are membranous structures with a grid of veins. The dense, coloured spot near the front margin of wings are known as the pterostigma or the wing spot.

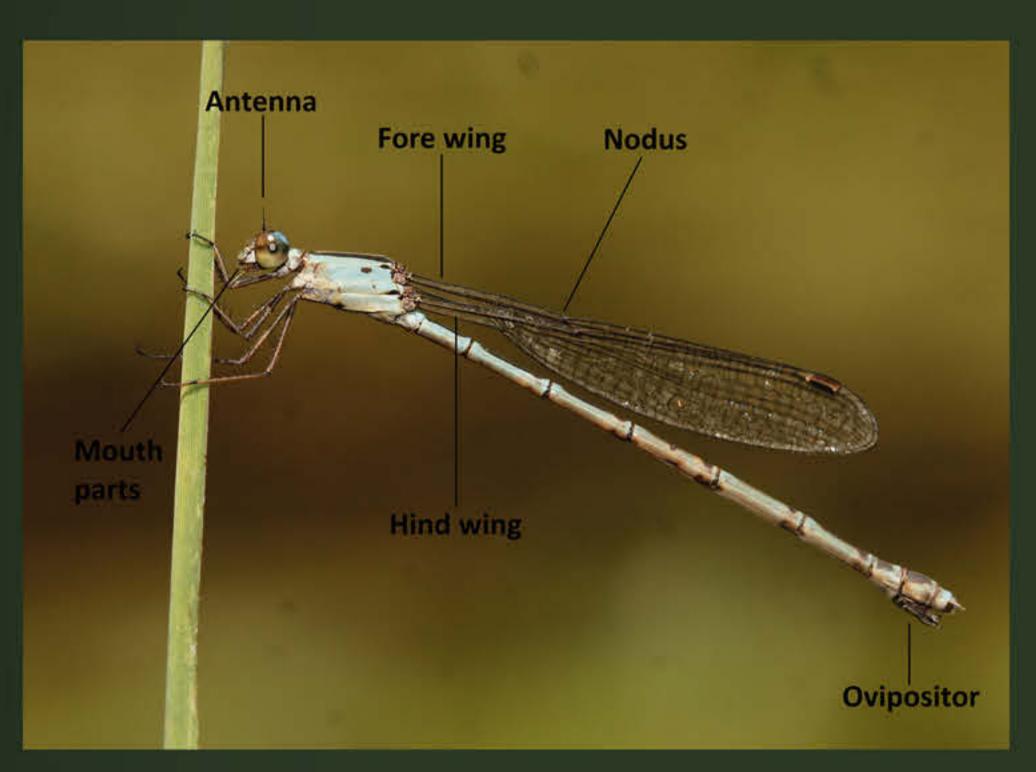
The abdomen of an odonate is composed of 10 segments. Reproductive organs are located in the abdomen. The males have their primary genitalia below the segment 9 and secondary genitalia below segments 2 and 3. The females have their genital opening on the ventral side of segment 9. They may have an ovipositor under the segments 8 and 9 depending on their egg laying behaviour. Two pairs of anal appendages are located at the tip of the abdomen. Superior anal appendages are usually longer than inferiors.

Dragonflies and Damselflies: Introduction and Morphology

cntd...



Basic morphology of a male odonata



Basic morphology of a female odonata

Odonata are among the largest living insects. The Giant Helicopter damselfly (Megaloprepus caerulatus) found in South America is the largest known damselfly with a wingspan reaching up to 19 cm. The damselflies in the genus Mecistogaster which are distributed in Central and South America, and also known as Helicopter damsels are the longest damselflies with an abdomen up to 15 cm in length. Southeast Asian dragonfly Tetracanthagyna plagiata that has a wingspan over 14 cm is the largest known dragonfly.

Differentiation between the sexes

In many species of odonata, a sexual dimorphism can be observed. Thus usually their sex can be easily distinguished using colour patterns. However, this is not possible for all species and all individuals. Even among the species with sexual dimorphism, some deviations such as females with male colour patterns (androchrome females) or males with female colour patterns (gynochrome males) could occur.

The sexes of odonata can be differentiated conclusively using their external reproductive structures. Males often have longer and structurally more complex anal appendages than the females and their secondary genitalia are clearly visible near the abdomen base. Females can be identified using their ovipositor located near the abdomen tip, short anal appendages and lack of secondary genitalia as in males. Males also tend to have a tapering and a thin abdomen than that of females even though sometimes it needs some experience to recognize this.



An androchrome female of Scarlet Basker (Urothemis signata)

Reference

- Corbet, P.S., (1999). Dragonflies: Behaviour and Ecology of Odonata (Revised Edition). Koninklijke Brill NV.
- Suhling, F., Sahlén, G., Gorb, S., Kalkman, V.J., Dijkstra, K-D.B., van Tol, J. (2015).
- Order Odonata. In: Thorp, J., Rogers, D.C. (Eds.), Ecology and General Biology: Thorp and Covich's Freshwater Invertebrates, Academic Press, 893–932

Ant Plant Relationships



Fiend I was, watching as if a kitten is at a ball of yarn unraveling in front, fascinated as a trail of black blobs marching past me slithering into a hole in a tree, like a serpent would do so with such secrecy and mystery.

Ants are no less a mystery. Belonging to the Family Formicidae of the vast Order Hymenoptera that harbor a staggering 150,000 plus described species, ants have come to play a major role in their respective ecosystems.

An ant plant relationship is always associated with the term mutualism, which simply put is a relationship that benefits both parties involved. While the ants provide plants with protection from herbivores, essential nutrients, help in pollination and seed dispersal, the ants are paid with by built in housing schemes called domatia. Further, they are benefited by having access to the food bodies and extrafloral nectaries that secrete a sweet sap to be used as fuel.

If you've ever walked past a mound or a tree branch that is teeming with ants, you know how it goes. Nothing in this world would make you go past the tree unless it's another tree. This is the exact similar situation the ants create, keeping anything and everything at bay, from the innocent plant hoppers to grasshoppers that munch on the leaves to beetles and caterpillars that bore deep within. And yes, they are pretty good at deterring the mammal kind too, one bite from those powerful mandibles is all it takes for a perfectly masculine sambar or a deer leaving, while second guessing whether to have a nibble on the same plant next time.

Then there are the vines, creepers and epiphytes that use trees as support in reaching the warm sunrays falling from above. But these can sometimes be a nuisance to the plant as they sometimes outcompete the host plant for resources. With ants present these invaders are destructively gnawed down, one snip at a time, before they become a threat to the host plant itself.

