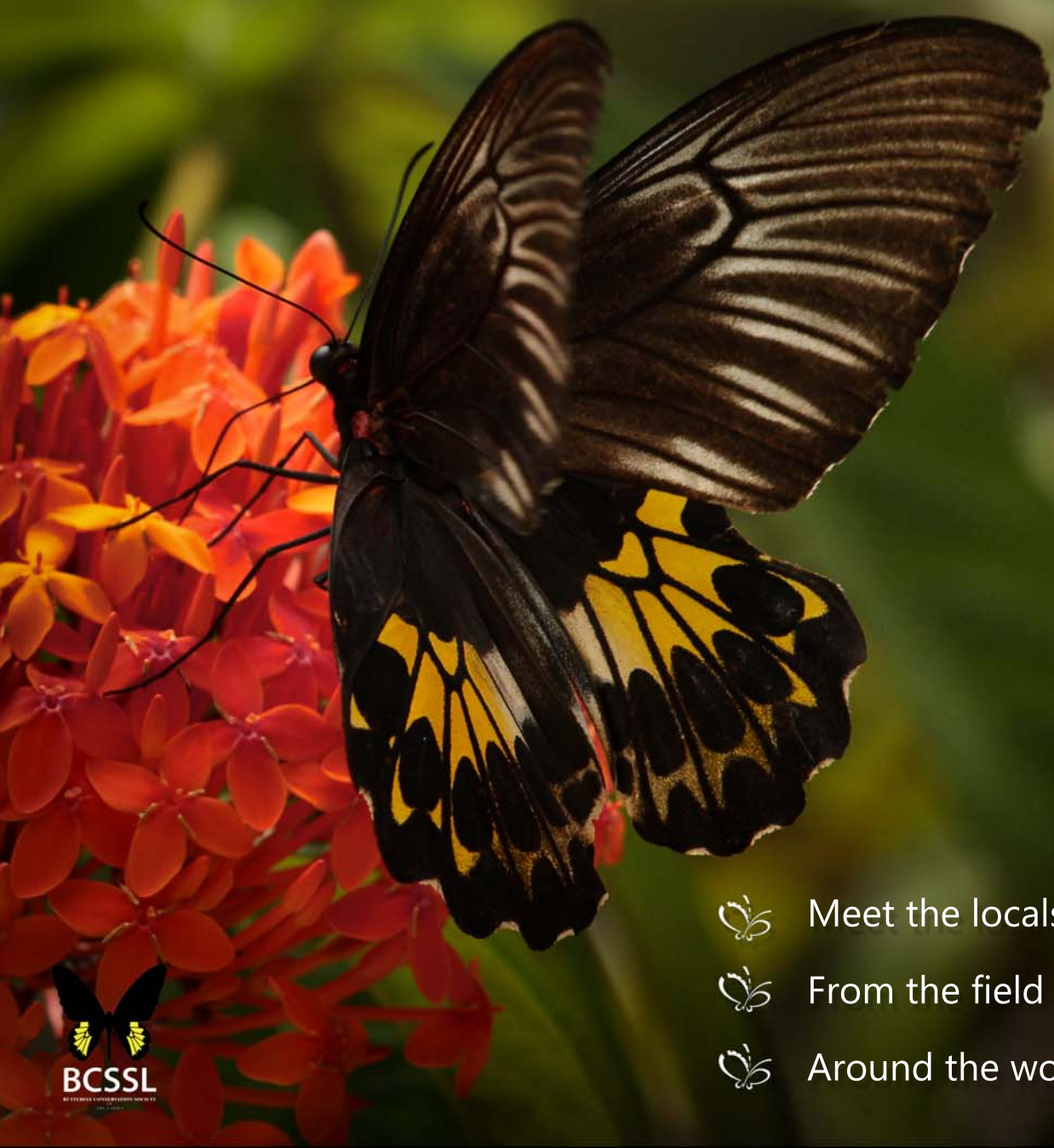


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KRUMITHURU
INSECTS OF SRI LANKA

MARCH , 2018
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Meet the locals



From the field



Around the world with critters



Meet the writers

Sachini Rasadari

Sri Lanka Birdwing

Nuwan Chathuranga

Feeding plant of the
Birdwing Larvae

Anushamalee De Soysa

Bees: a life, a story

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About BCSSL...

