# Sri Lanka

# Natural History Society

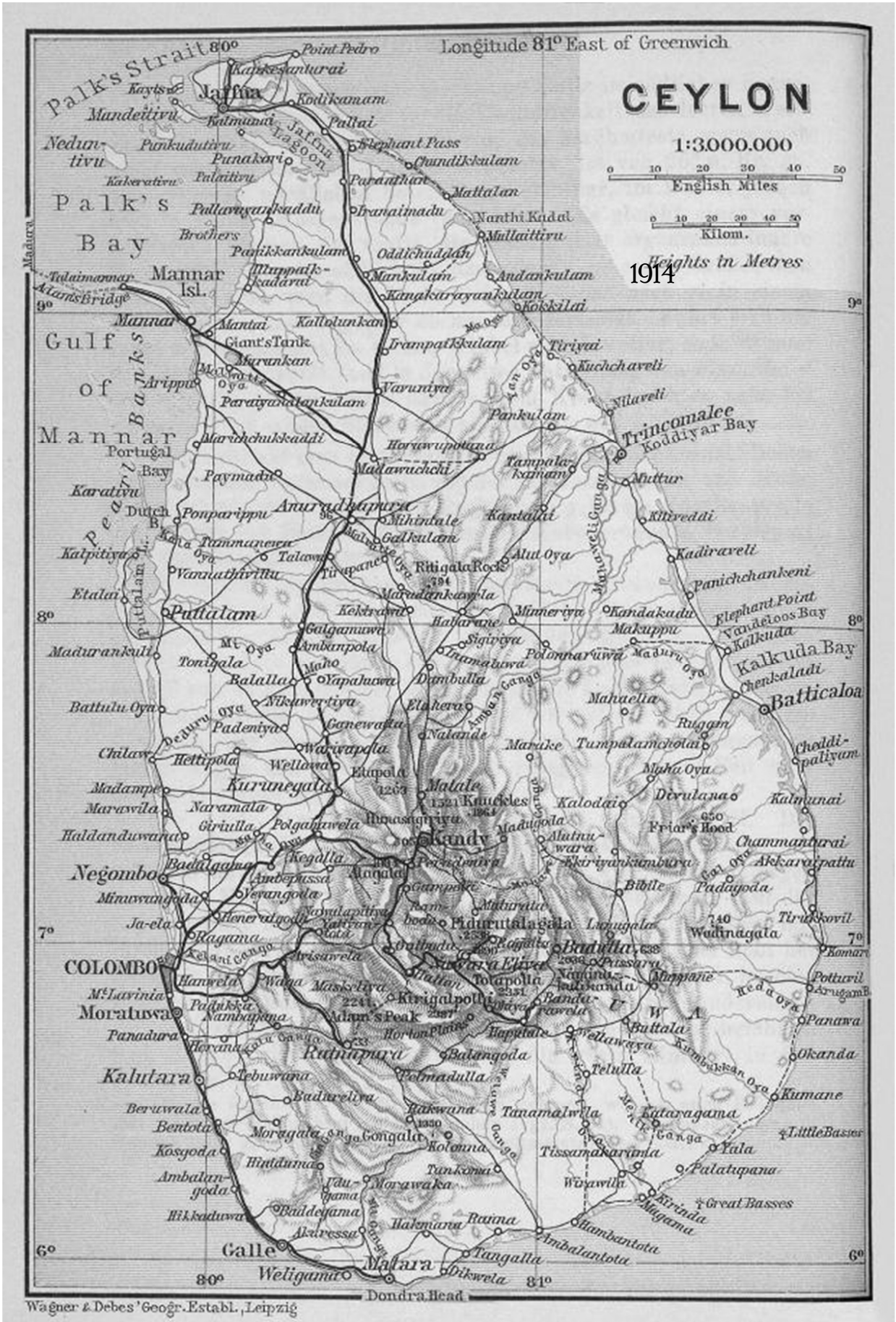
1912 – 2016

# A Brief Historical Compendium

*With contributions by Malik Fernando, Ismeth Raheem and Devaka Weerakoon*
*Compiled and Edited by Asoka Siriwardena and Chris Corea*
*Limited edition for private circulation*

Over a century of appreciation of

Ceylon's natural environment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Palk's Strait
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Pearl Banks
Adam's Bridge
Mannar Isl.
Jaffna
Jaffna Lagoon
Point Pedro
Elephant Pass
Trincomalee
Koddiyar Bay
Batticaloa
Kalkuda Bay
Anuradhapura
Puttalam
Kurunegala
Negombo
COLOMBO
Mt. Lavinia
Moratuwa
Kandy
Matale
Knuckles
Nuwara Eliya
Badulla
Kalutara
Galle
Matara
Weligama
Dondra Head
Ratnapura
Adam's Peak
Trincomalee
Batticaloa
Wagner & Debes' Geogr. Establ., Leipzig

# Contents

# Introduction

Headquartered at the National Museum, the Ceylon Natural History Society was inaugurated in 1912. It was formed by (mostly) British colonialists who found themselves in a strange and wonderful tropical paradise with an extensive assortment of fauna, flora and minerals which were often completely new to them. With their characteristic urge to study and classify what they saw, they set up the NHS and other organizations so that study could be facilitated. It was also a platform to share their knowledge and experiences with each other.

Today, the society continues to disseminate knowledge of our natural environment to members and the public through presentations by learned naturalists and environmentalists. The society also arranges excursions for further, first hand, experience and study.

Where ever one travels in Sri Lanka, the eye and indeed the soul is rarely disappointed. The lofty peaks of the hill country, the energetic waterfalls one encounters on the way, the picturesque expanse of the Horton Plains and scintillating Bakers Falls, the Knuckles range, the mist laden Bogowantalawa valley, sparkling streams of Sinharaja, the historical Adams Peak, the vast tracts of paddy fields in the east, the beautiful golden beaches, brilliantly coloured coral gardens, grazing herds on the dusty plains of Yala, villus at Wilpattu, the fleeting glimpse of a leopard….. an interest in Sri Lanka's natural history takes us to the most wonderful places.

As you read, I am sure your mind will conjure up images from your own happy journeys and personal favorite spots in paradise. If you have not visited these locations I hope you will be inspired to do so soon. It is a moot point as to whether we go to these places to study Natural History or whether we study Natural History to visit these glorious locations ! Food for the soul abounds in Sri Lanka's verdant tropical environment.

Sri Lanka's forest cover has diminished from about 50% in 1920 to about 25% today. This is indeed an alarming rate of decline and has to be reversed urgently. Although our landscapes may still appear lush, the unfortunate circumstance is that our biodiversity has suffered. Many invasive and cultivated species of plants have displaced endemic species to the point of extinction. The loss of flora and habitat has led to corresponding loss in fauna. Symbiotic relationships have been disturbed leading to further species loss.

The invasion of age old habitat has been spearheaded by man's insatiable need for "growth". Global advertising is designed to create needs which we did not know we

had ! We are being taught that we need to consume more in order to be happy. Conspicuous consumption is required to distinguish us from our peers. We need to replace our clothes, domestic appliances and even vehicles periodically in order to be seen to be up to date. And indeed, present day goods are designed to fail in time for the next wave of new models that are being designed.

It is time to wonder whether this is an appropriate model to follow. When we eat at a buffet, we need to restrain ourselves in our choice of food items in order to stay healthy. It is time to extend this to all our consumption – we don't need to replace our equipment just because a new model is out.

In my short lifetime, global population has more than doubled - 4 billion people have been added to the planet ! Just to put that number into perspective, that's 4,000 million more people to feed, clothe, and shelter. Little wonder then that whole forests of timber have been cut down to meet this demand – in less than a single lifetime.

Associations like ours help to show the public the importance of our biodiversity (expertly described in the next chapter by Prof Devaka Weerakoon). We need to preserve biodiversity, even at the "expense" of economic growth. In fact, it is time the world looked less at materialistic yardsticks for growth. This ought to be easy as none of us wants to grow in size indefinitely (to come back to the analogy of the buffet) !.

Let us take a new set of values to the world, let economics and profit maximizing be replaced by conservation and satisficing. Let us hope that we will be able to adopt less consumerist practices in day to day living and take a little trouble to reduce our impact on the environment by reusing and recycling. Future generations are banking on us.

Chris Corea
*President SLNHS*
*Jan 2017*

# The Biodiversity of Sri Lanka

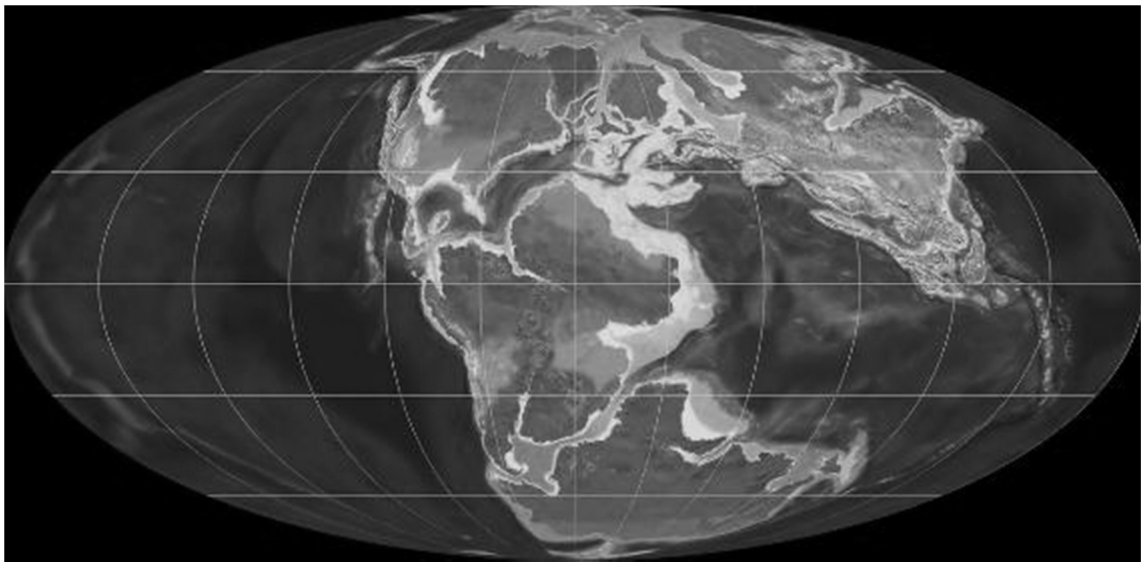
Prof Devaka Weerakoon, Department of Zoology, University of Colombo

Sri Lanka is a moderate sized continental island listed as the 25th largest island in the world. Sri Lanka belongs among the equatorial belt of countries as it lies just North of the equator. The country has a diverse topography that has resulted due to upliftment and erosion. The net result of these processes has been the creation of the central hills, with many peaks, and in cross section, a step-like arrangement referred to as Peneplains. The resulting landform thus has many escarpments, ridges and valleys. Apart from the central hills there are "rock islands" called inselbergs jutting out from relatively flat terrain in the dry zone.

The drainage pattern of the country is almost entirely governed by the central highlands, with all the perennial watercourses originating in the mountains. The country is dissected by 103 river basins. The river flow contributes to the creation of some unique ecosystems in the flood plain areas.

Sri Lanka's climate is largely governed by the monsoonal winds and affected by the central hills. The seasonality of rainfall, influenced by two distinct monsoons and convectional and cyclonic effects and the rain shadow effect caused by the central mountains has given rise to two pronounced climatic regions, the wet and dry zones. Due to the high altitudinal variation, the mean temperature of the Wet Zone drops progressively from 27˚ C in the lowlands to around 13˚ C - 16˚ C in the montane areas. The temperature plays an important role in the highland regions where the decreasing temperature at higher elevations along with the wind has resulted in unique natural communities. The Dry Zone, with a mean daily temperature of 30˚ C, is spread over much of the lowlands plains. A narrow Intermediate Zone lies between the Wet and Dry Zones, and there are two extra dry coastal strips with prolonged drought periods in the north-west and south-east coastal regions forming the Arid Zone.

Sri Lanka, being a continental island, is endowed with a coastline of 1680 km. Therefore, nearly 24% of the land area of Sri Lanka comes under the coastal zone. The shelf around northern and north-western part of the island is broad and the shelf ends more abruptly in the south and east of the island.



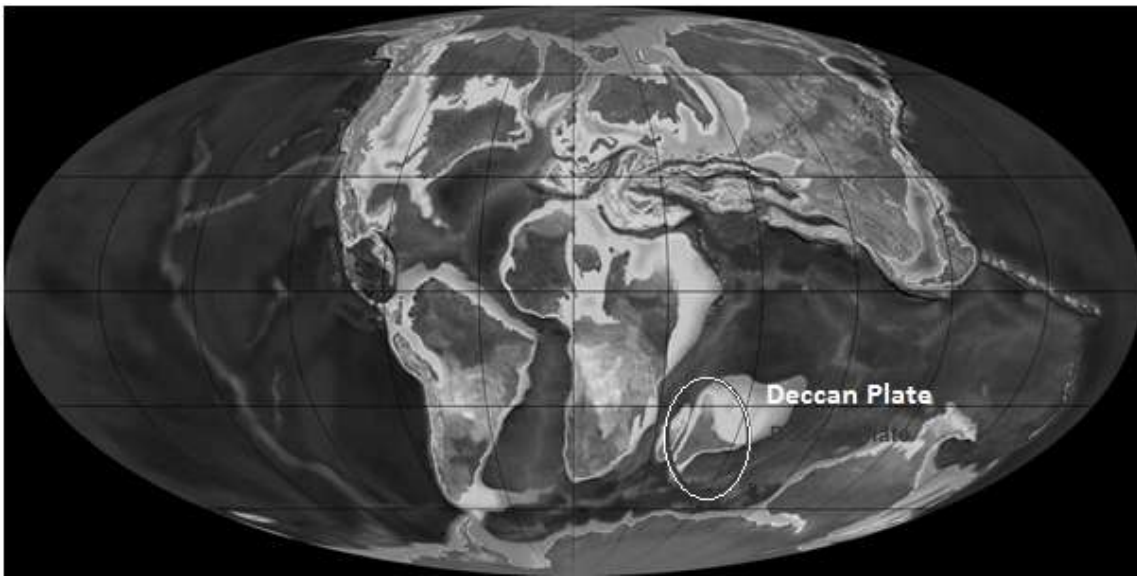

Deccan Plate

**Figure 1. The earth during the early (above) and late (below) Jurassic**
(Source:http://commons.wikimedia.org/wiki/File:Palaeontinidae_Distribution_(Late_Jurassic).jpg)

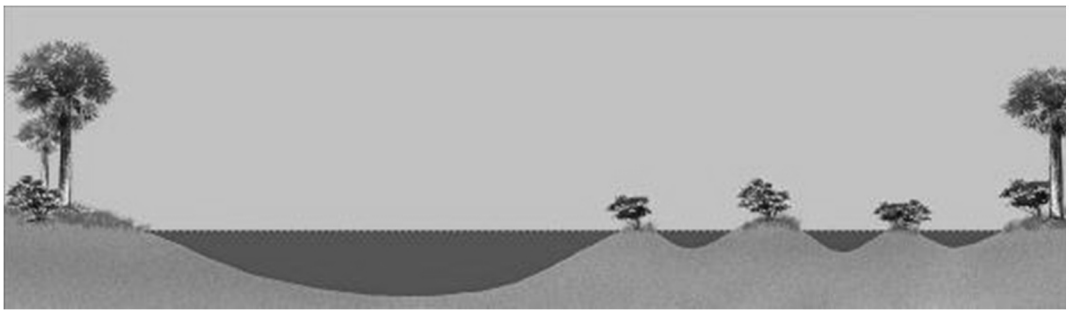
Based on the geological evidence, Sri Lanka has been in existence for nearly 3 billion years. From Preterozoic (2500-500mys) era up to the Jurassic period Sri Lanka remained part of the Gondwana super subcontinent. During the Jurassic period, approximately 158-160 mya, the Indo-Madagascar plate drifted away from East Africa, followed by the separation of Indian plate from Madagascar around 84-96 mya (Briggs 2003). After the separation from Madagascar, the Indian plate underwent a period of isolation for about 30-40 million years (my), before colliding with the Eurasian plate around 40-50 mya. With the collision of the Indian and Eurasian plates there was exchange of biota between Asia and peninsular India. Consequently, the "Biotic ferry model" was proposed, according to which the rafting Indian plate carried ancient Gondwanan forms to Asia. Upon collision with Asia these Gondwanan forms dispersed out of India and into Asia (also called as "Out-of-India" hypothesis). Likewise Palaearctic mammals such as the Elephants (*Elephas, Hyselephas and Palaeoloxodon*), Hippos (*Hexaprotodon*), rhinos (*Rhinoceros*) Lions and Tigers (*Panthera*) dispersed into India (also called "Into India").