Plants protected this way have always been found to acquire better growth and higher productivity. But ants are not there to work freely, and demand a fair share for the valuable services they provide. Hollow stems and twigs occur in many plant species. These known as domatia or little houses are utilized by ants as nest sites. True domatia are always produced even when the ants are missing. Such plants are called myrmecophytes and include trees, shrubs or vines. One good example is the genus *Acacia*, which produces hollow thorns (Figure 1 (a)). In addition to thorns, tubers, stems and even swollen petioles are provisioned by plants as domatia with examples being

Hydnophytum (Figure 1 (b)), Macaranga (Kanda), and Piper (Pepper) respectively. These nests are defended fiercely by the ants at all costs with a slight disturbance resulting in the dispatch of an army of angry workers infiltrating the enemy from head to toe biting and stinging till you end up like a well riped plum in the summer.

Some plants are known to be fed by ants! Yes, you read it right. In a process known as myrmecotrophy the refuse dump containing the remains of prey item are slowly absorbed through the domatia walls as they decompose to be used in plant growth.

In addition to providing specialized nesting sites, some plants provide food in the form of nutritive sap or nectar. When its nutritive sap secretes, the structures producing them are termed food bodies (Figure 1 (a)) and these include an array of small epidermal structures that have been adapted to attract ant foragers. Extrafloral nectaries (EFNs), the most well-known and abundant, are glands that produce sugary secretions (Figure 1 (a)). They are found on petioles, stipules and stalks and bracts of flowers in addition to being found on leaves and stems and are carried by many plants such as *Ipomoea*, *Helianthella*, *Costus*, *Catalpa* and *Acacia*. Many studies have shown that the secretions of EFNs are greatest during periods of rapid vegetative growth, giving those plants a competitive advantage on the vertical ascend.

Look up next time when you swing by a tree or follow a trail of ants to where they stay, you'll be surprised by what they have to say.

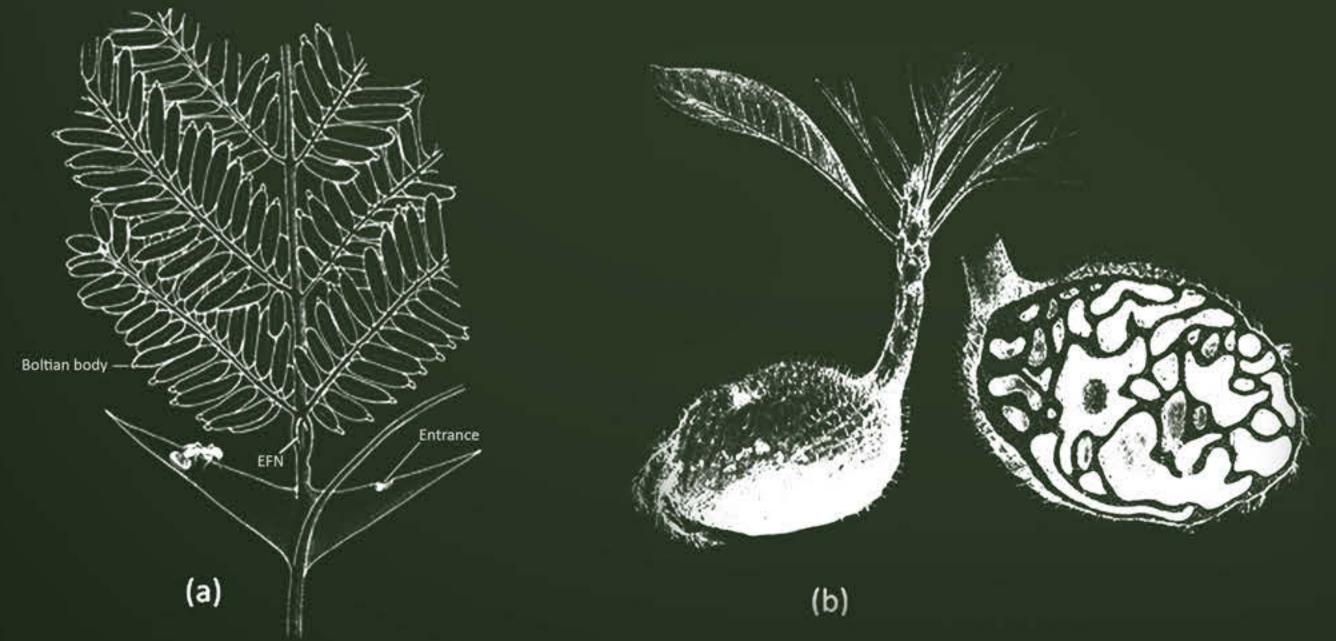


Figure: Two myrmecophytes showing the domatia that provide housing for the ants.

- (a) a neotroical bull's horn acacia, Acacia sphaerocephala, with hollow thorns, food bodies (Beltian bodies), and extrafloral necrtaries (EFN) used by Pseudomyrmex ants.
- (b) a hollow tuber of *Hydnophytum* with a cross section to show the chambers inhabited by the ants.

Image Source:
(a) https://slideplayer.com/slide/8244268/
(b) https://en.wikipedia.org/wiki/Hydnophytum#/media/File:Hydnophytum_formicarum_001.jpg_

References

- Beattie, A.J (1985) The Evolutionary Ecology of Ant-Plant Mutualisms. Cambridge Studies in Ecology. Cambridge: Cambridge University Press.
 Gullan, P.J and Cranston, P.S (2005) The Insects An Outline of Entomology. 3rd Ed.
 Blackwell Publishing Ltd.
- Wikipedia. (2018) Hydnophytum [Online] Available from:
 - https://en.wikipedia.org/wiki/Hydnophytum#/media/File:Hydnophytum_formicarum_001.jpg [Accessed: 3nd March 2019].
- Slide Player. (2019) [Online] Available from: https://slideplayer.com/slide/8244268/ [Accessed: 3nd March 2019].

Local Sightings

Unusual Wave of Painted Lady Sightings Across the Island

Painted Lady (*Vanessa cardui*) is an elegant butterfly seen in Sri Lanka, belonging to the family Nymphalidae. It is one of the most widespread butterflies in the world, found on every continent except Antarctica and South America. In Sri Lanka, Painted Lady is usually restricted to the hill country areas in high elevation due to the distribution of its only two known larval food plants available in the country, *Anaphalis subdecurrens* (මත සුදන) and *Artemisia roxburghiana* (වල් කොළුදු). It prefers habitats like open areas, frequenting gardens and other flowery places.