Butterfly Conservation Society of Sri

Lanka, known as BCSSL, is a

non-governmental, non-profit

organization that was established to

create awareness and connection

between insect fauna and humans,

mainly specializing about the

Lepidoptera species of the island.

The society consists of scientists, as

well as enthusiasts who are spread

around the country and throughout

the world, spreading knowledge and

awareness in conservation of

Lepidoptera, other insect fauna and

the floral groups related to their

ecosystems.

When there is life, there is hope, but when you destroy that life for your own selfish purposes, it changes the world upside-down. Life is all living beings around us. In every corner you see, there is life.

Insects are categorized as the largest set of living creatures in the world. Even though we do not direct our attention to this particular group, the life, the ways and the colours of these creatures fascinated us for a long time. Such creatures are represented by the Order Lepidoptera which includes butterflies and moths. Lepidopterans are creatures that can make our childhood dreams a reality. The fragile wings of butterflies echoes in the lore that remind us of fairy dances, flowery fields and frightful night creatures that haunt our dreams eternally. These creatures not only beautify the environment but also help humans and other creatures in many different ways. Sadly, today a mass number of butterflies and moths are disappearing from our planet due to habitat destruction. Sadly, today a mass number of butterflies and moths are disappearing from our planet due to their habitat destruction. Struggle of these fragile creatures to sustain their lives must be served as a serious warning, specially to humans, who are mainly responsible for their demise, since lepidopterans are an indicator of a healthy and balanced ecosystem.

We, as the present, should conserve and pass down the nature with all its glory to our future. We have to train our generation to get in to the path of conservation and it should be a noble one; we do not require to obtain wealth or popularity through conserving the environment. We as the present generation should be modest in teaching the future generation about the environmental conservation. The tender age is the most suitable time of a child to learn new things and that is the time we as adults should start teaching the value of our surroundings to them and lepidopterans are one of the ideal creatures for them to learn from.

So, you might think why insects? Why out of all, choose the lepidopterans? We chose these fragile bodies because they are a part and parcel of our life. They are the life givers of almost all of the other creatures living on land directly or indirectly by pollinating the flowers and

helping the kingdom of plants in creating its much needed fertile embryos for the next generation that becomes the source of food for many. Therefore they have equal rights to share this planet with us. Conserving insects, conserves us. We live in Sri Lanka, which is a tiny island with a rich biodiversity that is declining rapidly. That's why the founder members of BCSSL (Butterfly Conservation Society of Sri Lanka) has initiated many actions targeting the conservation of lepidopterans of Sri Lanka.

BCSSL is the first organization in Sri Lanka that is dedicated to conservation of moths and butterflies with a vision to protect their diversity along with natural environment. Even though started and still continuing as a small group, BCSSL is now a strong and stable organization which conducts research, collects data, creates awareness among general public, assists government in conservation efforts and encourages our own members to study in depth about various insects and their surrounding habitats. All these activities are meant to create inter-relationships among the scientists and amateurs who study them. Monthly conducted lectures along with educational trips and other field work gives new insights, awareness and knowledge not only to the members but also to the non-member enthusiasts.

The name of this newsletter, "Krumithuru", is a result of two Sinhala words joined together, which are, "Krumi" the word for insects and "Thuru" a derivative of either the word "Thorathuru", which means news or "Mithuru" which means friend or friendliness. Joining either of these two last words with the word "Krumi", "Krumi+Thorathuru" or "Krumi+Mithuru" gives rise to the word "Krumithuru", which could be interpreted as the "News of insects" or the "Friends of insects", where both the interpretations are pertinent and to be reflective in this Newsletter.

So feel free to read our newsletter. You may learn a new thing or two or maybe more which will motivate you to do what is right by your side, to the environment, and when you come up to that point, your heart will dance with the butterflies.....