Lowering of the sea level, during the Pleistocene era (1.8 million to 11,700 years before present) made it possible for faunal groups to cross over from Indian subcontinent to Sri Lanka across the Palk Strait through the Adam's bridge. This hypothesis is supported by the discovery of fossils belonging to Tiger (*Panthera tigris*) from Batadomba and Alawala caves, Rhinoceros from Lunugala. Sea level changes also facilitated the movement of small vertebrates such as the ancestors of horned lizards (*Cerataphora* species). Long periods of isolation between interglacial periods, where the sea levels rose cutting off the land connection appear to have led to the process of speciation allowing the evolution of many new species. A case in point being is the evolution of five species of the genus *Ceratophora* at different altitudinal ranges in Sri Lanka. Prehistoric humans also appeared to have immigrated to the island during this period as evidenced by the stone tools found in the Bundala Pathirajawela (dated to 125,000 yr before present).

Therefore, geological history of Sri Lanka can be subdivided into four phases, (i) Pre-drift phase where Sri Lanka and India were part of a much larger landmass referred to as the Gondwanaland (> 160 MYBP), (ii) Drift phase ending with the collision of the Indian plate and the Asiatic continent (50 and 40 MYBP), (iii) Miocene epoch (25 MYBP) where Sri Lanka's separated from the Indian subcontinent, following a series of complex tectonic movements, which began in the Jurassic era (iv) Quaternary epoch (two MYBP to

present), where sea level changes driven by climate cycles resulted in repeated formation of land bridges between India and Sri Lanka, in the Palk Strait region.

**Lowering of the sea level during periods of Glaciation**



**Sea level rise as in the present day separating India and Sri Lanka**

**Figure 2. Repeated land bridge formation, connecting the Indian mainland with Sri Lanka across the Palk Strait during the Quaternary epoch facilitated faunal exchange between Sri Lanka and India** (Source IUCN Sri Lanka)**.**

These zoogeographic, climatic, topographic and edaphic factors have resulted in a diverse array of aquatic and terrestrial habitats as well as a multitude of coastal and marine habitats. In addition 2500 years long hydraulic civilization has created some unique manmade habitats such as man made tanks and agricultural landscapes all of which have contributed to the establishment of a rich faunal and floral assemblage with some very unique attributes.

Sri Lanka supports an unusually high biodiversity compared to any other moderate sized tropical island. The hallmark of Sri Lanka's biodiversity is signified by the presence of large populations of mega fauna (Asian elephant, leopard, sloth bear etc.,) that do not occur in other moderate sized islands and presence of large proportion of endemic species (species that are naturally found only in Sri Lanka). Therefore, Sri Lanka along with the Western Ghats of India is listed as one of the 34 biodiversity hotspots of the world. Designation of a biodiversity hotspot is based on two criteria, presence of 0.5%

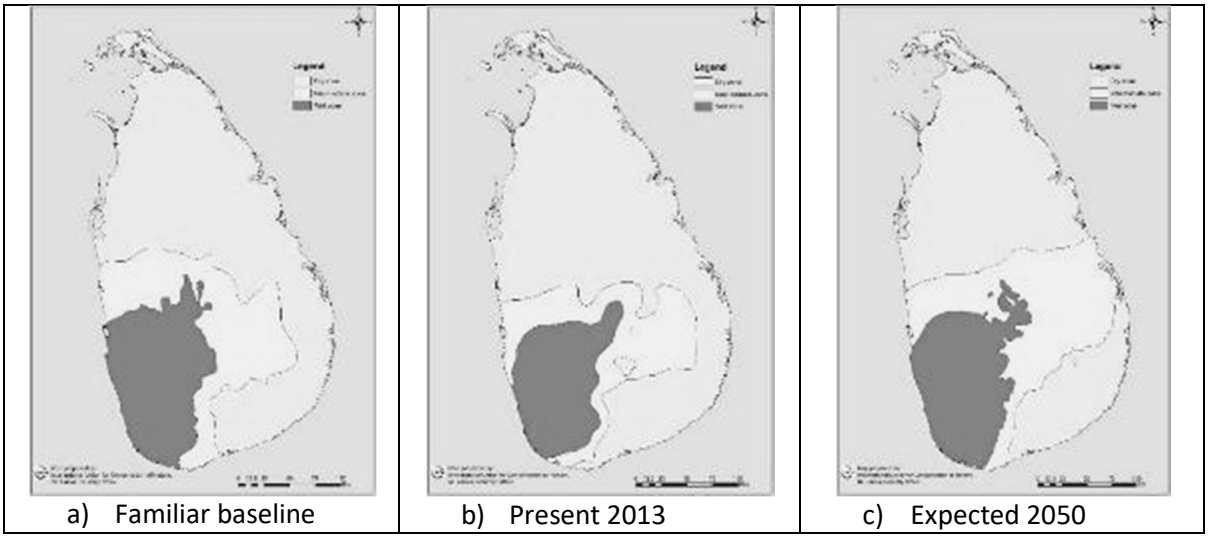
or 1500 species of vascular plants as endemics and reduction of forest cover by 70% or more causing many of the taxa to become threatened with extinction. Designation of Sri Lanka as a biodiversity hotspot is based on both of these criteria as there is high level of endemicity in most taxonomic groups and a high proportion of the species in most taxonomic groups are threatened with extinction, especially in the case of endemic species primarily due to loss of habitat.

This high level of endemicity may have arisen due to multiple reasons such as the topography, climate, abundance of water, association with multiple land masses during its evolutionary history and being a continental island as opposed to a volcanic island. These, factors would have contributed to repeated cycles of colonization followed by long periods of isolation leading to speciation resulting in the evolution of many endemic species. In other words almost all the evolutionary drivers appear to have operated on Sri Lanka, during its evolutionary history shaping up its biodiversity.

According to the available historical records and fossil evidence, much of the island has been covered with forests in the past. This may be the reason why most of the fauna encountered in Sri Lanka are forest dwelling species. However, the forests in Sri Lanka have been subjected to major remodelling by natural forces such as climate change in the past and in more reason times by activities of man.

At present more than two thirds of the forest habitats in Sri Lanka are found in the dry zone. However, the tree density, diversity and endemicity in the dry zone forests are comparatively lower than the wet zone forests. The low density in trees makes these forests much more spacious and therefore supports larger populations of charismatic species such as *Elephas maximus* (Asian elephant), *Melursus ursinus* (Sloth bear), *Panthera pardus* (Leopard), *Rusa unicolor* (Sambur) and *Axis axis* (Spotted deer). The low endemicity of animals seen in these forests could be attributed to the fact that most of these forests have been cleared by man during the last several thousand years to make way for agriculture during the height of the hydraulic civilization that existed in the dry zone of Sri Lanka, which may have resulted in the removal of many of the sensitive endemic fauna. The only endemics that are unique to dry zone are found today in forests associated with inselbergs and riverine forests that would have left undisturbed during this era. For instance, endemic species such as *Phaenicophaeus pyrrhocephalus* (Sri Lanka Red faced malkoha) and *Semnopithecus vetulus* (Purple faced langur) are found predominantly in the riverine habitats in the dry zone and endemic species such as *Cnemaspis alwisi* (Alwis's day gecko found only in Dolukanda). *Cnemaspis kumarasinghei*

(Kumarasinghe's day gecko found only in Maragala), *Cnemaspis podihuna* (Dwarf day gecko found only in Lahugala) and *Nannophrys naeyakai* (Sri Lanka tribal rock-frog found only in Kokagala and Yakunne hela) are all endemic species recorded only in inselbergs.



a) Familiar baseline b) Present 2013 c) Expected 2050

**Figure 3. Dry, Intermediate and Wet Zone climate boundaries**
**(**Source Muthuwatta and Liyanage, 2013)

The wet zone forests that represent only about 3% of the Sri Lanka's land area on the other hand have very high plant diversity where the structure of the forest shows a high degree of microhabitat complexity. Further, many of the remaining forests have remained relatively undisturbed by man for a very long time. More than 75% of the endemic species in Sri Lanka is restricted to the wet zone where only about 10% of the original forest cover remains. Forests in the wet zone also show a marked altitudinal variation, based on which these forest are grouped into lowland, submontane and montane rain forests. These three categories have distinct differences in the structure and composition of their vegetation. While many faunal species show a wide distribution among all three types, some faunal species are restricted in their distribution to one of these forest types. The lowland rain forests have the highest land extent, and support a greater faunal diversity. Many species of endemic freshwater fish are restricted to the streams located within lowland rain forests as they provide ideal habitat conditions for fish. In addition many species of invertebrates and vertebrates are also restricted to the lowland rain forests. The montane rain forests have the lowest land extent with only 0.05% of the total land extent of Sri Lanka. However, there are a number of endemic species restricted to these montane forests such as, *Pycnonotus penicillatus* (Sri Lanka Yellow-eared Bulbul), *Myophonus blighi* (Sri Lanka Whistling Thrush), *Bradypterus*

*palliseri* (Sri Lanka Bush Warbler), *Suncus montanus* (Sri Lanka Highland Shrew) and *Rattus montanus* (Sri Lanka Nellu rat).

Even though Sri Lanka is endowed with a diverse and unique assemblage of fauna and flora many of these species are running the risk of extinction due to number of threats they face. Loss of habitat is the most significant threat contributing to the loss of biodiversity in Sri Lanka. During the last century alone, Sri Lanka's natural forest cover has declined by about 50% and continues to decline even at present. The resulting loss and fragmentation of habitat have been the major drivers that has resulted in many of the species to become extinct or driven toward the brink of extinction.

Overexploitation, introduction of invasive alien species and human-wildlife conflict are three of the other major drivers that contribute to loss of biodiversity in Sri Lanka. Invasion by non native species is considered today as one of the greatest threats to the world's biodiversity. Sri Lanka is an island with a high proportion of endemic plants and animals due to its long geographic isolation that limits immigration of new species, allowing established species to evolve in the absence of strong competitors and predators. Many of these endemic species are highly specialized to the habitats they have evolved in and their continued existence depends on availability of habitat as well as quality of the habitat. Therefore, invasive alien species, introduced due to human activities have a dramatic effect on such isolated ecosystems where it can become a leading cause of species extinctions. Further, islands are more vulnerable to invasion by alien species as they lack natural competitors and predators and due to their isolated nature islands have to interact more with the outside world and the present trends in globalization have lead to increased trade, tourism and transportation that are responsible for most number of accidental introductions of potentially invasive species. Rapid expansion of human use areas resulting in large scale changes in landuse patterns have contributed to conflict situations between humans and wild animal populations that has resulted in further deterioration of conservation status of many of this conflict creating species who are already threatened with extinction.

As a tropical island, Sri Lanka is extremely vulnerable to the predicted climate change related impacts such as sea level rise, salt water intrusion leading to increased salinization of low lying areas, rising ocean temperatures and ambient temperatures, changes in rainfall patterns and increased frequency of storms and other natural hazards such as floods and landslides. These changes will have a significant effect on Sri Lanka's

biodiversity especially the distribution of species, composition of ecological communities and biological processes such as flowering, fruiting, reproduction and migration.

Loss of biodiversity will lead to loss of goods and services provided by the biological resources as well as loss of resilience of natural ecosystems to withstand changes in the environment, especially the predicted changes that are brought about by climate change. This in turn will have a significant impact on human well being and livelihoods such as agriculture and fisheries that directly depend on these ecosystem services. Further, Sri Lanka plans to expand its tourism industry which heavily depends on the natural capital whose loss will reduce the attractiveness of Sri Lanka as a tourism destination. Loss of biodiversity will also have an impact on future benefits that can be accrued from biological resources such as development of new drugs and improving crop varieties using emerging innovations of biotechnology.

# Birth of the Society

**The Times of Ceylon - Jan 12 1912**

## NATURAL HISTORY SOCIETY OF CEYLON

SUCCESSFULL MEETING AT THE MUSEUM

At the Colombo Museum yesterday afternoon, Dr. Joseph Pearson presided over a well-attended meeting to consider the formation of a Natural History Society for Ceylon. Among those present were Messrs. F. M. Mackwood, V. A. Julius, Colonel F. E. G. Skey, the Rev. P. T. Cash, Messrs. A. H. Pertwee, E. E. Green, W. A. Cave, C. T. Symons, H. P. G. Young and Dr. Andreas Neil.

The Chairman, having explained the object of the meeting, said the matter had been very forcibly brought before some of them quite recently. There were many people there that day who were better qualified to speak than he; but during the short time that he had been in Ceylon he had seen and felt the great need of some sort of organization in connection with the natural history of Ceylon. Of course, there was a Society at present - the Asiatic Society-which, theoretically, was supposed to include natural history and such subjects, but one could not expect one society to treat of every subject, and he thought the Asiatic Society had very rightly specialized in ethnology, archaeology and history. He did think that there was a great need - a crying need - for a Natural History Society. They had explained the main ideas - the basis on which they wished to found the Society. In the first place, he thought, the Society should have at least two main functions. It should, in the first place, be educative - to educate young people who had a natural learning towards Natural History and who did not get the necessary knowledge. They, who had specialized, ought to help those who sought knowledge of the subject. He hoped that the Society, if it was formed, would do a great deal of pioneer work. Secondly, the Society should do a great deal of real hard administrative work. They should set about organizing themselves and make up their minds that what they were doing individually ought to be shared. They ought to let each other know what they were doing, and try to make some real earnest attempt to bring about the survey of the natural history of the Island. In Bombay, there was a very strong and flourishing Natural History Society, and they had an excellent journal. They did not pretend to propose anything so rich and prosperous as at Bombay. They did not want to be too ambitious, and the achievements of the Society of Bombay were, perhaps, above them, but they could work on very much the same lines in a humble sort of way. Perhaps, eventually, they might have a journal of their own. The number of people who were there left no doubt that they would see the formation of a Society, and the only question was on what grounds they should run it. (Applause)

THE GOVERNMENT ENTOMOLOGIST SUPPORTS

Mr. E. E. Green remarked that the need for such a Society had been brought home to him over and over again by numerous correspondents, who had written to him asking his advice about collecting various things. It was, however, rather difficult to advice them entirely by correspondence, and it would be a very great advantage if they had some Society which met occasionally where people could discuss their difficulties, and see how things were done for themselves. At present, he proposed that they should constitute themselves a Society.

The Rev. P. T. Cash seconded the proposal, which was carried.

The question was raised as to what was Natural History.

The Chairman said he thought it would cover zoology, botany and geology.

A voice : Anything more ?

The Chairman : Are not those enough ? (Laughter) Continuing Dr. Pearson said the aim of the Society should be, as much as anything else, to interest people in Natural History, and to get them to assist in working out the many problems which required working out in Ceylon, but which it had hitherto been impossible to work out owing to the scarcity of workers. Of course, when they discussed the matter more thoroughly the other aims of the Society would crop up.

H. E. THE GOVERNOR THE PATRON

On the proposal of Dr. Pearson it was decided to ask H. E. the Governor to serve as patron of the Society, and Sir Hugh Clifford as president.

The Chairman remarked that they now arrived at the working part of the committee. He thought it would be much better to form a small committee and add to it other names later.

Mr. Mackwood said it seemed to him that the real success of a Society such as that depended on the Secretary and joint-Secretaries, at any rate, at the first. Would Dr. Pearson he prepared to take up the Secretary-ship or part of it ?

Dr. Pearson replied that he had already taken the liberty of approaching Mr. C. T. Symons, who was extremely keen, and who was willing to act as one of the Secretaries.

Mr. Mackwood asked if Dr. Pearson would be willing to act as the other, and received a reply in the affirmative.

Dr. Pearson and Mr. Symons were accordingly elected joint Hon. Secretaries.

Messrs. Mackwood, Green and Julius were elected Vice-Presidents and a small committee consisting of Dr. Lock (who, it was intimated, had expressed his willingness to serve on

the Council as botanist). Dr. Nell, the Rev. P. T. Cash, and Mr. A. H. Pertwee was appointed.

The Rev. P. T. Cash suggested that the Principal Mineral Surveyor should be approached, but it was stated that gentleman was at present on leave.

LADIES AS MEMBERS

Mr. Mackwood enquired whether ladies would be eligible for membership.

Dr. Pearson replied that he hoped so. It would be a question for the committee to decide. The Chairman also intimated that the expenses of the Society would probably be very small at first, so that the subscription for the first year or two would not be a big one.