Painted Lady butterfly is well-known for its distinct migratory behaviour observed all over the world. Some migratory cycles are known to reach a distance of a staggering 12,000 km in multiple generations. According to research, these migrations could be initiated by rainfall, which controls the growth of their larval food plants. Some evidence suggests that global climatic events, such as el Niño, may affect the migratory patterns of these butterflies. However the data collected suggest that their migration doesn't follow strict patterns and might shift from time to time, and may even not occur in some years.

In Sri Lanka, Painted Lady butterfly shows an internal migration along with the monsoon wind. This year, with the activation of the Southwest monsoon, the windy weather has triggered an unusually widespread dispersal of these winged beauties throughout the island, which started from the end of May and carried on until late June.

A significant number of sightings were recorded in certain areas in the island covering Western, Southern, Northern, North Western and Sabaragamuwa provinces. A large number of individuals were seen fluttering around Colombo and suburbs, in areas including Beddagana Wetland Park, Beira Lake, Nugegoda, Moratuwa and Lunawa. Around 80 individuals were counted around Beira Lake site in Colombo one time (refer the map next page).

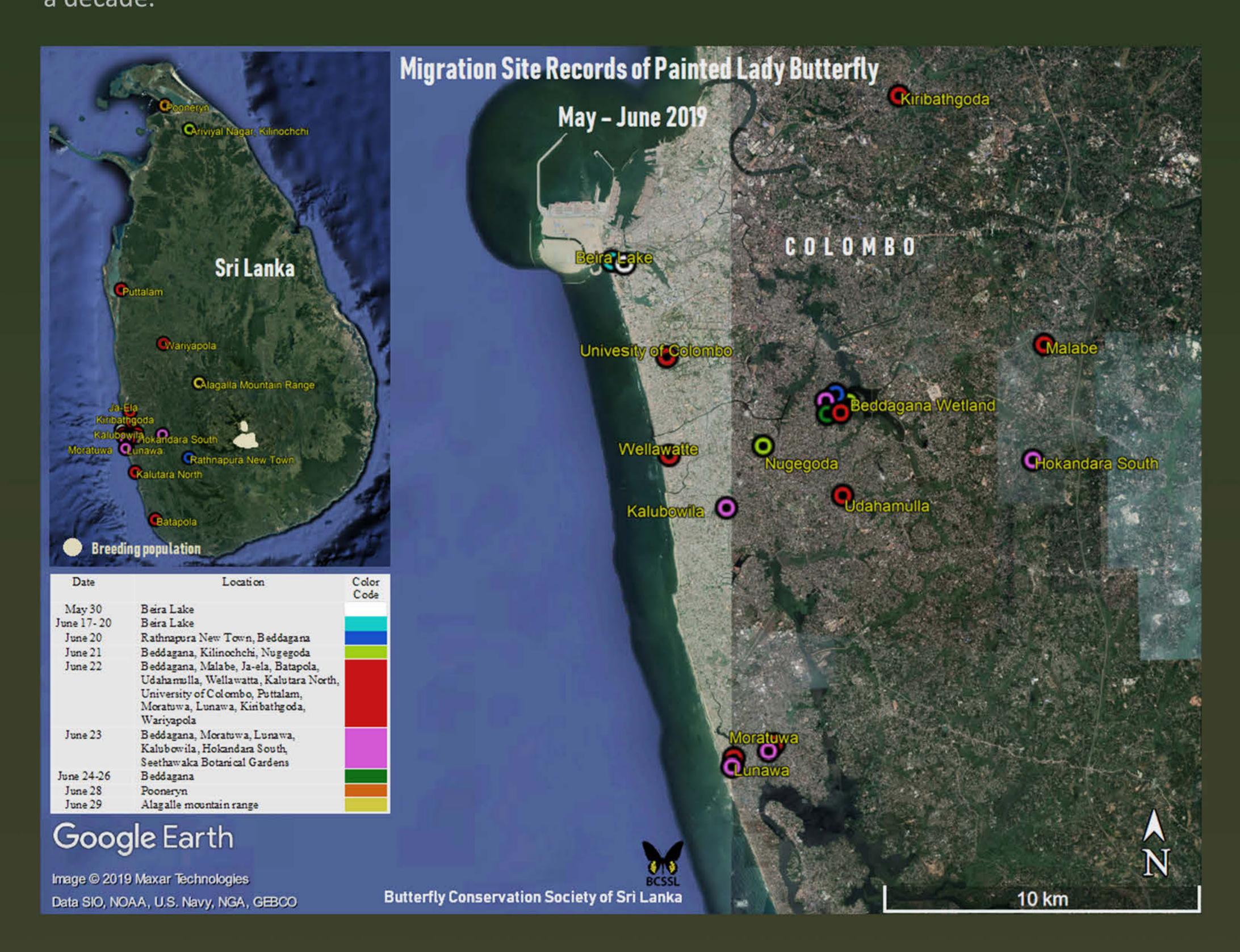
This extraordinary phenomenon was apparently observed this year not only in Sri Lanka, but all over the world. Heavy winter rains in the Middle East have led to an exceptional spring for wild flowers, due to which an abnormally large migration was seen over Israel and Lebanon through March and April. Estimated at a billion individual butterflies, experts say that the last time a migration of this scale has happened there was way back in 1917. An unusually rainy winter in California, USA, specifically in the deserts, has caused a massive surge in the Painted Lady population, which the ecologists refer to as an "irruption", rather than a "migration", which is usually a seasonal occurrence.



Local Sightings

In India, the monsoon rains in June have triggered the Painted Lady migration to start early, with a larger than usual population. Hundreds of these butterflies have been observed across multiple states as they made their way across the country. UK also saw a migration "influx" of Painted Ladies, where over 30,000 individuals were recorded in just two days, according to environmental charity Butterfly Conservation. Even though the butterfly is a common immigrant to the UK every summer, this phenomenon where millions arrive together occurs only about once a decade.

Heavy rains, warmer temperatures and favourable wind conditions may have caused this surge of beautiful Painted Lady butterflies in Sri Lanka and across the globe this year. However we cannot be certain whether the implications of this are positive or negative, in a climate change and conservation perspective. Studying the migration and other behavioural patterns of this interesting species over the years will unmistakably help us understand them better and take the necessary steps towards conservation.