Anushamalee De Soyza
Chief Editor

President's Message

Dear members,

It is a great pleasure to write this brief message as we publish the very first edition of the newsletter of Butterfly Conservation Society of Sri Lanka.

The BCSSL has been active for over four years and is completing its fifth year in 2018. Our pillars of success had always been the commitment of the committee, involvement of the members and the support of our partners in every endeavour. In the year celebrating our fifth anniversary, we intend to have a more successful year with many events and a positive and impactful contribution towards the conservation of Sri Lanka's biodiversity.

"Krumithuru" is an effort by the society to increase communication between the members and its partners and to keep everyone updated on activities related to the society and its focal areas. It is a product of BCSSL members and we hope that our effort will aid us in carrying the conservation message of the society and knowledge to a wider circle.

I wish the team behind "Krumithuru" a success in producing an impactful publication and encourage all members to join in the effort. Let's join hands in conserving Sri Lanka's nature and biodiversity.

Amila Sumanapala
President

Founder President's Message

It is a pleasure to address you as the founder president of this organization at this special achievement, the launch of the newsletter "Krumithuru". This was in discussion of the committee for a very long period, and I wish to congratulate the current president, editor and all the other contributors who worked to make this a success.

In this occasion, I would like to recall my memory regarding BCSSL for our new members to get to know about the history of this 'not very novel but well recognized environmental organization'. There was no initial intention of me to commence this type of an organization. Facebook group, "Butterfly Interested Group of Sri Lanka" which was created by Mr. Tharanga Aluthwaththa lead the way to a new thinking. I invited some active people of this group to join for a field visit to 'Dombagaskanda', where my initial intention was to meet 'face to face' the virtual friends of Facebook who had a common scope. Eventually, this gathering organized a book launch for the first edition of "A pocket guide to the Butterflies of Sri Lanka" which was co-authored by Sarath Rajapakshe and Chamitha de Alwis and myself. Confidence gathered in that event made the path to give birth to this organization, making me the founder president.

The first gathering of the "BCSSL" was conducted in July, 2013 at the 'common room' of the faculty of Science, University of Colombo. One of the main considerations at the first day was to initiate a platform to meet scientists and amateurs for better conservation practices together with general public. I hope that this newsletter will act as a tool for this scope. Articles in this newsletter has a scientific value, which are written in a way to be understood by amateurs and expects the younger generation to contribute and become professional scientific writers.

Gathering public for the scope of conservation as well as to increase the scientific research work which makes the baseline for conservation are two crucial aspects that the BCSSL must think of. As the present BCSSL has a membership of various professionals, capabilities and interests, I welcome you all to give your optimum input in your own way for BCSSL to make a better tomorrow with greenery where butterflies are flying around.

Himesh Jayasinghe
Founder President

Meet the locals

Sri Lanka Birdwing

by Sachini Rasadari

Triodes darsius, “The Sri Lanka Birdwing” is the largest butterfly in the island with a wingspan of 130-170 mm. The species live nowhere on earth except in Sri Lanka and the only butterfly in *Troides* genus that is recorded within the island. This gigantic beauty is an internally migratory species, distributed ubiquitously at altitudes less than 1200m. They are most common in Wet Zone, where the main flight season is recorded as March to May. The species can be easily identified by the bright yellow patch on velvet black wings, red spots on thorax near the wing bases. Thus, in 2010, this winged beauty was declared as the National Butterfly of Sri Lanka.