Colonel Skey remarked that he had been a member of the Bombay Society for some years, and wished for the Ceylon Society as much success as the Bombay Society had achieved. (Applause)

The meeting concluded, it being understood that a further meeting would be called shortly.

# THE CEYLON NATURAL HISTORY SOCIETY.

By C. T. Symons, B.A. (Oxon.), F.R.G.S.

IN a country like Ceylon, where the prosperity of the inhabitants depends, not so much upon manufactures, as usually understood, but upon the natural products of the land in the way of vegetable produce and minerals, and where practically every person is brought closely in contact with striking natural objects and phenomena, the need for the study of Natural History is self-evident. This statement is meant to apply to the ordinary individual, and does not in any way refer to the organized staff of experts, which must naturally be attached to any properly-conducted industry which depends upon natural products. It is most probable that every one has at some time or other in his life come across some natural object or phenomenon which has puzzled him, and made him wish to know the why and the wherefore of the occurrence. Perhaps he has noticed the coming of some unusual bird into his compound, and would like to know why and whence it has come; perhaps he has been struck by the peculiar growth of plants in some particular district, or the occurrence of certain mineral deposits in certain definite places, and would like to trace them elsewhere or know why they occur in that particular way; perhaps he has been amazed at the extraordinary numbers of butterflies in particular spots, or at their concerted movements in hundreds and thousands in particular directions at certain times of the year, and would like to trace out the reason of the phenomenon. These and many other instances will probably have occurred to every reader. Nature appears to be always throwing questions in our way, and to be tempting us to find answers to them. Such answers for the individual must be gained in one of two ways. The one alternative is solitary study with the help of books, which, so far as Ceylon natural objects are concerned, are few and far between, and furthermore expensive. This method pre-supposes a very strong mind in the observer, who will persevere, in spite of the inevitable difficulties in the way of individual effort. The second alternative is the concerted working of those who have been trained to know, or of those who have been experienced, with those who are anxious to know, so that the accumulated knowledge of the few may be available for the many, and the observations of the many may add to the general stock of knowledge.

It is with this latter aim in view that the Ceylon Natural History Society has been inaugurated. Its headquarters are at the Colombo Museum. Its rules state that it has as its object the promotion of

the study of Natural History, more especially in the branches of Botany, Zoology, and Geology, and the accumulation of such observations as will lead to a more complete knowledge of the Natural History of the Island. Those who were instrumental in convening the inaugural meeting were of opinion that there was a real need for such a society in Ceylon, and that it would bring together a large number of individuals who were interested in the subject, and who had made valuable observations in their own fields, but who were perhaps diffident about approaching on the subject those whom they regarded as experts, and of bringing them in touch with those who were only too ready to give the results of their training and experience. The isolated individual is always at a disadvantage, more especially in such a subject as Natural History, where accumulated data are of such great value, and where an ounce of personal advice is worth a ton of information from such books as are available, or comprehensible to the untrained observer; and further the trained expert, who gives his life's work to the study, is also at a disadvantage, because he realizes the necessity for many observations and much work, more than can possibly be accomplished by the few.

In the past, the organized study of Natural History in Ceylon has been necessarily carried on by those who were definitely appointed by Government for special work, or by those who were sufficiently keen to surmount the initial difficulties of individual work. In the history of the subject it is undoubtedly true that much of the best work has been done by the amateur, who has had his interest aroused by some natural phenomenon and has been thus led on to the definite study of some branch of Natural History. But in many cases where the individual has not become pre-eminent, or where he has not been in touch with the other workers in the same branch, his observations have been lost to the world at large. In some cases the observer may be sufficiently aroused to write to the daily papers on the subject of some observation; but no permanent record is thereby made in scientific literature, and most probably the results of the work are lost, so far as future workers are concerned. The Ceylon Natural History Society will provide an instrument whereby such an occurrence is unlikely. Although at the outset it is not the intention of the Society to publish its own periodical, members will be able to lay their observations before the rest of the members of the Society, and, further, will be encouraged to record their work in the pages of *Spolia Zeylanica*, at present the only local publication dealing with the subject. As soon as the Society is in a position to do so, it will produce its own periodical, which it is hoped will take its place amongst the recognized literature of the subject.

At such an early stage any Society must be in the position of an infant, and must not attempt anything which is liable to impair its strength in the future. But, with such encouragement as the

Society has had by the acceptance of the position of Patron by His Excellency Sir Henry McCallum, and of President by Sir Hugh Clifford, and by the readiness with which the experts have come forward with offers of service, it is only reasonable to expect that the period of infancy will be a very short one so far as actual power is concerned. There are most probably a very large number of persons who, if they are not actually active in the study of Natural History, are ready to join and to have their interest aroused. There is also a large number of persons who hesitate because of the usual expense involved in joining any Society, and because they feel that, though keen, they have no expert knowledge. These may be relieved to know that the subscription to the Society has been fixed at a very low figure, which will hold good until a magazine is published, or even after then, if sufficient funds are available, and which will enable all who are interested to join, and, further, to know that it is one of the objects of the Society to publish, as soon as possible, a series of booklets dealing with natural objects in a simple way such as will enable the beginner to gain a grasp of the subject and to identify his specimens.

Membership is open to anyone who is *interested* in the study of Natural History. A communication addressed to the Honorary Secretaries will procure further information on the subject, if necessary. In Ceylon there must be a very large number of persons who are qualified for admission, and the work which can be done by the Society will largely depend upon the number, and also the activity, of its members.

It is proposed to hold meetings at convenient intervals in Colombo or in some other suitable centre, at which members will be able to make communications or exhibit specimens, and at which lectures will be given by members from time to time. These meetings will enable workers in particular branches of Natural History to get in touch individually with others who are working in the same branches.

Nature lies around us in this Island in some of its most pleasant aspects, and must impress itself even upon the most unobservant. With the seashore, the low-lying land around the coast, the central range of uplands, the jungle of various types, and the drier districts in the north, we have in Ceylon plenty of variety in a small compass, plenty to keep the worker busy wherever he may be. And the more general diffusion of the knowledge of Natural History must lead to a sounder outlook on life, and indirectly to the greater prosperity of the Island.

# Early Naturalists of SLNHS

William Watt Addison Phillips was born in 1892, in Warwickshire, England. After a short stint of schooling he came out to Sri Lanka and took up a position as a Tea planter in Matugama. In 1915 he was enlisted in the Army and served in the Middle East in Egypt and Turkey. He was taken prisoner by the Germans and was released at the end of the war in 1920.

Phillips returned to this country the same year and served as a Tea planter in Bogowantalawa, Matale and Namunukulla-where he took a great interest in the wild life of the country.

Best remembered for his authoritative work-The Mammals of Ceylon [1935] and for a four-volume publication on common birds.

He was an active member of the Wild Life Protection Society (now the Wild Life and Nature Protection Society of Sri Lanka) and served on its committee. Phillips was honorary Secretary for 11 years and President for 5 years from 1943-48. He also served the government on several panels for the protection of wild life and the problems such as the impact of elephants on agriculture.

He contributed extensively to the National Museum's science journal *Spolia Zeylanica* in which he contributed detailed articles on the *Nidification of the Birds Of Ceylon (1948 and Revised Checklist in 1982)*.

His last work was on the Checklist of the birds of Ceylon. Phillips retired in 1951 and died in England in 1981.

**George Morrison Reid Henry [1891-1983]**

G.M.Henry was the author of the most popular natural history book in Sri Lanka- *A Guide to the Birds of Ceylon[1955].*

One of his first coloured plates appeared in the four part illustrated publication published as an addendum to *Wait,W.E. Manual of the Birds of Ceylon[1931].*The 34 plates were illustrated by G.M.Henry.

Several of his illustrations were also included in the 10 volume publication by *Salim Ali and Dillon Ripley Handbook of the Birds of India and Pakistan [1983].*

He was also associated with another widely read book on butterflies- *Woodhouse.L.G.O.-The butterfly fauna of Ceylon[1942]* in which he was the co-author. Henry was exceptional in that he illustrated all his texts on birds, butterflies and other insects with exceptionally clear, attractive sketches and coloured illustrations both for his own publications as well as his colleagues both in Sri Lanka and India. His son Bruce Henry was an exceptionally talented artist.

Although known for his work on birds Henry was by training, primarily an entomologist.

He started his career in the Ceylon Company of Pearl fisheries in 1907. By 1913 Joseph Pearson, himself a distinguished marine biologist and Director of the National Museum in Colombo recognizing his enthusiasm offered him a post as an Assistant in Systematic Entomology. Although Henry had no formal education or training Henry had a great sense of enthusiasm for whatever work he undertook.

This resulted in Henry being sent to the Indian Museum in Calcutta to train under the gifted Nelson Annendale, its Director. On his return he was appointed to the post of Asst Entomologist to the Department of Agriculture.

**Legge,William Vincent [1844-1918].**

Born in Scotland, and died in far off Tasmania, Legge was an inveterate traveller to the most remote areas. After training in Woolwich Military Academy in England he served as a Lieutenant in the Royal Artillery in Sri Lanka between 1868 and 1879.

During this relatively short period Legge amassed what was to be the most comprehensive data and specimens of the Islands avifauna ever to be collected by a single individual. While in the military serving in Sri Lanka, Legge was posted in Colombo, Trincomalee and Galle – and this gave him several opportunities to improve his collection of bird skins and eggs. Within a short span of 11 years he not only

travelled to the remotest parts of the country to observe birds he also amassed an extensive collection of birds eggs –and the majority of these were presented to the museums in England and Tasmania, Australia.

He also served as Secretary of the Royal Asiatic Society (Ceylon Branch) and published several interesting papers on the distribution of birds in the Island. He developed a network of informants and collectors like Henry Parker, Holdsworth, Neville and others who were civil servants, engineers and planters who were collectors of bird specimens.

By 1877, Legge was recalled to England and was appointed as chief instructor in gunnery in Portsmouth. For the few years he worked assiduously at the British Museum when off official duty and compiled extraordinary amount of data to publish the monumental work of over 1000 pages – *The History of the Birds Of Ceylon* [1878-1880] in three parts. The first edition was limited to 226 copies and the majority of the finely executed 34 plates were done by one of Europe's finest bird illustrator John Gerard Keuleman [1842-1912].

Legge retired to Tasmania Australia in 1883 when he was offered the command of the military forces there and in 1901 founded the Australian Ornithologists Union. He died at his home in Cullenswood House in 25, March 1918.

**Dr R. L. Spittel (1881-1969)** CMG, CBE, FRCS was a Ceylonese Burgher physician and author. Spittel received his education at Royal College, Colombo and the Ceylon Medical College, where he passed LMS in 1905. Thereafter he joined the government medical service and was sent to England in 1906 to complete his higher education.He was one of the foremost experts on the Vedda community. An avid nature-lover, Dr Spittel made many trips to the jungles of Ceylon, gaining much knowledge of the flora and fauna and the aborigines of the island, the Veddas. His studies on the Veddas made him an expert on this little understood people. Based on his ethnographic studies, he authored several books that gained much fame during his lifetime. His works include novels, poetry and academic studies. "Wild Ceylon" and "Far-off things" are two of his nonfictional works.

Fr Maurice LeGoc was the Rector of St Joseph's College. During his tenure of office, there was emphasis of the science subjects in the curriculum, Fr. Legoc's favourite subject was Botany. His own publication "Tropical Botany" was used as a text book in O' Level classes in India and Sri Lanka.

Dr Paul Edward Pieiris (P.E.P) Deraniyagala [1900-1975]. Born to an erudite scholarly family comfortable in the arts as well as the sciences, Deraniyagala was well equipped to fashion his own career as a biologist.

His father was an eminent historian and renowned judge and an able Civil Servant. One of his brothers was well known artist who ushered in the contemporary movement in art. His younger brother Ralph was the first Clerk of the House in the first Parliament established soon after independence.

Paulus Edward Deraniyagala Peries was born on 8 May1900 and was educated at St. Thomas College [Colombo], Cambridge in 1919and graduated with M.A.1923 sciences. Also spent a semester at Woods hole, before completing his studies in Harvard at the Museum of Comparative Zoology.

He returned and joined the National Museum, Colmbo in 1925 and retired in 1963, and died in 1973.

Within those years Deranigala's brought the Spolia Zeylanica [the science journal of the National Museum] to standard never ever attained.

His own contribution in that journal included 189 items mainly articles, but also short notes in subjects ranging from archaeology, Anthropology, ethnography, geology, meterology, ornithology and zoology. They varied from historical aspects as well on ivory, gemmology, statuary and even the capture and taming of elephants. Often these articles were sourced from remote sources such as palm leaf manuscripts.

His books oaf n herpetology and reptile fauna are still an important source for researchers.

 Founder member of the Sri Lanka Natural History Society.

Dr Joseph Pearson

**Kirthisinghe , Parakrama[1903-1981].**

Born in 1903, then a small coastal town Hikadauwa where he explored the area for marine fauna well known for its coral reefs .Educated at Ananda College he went on to University College , London to study medicine but later switched to take up a career as a zoologist., and graduated in 1929.

After World War II he returned to take up an M.A. degree. After returning home he took up the post as a Reader in Zoology at the University of Ceylon and went on to becoming Assistant Professor of Department of Zoology.

After retirement he became the head of the Department of Zoology at Aquinas University College, Colombo.

Kirthisinghe is best known for his two publications Amphibians of Ceylon [1955], and Sea Shells of Sri Lanka [1978].

The former work is beautifully illustrated with delightful pen and ink drawings by Miss E.R.Turlington and Peter Green of varied species ofAmphibian . . G.MHenry was very helpful in providing over two hundred of less common.species from all over the Islandd and W.W.APhillips also assisted the author y frogs mainly from the Gammaduwa area. Both were former t prominent members of the Natural History Society

The author under took the publication for the book largely from his own funds.

Kirthisinghe served as both secretary and later as president of also held the post the Ceylon Natural History Society a d also served as president ofthe Natural History Section of the Ceylon Advancement of Science and Sri Lanka's representative to the meeting of British Association of Science in 1954.

Mrs Dorothy Fernando

Prof B A  Abeywickrema

Dr M.D. Dassanayake

P B Karunaratne **Karunaratne, Punchi Banda[1930-1996].**

Educated at Trinity College,Kandy, Karunaratne had no formal specialized education in zoology, but was one the country's best known field worker and collector of specimens especially in entomology.ae

Leaving school early,Karunaratne enlisted in the National Museum, as a trainee field assistant and his mentor was P.E.P. Deraniyagala, Directorat the National Museum, Colombo and later promoted him for the post as Assistant Curator in Entomology, which was long due to him.

Under Deraniyagala's guidance his skills in identifying new species and collecting them became a passion.

After several years of being side lined for promotion the Smithsonian expert

Dr. Karl Krombein [1912-2005] recognized his talents and offered him a post as a field assistant collector in a taxonomic team that comprised as many as 125 specialists selected world wide to work on the species collected in Sri Lanka over almost a decade.

Karunaratne contributed to ion was recognised and he was invited to visit the Smithsonian Headquarters in Washington for consultation and en route he also spent a few day in London to sort out the collection of land mollusc as well as other species of at the Natural History Museum. [BM].

His correspondence with naturalists was worldwide and generously gave data on all aspects of zoological specimens.

During his last few years he worked at the Sinharajah Rain Forest [Man Biosphere project] and extracted vast amount of data with his unbinding energy and field work for the book by the same title  funded by the New York Zoological Society.