References:

- https://media.uottawa.ca/news/monarch-dethroned-painted-lady-takes-crown
- https://en.wikipedia.org/wiki/Vanessa cardui
- https://www.atlasobscura.com/articles/california-butterfly-irruption
- https://www.thehindu.com/news/international/butter flies-swarm-lebanons-meadows-in-numbers-unseen/article26867314.ece
- https://www.thehindu.com/news/cities/Coimbatore/painted-lady-butterflies-flutter-coimbatore-skies/article28112216.ece
- https://timesofindia.indiatimes.com/city/chennai/painted-ladies-swarm-all-over-chennai/articleshow/70052332.cms
- https://www.itv.com/news/2019-08-05/thousands-of-painted-lady-butterflies-spotted-in-july-as-uk-experiences-influx/

Field Field Visit to Nilgala Forest Reserve

The Butterfly Conservation Society of Sri Lanka conducted its first field visit for the year 2019 from 14th-17th March in the Nilgala area. Nilgala Forest Reserve is located at the border of the Gal Oya National Park in the Monaragala District and it belongs to the Intermediate Zone with three types of vegetation, namely, Savanna Grassland, Forest and Scrubland. The total area of the Nilgala Forest including the surrounding savanna grasslands is around 26,000 hectares and it is one of the high species density forests in Sri Lanka which provides home to many butterfly species, bird species, reptiles and mammals.

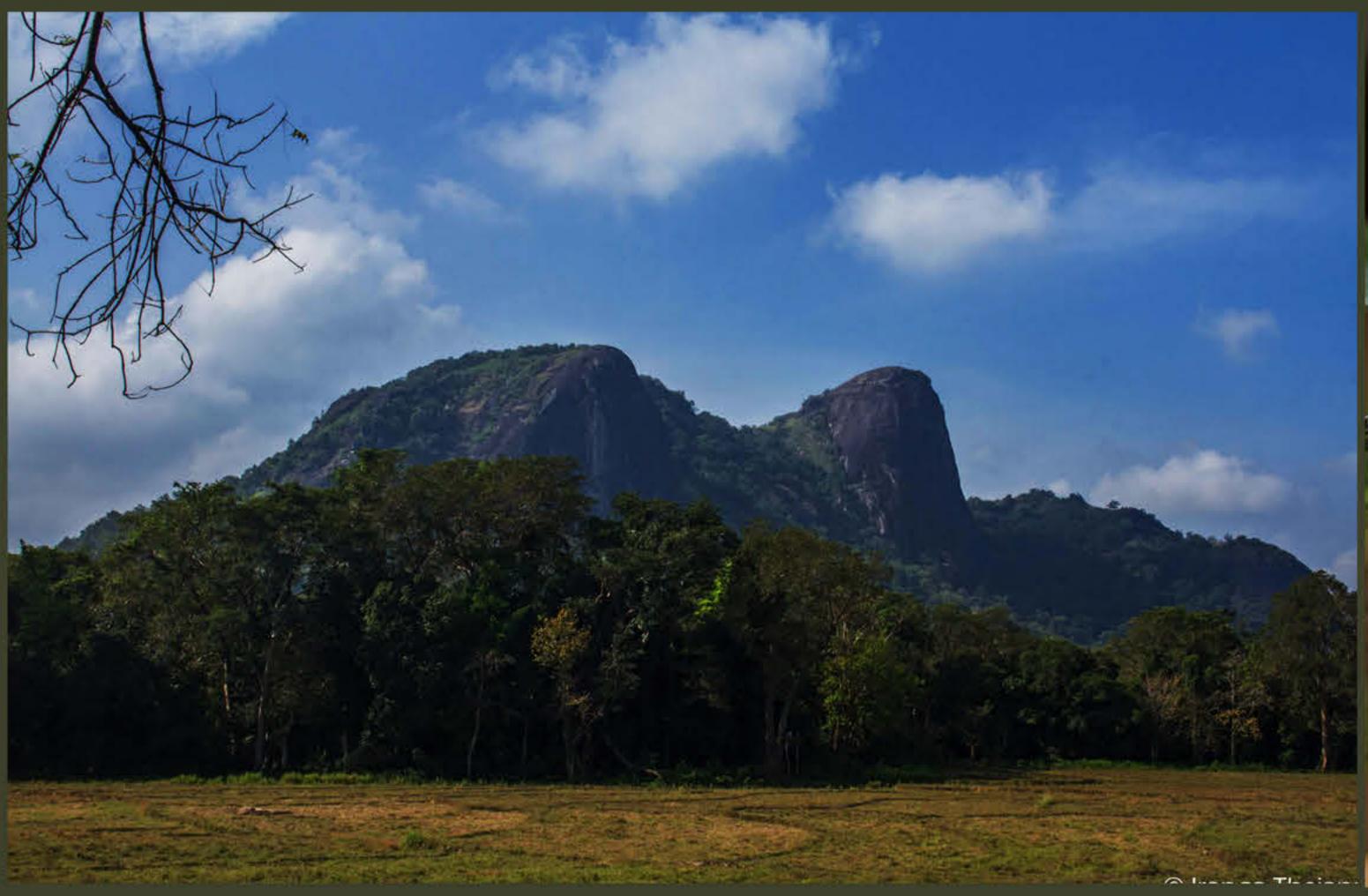
A total of 12 Butterfly lovers participated in the field excursion. We started our journey from the University of Colombo at around 7.30 p.m. on the 14th of March. It was a long journey and after travelling nearly 300 km we arrived at the Inginiyagala village (Stay Home Inginiyagala Guest House) at around 3.30 a.m. in the next morning. Since the whole team was tired after the long journey we all decided to have a small nap for a few hours. We had our breakfast at around 8.00 a.m. and started our journey to the Nilgala forest which was nearly 40 km from Inginiyagala village. At around 10.00 a.m. we arrived at the entrance road to the Nilgala Forest and our plan was to observe the Lepidoptera alongside the road to the Nilgala forest. Our first stop was a small dried up water stream which ran through the forest. We were able to identify many butterfly species mud-puddling along the water stream. The most noticeable one was the Hampson's Hedge Blue along with a few Common Pierrots and Tailless Lineblues. Also we were able to observe a pair of Greater Racket-tailed Drongos on a tree top hunting for small insects flying nearby. We continued our journey along the road observing and enjoying the mesmerizing beauty of the forest. At around 2.30 p.m. we had our lunch and then continued our search for butterflies. We were able to identify some endemics such as Sri Lankan Lesser Albatross, Tamil Lacewing and Gladeye Bushbrown. Some other butterflies we encountered on our way were Spotless Grass Yellow, Dark Blue Tiger, Angled Castor, Common Lascar, Forget-me-not, Pea Blue, Golden Angle, Quaker etc. At around 4.30 p.m. in the evening we finished our walk along the Nilgala forest road and we returned to Inginiyagala. On our way to Inginiyagala we had a quick stop at the Namal Oya reservoir. It was a breathtaking view and we were greeted by a pair of Malabar Pied Hornbills who were resting on a nearby tree top. The view of the reservoir along with the cool breeze brought us such a relief and the whole team rested for a while enjoying the scenery. We returned to the guest house at around 7.00 p.m., successfully finishing our 1st day at the Nilgala forest reserve. After having our dinner we prepared the checklists of the butterflies and the birds that we observed during the day. A total of 57 butterfly species and 70 bird species were recorded for the day. Then we had a small discussion about the naming conventions that can be used to note down bird species while observing them in the field. Since it was a tiresome day we all decided to go to bed early.



cntd...