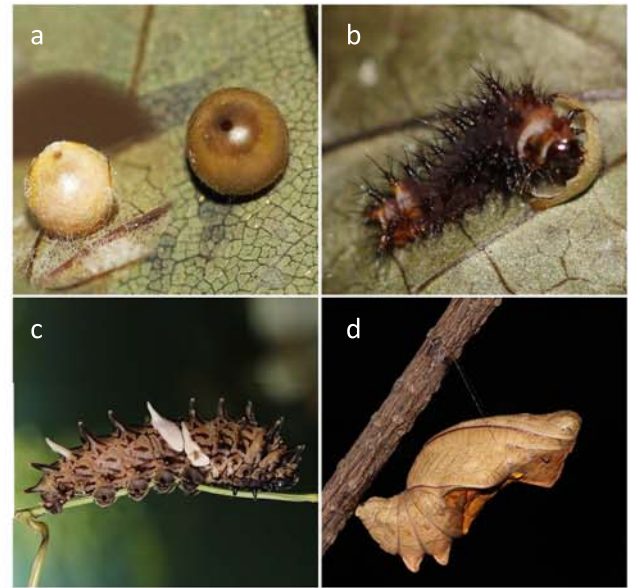
Male butterfly has no white dusting besides the veins on upper side of the forewing, but a little on underside. Also, has a large bright yellow patch on the hind wing, which is divided along black veins. Occasionally, these patches have black spots in some individuals. The female of this species is generally larger than the male, with white dusting on both sides of the hind wing. Yellow patch of the female has large black spots which merge together and form a postmedian black band.



© https://en.wikipedia.org/wiki/Troides_darsius#/media/File:MooreThe_Lepidoptera_of_

The female lays eggs, singly, on the leaves of a large strangling vine known as *Aristolochia indica*. This is the only larval food plant recorded within the island. The egg is orange-yellow in color. All the instars of larvae are sluggish and unpalatable for predators, and can be identified from other species of larvae who feeds on *A. indica* by unique color pattern.

Adult butterflies are most likely to visit open spaces early in the morning, and return to shady forest patches to avoid the direct sunlight. This behavior can be justified by its jet black wings, since black color absorb heat excellently.



(a) . Birdwing Eggs (b) . Birdwing larvae - First instar (c) . Final instar (d) . Birdwing Pupa .
© Sujeeva Gunasena

Wrightia angustifolia, *Elaeocarpus amoenus*, *Mussaenda frondosa*, *Ixora coccinea* and *Premna tomentosa* can be named as it's favorite nectaring plants in the forest patches. However, in shady gardens and non forested areas they prefer visiting the blooms of *Clerodendrum paniculatum* and *Ixora coccinea*.

Adult butterfly has a majestic, birdlike flight and has large wings that gives its name as Birdwing. Its bright and contrasting colour pattern on its wings makes it vulnerable to predators such as birds. To overcome this, the Mother Nature has given a perfect gift of adaptation, which is the toxic chemical accumulation in the body during its larval stage. Their aposematic coloration, as same as in Crimson Rose and Common Rose, acts as a warning to any potential predator.

According to the IUCN Red Data List (2012), the species status has been described under the threat status, least concern. However, the numbers in the populations of these butterflies tend to fall drastically due to the loss of the larval food plant, habitat destruction and lack of mastering blooms. Therefore, those who wish to lend a hand in conservation of *T. darsius*, can simply add those plants to your garden.

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Ministry of Environment. 2012. The National Red List 2012 of Sri Lanka; Conservation Status of the Fauna and Flora. Ministry of Environment. Colombo, Sri Lanka
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Feeding plant of the Birdwing Larvae

by Nuwan Chathuranga

- Name** : සජ්ඣ / Indian Birthwort (*Aristolochia indica*)
Family : Aristolochiaceae
Habit : Slender, twining, perennial herb with ridged, purplish green to ash green, glabrous stems.
Height : Reaches a height of several meters on trees and covers the branches with thick foliage.
Leaves : Simple, alternate, variable, 4-15cm long, 3- 5x longer than wide, 3-veined at the base.
Flowers : Irregular, bisexual in axillary corymbs. About 2.5 cm long, with a pilose mouth and lip.
Flowering : September to January.
Propagation : Seeds and roots.
Distribution : A large number of species distributed throughout the tropical, subtropical and mediterranean countries. In Sri Lanka it's common in low country moist areas up to 1000m above sea level.
Origin : Indigenous
Common use : Grows as a plant to extract medicine and as a common feeding plant for butterfly larvae.
Landscaping : Commonly grown in home and botanical gardens as a butterfly larval host plant, and other species of this family can be grown as ornamental plants as well. *A. indica* is critical to the survival of the Sri Lankan Birdwing butterfly as well as to Crimson Rose and Common Rose butterflies. The larval stages of these butterflies are Aristolochia feeders and this makes them unpalatable to their vertebrate enemies like birds and reptiles due to the sequestering of Aristolochic acids in the larval tissues which are passed on to the adults.