Dr Thelma Gunewardena

# Principal Office Bearers

| YEAR | PRESIDENT | SECRETARY/ Jt. SECRETARIES | Date elected | Patron |
|---|---|---|---|---|
| 1912 | Sir Hugh Clifford | Dr. J. Pearson & Mr. C. T. Symons | Inaugural meeting: 11.3.1912 | Hon. Henry Edward McCallum |
| 1913 | Mr. F. M. Mackwood | | 2nd Annual Meeting 28.2.1913 | Hon. Henry Edward McCallum |
| 1914 | No annual meeting held. The 12th General Meeting held on 24.7.1914 | | | H. E. Sir Robert Chalmers |
| 1915 | Hon. Dr. R. E. Stubbs | Mr. C. T. Symons & Capt. W. A. Cave | 3rd AGM 7.5.1915 | H. E. Sir Robert Chalmers |
| 1916 | Hon. Dr. R. E. Stubbs | Mr. C. T. Symons & Capt. W. A. Cave | 4th AGM 28.3.1916 | H. E. Sir John Anderson |
| 1917 | Hon. Dr. R. E. Stubbs | Mr. C. T. Symons & Capt. W. A. Cave | 5th AGM 13.3.1917 | H. E. Sir John Anderson |
| 1918 | Hon. Dr. R. E. Stubbs | Mr. C. T. Symons & Capt. W. A. Cave | 6th AGM 22.5.1918 | H. E. Sir William Henry Manning |
| 1919 | Hon. Dr. R. E. Stubbs | Mr. C. T. Symons & Capt. W. A. Cave | 7th AGM 14.3.1919 | H. E. Sir William Henry Manning |
| 1920 | Sir Graeme Thomson | Dr. Joseph Pearson & Mr. C. T. Symons | 8th AGM 16.6.1920 | H. E. Sir William Henry Manning |
| 1921 | Sir Graeme Thomson | Mr. O. M. Malpas | 9th AGM 9.3.1921 | H. E. Sir William Henry Manning |
| 1922 | Sir Graeme Thomson | Mr. O. M. Malpas | 10th AGM 20.2.1922 | H. E. Sir William Henry Manning |
| 1923 | The Hon. Mr. Cecil Clementi | Mr. O. M. Malpas | 11th AGM 20.2.1923 | H. E. Sir William Henry Manning |
| 1924 | Dr. Joseph Pearson | Mr. O. M. Malpas | 12th AGM 12.2.1924 | H. E. Sir William Henry Manning |
| 1925 | Mr. C. T. Symons | Mr. O. M. Malpas& Mr. E. C. T. Holsinger | 13th AGM 10.2.1925 | H. E. Sir Hugh Clifford |
| 1926 | Very Rev. Fr. M. J. Le Goc | Mr. O. M. Malpas& Mr. E. C. T. Holsinger | 14th AGM 28.2.1926 | H. E. Sir Hugh Clifford |
| 1927-30 | No records | | | |
| 1931 | Mr. G. M. Henry | Mr. D. R. R. Burt | | H. E. Sir Graeme Thomson |
| 1932 | Mr. D. R .R. Burt | Dr. W. Fernando | | H. E. Sir Graeme Thomson |
| 1933 | Mr. D. R. R. Burt | Dr. W. Fernando | 21st AGM Feb.1933 | H. E. Sir Graeme Thomson |
| 1934 | No records | | | |
| 1935 | Mr. A. H. Malpas | Mr. D. C. Gunawardane | 23rd AGM Nov.1935 | H. E. Sir Reginald Stubbs |

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|---|---|---|---|---|
| 1936 | Prof. F. O'B. Ellison | Mr. D .C. Gunawardane | 24th AGM Nov 1936 | H. E. Sir Reginald Stubbs |
| 1937 | Prof. W. C .O. Hill | Mr. D. C. Gunawardane | 25th AGM Nov.1937 | H. E. Sir Reginald Stubbs |
| 1938-56 | No records | ---------- | ---------- | ---------- |
| 1957-59 | Prof. B. L. T. de Silva | Mr. B. A. Indraratne | 44th AGM | |
| 1960 | Dr. B. A. Abeywickrema | Mr. B. A. Indraratne | 45th AGM 23.2.1960 | H. E. Sir Oliver Goonatilleke |
| 1961 | Dr. R. L. Spittel | Dr. U. Pethiyagoda | 46th AGM 6.3.1961 | H. E. Sir Oliver Goonatilleke |
| 1962-64 | No records | | | |
| 1964-65 | Dr. M. S. Thambiah | Mr. B. A. Indraratne/Mr. M.W.R.N. de Silva | Extra-Ord Gen. Mtg 23 .11.1964 | H. E. Mr. William Gopallawa |
| 1966 | Dr. M. S. Thambiah | Mr. M.W.R.N. de Silva/Mr. S. E. Sebastian | 54th AGM 29.3.1966 | H. E. Mr. William Gopallawa |
| 1967 | Dr. M. D. Dassanayake | Mr. S. E. Sebastian | 55th AGM 11.3.1967 | H. E. Mr. William Gopallawa |
| 1968 | Mr. K. O. Koelmeyer | Miss. S. Paramanandhan | 56th AGM 29.3.1968 | H. E. Mr. William Gopallawa |
| 1969-'70 | Mrs. Dorothy Fernando | Mr. G. A. de S. Wickremaratne | 57th AGM 24.5.1969 | H. E. Mr. William Gopallawa |
| 1971 | Mrs. Dorothy Fernando | Mr. Tilak N. Gunawardena | 58th AGM 10.2.1970 | H. E. Mr. William Gopallawa |
| 1972 | Dr. P. Canagaratnam | Mr. Tilak N. Gunawardena | 59th AGM 19.11.1971 | H. E. Mr. William Gopallawa |
| 1973 | Dr. P. Canagaratnam | Mr. Kumar Eliezer | 60th AGM 19.1.1973 | H. E. Mr. William Gopallawa |
| 1974-'75 | Dr. (Mrs.) Thelma Gunawardena | Mr. Kumar Eliezer/Mr. Ananda Samarakoon/ Mr. Ernie Dabrera | 61st AGM 25.4.1974 | H. E. Mr. William Gopallawa |
| 1976 | Dr. W. D. L. Fernando | Mr. Ernie Dabrera/Mr. S. W. Kotagama | 62nd AGM 8.12.1975 | |
| 1977 | Dr. W. D. L. Fernando | Mr. S. W. Kotagama | 63rd AGM 1976 | |
| 1978 | Mr. Tilak Gunawardena | Mr. S. W. Kotagama/Miss. Nireka Weeratunge | 64th AGM 8.12.1977 | |
| 1979 | Mr. Rex I. De Silva | Miss. Nireka Weeratunge | 65th AGM 16.2.1979 | |
| 1980 | Mr. Rex I. De Silva | Mr. Arjun Gunaratne | 66th AGM 16.4.1980 | |
| 1981 | Dr. MalikFernando | Mr. Arjun Gunaratne | 67th AGM 14.2.1981 | |
| 1982 | Dr. MalikFernando | Miss. Yasmin Fernando | 68th AGM 29.5.1982 | |

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|---|---|---|---|---|
| 1983 | Mr. SharkerMohideen | Miss. Yasmin Fernando | 69th AGM 5.5.1983 | |
| 1985 | Dr Mrs Thelma Gunawardena | Miss. Yasmin Fernando | 70th AGM 25.5.1985 | |
| 1986-'88 | No records | ---------- | ---------- | |
| 1989 | Dr Mrs Thelma Gunawardena | Miss. NelunSenanayake | 391st Gen. Meeting 29.3.1989 | |
| 1990-'91 | No records | ---------- | ---------- | |
| 1992 | Archt. Lal Balasuriya | Ms. Kumudini Gomes | 72nd AGM | |
| 1993 | Mr. Frederick Medis | Mr. KanishkaSamarasinghe | 73rd AGM 19.12.1992 | Dr. (Mrs.) Thelma Gunawardena |
| 1994 | Mr. Rex I. De Silva | Mr. KanishkaSamarasinghe | 74th AGM 5.12.1993 | |
| 1995 | Mr. Chris Corea | Ms. Kumudini Gomes | 75th AGM 26.11.1994 | Dr. Malik Fernando |
| 1996 | Mr. Rohan de Soysa | A. Kadurugamuwa | 76th AGM 9.12.1995 | Dr. Malik Fernando |
| 1997 | Mr. Lester Perera | Ms. Tara Wikramanayake | 77th AGM 30.11.1996 | Dr. Malik Fernando |
| 1998 | Mr. Elmo Alles | Ms. Tara Wikramanayake | 78th AGM 13.6.1998 | Dr. Malik Fernando |
| 1999 | Mr. Elmo Alles | Ms. Tara Wikramanayake | 79th AGM 20.3.1999 | Dr. Malik Fernando |
| 2000 | Mr. Rohan de Soysa | Ms. Tara Wikramanayake | 80th AGM 22.1.2000 | Dr. Malik Fernando |
| 2001 | Mr. Rohan de Soysa | Ms. Tara Wikramanayake | 81st AGM 3.2.2001 | Dr. Malik Fernando |
| 2002 | Ms. Tara Wikramanayake | Mr. Rohan de Soysa | 82nd AGM 19.1.2002 | Dr. Malik Fernando |
| 2003 | Mr. Rohan de Soysa | Ms. Tara Wikramanayake | 83rd AGM 25.1.2003 | Dr. Malik Fernando |
| 2004 | Mr. Rohan de Soysa | Ms. Tara Wikramanayake | 84th AGM 31.1.2004 | Dr. Malik Fernando |
| 2005 | Mr. Kithsiri Gunawardena | Ms. Tara Wikramanayake | 85th AGM 19.2.2005 | Dr. Malik Fernando |
| 2006 | Mr. Kithsiri Gunawardena | Ms. Tara Wikramanayake | 86th AGM 25.2.2006 | Dr. Malik Fernando |
| 2007 | Mr. Namal Kamalgoda | Ms. Tara Wikramanayake | 87th AGM 27.1.2007 | Dr. Malik Fernando |
| 2008 | Mr. Namal Kamalgoda | Ms. Tara Wikramanayake | 88th AGM 26.1.2008 | Dr. Malik Fernando |
| 2009 | Mr. Namal Kamalgoda | Ms. Tara Wikramanayake | 89th AGM 31.1.2009 | Dr. Malik Fernando |
| 2010 | Mr. Namal Kamalgoda | Ms. Tara Wikramanayake | 90th AGM 13.2.2010 | Dr. Malik Fernando |

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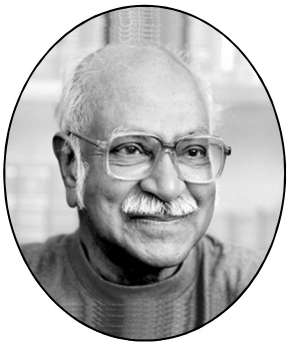
|---|---|---|---|---|
| 2011 | Mr. Rohan de Soysa | Ms. Tara Wikramanayake | 91st AGM 5.3.2011 | Dr. Malik Fernando |
| 2012 | Mr. Rohan de Soysa | Ms. Tara Wikramanayake | 92nd AGM 18.2.2012 | Dr. Malik Fernando |
| 2013 | Mr. Chris Corea - *ad interim* | Dr. Malik Fernando - *ad interim* | Council meeting 24th June, 2013 | Dr. Malik Fernando |
| 2014 | Mr. Chris Corea | Dr. Malik Fernando | 93rd AGM 25.11.2013 | Dr. Malik Fernando |
| 2015 | Mr. Chris Corea | Mr. Asoka Siriwardane | 94th AGM 19.1.2015 | Dr. Malik Fernando |
| 2016 | Mr. Chris Corea | Mr. Asoka Siriwardane | 95th AGM 18.1.2016 | Dr. Malik Fernando |

# Executive Committee Members

## 2012 to 2016

Chris Corea
President 2013-2016



Dr Malik Fernando
Patron 1995-2016

Rohan de Soysa
President – 2011-2012

Asoka Siriwardena
Secretary 2015-2016

Dr Asoka Thenabadu
Vice President 2013-2016

Tara Wikramanayake
Secretary 1997-2012

Nandalal Ranasinghe
Treasurer 2016

Ninel Fernando
Exco Member 2013-2016

Cheryl De Silva
Exco Member 2016

Kissani Liyanage
Treasurer 2011-2015

Kumar Perumal
Exco Member

Sandra Withana
Secretary

# Reminiscences of our Patron

## Dr Malik Fernando ~ Patron 1995 ~ 2016

My first recollection of a Society meeting was when Lord Soulbury—or The Rt. Hon. the Lord Soulbury, Governor-General of Ceylon, to give him his full title— chaired a general meeting. My uncle Dr. Ernest Soysa was speaking about orchids. As an army man, he was an aide-de-camp to the Governor and so was able to arrange this appearance. I have no idea of the date and can find no documentary record either, except for the information that Lord Soulbury was in office from 1949 to 1954.Unfortunately, the period 1927 to 1956 are blank years as the Society records for those years are unavailable.

As part of the work-up to compiling the History of the SLNHS we decided to publish a list of the senior office bearers (see accompanying pages of **Presidents and Secretaries of the SLNHS**). We eventually decided to add the names of the Patrons as well, as a more tangible link with the past. The Patrons of the Society since its inception in 1912 have always been the country's Governors, or Governors General after Independence in 1948. With the change to a Republican System in 1972, together with a change of name from Ceylon to (the Republic of) Sri Lanka, out went the Governor and in came a President and the SLNHS lost the head of State as Patron. By 1975 the Society had become the Sri Lanka Natural History Society. The present SLNHS Constitution, last amended in 2004, requires the Council to nominate a "… person who has made a significant contribution to the study of Natural History and Conservation of Natural Resources in Sri Lanka …" as Patron.

### Source Material

The list of office bearers was compiled from a number of sources. Early records of the proceedings of the **Ceylon Natural History Society** were reported in the journal *Spolia Zeylanica* published by the Colombo Museum. These are available in the Museum's Library. Another important source was a copy of the Minutes of the Society of the early years carefully preserved by a succession of Secretaries. This covered the period from 1912 to 1924, the year when the Very Rev. Father Le Goc OMI was elected President; among the Vice-Presidents were Sir Solomon Dias Bandaranaike and Dr. Andreas Nell. A frantic search followed and we found that Kumudini Gomes (Secretary 1992 and 1995) had another volume of Minutes spanning the years 1960 to 1985. The years 1986 to 1988 and 1990 to 1991 have also yielded no information; and however much we scratched our heads and searched among the mental recesses of our colleagues we have not been able to turn up information regarding these two periods. If anyone reading these lines has any information regarding the gaps in our record, please let us have the information.

## Random Recollections

One of the striking features of the activities of the Society in the early days was that it had students as members. Student members died out at some point in its subsequent history, but even in 1972 there was a Student Councillor (an undergraduate) elected to the Council. Dr. Thelma Gunawardane (President 1974-'75, 1985 &1989) worked tirelessly to promote a students' section for school children and we had many attending our meetings. They were from a few schools in Colombo that had teachers interested in nature and in taking children out of the classrooms to further their education. The Society had two programmes targeting children – I cannot recollect when they started and when they ended.

***Schools' Essay Competition***

*The Schools' Essay Competition was run in conjunction with the Education Department in three languages. In 1969 the topics were:*

a) *Pests of Cultivated Crops in your neighbourhood;*
b) *Gems of Ceylon;*
c) *Natural History of a Seashore or Paddy field.*

*The scripts were corrected by Colombo University staff and the prizes were book tokens to the value of Rs. 50/- for each language. I recollect these students coming from far-away places to receive their prizes at the AGM and one year I took one and his family to the Fountain Café for a treat afterwards.*

***Schools Collections Competition***

*For many years we ran a competition that would not be acceptable today. That was during a time when students were encouraged to make collections for study and display. This was a practice in schools too, until the ill effects of over-collection became recognised and the accent shifted to observation, recording in the field, sketching and most recently photographing. The Schools' Collections Competition was held in such places as Royal College, Visakha Vidyalaya and the Colombo Museum. A few schools were regular participants and they were held till the early nineteen-eighties. The last competition was won by S. Thomas' College, Mount Lavinia for the Dorothy Fernando Memorial Challenge Trophy. No competitions were held subsequently and the trophy no doubt is still at STC.*

*No records are traceable of these competitions. I was usually one of the principle organisers and there are two incidents that are vividly etched in my memory. The one closest to home was when my pet baby crocodile bit someone's finger while being demonstrated by my teenaged nephew. The gent was showing his granddaughter the*

*crocodile's teeth and unfortunately put his forefinger too close to the open mouth of Barney (the croc). Barney snapped and drew blood amidst much drama. No great damage was done.*

*The second incident concerned Ravi Serasinghe's water snake that escaped from its tank at Visakha Vidyalaya. It could not be found and poor Ravi, scrabbling about creeping into all the floor level lockers of the laboratory looking for it, was quite distraught. However, it had surfaced in the staff room the following Monday and urged into a tin can. I received a telephone call in the morning and left my clinic hurriedly. Reaching the school, I found a ring of terrified teachers drawn up against the wall looking in petrified anguish at a tin can with its lid firmly in place on the floor at the centre of the room. The snake was quite safe and went home with me. Only to escape from one of my cages and go wandering about the neighbourhood, where it met with an untimely demise. It was quite a Houdini.*

***People I remember***

Looking through the old records, and searching through my memory banks, reminds me of many people I met, learnt from and worked withinthe SLNHS. Some of them I remember with fondness, others with gratitude—and all of them with respect. The only one who does not fall into any of the categories mentioned, who shall remain nameless, was a Treasurer who suddenly disappeared without word. I shall list them in order of appearance. Those selected for mention are those who made a significant contribution to the Society and/or who made a lasting impression on me. I have omitted many of those who are still around and active in the SLNHS—they are mentioned elsewhere in this publication. The first five named below are all deceased. The rest are still around.