Our plan for the second day was to observe butterflies around the wildlife office in the Nilgala forest. We left around 7.00 a.m. from Inginiyagala and reached the wildlife office at around 9.30 a.m. We had our breakfast there and decided to explore some abundant paddy fields nearby. We were greeted by a Sri Lankan Birdwing butterfly; the largest and the national butterfly of Sri Lanka. As we continued our journey towards the paddy fields we came across a dozen of Peacock Pansy butterflies bathing in the early morning sunlight. The vibrant colours on their upper side wings were a feast to our eyes and we were so pleased to photograph the beautiful creatures. We continued our walk through the paddy fields where we encountered many more butterflies such as Lemon Pansy, Banded Peacock, Yellow Orange Tip, Dark Wanderer, Indian Skipper, Bush Hopper, Gram Blue etc. We continued our search till noon and then returned to the office to have our lunch. Since the weather was extremely dry the team decided to have a cool bath in the Gal Oya River which also gave us the opportunity to observe several freshwater fish species. In the afternoon we searched for more butterflies in the vicinity and then returned to Inginiyagala at around 4.30 p.m. On our way we went to see the Gal Oya dam in Senanayaka Samudraya which creates one of the largest and iconic reservoirs in Sri Lanka. We climbed a small stone peak to get a better view and we were able to enjoy the evening sunset along with the mesmerizing beauty of the largest reservoir in Sri Lanka. Finally we returned to the guest house at around 7.00 p.m. We had our dinner and we were done for day with lots of knowledge, adventure and fun.

Next day was the last day of our field visit. We had our breakfast and packed our belongings as soon as possible since we had a long journey ahead. We left Inginiyagala at around 8 a.m. in the morning and we decided to observe some butterflies along our way. We had a quick stop near the road along the Senanayake Samudraya where we encountered few Hesperiids. The day was extremely cloudy so we were unable to observe a lot of species due to less sunlight. We had few more stops near the Randenigala and Rantambe Sanctuary and then we returned to Colombo via Mahiyangana - Kandy road and then Kandy - Colombo road. We reached the Colombo University at around 8.00 p.m. in the evening, successfully finishing our 3-day field visit to Nilgala with a count of more than 75 butterfly species, 80 bird species along with several mammal and freshwater fish species.





06th April at Seethawaka Botanic Gardens in Awissawella

Team YBA grabs the title at Butterfly and Dragonfly Race 2019

Once you start watching butterflies and dragonflies, you can't help but notice how amazing they are..."

Some even travel to new destinations, far off countries, to add more and more species to their life lists. Stunning jewel like colours and the daredevil flying; aren't they enough reasons for nature enthusiasts to love these wonderful creatures?

It was high time for the excited young animal enthusiasts to gather again for a friendly competition with their interest and talent on butterfly and dragonfly identification. It's 'The Butterfly and Dragonfly Race 2019'.

Both undergraduates and school level students competed under open and school/ university categories. The participants were not professional lepidopterists or trained entomologists. Most of them were casual observers while some were hard-core enthusiasts.

The participating teams had to compete with each other by trying to record the highest number of butterfly and dragonfly species in the garden within the given time. A team comprised of a maximum of five members.

This year, there had been an overwhelming response as about 80 participants came together to battle their way. The teams were so optimistic that all members had very high spirits of recording species many as possible.

It was a fascinating morning, the specified footpaths had enough and more sunlight to activate the flying creatures. Unbelievably, there was such a diversity of faunal biota in garden. A breathtaking array of species were present around premises and majority of the teams were able to record many of these species.



Displaying the power of togetherness and undaunted enthusiasm, Team YBA became the winners of the contest by recording the highest cumulative number of butterfly and dragonfly species, while Team Odonoptera became the runners-up. The Winners were awarded valuable prizes and certificates were given to all the participants appreciating their effort.

The field session conducted by renowned lepidopterist Dr. George van der Poorten (a co-author of 'Field Guide to the Butterflies of Sri Lanka' - 2018), increased the enthusiasm and injected candid blessings upon the future of the budding ecologists and field biologists who were present at the event. As individuals who are truly connected with nature, Mr. Himesh Jayasinghe and Mr Amila Sumanapala were able to instill an exquisite interest about environment and nature during the session.

This year's race was completed as an event of unprecedented grandeur. As the sun went down, the green panthers dispersed with renewed enthusiasm only to meet again with another event by BCSSL, to rediscover the fearless and enthusiastic version of themselves.

June 2019

1st – BCSSL Team participated in Design Thinking and Rapid Prototyping Workshop organized by Thuru, together with Environmental Foundation Ltd. to find solutions for deforestation in Sri Lanka via technology. Many experts, students and military officers participated in this occasion and the teams came up with creative models and exchanged their ideas with others to prioritize the related objectives for future policy makers.







Photo credit Environmental Foundation Ltd.

15th - Monthly Lecture - A lecture on "Identification of Butterfly Larvae and Their Food Plants" - Part IX (Family-Pieridae) was conducted by Mr. Himesh Jayasinghe at Colombo Public Library Lobby.

July 2019

06th – Butterfly Count and Field session - Beddagana Wetland Park

The BCSSL Team conducted a basic field survey at Beddagana Wetland Park with the participation of the members to have the practical experience of counting and taking observations on butterflies in the field. As an initiation of getting the people practically involved in conserving these precious insects, BCSSL hope to continue this effort in future as well.