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Around the world with critters

Bees: a life, a story

by Anushamalee De Soysa

Bees are insects closely related to wasps and ants. Somewhere around 100-125 million years ago, the bees evolved from a wasp type who became vegetarian. The first known fossil sample of a Bee was found from New Jersey, in a piece of amber, which dates back to the early Cretaceous era. This Bee is known to be an extinct sister type of the modern Bee lineage.

These insects have compound eyes like almost any other insect. Their antennae are developed in a special way so that they can detect tastes, smells as well as air movements (to hear sounds) through them. The mouth parts are adapted for both chewing and sucking by having both, a pair of mandibles and a long proboscis. The front legs of some bees are adapted to comb the antennae, while the hind legs of many species bear pollen baskets (flattened sections with incurving hair to secure the collected pollen). They have their abdomen segmented into nine parts, and out of these nine parts, the last three segments are modified into an appendage that acts as a sting, which they use as a protection against intruders.

Bees are community living insects, which consist of different hierarchical levels. The highest level is the queen. True honey bees in the genus *Apis* establish their colonies in swarms which consist of a queen and several hundred worker Bees, and they communicate with each other by the "wobble dance". In this dance one worker shows the location of food sources to other workers. When travelling in search of pollen and honey, Bees find their desired compass direction through different techniques. One such is by the use of the sun. It uses the sun as a fixed point, and orient itself by maintaining a fixed angle between its line of flight and the line of the sun. "Wobble dance" as well as the pollen collecting roads are navigated by this way. Bee is the world famous pollinator. They collect pollen from flowers for their survival process. Most of the Bees are polylectic, which means they are capable of collecting pollen from a range of flowers, but there are some Bees which are called oligoleges or specialists who only collect pollen from one or a few species or genera of closely related plants. These specialist bees sometimes obtain floral oils instead of pollen, i.e. the male orchid bees gather aromatic compounds from orchids (*Ophrys* sp. Orchids)

in exchange they, pollinate the flowers. There are nocturnal Bee species in the world as well. They help pollinate the flowers which bloom at the night time.

These insects are a scrumptious meal for a variety of vertebrates which are mainly Bee eaters, Flycatchers, while Bears and Honey Buzzards feast on their honey filled hives. Further, they are targeted by the invertebrates such as the Spiders, Mantises, and Beewolves. Bees not only have visible enemies, but also they are affected by microscopic parasites too.

Humans have had interactions with honey Bees for centuries. Records indicate that humans began consuming honey and wax around 10,000 years ago and had begun a form of beekeeping around 7,000 years ago. This has been indicated in prehistoric drawings found in caves, in Spain that are believed to be around 7,000 years old. After World War I, the increased construction of infrastructure and the use of motorized vehicles had helped to establish and well as expand the beekeeping industry. Nowadays, most people have beekeeping operations as a hobby.

Honey is definitely more than just a simple sugar, because it's rich in vitamins, minerals and other nutrients. This healthy, natural sweetener offers many nutritional benefits without the man-made chemicals that comprise other types of sweeteners. Although, nutrition facts can vary slightly based on the floral variety, they usually are very similar.

Bees are threatened by the same environmental challenges as other species, including habitat loss, degradation, and fragmentation; non-native species and diseases; pollution, including pesticides; and climate change. We should help save honey Bees because while grains do not require honey Bees to flourish, virtually all of our non-grain foods are dependent on honey Bee pollination to a large extent. Worldwide, there are 90 different food plants that depend almost exclusively on the honey Bee. Throughout the world, honey Bees are considered critical pollinators of many fruits, nuts and vegetables. Your own diet will be changed dramatically if we lose our honey Bees. Planting nectar plants in your own gardens and reducing the amount of pesticides you use, will definitely help to save Bees.