***Mr. A. S. Mendis*** was never a President or Secretary, but was a moving force who was always there and the name I remember most compellingly. From the Fisheries Research Department, he published papers that I still refer to, at timesIn November 1964 he was one of the convenors, together with Dr. M. D. Dassanayake and Dr. B. A. Indraratne, of an extra-ordinary meeting of the Society called "… with a view to revive the activities of the Society." He was a Vice-President in 1972 and unfortunately passed away after an illness before reaching old age. Drs. Dassanayake and Indraratne were both from the Colombo University Botany Department. During that period the Society was centred around the Colombo University and the Fisheries Department, having migrated there from the Colombo Museum where it was born.

***Prof. B. A. Abeywickrema – President 1960,*** was a towering presence who was a Vice-Patron in the nineteen-seventies. A reserved man who looked unapproachable, he was, in fact, very approachable and helpful. He lent me books from the University Library, as

well as from his personal library, which helped me immensely in my work of identifying jellyfish and seaweeds.

***Mrs. Dorothy Fernando – President 1969 -'70,*** was my mother and I owe her a lot. Firstly, for allowing me to swim in any body of water as long as I did not put my feet on the bottom; the deeper the better! Secondly, for taking her children into many nooks and corners of the island in search of wild flowers, inculcating in us a love for the country and nature, usually subsisting on *pol mallung lavariya* for breakfast and boiled *bathala* or *pol roti* for lunch. Lastly, for re-introducing me to the SLNHS on my return from the UK in 1969.

***Dr. Thelma Gunawardena – President 1974 – '75***. Dr. Thelma Gunawardena was an entomologist and the Director of the Colombo Museum. She ran a series of natural history lectures in the Museum lecture hall that my mother and I attended. So started a long friendship between us that led her into the SLNHS and once more got the Society a footing in the Museum. Her interest in involving school children in the study of natural history through the Society also made her start children's sections in the Museum and special programmes for children.

**Dr. W. D. L. Fernando** – President 1976 -'77. Dr. Fernando was a renowned Forensic Pathologist and at one time the JMO of Colombo. An ardent orchid grower he gave shelter to an unknown orchid collected by my mother from the outskirts of the Sinharaja forest in 1972 that was not doing well under our care. In 1979 Dr. WDL, as he was known, told me that the plant was flowering and asked me to collect it. This I did, just days before he died suddenly. The orchid was determined at the Kew Gardens as *Bromheadiascirpoidea*, a new record for Sri Lanka; but some years later in 1995, after being re-collected by Suranjan Fernando, Samantha Gunasekera and others it was found to be a species new to science and named *Bromheadia srilankensis*. My mother's collection, a painting and my enlarged drawings of the dissected flower are at the Kew Gardens herbarium.

***Mr. Rex I. de Silva – President 1979-'80***. Rex de Silva brought to the Society his well known drive and enthusiasm. He introduced astronomy as a subject and gave lectures and conducted sessions observing the night sky. But his biggest contribution was the setting up of Special Interest Groups. Not all of these groups flourished, but they certainly got many people out of the lecture halls into the countryside, if only for a while—and sparked at least one romance! Study groups were established on the following topics, in alphabetical order: Astronomy, Fresh water life, Geology & Palaeontology, Insect life, Marine life, Ornithology, Reptiles & Amphibians and Urban Landscape study. The available documents indicate that they were active in the years 1992 & 1993, held meetings on Saturday afternoons and met at Bishop's College, Ladies College, the Colombo Museum Art Class and at the homes of members, including that of

Mrs. Iranganie Serasinghe. The greatest volume of documentation has been generated by the Urban Landscape Study Group under the leadership of Shereen Amendra.

***Messrs.Ravi Algama, Lalanath de Silva** and **Arjun Gunaratne**:* Ravi, Lalanath and Arjun were students who were very active environmentalists, members of the Conservation sub-committee that we had in the late nineteen seventies/early nineteen-eighties period, when Rex was president followed by me. They spent much time looking into environmental problems in the field and wished to be pro-active in resolving those issues; something that was not feasible through the SLNHS, as it was constituted. This led them to set up the Environmental Foundation Ltd (EFL) to further the good work they were doing. They explain in the EFL Home Page:- "The idea was stumbled upon by a group of friends – four law students, a budding zoologist, anthropologist, accountant, mathematician and an actress…" We are all aware of the tremendous amount of work that has been done, and is still being done, by EFL.

**Ms. Indrakanthi Kotelawela née Perera**:In 1978, when Mr. Tilak Gunawardena was President and Mr. S. W. Kotagama and Miss. Nireka Weeratunge were Secretaries, in succession, Indrakanthi was the leader of a small group of members, including me, who made a number of field visits to a site at Kaluamodera, near the Bentota Ganga. The place is unrecognisable now: there was a muddy bank just by the main Galle road with a colony of fiddler crabs, a short walk away was a mangrove with a mud flat on which we observed mud skippers (*Periophthalmus*) and waded in shallow water attempting to catch an inquisitive dog-faced water snake (*Cerberus rhynchops*) that kept bobbing up all around us. There were mangrove snails within easy reach to observe. Across the road, through a coconut plantation and on to the beach at the mouth of the Kaluamodera ganga where it meets the Bentota ganga was a different world, with marine species of snails. It was a wonderful outdoor laboratory, alas, now vanished due to "development". I am eternally grateful to Indrakanthi for having introduced me to this place at that time. I remember vividly the train journeys to Bentota—and the snacks she used to buy for us from the itinerant vendors in the train, especially the rock-hard patties filled mostly with air—and the bus trips.

**Mr. M. W. R. N. de Silva – Secretary 1965 – '66**: Dr. M. W. Ranjith N. de Silva, as he came to be known in later life, did not continue as a Society member. I came to know him in 1985 when he was assigned the task of setting up a coral ecology unit at the National Aquatic Resources Development and Research Agency (NARA); he was a coral researcher at a Malaysian University at the time. I was associated with him for many years, joining him in establishing and running the Sri Lanka Sub-Aqua Club, teaching scuba diving, participating in dive trips and, moreover, learning about corals and their identification. As he had a doctorate based on research into green sea weeds, before he moved to corals, we had another interest in common that I found beneficial.

***Conclusion***

The Sri Lanka Natural History Society has passed through many phases, its programmes evolving to meet the needs of the time. No doubt it will continue to evolve and, in time to come, others will add their stories to continue the history of the Society. The SLNHS has endured because it has been able to adapt to changing needs, and I am sure it will continue to do so. One obvious change is that the running of the Society has passed from the hands of scientists, as it was in its early years, to that of gifted amateurs whose hobbies are centred around the outdoors and its wild occupants—be they plants or animals, terrestrial or aquatic. It is not too late to ask ourselves "What is Natural History?" Wikipedia, the free encyclopaedia, gives this definition: *Natural history is the research and study of organisms including animals, fungi and plants in their environment, leaning more towards observational than experimental methods of study.* The key words are 'research and study … in their environment … more … observational than experimental methods of study.'

I remember when the main activity of the SLNHS was the monthly lecture, accompanied by a demonstration of interesting specimens—this a carry-over from its very earliest days. Field excursions were few and far between. Films were also part of the programme, often replacing the lecture. Many films were obtained through embassies and other organisations, but there were also films made by its members, such as Mr. Sharker Mohideen (President – 1983) who was an early amateur cinematographer. He served on the Council for many years before he became President. He screened his films on wildlife on more than one occasion.

The period between 1984 and 1991 appears to have been a troubled time, with a lack of records and Dr. Thelma Gunawardena making two re-appearances as President. Some stability seems to have been achieved with Archt. Lal Balasuriya taking the helm in 1992 followed by Mr. Frederick Medis in 1993, but the re-appearance of Mr. Rex de Silva as President in 1994 suggests that things were still not quite stable. Then followed a long period of stability from 1995, with the first appearance of Mr. Chris Corea as President. The names of those who followed in the contemporary period are listed in the table of Presidents and Secretaries, but a few names have to be mentioned here, as they turned the Society around with a new vision, doing away with the early practice of changing Presidents and Secretaries after a single year or two in office.

Messrs. Rohan de Soysa, (Ms.) Tara Wikramanayake, Kithsiri Gunawardena and Namal Kamalgoda ushered in a long period of stability, ably supported by Elmo Alles and Lester Perera for short spells. Much credit goes to Ms. Tara Wikramanayake for shouldering the responsibility of Secretary for a period of 15 years, during which time the Society evolved into being primarily a bird-watchers' society. The activity shifted from talks and slide shows (now at the premises of the Institute of Technological Studies, as the Museum

premises were no longer available in the evenings) to regular, extremely well organised excursions—alas, limiting the number able to participate to 10, except for day trips when more were able to join. Participation at the evening talks dwindled and eventually they were abandoned. More difficulties surfaced and the SLNHS had another set-back in 2012—only to rise, Phoenix-like, in 2013.

The current lecture programme has been successful essentially due to the input of the late Dr. Asoka Thenabadu (who passed away suddenly in July, 2016), who was able to get us the venue we use now (the Auditorium of the Hyde Park Residencies). We have also been trying to establish a regular excursion programme. The content of the talks has been consciously focussed on the smaller animals and on insects, and also on marine topics and plants. Subjects that are not generally well known. The response from the membership and those aspiring to membership has been encouraging. We have also established a web site to communicate with members and the public and also to serve as a repository of information pertaining to past and proposed activities.

What do we need to continue? More members willing to take up office and **give of their time**. Otherwise we will continue to see the same old faces until they fade away, or lose steam, without having had the opportunity of building up a team to ensure succession.

I am in good company. From the earliest days of the Society the Patron has been the Governor of the Island. Not that I aspire to such high office … but it is an idea …Anyway, Governors—General or otherwise—have been done away with. Except in Provinces. But I am rambling……

Malik Fernando, 7th August, 2016

# Past Records

In the early days of the society, proceedings of meetings were reproduced in the Spolia Zeylanica which was the publication of the Colombo Museum. At a point of time the publication of minutes of the Society shifted to the Ceylon Journal of Science (CJS).

For many years, the NHS had very close links with the museum and in fact meetings were conducted in the premises of the museum.

Reproduced on the following pages are extracts from pages of Spolia and CJS with references to the NHS. They make quite evocative and nostalgic reading.

The large number of facsimiles of textual pages are interspersed with images of some of the more recent society excursions (in no particular order).

*L to R - Tara Wikramanayake, Cheryl de Silva, hhhhhh, Sri , Kumar Perumal Namal and Jackie Kamalgoda, Lankika, cccccc and Mr Somasunderam*

# THE CEYLON NATURAL HISTORY SOCIETY.

## First Business Meeting.*

THE first business meeting of the newly-formed Ceylon Natural History Society was held in the Colombo Museum Library at 9 P.M. on Tuesday, March 26, 1912. The Hon. Sir Hugh Clifford, K.C.M.G., Colonial Secretary, presided, and there was a good attendance of members and visitors.

### The President's Address.

After the Minutes of the Inaugural Meeting had been read, the President addressed the Society as follows:—

Ladies and Gentlemen: The agenda tells me that the next item on the programme this evening is an address from the President. At the invitation of the Committee I very gratefully accepted the post of President of this Society, though I ventured to point out to them that the many calls upon my time, and the peculiar nature of my own individual studies, somewhat precluded me from examining as closely into insect life as might be appropriate for the President of a Natural History Society. I suggested the name of another officer senior to myself, but was informed that on the whole, I had better continue, at any rate, for the moment. So I trust that the members of this Society—which has just been inaugurated so successfully, mainly through the efforts and the initiative of Dr. Pearson—will pardon any shortcomings on the part of its present President. And I can only assure you that I will always do my best to serve the Society to the utmost of my ability. The Society which has just been formed is, to some extent, a new institution in this Colony. But this morning I had my attention drawn to the prospectus of a Society which was established on December 11, 1820. I noticed that the opening paragraph of the prospectus said that "to a country nearly unprovided with manufactures and dependent almost entirely upon its natural productions the investigation of its Natural History must be of the highest importance"—a sentiment which, I feel sure, every member of this Society will endorse. Yet, though I tried to carry further my investigations into the history of that Society, its records proved quite elusive. It seems to have carried on a number of literary and anthropological discussions and to have left Natural History severely alone, in spite of the bright promise contained in the first words of its prospectus. I feel sure this Society—considering the short time that has elapsed since its inauguration, and considering the comparatively slight amount of advertising which it at present is receiving—has obtained a degree of encouragement. The numbers read out to you by the Secretary are of a most encouraging character. Already we have 107 members of this Society, and my earnest hope is that all persons whose occupations take them into the wilder parts of the country will hasten to join the Society and will assist it by contributing notes of interest to the publications of the Society. It has been said that the proper study of mankind is man. We all study mankind with sympathy in our own persons and with a certain amount, frequently,

* This account is taken partly from the newspaper reports of the meeting.

of criticism and disapproval in our neighbours, and we carry later these studies all through our lives, consciously or unconsciously. But I do not think Pope's line need trouble this Society, because, if the proper study of mankind is man, unquestionably that is not an exclusive sentence; and the study of the natural life around us must always appeal very strongly to the intelligence of all. I recently heard a discussion between a lady and a medical man of great repute, who assured the lady on her arrival in Ceylon that this was one of the most interesting Colonies that the British Empire contained, and the lady said she felt quite sure that that was so. And all of us who know and admire the Island will agree with her. But the doctor I am speaking about added that there was a greater variety of tropical diseases in this Island than in any other place of its size in the world. And some measure of the lack of enthusiasm which his words called forth from the lady was noticed by him. Now, we all know that disease is very largely the result of organisms of various kinds; and we know that numerous insects in this Colony and out of it carry disease in an extraordinary manner, and have the impertinence to inoculate us with the disease from time to time. That branch of study is rapidly becoming more and widely appreciated, not only by scientific men, but by the general public. But this Society, I take it, will probably leave pathological questions of that sort more or less alone, and will devote itself to the perhaps less utilitarian but more attractive form of study of Natural History, and especially of the beautiful insects, butterflies, birds, and animals, which abound throughout the Island. And it is because the Government of this Colony employs a very large number of people in all sorts of places—Civil Servants living at distant outstations, Irrigation Officers, Public Works Officers, and members of all the big departments scattered throughout the Colony—that I very much hope that all the services which I have the honour to represent will very quickly and promptly support this Society, and do their best to carry out the work of it and to perpetuate its existence. The great danger in a Society of this kind is that it begins with a good deal of interest and enthusiasm, which is apt all too soon to cool off and become apathetic. I trust that the members of this Society—every one of them—will do their best, as far as it lies with them, to prevent that being the record of the newly-formed Society. We all owe a debt of gratitude to Dr. Pearson for having started the Society in our midst, and I look forward to the time when the study of Natural History will spread widely throughout the Colony, and in the years to come people will look back with gratitude upon the efforts of Dr. Pearson who started the Society for which we are all met this evening to wish success and long life.

## Pioneers of Natural History in Ceylon.

Mr. E. E. Green then read a Paper on "The Pioneers of Natural History in Ceylon."[9]

## The Singing Fish of Batticaloa.

Dr. Joseph Pearson said he had one or two notes to which he wished to call the attention of members.

He had a letter the other day from Mr. E. L. Mack, the Private Secretary to Mr. Justice Middleton, who reported that while on a recent visit to Batticaloa he noticed that certain fishes when taken out of the water produced precisely the same notes as made by the "singing fish." Mr. Mack followed up his observations and kept some of the fishes in a bucket of water. No sounds were heard when the fish were kept in water, but musical notes were omitted when the animals

were removed from the water. It was Mr. Mack's conviction that he had discovered the singing fish. As Dr. Pearson had spent some days in the Batticaloa District in August of last year he was able to criticise Mr. Mack's conclusions. The speaker then went on to describe the conditions of the Batticaloa lake, which was a shallow backwater stretching for many miles to the south of Batticaloa town. The famous singing fish was only heard in a comparatively small area of the lake, between the fort and the entrance to the lake, and the sounds were only heard at night, most favourably at full moon. Sir Emerson Tennent's theory that the sounds were produced by the mollusc *Cerithium*—a theory which is based upon the traditions of the fishermen—does not appear to offer a satisfactory explanation. Dr. Pearson was convinced, after investigating the question, that the sound was produced by some animal in the water, and not, for example, by frogs on the banks of the lake. That animal may be either a fish or a crustacean. It is well known that both fishes and crustaceans can produce sounds. Since Mr. Mack's observations showed that the fish he wrote about only made a noise when removed from the water, the problem does not appear to be any nearer solution. The fact is that many fish when removed from the water make musical sounds. This may be due to the bubbles of air mixed with the water making a gurgling sound as the air and water are drawn through the gill chamber. Dr. Pearson had noticed this not only in Batticaloa but also in various places along the coast. The fact that the singing fish is only heard in a few scattered localities—Batticaloa, Kayts, and Puttalam—and that in each of these localities the distribution of the sounds is extremely limited, rather disproves the suggestion that the singing fish is a true fish (using the term zoologically), since fishes are generally active swimmers. It is probable that a comparatively sedentary animal, such as a crab, may give rise to the sounds which have made Batticaloa so famous. At any rate for the present the problem may be regarded as unsolved.