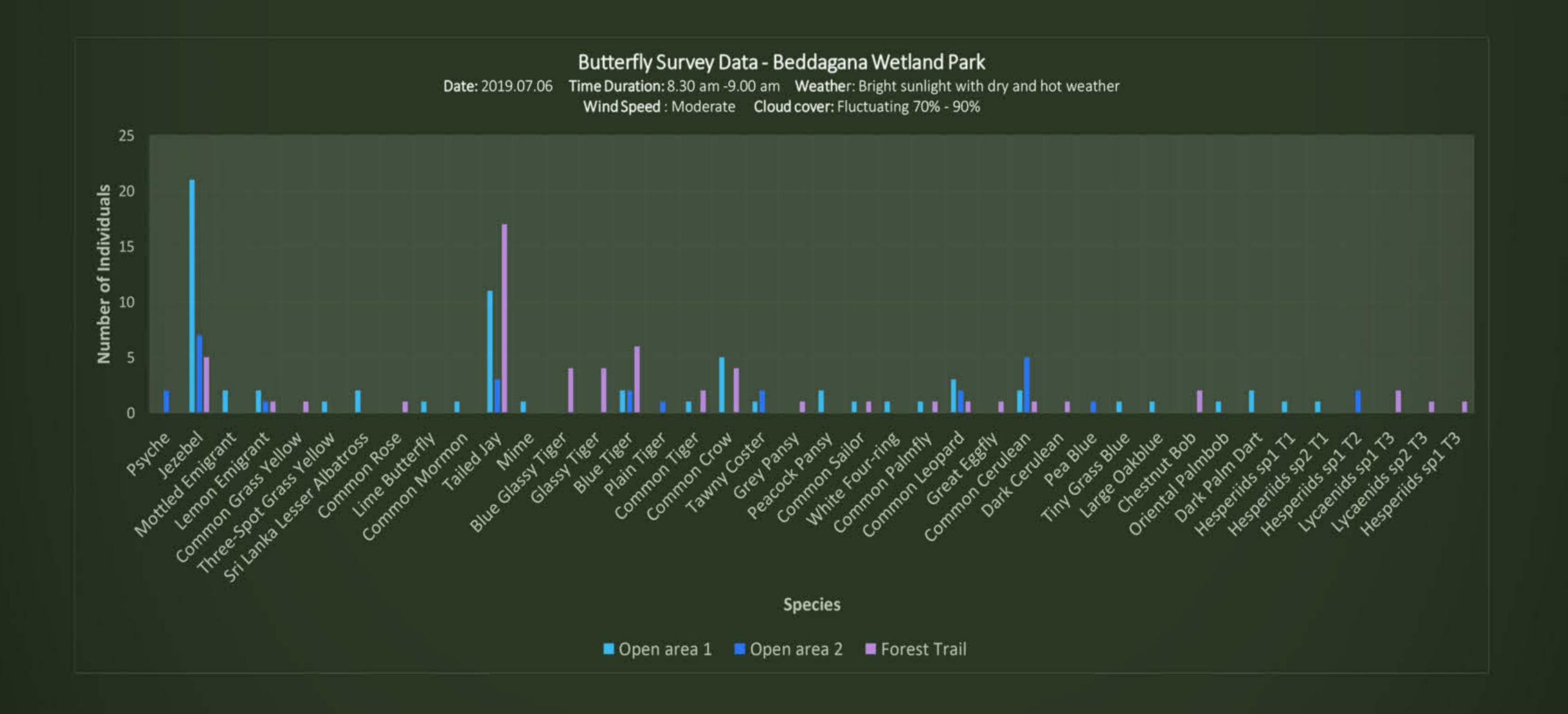


Basic Butterfly Count and Field Survey

Conducting regular surveys on butterflies assists us in identifying their seasonal variations and continuous monitoring will help us plan how to protect these fragile creatures. As an initiation of getting people practically involved in conserving these precious insects, the BCSSL Team conducted a basic field survey with the participation of the members and other enthusiasts to provide the experience of counting and taking observations on butterflies in the field on 5th of July 2019 at Beddagana Wetland Park. The Beddagana wetland is located in the heart of the Administrative Capital Sri Jayewardenepura Kotte. The area is consisting of variety of habitats including natural water ponds with different types of water lilies, marshes with seasonally flooded grass lands and scattered pockets of shrubs.

During the survey, three groups were involved taking counts along transects and they recorded 40 different species of butterflies in three different trails:

- Open Area 01 which is close to the main canal with mud flats and prominently lined with Premna serratifolia (වල් මිදි)
- Open Area 02 which is prominent with *Clotelaria* species (අඬනහිරියා), *Stachytarpheta jamaicensis* (බලුනකුට) and many other types of small herbs and grasses
- Open Area 03 where Annona glara (වෙල් අත්තා) and other wetland plants are abundant within open and shady habitats.



The results of this basic survey showed that Jezebel, Tailed Jay and Blue Tiger were among the most abundant species in the area, where Jezebels dominated the open area 1 because of the presence of *Premna serratifolia* for nectar feeding while the Tailed Jay preferred the forest area which is prominent with *Annona glabra* - one of their larval host plants. However, the highest number of butterflies was recorded from open area 1 which is rich with a number of *P. serratifolia* and *Syzygium caryophyllatum* (හීන් දo) plants holding blooms, and butterfly larval hosts plants such as *Senna occdentalis* (පැණි තෝර) and *Ponamia pinnata* (මඟුල් කරඳ).

Response from a participant

வண்ணத்துப் பூச்சிகளை எண்ணுவதற்கான ஒரு களப்பயணம

வண்ணத்துப் பூச்சிகளின் ஆர்வலரும் விரும்பியுமான எமக்கு அவற்றைப் பார்ப்பதற்கும் எண்ணுவதற்கும் ஒரு சந்தர்ப்பம் கிடைத்தது. சிறுபராயம் முதல் வண்ணத்துப் பூச்சிகள் தான் எனது நண்பர்கள். அவற்றைப் போன்று அழகான வாழ்க்கை வாழவேண்டும் என்ற எண்ணம் அவை சிறகடிக்கும் போது தோன்றும். வண்ணத்துப் பூச்சிகளை கண்டால் அதன் பின்னாலே மிக நீண்ட தூரம் எல்லாவற்றையும் விட்டுவிட்டு சென்றுவிடுவேன். கிராமத்தில் இருந்து நகரத்திற்கு வந்தாலும் வண்ணத்துப் பூச்சிகளுடனான எனது தொடர்பு குறையவில்லை. அதற்கு காரணம் எனது கணவர். நாம் இருவருமாய் வண்ணத்துப் பூச்சிகளுடன் கதை பேசுவோம். அவற்றைப் புகைப்படம் எடுப்போம். அவை இருக்கும் இடங்களை தேடிச் செல்வோம். அவற்றிற்கு ஆபத்துவராது பாதுகாப்போம். வண்ணத்துப் பூச்சிகளை பாதுகாக்கவும் அவற்றைப் பற்றி பேசும் சமூக வலைதளங்களுடன் தொடர்பினை பேணியும் வந்தோம். இதன் போதே "இலங்கை வண்ணத்துப் பூச்சி பாதுகாப்பு சங்கத்தினால் 06 ஆம் திகதி ஜுலை மாதம் 2019 பெத்தகான ஈரவலய பூங்காவில் ஏற்பாடு செய்யப்பட்டிருந்த வண்ணத்துப் பூச்சிகளை எண்ணும் கள நிகழ்வில் கலந்துகொள்ள முடிந்தது. எமக்கு இது புதிய அனுபவம். வண்ணத்துப் பூச்சிகள் பற்றிய எமது அறிவினை கள அனுபவத்துடன் வளர்த்துக்கொள்ள முடிந்தது. வண்ணத்துப் பூச்சிகளை வாழும் சூழல், அவை உணவாக உட்கொள்ளும் தாவரங்கள், அவற்றின் வாழ்க்கை வட்டம். சூழலின் அமைவிடம் மற்றும் இயைபான காலநிலை தொடர்பான தகவல்களை சகோதரி நர்மதா தெளிவுபடுத்தினார். அத்தோடு வண்ணத்துப் பூச்சிகளை எண்ணுவதில் ஏற்படும் சவால்களை புரிந்துக்கொள்ள முடிந்தது. இறுதியாக பூங்காப் பாடசாலையில் ஒன்றுசேர்ந்த நாம் இலங்கை வண்ணத்துப் பூச்சிகளை பாதுகாக்கும் சங்கத்தின் அங்கத்துவத்தை பெற்றுக்கொண்டோம்.