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A sight record of Sri Lanka Clouded Silverline (*Spindasis nubilus*) from Anawilundawa Sanctuary

Dushan Muthunayake

dmuthu91@gmail.com

Sri Lanka Clouded Silverline (*Spindasis nubilus*), belongs to the family Lycaenidae, is a butterfly species endemic to Sri Lanka, whose range is mainly restricted to the Northern part of the island. On 18.01.2018, a group of young nature enthusiasts from Young Biologists' Association of Sri Lanka (YBA) has sighted and photographed one individual of the species around 11.30 a.m. at Anawilundawa Sanctuary (7.710224° N, 79.809074° E). This is the second record of Clouded Silverline in the locality and one of the few observation records of the species in the recent years.

Dispersed red scales on lighter background of underside, 'brick red' bands with no outer marginal band on fore wing helps to distinguish this species from other Silverlines found in Sri Lanka.

The species is considered to be Data deficient in the National Red List 2012 and very little is known of its biology and ecology.

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Jayasinghe, H.D., Rajapaksha, S.S. and de Alwis, C. (2015). A pocket guide to the butterflies of Sri Lanka, second edition. Butterfly Conservation Society of Sri Lanka.

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BCSSL marks its fifth year in 2018

The BCSSL was established in June 2013 and this year we are celebrating the completion of five years. The past four and a half years have been a wonderful time as we achieved success in attracting members and spreading our conservation messages through our regular activities and special events.

As we celebrate our fifth year, we are planning several events to be held during the year in addition to our regular activities, such as the third annual “Butterfly & Dragonfly Race” , second annual “Grow with Nature” kids program, a field workshop on butterflies and an educational exhibition inclusive of a photographic exhibition.

The first two events, the “Butterfly & Dragonfly Race” and the “Grow with Nature” kids program are being planned to be held parallel to each other in late April or early May. We will be disseminating all necessary information in advance through emails in order to keep you updated. Hope that you will be joining us in making these events a success.

BCSSL field visits

The BCSSL organizes field visits several times a year. Their main objectives are to explore the diversity of butterflies and other fauna and flora in different localities and gather important information for their conservation, provide hands on experience on observing butterflies and other biodiversity to the members, provide an opportunity for the members to interact with researchers and experts and to encourage them in further exploration and studies on fauna and flora. Usually there are quarterly field visits being organized to different locations around the island depending on the weather patterns and flight season of the butterflies. In the past years we have explored various locations including, Sinharaja Man and Biosphere Reserve (Kudawa and Enasalwaththa), Knuckles Mountain Forest Reserve (Reverston, Deanston and Rambukoluwa), Nilgala, Horton Plains, Belihul Oya, Pokunuthanna, Kithulgala, Hiyare, Madawachchiya, Mannar, Ritigala, Panama, Ududumbara, Wellawaya and Runakanda.

This year, we are planning several more field visits covering locations in different climatic zones. The visits are open to all but priority will be given to the members. The reservations are done first come first serve basis and information on all visits will be disseminated through emails, and at general meetings of the society.

Events to come...

Annual Butterfly & Dragonfly race 2018

Date May 2018
Time 7am - 12.30pm
Venue Diyasaru park
Thalawathugoda



How to join BCSSL

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 to increase the awareness 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 12 – 19)
- Overseas membership (non-Sri Lankan natives and foreigners) Both General and Overseas categories have long term membership option (membership extends up to 5 years)

BCSSL membership and details can be obtained

- Directly at the monthly lecture sessions (last Saturday of every month at Faculty of Science in University of Colombo)
- Via social media (Facebook, twitter)
- By sending a request to email address: butterflycssl@gmail.com
- By visiting BCSSL web site, <http://www.bcssl.lk/>



BCSSL

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