The CHAIRMAN : Might I ask you how many noises the fish produced ? Was the sound like sawing ?

Dr. PEARSON : Quite different sounds.

The CHAIRMAN : Any cadence ; or was it a croaking sound ?

Dr. PEARSON : Quite irregular. It seemed as if each one had its own note. You have about half a dozen sounds going on at once. Sometimes it was like the croaking of a frog, and sometimes there was a deep note like that of a cello. But none of them were musical.

## Window Pane Oysters in the Colombo Lake.

Dr. Pearson stated that he had recently received a consignment of shells from Mr. Bakewell, the Assistant Construction Engineer of Railways, who, during operations in the Colombo lake between Captain's gardens and the Royal College, discovered the shells embedded in the mud five feet below the bed of the lake. The shells proved to be of three kinds—*Placuna placenta* (the window pane oyster), *Arca* sp., and *Paphes rotundata*. Since the first discovery Mr. Bakewell has reported the presence of similar shells in other parts of the lake. When Dr. Pearson first received the shells it occurred to him that this was evidence in favour of supposing that at one time the lake was connected with the sea, leaving aside the former connection of the lake with the sea by means of the old Dutch canal. If such connection had existed, the conditions would have been an ideal habitat for the window pane oyster. An examination of the shells, however, proved that, so far as *Placuna* was concerned, the evidence did not give much strength to such a theory, since the edges of all these shells proved to have been artificially trimmed. It is probable that the shells had been thrown into the lake many years ago.

## Crustacea and Fish in the Sewage Tanks at Madampitiya.

Dr. Pearson also submitted a note on the presence of aquatic animals in the tanks of the treatment works at Madampitiya. Healthy fish were found in the septic tanks where the sewage material was undergoing treatment. It was not possible for the fish to have entered with the sewage matter, since the latter had to pass through a series of clashing blades which made it impossible for any large body to pass through intact. The only explanation appeared to be that fish eggs were able to pass through and that certain species found the conditions of the septic tanks favourable. Crustacea belonging to the genera *Palaemon* and *Caridina* were found in the effluent tanks after the sewage water had been passed through finely divided sprinklers and had flowed through the filter beds. The river is about 100 feet below where the Crustacea were found, and as the ascent is extremely steep it does not appear likely that the shrimps made their way up from the river.

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The CHAIRMAN proposed a vote of thanks to Mr. GREEN and Dr. PEARSON.

Mr. V. A. JULIUS proposed, and Dr. ANDREAS NELL seconded, a vote of thanks to the CHAIRMAN.

*Enoka Perera, Chris Corea, Naresh Subramaniam, Nalinika Obeysekera, Rex de Silva and Kumudini Gomes, Mundel Lagoon, circa 1994.*

# PROCEEDINGS OF THE CEYLON NATURAL HISTORY SOCIETY, 1931 Session

## Nineteenth Annual General Meeting

Minutes of the Nineteenth Annual General Meeting of the Ceylon Natural History Society held on February 10th, 1931, at 5.30 p.m. in the Reading Room of the Colombo Museum Library.

The retiring President, Dr. A. Nell, took the chair and there were 15 members and 7 visitors present.

In view of the business to be conducted the minutes of the previous meeting were taken as read and confirmed.

The following were elected ordinary members of the Society :—

Messrs. P. Kirtisinghe, B.Sc., M. Crawford.

The following were elected Student-Members of the Society :—

Messrs. B. A. Baptist, S. E. Dias, V. S. V. Fernand, M. Fernando, A. L. Johnpulle, R. Kirtisinghe, P. E. H. Koelmeyer, A. R. Perumal, R. A. de Rosayro, B. de Silva, K. B. Sangakkara, C. L. de Zylva, L. J. D. Fernando.

The Report of the Hony. Secretary, and the Balance Sheet of the Hony. Treasurer, which were in the hands of the members were taken as read and adopted.

The President, on behalf of himself and the other office-bearers, retired, and proposed that Dr. Pearson occupy the chair.

Dr. Pearson proposed that Sir Graeme Thomson, the Governor-elect, be asked to be Patron of the Society, which proposal was unanimously approved.

Dr. Pearson proposed that the Vice-Presidents of the Society be the Hon. Mr. Bourdillon, C.M.G., and Sir Solomon Dias Bandaranaike, K.C.M.G. and they were unanimously elected.

Professor Ball was elected President, proposed by Dr. Pearson and seconded by Mr. Henry. Professor Ball then took the chair.

The following Vice-Presidents—proposed by Professor Ball and seconded by Mr. Burt, were elected :—

Dr. A. Nell, M.R.C.S. ; Dr. J. Pearson, D.Sc., F.L.S., F.R.S.E. ; Hon. Mr. W. E. Wait, M.A., M.B.O.U., C.M.G. ; C. T. Symons, Esq., B.A., F.I.C., F.R.G.S. ; The Very Rev. Fr. Le Goc, B.Sc., Ph.D., O.M.I.

Mr. D. R. R. Burt, B.Sc., F.L.S., F.R.S.E., proposed by Dr. Pearson and seconded by Dr. Nell was re-elected Hony. Secretary.

Mr. A. H. Malpas, proposed by Professor Ball and seconded by Mr. Burt, was re-elected Hony. Treasurer.

The members of the Council :—W. W. A. Phillips, Esq., F.L.S., M.B.O.U. ; Dr. S. E. Fernando ; Messrs. E. C. T. Holsinger ; G. M. Henry ; Professor F. O'B. Ellison, M.D., B.Ch., B.A.U., B.A. ; and Mr. D. C. Gunawardana—proposed by Professor Ball and seconded by Mr. Burt, were elected.

The student-member of Council M. Fernando, Esq., proposed by Mr. P. E. H. Koelmeyer and seconded by Mr. R. Kirtisinghe, was elected.

Dr. Ball then called on Dr. Nell to give his paper on " Some Ceylon Medicinal Plants."

Dr. Nell said that a considerable number of plants were useful medicinally and many deserved more extended observations than he has been able to give. Some have the credit of a good repute from antiquity being mentioned in ancient Sanskrit works, in the writings of the early Arabian physicians, and by Garcia de Orta in Goa in 1653. The lecturer said he would confine his remarks to those plants which he knew of, both directly and from the testimony of users, and he would treat the plants under their Natural Orders and classify them according to their medicinal uses.

Of the Acanthaceae *Justicia betonica* is used as a poultice for boils, while *Adhatoda vasica* (Sihn., Wanepala or Adhatota) a well-known boundary plant of paddy fields is used as an insecticide. Decoctions of this plant were used for the treatment of Chronic Catarrhs of the throat or the chest and to allay cough. This plant is in use in hospitals of South India. *Hydrophila spinosa* (Sinh., Katu-ikiri) common everywhere in abandoned paddy fields is a powerful diuretic. The leaves either dried or fresh, made into a decoction caused rapid diminution of dropsical swellings. Prolonged therapeutic tests over forty years by the Medical Officer at Balangoda, the late Dr. Jayasinghe, gained him a medal for his research, and caused the introduction of this plant into the Supplement of the British Pharmacopeia.

*Acorus calamus* (Sinh., Wadakaha) one of the Aroidae is used as a decoction for colic, and the aromatic oil of the leaves is used in medicinal oils.

Of the Asclepiadeae, *Tylophora asthmatica* (Sinh., Bin-Nuga), is used for the same purpose as Ipecacuanha; decoctions of *Oxystelma esculentum* (Sinhalese and Tamil, Kulappalai) are used in cases of hydrophobia; while *Hemidesmus indicus* (Sinh, Irumusu) the Indian Sarsaparilla has a place in the Indian and British Pharmocopeias as a demulcent. The fresh leaves and tender stems are chopped up and cooked with rice. *Calotropis gigantea* (Sinh., Wara) has many uses; the plant itself is said to keep cobras away; the fresh leaves are used as poultices to swellings: the powdered root or a liquid extract of it is given to malarial cases, while the latex is used for leprosy. It is said that the addition of *wara* root to ganja makes the smoker aggressive.

Combretaceae. One plant of this order *Terminalia chebula* (Sinh., Aralu) has also many uses: the unripe nuts are used as a laxative: the ripe nuts, rich in tannin, are used as astringents, while a poultice of the bark is used for dry eczemas. The oil expressed from the ripe nuts is an ingredient in many medicinal oils. Of the Compositae *Ageratum conyzoides* (Sinh., Hulantala) and *Emilia sonchifolia* (Sinh., Kadupara), the leaves are used as dressings for cuts and sores. *Vernonia anthelmintica* (Sinh., Sonni-Noyan) is used as a sedative and febrifuge, while *Gynura pseudochina* (Sinh., Ala-bēth) supplies another palliative for leprosy, the tubers being cooked and eaten. An infusion of the leaves of *Spilanthes acmella* (Sinh., Akmella) is used externally for sore throat.

Convolvulaceae. The best known is *Operculina* or (*Ipomóea*) *turpethun* (Sinh., Trasta-vela) the false jalap, which is almost as good as the true jalap. Other two members:—*Evolvulus alsinoides* (Sinh., Vishnu-Kranty) is used as a febrifuge, and *Ipomõea bona-nox* is used for sprue when the tender fleshy calyces are made into a palatable vegetable curry.

Eurphorbiaceae. Three plants are well-known medicinally; *Acalypha indica* (Kuppameniya) as a vermifuge, *Phyllanthus emblica* (Nelli) as a laxative and febrifuge and *Euphorbia nuta* (Dadakeriya) a spurgewort is a useful vermifuge for children. Of the Labiatae, *Coleus aromaticus* as a decoction of the leaves, is used for asthma, *Plectranthus zeylanicus* (Iriveriya) is a carminative, while *Ocimum sanctum* (Madurutala) the sacred Basic of India keeps off mosquitoes, and an infusion of the leaves is used for coughs and catarrh. In India this latter plant is found at every shrine to Vishnu.

*Azadirachta indica* (Kohomba) one of the Meliaceae has many uses: the fruit is laxative, the fruit and leaves vermifugal, the oil from the seed is antiseptic and the bark powdered and made into a decoction is an effective febrifuge.

Rubiaceae. *Ixora coccinea* is often stolen from gardens to be made into a decoction for sore eyes, while the weed *Hedyotis auricularia* is used for dysentery and colitis.

Rutaceae. *Limonia alata* is used as a fomentation for muscular pains.

*Feronia elephantum*, the wood apple, is astringent when unripe, and the ripe fruit is used in cases of kidney trouble. *Aegle marmelos* (Beli or Bael) is mentioned by early Sanskrit writers, by the Arabian physicians, and by Garcia de Orta. The ripe fruit is tonic and laxative and eaten uncooked; the unripe fruit is cooked, and the pulp strained and sweetened and used in cases of acute dysentery. The plant is much used at the present time and may be stored as marmalade. The roots are one of the ten in the much vaunted *dasamula*.

Of the Scrophulariaceae, *Herpestis monnieria* (Lunuvila) supplies a laxative, and an infusion of the leaves of *Centranthera procumbens* (Dutu salutu) is used as an eye-wash. A decoction is used internally for malaria.

Solanaceae. *Solanum indicum* (Tibbatu) the wild brinjal is eaten in curries for Bronchitis. *Withanthera somnifera* has the same properties but is narcotic. *Datura fastuosa* has been known for centuries as a cure for asthma, the dried leaves being smoked; but in excess this plant is poisonous and causes delirium—added to arrack the drinker goes mad.

If we try to picture the details of human life in jungles we can understand the uses of the plants. Freshly cut segments of stems and roots are used to brush the teeth; bruises, cuts, and wounds are treated with leaves, sores caused by leach bites are treated with poultices of leaves and for fevers febrifuges are discovered.

In the discussion that followed Professor Ball spoke of the debt that Western medicine owed to the East and Dr. Ellison discussed the uses of water hyacinth.

Dr. Pearson proposed a vote of thanks to Dr. Nell for his lecture and expressed the thanks of the Society for his services as President and for the keen interest he had taken in the Society although he had to travel from Kandy for every meeting. This was seconded by Mr. Burt and passed with acclamation.

Professor Ball called on Mr. Burt to exhibit a live specimen of *Manis crassicaudata*, the Ceylon ant-eater, which had been caught by Mr. L. Burgess of the Irrigation Department at Uggaldeltota, twelve miles east of Balangoda.

The meeting then terminated.

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## Ninety-eighth General Meeting

Minutes of the Ninety-eighth General Meeting of the Society held on March 10th, 1931, at 5.30 p.m. in the Reading Room of the Colombo Museum Library.

The President of the Society, Professor N. G. Ball, took the chair, and there were present 43 members and 6 visitors.

The minutes of the previous meeting were read and confirmed.

The following were elected Student-Members of the Society :—

Miss R. M. Beven and Miss L. G. Selliah.

The President introduced the lecturer, Professor W. C. Osman Hill, as a Comparative Anatomist who had made a close study of the Primates and called on him to give his lecture on "The Apes' Place in Nature."

Dr. Hill explained that his title was of the nature of a problem to which answers had been given, but to which the old answers, in the light of new knowledge and conceptions, would not now satisfy the facts.

Huxley's doctrine that the Apes resemble mankind more than the other Primates holds good, but John Ray's definition in 1693 may not be regarded as scientific, as the negative character of the absence of a tail is not important and does not hold good in all cases. An Ape may now be defined as a large Primate which tends to adopt an erect or semi-erect attitude habitually.

There are four distinct types of Apes, the Gibbons, the Orang-utans, the Gorillas and the Chimpanzees.

Of the twelve kinds of Gibbons, all are small and found in the Oriental Region. They are mostly black with a varying amount of white hair round their small flat faces, while the nostrils are small. Their salient character is the possession of enormously long arms, which, when the animal stands erect, reach to the ground. The long arms are associated with a brachiating mode of progression in a perfected arboreal type of existence. On the ground the Gibbon walks more erect than does any other ape and holds his long arms above his head or behind his back to keep them out of his way and to aid in balancing. A curious habit of the Gibbons is the holding of vocal concerts at sunrise and sunset, and with this is associated the possession of large pharyngeal air-sacs. The most primitive of the giant apes is the Orang-utan, a large sluggish ape with long arms and very short legs. They

are least modified for terrestial locomotion, which on account of the inverted feet, is difficult. They are covered with red hair, while the face is slate coloured. The jaw is prominent giving that appearance known as Semognathism. The cranium is high, the eyes and ears are small, the lips are mobile and there are laryngeal air-sacs present, much larger relatively than in the Gibbons. It is to be noted that the feet of the human baby are inverted like those of the Orang-utan.

The Gorillas, the largest apes, are most like man in their posture and mode of progression. They were first known to science in 1860 through Paul B. du Chaillu. Gorillas walk on the whole flat surface of the sole of the foot which shows the beginnings of a heel. The legs are short and the arms long, but not so long as in the Orangs or Gibbons. The face is bestial, especially in the adult male where the large canines, prominent square cut jaws, large nostrils, well padded alae and prominent brow-ridges are conspicuous. They are restricted to tropical West Africa where separate lowland and highland races are found.

The Chimpanzees are smaller and more intelligent. They have large ears, smaller brow-ridges and a less muscular development than the Gorillas. Their lips are extremely mobile. The arms are longer than those of the Gorilla but the thumb is better developed. They walk in a semi-erect attitude with the fingers and toes tucked under the hands and feet. There are many races, all restricted to tropical Africa. Intermediate forms between Gorillas and Chimpanzee are known, and they have been explained as crosses between these two African apes. Most of them are probably Gorilla-like races of Chimpanzees, generally of the kind recorded by du Chaillu as Koolokamba. This opinion is corroborated by Sir Arthur Keith.