என்று உலகில் வண்ணத்துப் பூச்சிகள் அழிகின்றனவோ அன்று உலகின் இருப்பு கேள்வி குறியாகிறது. எனவே ஒன்றிணைவோம். வண்ணத்துப் பூச்சிகளைப்பற்றி கற்போம். அவற்றை பாதுகாப்போம். அவற்றுக்காக எமது குரலை பதிவு செய்வோம்.

தாஹிர் நூருல் இஸ்ரா புனர்வாழ்வு உளவளத்துணையாளர், கொழும்பு-13

A Field Visit: Counting Butterflies

As a butterfly enthusiast and a fan, I got a chance to observe and count them to identify. Butterflies have always been my friends since childhood. When watching them flap, it gives me the idea of living a beautiful life like them. If I saw butterflies, I will leave everything behind and start to follow them for a long time, taking me away. Though I moved from village to city, my connection with the butterflies wasn't lessened. The reason for that is my husband. We both talk about butterflies. We photograph them. We find and go in search of them. We protect them from danger. We got connected with social media which talks about butterflies and how to protect them. Meanwhile, we were able to attend in the "Field visit to count Butterflies" which was organized by Butterfly Conservation Society of Sri Lanka on 06th of July 2019 at Beddagana Wetland Park. This was a new experience for us. Our knowledge of butterflies has been enhanced with field experience. Sister Narmadha explained about; types of butterflies, environment they live in, plants they eat, their life cycle, location and harmonious climate of the environment. Also, the challenges in counting butterflies. Finally, we got together at the Park and got the membership of the Butterfly Conservation Society.

When butterflies become extinct, then the world existence becomes questionable. So, let's do get together. Let's learn about butterflies. Let's protect them. Let's raise our voice from them.

Tahir Noorul Isra Rehabilitation Counselor Colombo-13

13th – 16th – Field Visit to Hiyare, Rammale Kanda and Enasalwatta Area

The members of BCSSL took part in field excursion to Rammale kanda area at the border of Rakwana mountain range and Enasalwatta area in Deniyaya. During the visit, the team was able to record nearly 90 species of butterflies including a number of their larval stages and larval food plants.



21st – Workshop on Butterfly Gardening for Emotional Intelligence and Life Skills Training Team (Gte) Ltd. – BCSSL contributed as the main resource provider for the training workshop on butterfly gardening for the future stakeholders of Kolonnawa Wetland Project which was held at Beddagana Wetland Park with the involvement of Urban Development Authority.



Events to come...

How to join BCSSL

September 2019

 Monthly Lecture in early September...

to be notified...

 Field Workshop on Dragonflies of Sri Lanka

Date 13th - 15th September 2019 Venue - Yagirala Forest Reserve



Butterfly Conservation Society of Sri Lanka is open to anyone interested in butterflies and other insect fauna. BCSSL members can actively participate and share their abilities and knowledge during activities organized by the society such as monthly lectures, field visits, workshops and annual events. Join hands with us to help aware and create a world rich in butterflies and other fauna and flora for future generations to enjoy.

You could become a member of the BCSSL in several categories.

- * General membership (anyone interested in joining BCSSL)
- * School membership (school children from age (15 19)
- natives and foreigners)

 Both General and Overseas categories have long term membership facility (membership extends up to 5 years)

* Overseas membership (non-Sri Lankan

BCSSL membership and details can be obtained

- Directly at the monthly lecture sessions
- Via social media (Facebook, Twitter, Instagram)
- By sending an email request to butterflycssl@gmail.com
- By visiting BCSSL website http://www.bcssl.lk/

පරිසරකාරයාගේ කොලම

"මමත් හැදුවා මචං බැදි දෙල් මැල්ලුමක්"

දිවෘ භෝජන කියන්නෙ මේවට බං..

වල් දෙල්, බැදි දෙල්, කැලෑ දෙල්, සිංහල දෙල්......ඔය කෝකෙන් කිව්වත් හරි... මේක ගවේෂණය කරපු මහත්වරු Artocarpus nobilis කියලා අභිමානවත් ඉංගිරීසි බසින් නමක් දාලා තියනවා....

අපේ රටේ පහතරට වනාන්තර මේ දවස්වල බැදි දෙල් සුවඳින් පිරිලා ඉතිරිලා යන කාලයක්...ඒවා ඉතිං දන්නෝ දනිති...

පහත රටේ ළඳු කැලෑ අස්සෙ මහ උසට වැඩුණු බැදිදෙල් ගස් වල ඉතිහාසය හෙන ලොකු චකක් වෙන්ට ඕනේ.

මහමේරු පර්වත වගේ මේ ගස්.

තෙත් කලාපයේ සරුවට වැඩුණු බැදිදෙල් ගස් මිනිස්සුන්ගෙ වාසභූමි පුළුල් කරගන්න වැඩේදි පොතු ඇරුණා....කපලා දෑවා... කෝමහර් කීපයක් කීපයක් ඔය රිසිවේසම් රක්ෂිත මායිම්වල ඉතිරිවෙලා තියනවා...