The lecturer then discussed some of the fossil forms related to the apes, exhibiting slides of *Dryopithecus* jaw, a fossil ape of Europe allied in many respects to the Chimpanzee, and *Australopithecus*, the South African Ape Man. In the slide of the braincast the fissures were recognisable. The specimen was a "child" of about six years old, for it had its milk teeth. The brain shows a great expansion of the parietal association area, an area which serves to associate receptions from auditory and visual sources. Gabriel Max's famous painting of Pithecanthropus was then shown; it was painted from data given by E. Haeckel before the actual specimen was discovered.

In discussing the relatives of the apes apart from mankind Dr. Hill discussed *Tarsius*, the lowest living form that exhibits the glimmerings of the structures that have raised the Apes and Man so much above their fellows; fossil Eocene Tarsioids; and the various stages in the evolution of the higher Anthropoids. The Squirrel Monkey was especially mentioned as having a brain relatively larger than the human brain, and the Snub-nosed Monkey was shown to indicate that the possession of an external nose was not necessarily a human attribute.

In conclusion Dr. Hill said that the apes stood intermediate between man and the lower Primates and were if anything, more nearly related to man than to monkeys. They have obviously progressed a good way, in the same direction that man himself so successfully took, but they have failed to reach so far. They have never completely forsaken the trees and there they remain. They cannot themselves be regarded as ancestors of man, but are probably our brothers who have not been so successful as ourselves in the game of life. In the discussion following the lecture Professor O'Brien Ellison expressed his extreme interest in the subject matter, and stated that he was glad to learn the answer to a problem that he had had for a long time—the origin of the bag-pipes from laryngeal-sacs of the apes. Dr. Hill replied that this was probably true in the case of the Irish bag-pipes. Mr. Bantock inquired where the Koolokamba were found, and was informed that they existed in West Africa. Dr. Pearson while complimenting the lecturer and expressing the wish that the Society should hear more on the subject perhaps in a lecture on "The Missing Link" took exception to Dr. Hill's opinion regarding the creation of new species, and said that when a certain group of characters were found to be constant in certain local races it was only right that they should be labelled by a new specific or sub-specific name.

The Chairman then expressed the thanks of the Society to Dr. Hill and called for a hearty vote of thanks which was carried with acclamation.

The meeting then terminated.

## Ninety-ninth General Meeting

Minutes of the Ninety-ninth General Meeting of the Ceylon Natural History Society held on June 9th, 1931, in the Reading Room of the Colombo Museum Library.

The President of the Society, Professor N. G. Ball, took the chair, and there were present 8 members and 13 visitors.

The minutes of the previous meeting were read and confirmed.

The following were elected ordinary members of the Society :—

Rev. R. S. de Saram and Miss M. Linwood, Messrs. L. G. O. Woodhouse, E. B. Wickremanayake, D. L. F. Pedris, and J. V. Collins.

The following was elected a student-member :—

Mr. F. A. Pinto.

The Chairman then called on Mr. G. M. Henry to give his lecture on " The Praying Mantis."

Mr. Henry said that he had been asked whether the name " praying " should not be spelt " preying " but was obliged to give a reply in the negative, for the term refers not to the predacious nature of the creature but to its customary attitude of sanctimonious piety with arms either folded devoutly or extended as if in invocation of the Deity. In some countries mantises are objects of superstitious veneration on this account.

The lecturer discussed the Insects in general, the largest group of air breathing animals, and placed the mantis in the order *Orthoptera*, a group characterised by the possession of mouth parts of the biting type and by the possession of wings which fold in radiating lines like a fan. The *Orthoptera* are rather primitive insects of a generalised type. They afford the best examples known of two phenomena of common occurrence among insects. The production of sound, and modifications of colour and form for purposes of concealment. Mantises are not very notable in respect of the first of these but give place to no other family in respect of the second. Metallic colouring is rare among the *Orthoptera* and all the Ceylon mantises are soberly coloured in plain greens, browns and greys.

Mr. Henry then dealt with the structure of the Mantis, its head with large eyes, antennae often in constant vibration, its biting jaws and mobile neck: its long prothorax and remarkably developed fore-legs with femoral and tibial armature, its ill-consolidated meso- and meta-thorax, each of these segments with a pair of wings. Although in essentials all mantises conform to one general type, they show all sorts of extravagant developments as in the tag-like expansions on the legs of some and on the sides of the thorax in others.

In the life history of the mantis there are many peculiarities. One of these is seen in the laying of the eggs. The mother takes up her position on the bark of a tree or wherever she lives normally and deposits a secretion of mucous produced by her colleterial glands. When a layer or two has been deposited a layer of eggs, one or two side by side is laid in the middle, then another layer of mucous, and more eggs and so on until perhaps 50 or 60 eggs have been laid and completely covered and concealed by the mucous which soon hardens in the air and protects the eggs from all ordinary enemies. Some enemies, however, can penetrate this armour and there are wasps which pierce the hard egg-masses of Mantises with their ovipositors and deposit their eggs beside those of the Mantises so that the Mantis eggs become food for the young wasp larvae when they hatch out.

Normally, however, the young mantises hatch out and emerge through slits in the hardened mass of mucous, to hang by a silken thread from their nursery, each baby mantis enclosed in a delicate membrane. This membrane soon ruptures and the young escape, each thereafter to make its own way in the world. They are rapacious from the start and if kept in a cage become reduced in number by cannibalism, but in nature this fate is averted by their tendency to scatter as widely as possible immediately after hatching.

Throughout their lives Mantises showed two conflicting emotions, firstly they would like to eat, and secondly they would like not to be eaten. They are incredibly ferocious towards any creature they feel able to overpower, and against an enemy they will assume a menacing manner trying to make themselves out bigger and more dangerous than they really are. In general Mantises prefer to be left alone, and show a fine spirit of sportsmanship in killing nothing which they do not actually require for food.

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The Ceylon Mantises could be grouped into three classes :—(1) Grass and twig mimics, (2) Leaf and flower mimics, and (3) Bark and moss mimics. Mr. Henry showed slides of these mantises and notable among the insects shown were :—

(1) *Deiphobe infuscata* and *Oxyopthalmus gracilis.*

(2) *Hierodula taprobanae, Gongylus gongylodes.*

(3) *Humbertiella affinis, Muscimantis montanus.*

The Mantises form a small family as Insect families go, for the most recent list gives but 1,834 species, while in a single family of beetles, say the Rhyncophora or Weevils there are over 30,000 species known and the number is increasing.

In conclusion Mr. Henry stated that he was glad that the Mantis was of no immediate use to man, but that like the great bulk of insects it helped to maintain the balance of nature by preying on other insects.

Several questions were asked the lecturer who replied and Dr. Hill then proposed a vote of thanks complimenting the lecturer on the exceptionally interesting lecture to which the Society had listened and deprecating the commercial attitude towards science, on which point he thoroughly agreed with the lecturer.

The vote of thanks was carried with acclamation and the meeting then terminated.

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## One Hundredth General Meeting

Minutes of the One Hundredth General Meeting of the Ceylon Natural History Society held on July 28th, 1931, at 5.30 p.m. in the Reading Room of the Colombo Museum Library.

The President of the Society, Professor N. G. Ball, took the chair and there were present 14 members and 6 visitors.

The minutes of the previous meeting were read and confirmed.

The following were elected ordinary members of the Society :—

Messrs. D. E. V. Koch, B.Sc. ; C. P. Abeyesinghe ; and W. D. Hewavitarne.

The following were elected student-members of the Society :—

Messrs. C. I. de Silva, E. F. Modder, A. S. Outschoorn, R. W. P. de Soysa, L. A. Gunawardene, G. A. K. Rockwood, A. E. C. Perera, C. E. V. P. Amerasinghe, R. Jeremiah, A. R. Majid, W. S. R. Mendis, T. V. N. Perera, C. S. Ratnavale, A. M. D. Richards, K. Satchithananda, M. M. M. Sheriff, H. C. H. Soysa, S. Suppiah, and V. Thillainadarajah.

The President read an invitation from the Honorary Secretaries of the Royal Asiatic Society (Ceylon Branch) to the lecture by Mr. A. R. Hughes, B.A.O.U., on " Hawks, Eagles and Birds of Prey " to be held on 4th August, 1931, at 6.30 p.m. in the Reading Room of the Colombo Museum Library.

The President intimated that there would be no General Meeting of the Society in August.

The President then called on Mr. D. C. Gunawardena to give his paper on the " Mangrove Plants of Ceylon."

Mr. Gunawardena said that the plants collectively called mangroves are confined more or less to the tidal limits of brackish waters of creeks and lagoons of tropical shores. They often grow so luxuriously as to form a forest on the sea through which the rays of the sun scarcely penetrate; as a consequence of this there is little undergrowth. The tangled nature of the roots which stand up in the air through the soft yielding mud makes it difficult to penetrate the mangrove forests.

The plant communities of the tropics may be classified as :—

(*a*) Closed forests—such as are found in the hill country where the tree tops are crowded together. In these, grass is absent but lianas, orchids, ferns, mosses and lichens abound. (*b*) Park-land—familiar to hunters in Ceylon, is free from climbing plants, and trees are scattered. (*c*) Grass-land—where trees and shrubs are absent. Park land is a transition stage between (*a*) and (*b*). (*d*) Maritime swamp and aquatic vegetation. Here the flora is often floating, submerged, amphibious or subjected to periodic inundations. If the foundation is salt or brackish we get the strand vegetation of the seashore, but if the area is subjected to tidal effects, the mangrove vegetation is evident.

Mangroves are an arboreal group found in brackish water, in river deltas and along river banks as far as the tidal limits. The distribution is confined to the tropics,—West Indies and the Amazon, Nigeria, Tanganyika Territory, the Ganges, Malay Archipelago, the swamps of the Philippines and the North coast of Australia.

In the mangrove swamp the water is full of mud and decaying vegetation: the dead leaves and rotting branches give a characteristic smell and the mud is a horrible black slime. As the roots of these plants cannot get a firm grip in the mud and as the absence of air in the soil affects the plant adversely, the plant has to contend with the problems of absorption of water, and respiration. Also the seeds are in danger of being washed away.

The mangroves are adapted to meet these adverse conditions.

There are 26 species of mangroves distributed among nine families and of these only one, *Acanthus* is a herb, the rest are trees and shrubs.

*Rhizophora* is the most widespread and well-known. There are two species of it in Ceylon.

*Bruguiera* is also represented by two species. These two form the bulk of the Mangrove forests of the coast, the former is more common on the East and the latter on the South. Both these plants have many features in common but *Rhizophora* has 4 sepals and petals, while *Bruguiera* has 8-14.

*Rhizophora*, the Mangrove *par excellence* is a tree with spreading branches and dark green leaves. It supports itself in the mud by sending out aerial roots which act like buttresses to protect the plant against the wind. The roots have another function, they are spongy and air diffuses to the soft tissue through the lenticels to get to the roots below the mud. The roots in the mud have spongy tissue more extensively developed. The spongy tissue acts as a reservoir for the air taken in from above. The leaves are shiny and reflect excess light. The young leaves are well protected from drying by stipules and mucilage, excreted from the glands at their bases, which envelopes the whole bud. The flower of Rhizophora is not abnormal but the germination of the seed has many peculiarities.

The mature fruit does not fall to the ground on germination but remains on the plant, a condition known as vivipary. The stages of growth are as follows :—

Only one of the two ovules develops, and the embryo consists of one cotyledon and there is no true radicle as in the case of other plants. The full grown cotyledon consists of an upper part likened to a Phrygean cap by Fr. Le Goc while the lower part is hollow and elongated. Fitted to the base of the hollow tube is the hypocotyl which bears a small bud on the upper end.

During germination the cotyledon feeds the hypocotyl with food absorbed from the endosperm, meanwhile the cotyledon forces its way out of the fruit through the micropyle and continues to elongate, reaching a foot or two in length. The total period for full germination is nine months.

The hypocotyl is green in colour and swollen at the base. Hypocotyls hang in the air like candles in a grocer's shop. When the fruit drops the hypocotyl sticks in the mud and adventitious roots arise from its base and the bud begins to sprout forth.

The Mangrove is one of Nature's most important geographical agents in colonizing and reclaiming mud. The leaves of the Mangrove as well as floating rubbish accumulate about the roots. This raises the level of the ground. Eventually the soil becomes hardened and raised and the Mangroves then tend to die while the ordinary jungle trees encroach on it. In this way the continual development of Mangroves reclaims enormous stretches of land.

*Bruguiera* is a smaller plant having a very specialized type of air-breathing root called a pneumatophore. Some roots rise above the mud and bend down again into the water, the exposed part looking like a bended knee. These are called knee roots. In the exposed parts are the lenticels through which air enters. The submerged part of the knee root is spongy with an abundance of air spaces.

Fertilization is self-effected. The stamens are enclosed within a leaf-like envelope that forms an appendage to the base of the petals. When the flower expands the blades from the leaf-like envelope open suddenly releasing the enclosed stamens which spring forward to the centre of the flower scattering the pollen-grains on the stigma.

*Ceriops* is the third genus. It is found at the estuary of the Mahaweliganga.

*Kandelia* is doubtfully present in Ceylon.

*Sonneratia* is common in the west and south. It is easily identified by clusters of erect pneumatophores which grow all round it.

*Acanthus ilicifolius* is a perennial herb, with spiny hollow leaves. It is found as an undergrowth to the other Mangroves and is dominant at Batticaloa.

*Avicennia officinalis* is called in English the White Mangrove. It has no stilt roots but sends up erect pneumatophores from its cable like roots.

*Carapa, Lumnitzera, Scyphiphora* and *Aegiceras* are other Mangroves.

The Nipa palm (*Nipa fruticans*) is common on the south west coast. It grows in the water and may be called a semi-mangrove. One other semi-mangrove common in Ceylon is a fern *Acrostichum aureum.*

The lecturer then concluded by discussing the economic possibilities of the Mangrove. It is well-known that Mangroves abound in tanning material. Previously " cutch " obtained from the heart-wood of *Acacia* was used but the supply from India and Burma was not reliable. Now tannin from the mangrove has replaced it and there are factories in East Africa, the Philippines and Borneo. Mangrove wood is highly prized as firewood. The Nipa palm is an important source of Alcohol and Vinegar.

In Australia the oysters flourish at the roots of the Mangrove which plants are on this account extensively cultivated.

The lecturer pointed out that the possibilities of the Ceylon Mangroves required a fuller investigation.

In the discussion which followed this Miss Linwood and Mr. Burt made a few comments and asked questions to which Mr. Gunawardena replied.

The meeting then terminated by the Chairman proposing a hearty vote of thanks to the lecturer. This was carried with acclamation.

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## One Hundred and First General Meeting

Minutes of the One Hundred and First General Meeting of the Ceylon Natural History Society held at 5.30 p.m. on September 8th, 1931, in the Reading Room of the Colombo Museum Library.

Professor N. G. Ball occupied the chair and there were at least 9 members and 4 visitors present.

Mr. F. N. Betts and Miss G. F. Opie were elected ordinary members and Mr. J. L. C. Fernando a student-member of the Society.

The Chairman then called on Dr. S. E. Fernando to deliver his lecture on " Protozoan Parasites of Man."

Dr. Fernando said that protozoa and man belonged to the first and last phyla in the evolutionary series of the animal kingdom and that parasitism is one of the many types of association that may exist between different species of living organisms. It is an association where the parasite is benefited, obtaining food and protection with the least possible effort, but is detrimental and sometimes disastrous to the host.

The conception of parasitism implies antagonistic relationship between two correlated beings, parasite and host the one attacking, the other defending. Again some parasites are in turn attacked by other parasites :—

> " Big fleas have little fleas
> Upon their backs to bite 'em,
> And little fleas have lesser fleas
> — and so *ad infinitum.*"

Then he distinguished parasitism from two other animal associations, viz., symbiosis and commensalism. In view of the different modes of life he divided protozoa into two groups, epizoic and entozoic.

The anatomy and the life history of protozoa were dealt with in detail followed by a classification into four classes according to the presence or absence and nature of locomotor organs.

*Sena Fernando, Srilal Motha, Vasantha Dias, Chris Corea, Nandalal Ranasinghe, Druvinka Paul, Kumar Perumal, Dr As*
*Enoka Corea, Shivanthi Jayasuriya, Ninel Fernando, Marisa Fernando and Baby, Shenuka Corea, sssssssssssss and sss*
*Maligatenna Aug 2015*

(1) *Sarcodina*, (2) *Mastigophora*, (3) *Sporozoa*, (4) *Ciliata*. He gave the chief characteristics of each of those four groups. For descriptive purposes he divided protozoan parasites into (*a*) Intestinal protozoa, (2) Blood inhabiting protozoa.