අවුරුදු 2000ට චිහාපැත්තේ මේ බිමේ ජීවත්වෙච්ච ගෝතික මිනිස්සුන්ගෙ පළවෙනි ආහාරය වෙලා තිබුණේ මේ බැදිදෙල් තමයි පුතේ.

ඒ කාලේ රට හාල, රට අල, රට දෙල් කොයින්දැ...කැලේ හැදුණු වැලේ බැස්ස ඇලේ දොළේ දාලා හෝදගෙන පුච්චන් කාපු නියම සිංහලයා අන්න....බැදිදෙල් ඇට ඇහිඳපු උන් ඒවා පුච්චන් කෑවා....මදුළු වේලන් කෑවා..පහුකාලීනව හට්ටි වළං පහල වෙද්දි උයාපිහාගෙනත් කෑවා..

මේ බිමේ පළවෙනි රට දෙල් ගහ සුද්දා ඉන්දුවෙ ගාලු පළාතේ නොවැ. බැදි දෙල හිඳෙන්නෙ චිතනිං.

සිංහලු හිතුවා ඒක තමයි හොඳම දෙල කියලා. හැබැයි ඉතිං උඹලට අපට වැරදුණු තැන චිතන...

යකෝ... ලෝකෙ මේ බිමේ විතරක් හැදෙන, හැදුණු බැදිදෙල් යටපත් කොරං රට දෙල් බෝවෙලා ගියා...කන්න කන්න මිනිස්සු ලෙඩ උණා.....පිෂ්ඨය අධික ඌෂ්ණාධික රට දෙල්ම තමයි හෙව්වෙ...කෑවම කරකැව්ල්ල, කලාන්තය, බඩ පුරෝදෑම..

මේ ඔක්කොම තිබුණා....

බැදිදෙල් වල තියෙන ගුණාත්මක ගතියේ පළවෙනිම කාරණාව තමයි මචං, ඇදුම රෝගීන්ට සුව හදන ආහාරයක් වග...ඇදුම තියෙන උංට ඔන්න උඹලා අර කොරන පලෝකිරීමද මොකද්ද කොරන එක කොරල බලාං...දේශීය පාරම්පරික හෙල වෙදකමේ මේ බැදිදෙල් ඇට මගින් ලබාගන්න තෙල් වලට ලොකු ඉඩක් තිබුණා. අන්තිමේ සුද්දොම කිවුවා බැදිදෙල් ඇටවල උන්ගෙ බිම්වල හැදෙන "ආමන්ඩ්" බීජවලටත් වඩා ගුණදායක වගේම රසවත් සංඝටක පිරෙන්න තියනවා කියලා.......

බැදි දෙල් ගස් යට ඇවිද්දාම ඕනතරං බැදි දෙල් ඇට. ලිපේ දමලා පුච්චලා හරි, කබලෙ දමලා බැදලා හරි අරගෙන කාලා බලාං......කබලක් තියෙද මචං.... ගස් කජුත් පරාදයි බං.... හැබැයි මචං පොත්ත ඇරපං...!

බැදිදෙල් කන්න ර්ලව්, වඳුරෝ, දඬු ලේන්නු පෝලිමට...උන් කාලා දමන බීජ කන්න ගහ යට වෙනමම ආහාර දාමයක්...

ඉදිච්ච බැදිදෙල් මදුලකට වඩා වැඩිපුර එකක්වත් කන්න බෑ...ඒ පැණි රසට මත්වෙනවා...කරකැවෙනවා... මම දන්නේ ඒ අද්දැකීම මාරම මාරයි කියලා කියන්න විතරයි මචං...

පැහිච්ච දෙල්ගෙඩි පහ හයක් ඇති හත්අට දෙනෙකුට නම් මැල්ලුමක් චහෙම නැත්නං බැදිදෙල් කිරි මාලුවක් හදාගන්ට...

හොඳ දේවල් ගුණ දේවල් වලට මහන්සි වෙන්ට ඕන ඉතිං...මේ මැල්ලුම් වලට, කිරිමාලුවට තෙල් කර කොරලා දමන්නෙ නෑ.

ඒක විශේෂයි. මේදය කියන සබ්ජෙට් එක මේකෙ පදමට ඔටෝමැටිකිලි හැදිලා තියනවා... සාමානෳ කොස් මැල්ලුමක් හදා ගන්නවා වගේ හදා ගත්තාම හරි....

ඒ රහට ගහන්න රහක් කොහෙවත් නෑ මචං....ඕකයි කතාව...අපි හදපු බැදිදෙල් මැල්ලුම ගමේ පන්සලට දානයක් විදිහට පූජා කොරන්ටත් හැකි උණා... සමහර ගම්මාන වල පැරණි හාමුදුරුවරු හරි පිරියයි ඉතිං මේවා වලඳන්ට.

වේලපු බැදිදෙල් ඇට අර සිසිල් කියන ස්ථානවල අවුරුදු ගාණක් උණත් තියාගන්න පුලුවන්... මේවා දුර්ලභයි.. පාරම්පරිකයි.. ඒකදේශිකයි.... මේවා කන්නත් පිනක් කොරලා තියෙන්න ඕනෙ ඉතිං...

ඉතිරි වෙච්ච අවසාන බැදිදෙල් ගස් ටිකවත් රැක ගනිමු ඉතිං...

උඹලගෙ පැතිවලත් තිබුණොත් කියන්ට ඕනෑ....

බැදිදෙල් පැල හදාගන්න වැඩකට උණත් ඉඩ තියෙනවා තවමත්.......

මේ උරුමය දෙවුරෙන් අරං යමං ඊළඟ පරම්පරාවට......

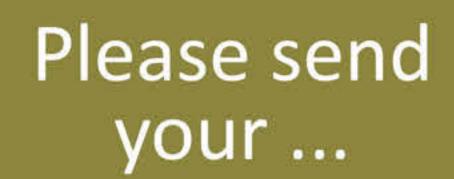
ජයවේවා...



An invite to contribute ...

Dear readers,

We would like to see more contributions of yours to be published in our news letter, Krumithuru.





or even reports, scientific papers or any other material or a creation that you would see fit to be published in our news letter.



You can show case your talent and share your knowledge while motivating others to improve themselves,

gather more

knowledge and involve in the conservation of our mother nature in many ways.

State of the state

We at Krumithuru, will be looking forward to see you sending your suggestions, or contributions and let you enjoy the due recognition as well.

Narmadha Dangampola

Dhammika Priyadharshanie

Email us to krumithuru@bcssl.lk

or contact the Chief Editor

0777 255 793

(Imaduwa)