In the *Sarcodina* he dealt with the different *Amoebae* with special reference to *Entamoeba histolytica* the cause of amoebic dysentery.

In the class *Mastigophora* he dealt with *Trypanosoma, Leishmania tropica* and *L. infantum*.

In the *Sporozoa* he dealt with the malarial parasites.

In the *Ciliata* he mentioned the less common *Balantidium coli*.

Lastly he described the controversial group of Spirochaetes with special reference to organisms of syphilis, parangi and rat-bite fever.

He stated that host-parasite specificity is a problem of great interest to the Zoologist especially from the evolutionary point of view.

The lecture was fully illustrated with diagrams with maps showing incidence of disease caused by the parasites and with lantern slides. These were shewn through the recently purchased epidiascope.

At the close of the lecture comments were offered by Dr. F. Hirst.

The meeting terminated with a hearty vote of thanks to Dr. Fernando.

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## One Hundred and Second General Meeting

Minutes of the One Hundred and Second General Meeting of the Ceylon Natural History Society held on 13th October, 1931, at 5.30 p.m. in the Reading Room of the Colombo Museum Library.

The President, Professor N. G. Ball, took the chair and there were 19 members and 1 visitor present.

The Secretary proposed that in reading the minutes the summary of the previous lecture be taken as read. This was seconded by Mr. G. M. Henry and passed unanimously. The minutes were then read and confirmed. The President called on the Very Rev. Fr. Le Goc to give his lecture on " Stimulus and Response."

The lecturer discussed the principle of stimulus and response in the animal senses and therefore in human senses. There were six primary senses, including heat perception which did not enter into the present discussion, the six senses being touch, taste, smell, hearing, sight and heat perception.

In the case of non-living organisms stimulus and response is just action and reaction which can be represented by the equation $m_1 v_1 = m_2 v_2$, but in dealing with the living body the response or reaction to the stimulus may be out of all proportion to the stimulus used.

The nature of the response depends on the nature of the organ of perception, as in a plant where the response to light is a turning towards the light by the stem, and away from it by the root. In this case the direction and nature of the response are beneficial to the organism. In a similar way the reaction to gravity, geotropism, is beneficial to the organism.

The lecturer then discussed chemical stimuli in plants such as the sun-dew and the stimulus of humidity and of light.

Among animals the lowest forms, as Amoebae, are like plants but in higher forms the senses are specialised as senses of touch, smell, taste, hearing and sight.

The lecturer dealt with these in turn, discussing fully the nature of the stimulus and the nature of the response to it. In this part of the lecture the Rev. Fr. Le Goc emphasized the fact that man combines the result of impressions and subjects them in the direction from which he received them and this direction, as in the case of the reflected candle in a mirror, may not be the true direction of the object. So far as the eye and the brain are concerned the " true " image and the " reflected " image are identical. A mirage in the desert, or as sometimes seen at the Straits of Dover is apparently a true image.

The lecturer held the sense of sight to be the reason for man's advance for all advance has been based on observations giving man a power over Nature.

The meeting terminated with a hearty vote of thanks to the lecturer which was carried with acclamation.

## One Hundred and Third General Meeting

Minutes of the One Hundred and Third General Meeting of the Ceylon Natural History Society held on the 11th November, 1931, at 5.30 p.m. in the Reading Room of the Colombo Museum Library.

The President, Professor N. G. Ball, took the chair and there were 22 members and 2 visitors present.

The minutes of the previous meeting were read and confirmed.

The following were elected members of the Society :—

*Ordinary members.*—Mr. J. R. Leembruggen.

*Student-members.*—Messrs. T. A. Frewin, J. A. L. Nelson, J. C. W. Rock, and L. Martinus.

The Chairman called on Dr. P. C. Sarbadhikari to give his lecture on " The Nature of Sex in Plants."

Dr. Sarbadhikari said that the existence of sex in plants was early recognised : it had been called one of the great mysteries, equal to that of life itself. That description was justified thirty years ago, but today it was so no longer, for in the last quarter of a century biologists had shed much light on the subject.

In the lower plants zoospore production is very general outside of the fission plants and it is very probable that sexuality had its origin in practically all groups at the naked motile stage of the life-cycle. In such plants as *Vaucheria* the difference in shape and size of the gametangia is remarkable when the simplicity of the other parts of the plant is taken into consideration. In *Chara* the Oogonium and Antheridium are exceedingly complex and so remarkably differentiated in shape, size and finally in colour.

The Heterosporous Pteridophytes shown an extraordinary difference in the size of the sexual individuals. From the example of *Selaginella* it will be seen that there are two kinds of spore-cases, one bearing large spores (megaspores or female spores) and the other small spores (microspores or male spores).

Finally in the flowering plants, the great group of seed plants and the culminating group of the plant kingdom, the same conditions are carried forward to a greater extreme. Here the most complete expression of maleness and of femaleness is found. One of the most interesting cases in the change of the sexual condition is seen in the Papaw (*Carica papaya*). This is a dioecious species, but it has been found that if one of the staminate and therefore unfruitful trees has its terminal bud removed it soon begins to produce carpellate fruits. The differences between the male and female gametes, irrespective of any differentiation which may be present among those of either kind, are both physiological and morphological.

The meeting was thrown open to discussion and Professor Ellison asked whether in plants the same kind of difference in the male and female Chromosomes could be distinguished as in animals. The lecturer replied that as in animals the sex chromosome could be distinguished in plants. There being no further discussion the Chairman called for a hearty vote of thanks to the lecturer. This was carried with acclamation.

The meeting then terminated.

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## One Hundred and Fourth General Meeting

Minutes of the One Hundred and Fourth General Meeting of the Ceylon, Natural History Society held on December 8th, 1931, at 5.30 p.m. in the Reading Room of the Colombo Museum Library.

The President, Professor N. G. Ball, took the chair and there were 14 members and 2 visitors present.

The Honorary Secretary read the minutes of the previous meeting which were confirmed.

*Kumar Perumal, Mr Somasekera, Dr Malik Fernando, nnnnnnnnnnnn, Ninel Fernando, Sena Fernando at pppppp – aaaaa xxxxx*

*Dr Malik Fernando, Enoka Corea, Ninel Fernando, Laki Senanayake, Srikumar, Chris Corea at Laki Senanayake's forest residence "Diyabubula" - June 2015*

The Chairman called on Mr. P. Kirthisinghe to give his lecture on " Frogs, toads and their allies."

Mr. Kirtisinghe opened his lecture by explaining the course of evolution of the vertebrates and allocating to the Amphibians the Carboniferous and Permian periods, a position between the Age of Fishes and the Age of Reptiles.

An Amphibian such as a frog or toad is adapted to live the earlier part of its life in water when it possesses gills and breathes like a fish, but later it possesses lungs and breathes air like a reptile or mammal.

The Class Amphibia is divided into four Orders. Of these, the first Order, the Stegocephalia, is composed entirely of extinct forms whose remains are first found in the Cambrian but continue into the Permian. These are the first vertibrates to depend entirely on air breathing for part of their life. The fossils *Loxomma*, *Cricotus* or *Eryops* and *Melosaurus* show three stages in the development of the Stegocephalia. The first lived in water and swam with its long flat tail and it may have crawled on land with its short feeble legs ; the second type lived on dry land and probably only returned to water to breed ; while the third type probably found its dependence on water as a breeding place or merely to keep moist its skin which rendered it unfit to compete with dry-land reptiles and extended the larval period so that it became completely aquatic again.

The three remaining Orders, the Urodela, Anura and Gymnophiona are all recent and alive at the present day. The Urodela can roughly be divided into two groups, those in which gills are absent in the adult and those whose gills persist. Mr. Kirtisinghe described by means of lantern slides and actual specimens the main types of Urodela including *Amphiuma* of the South-east States of North America, the Salamanders, *Salamandra atra* and *maculosa* each with different breeding habits relative to its different habitat. *Ambystoma* and its precocious larva the Axolotl ; *Proteus* the Blind Salamander of Germany and *Siren lacertina* from North America.

The lecturer then described the Anura, dealing in particular with their breeding habits, describing first the development of the common Frog or Toad and showing how the other members of the group differed. *Racophorus reticulatus* attaches her eggs to the underside of her belly and the eggs are about twenty in number, while *Racophorus maculatus* lays her eggs in a frothy foam over a well or at the side of a stream and the young tadpoles on hatching drop into the water. *Alytes obstetricans* the mid-wife toad is peculiar for here it is the male that looks after the eggs attaching strings of them to his legs where they remain until hatched. The Brazilian frog *Hyla goldii* carries her eggs on her back, whereas in the Surinam toad *Pipa americana* from North Brazil, the eggs are carried on the back of the mother but her skin thickens so that each egg is enclosed in a dermal cell where it remains until the baby frogs emerge perfectly formed. In *Rhinoderma darwini* a small frog from Chili, the eggs are carried in the gular pouch of the father, the pouch extending over the entire ventral side.

The *Gymnophiona* are represented in Ceylon by *Ichthyophis glutinosa*, a worm-like Amphibian without limbs found in the Botanical Gardens at Peradeniya. In this case the gilled or larval stage is passed through in the egg before the young are hatched.

In conclusion Mr. Kirtisinghe discussed the ancestors and mode of evolution of the Amphibia dealing in detail with the similarities of the Amphibia and Lung-fishes with regard to their development, respiratory, circulatory, and excretory systems. He indicated the probable manner in which air breathing Amphibia evolved from gilled ancestors, supporting his theory by comparative morphology, palaeontology and embryology and showing the affinity between the Dipnoi or lung breathing fishes and the Amphibia.

In the discussion which followed Professor Ball, Mr. Wait, Mr. Burt and Professor F. O' B. Ellison took part.

The meeting terminated with a hearty vote of thanks to Mr. Kirtisinghe. This was carried with acclamation.

## One Hundred and Fifth General Meeting

Minutes of the One Hundred and Fifth General Meeting of the Ceylon Natural History Society held on January 12th, 1932, at 5.30 p.m. in the Reading Room of the Colombo Museum Library.

In the absence of the President, Dr. Pearson took the chair and there were 86 present, of whom 19 members and 8 visitors signed the book.

The Honorary Secretary read the minutes of the last general meeting which were confirmed.

Mr. K. Martinus was elected a student-member.

Dr. Pearson called on Mr. Wait to give his lecture on " Birds' Eggs."

The fact that birds are evolved from reptiles is borne out by the characters of Archaeopteryx, which is, in a sense intermediate between these two groups. Birds being derived from a reptilian branch should show the ancestral characteristics of reptiles in their eggs.

Most reptiles lay unpigmented white eggs with a hard or a leathery shell which are usually laid in sand or earth and covered over. Birds without exception, lay eggs and have carried the evolution of the original reptilian egg to a high degree. Most birds build nests, some lay on bare ground while the Megapodes have retained or have reverted to the reptilian habit of laying their eggs in mounds and covering them over.

The outside texture of birds' eggs varies : soft and calcareous in the Cormorant, smooth and greasy in the Whistling Teel, glossy in the Kingfisher, smooth but dull in the White-vented Drongo, slightly pitted in the Mynah's egg as in the Ostrich or Pea fowl egg. The shape varies from the normal as in the House crow ; pyriform as in the waders ; peg-top shaped, symmetrical, round or pointed at each end.

The markings vary from self-coloured as in the Pond Heron, stippled in the Jungle Fowl, freckled in the Moor-hen, heavy blotched in the Painted Snipe, to scrawled in the Indian Kentish Plover. The relative size of the egg varies according to the degree of development attained by the chick when it is hatched and also according to the size of the clutch.

Mr. Wait discussed the evolution of colour from the white reptilian egg. Eggs found in dark holes or in closed nests are usually white but there are many exceptions. The white egg may be the original colour carried down without change or birds may have evolved pigmented eggs, some reverting to white as a modification to suit environment. This was illustrated at length by eggs protectively coloured, mimetically coloured eggs of parasitic cuckoos and the white eggs of birds of the Coraciiformes. Exceptions are seen in the pale blue eggs of the common Mynah which nests in the hole of a tree, the spotted egg of the Southern Grey Tit which is found in a similar nest and the white egg of the Ash Dove found in the scanty nest of a few twigs.

There is, however, no doubt that many birds, especially those nesting on the ground lay protectively coloured eggs. Some of these are the eggs of the Indian Pipit, the common Indian Night Jar, the Ceylon Bustard Quail, the Little Tern, and the Yellow-wattled Lapwing. The pinkish egg of the latter is particularly interesting as it is obtained from a locality where the soil is pinkish red laterite.

The lecturer then discussed the more elusive problem of the causes leading to the evolution of the various beautiful colours in eggs, neither white nor protectively coloured. Pycraft discusses the evolution of colour types in eggs referring it to the evolution of plumage and suggesting the inherent tendency to an increase of pigmentation in the eggs of certain birds. Natural selection acts as a sieve weeding out all such experiments if they become a handicap in the struggle for existence. In fierce birds and assiduous sitters there is little need for concealing colouration, and throughout the family of the Hawks and Eagles there are wide differences in the eggs. The Sea-eagle's egg is white, the Sparrow Hawk's egg has bold blotches of brown, while the eggs of the Honey Buzzard and Peregrine glow with colour.

The Warbler family gives many instances of specific, racial, and individual variation. All the members build skilfully constructed nests which are well concealed. In many the nest is domed so that the eggs are invisible from the outside. Eggs in cup-shaped nests (Ceylon Great Reed Warbler) are not conspicuously coloured. Nests almost tubular (Streaked Fantail Warbler) have

eggs of which the ground colour is white. Nests which are domed have pure white eggs. In other warblers with the same kinds of nests there is a wide range of vivid colour. The examples from the warblers which Mr. Wait showed suggest the following line of evolution in the nests and eggs: (1) The cup nest, the ancestral form, with protectively coloured eggs ; (2) The tubular, cup, or domed nest with more vividly coloured eggs ; and (3) The dark nest with whitish eggs, speckled and eventually pure white. In the Coraciiformes white is probably the ancestral colour, here it appears to be a recent modification.

Mr. Wait then discussed the eggs of the whole family of Bulbuls where a certain amount of variation is found in each species.

Another aspect of egg colour is warning colour and mimicry. Eggs of various species differ greatly in flavour, for the Robin, Swallow, and Nightingale have nasty tasting eggs ; the eggs of the Little Bittern are sweet and mild, and the eggs of the Barn Owl not much inferior. The bright colour of eggs laid in open nests may be a flag of warning. The Pied Crested Cuckoo always lays blue eggs victimizing the nest of the Babbler and here the colour conveys some advantage, as the Koel, victimizing the Crow, has likewise a similarly coloured egg. The Cuckoos, belonging to the Coraciiformes, have diverged widely from the ancestral habit, the non-parasitic members still laying white eggs, as in the Jungle Crow.

In conclusion Mr. Wait discussed the structure of the egg, the process of egg laying, and the probable mechanism of the deposition of pigment illustrating the different types of markings with eggs from birds of widely separated families.

In the discussion which followed Professor Hill, Mr. Burt and Professor Ellison took part. The main point discussed was the pink colour of the egg of the Yellow-wattled Lapwing when found on laterite soil.

Dr. Pearson in paying a tribute to the lecturer, mentioned the Epidiascope which made possible the illustration of the lecture by the actual eggs. The meeting closed with a hearty vote of thanks to the lecturer.

# PROCEEDINGS OF THE CEYLON NATURAL HISTORY SOCIETY, 1933 SESSIONS

## Twenty-first Annual General Meeting

Minutes of the Twenty-first Annual General Meeting of the Ceylon Natural History Society, held on February 14th, 1933.

Proceedings commenced with the President, Mr. G. M. Henry in the Chair, there were present thirty-three members and visitors.

The minutes of the previous General Meeting were read and confirmed.

The President then read out the amendment to paragraph 5 of the Constitution and Rules of the Society as adopted by the Council of the Society.

> ' 5. At the Annual General Meeting, the Ordinary and Life Members of the Society will elect the Council for the ensuing year, with the exception of the retiring President who will become automatically a Vice-President. The Student Member of the Council will be elected by the Student Members of the Society. The two Vice-Presidents with the longest continuous service will not be eligible for re-election as Vice-Presidents until a period of one year has elapsed, but shall be eligible for election as members of the Council. Vacancies arising during the year will be filled by the Council.'

The Honorary Secretary's Report and the Honorary Treasurer's Statement, which were in the hands of the members, were adopted.

Mr. D. R. R. Burt was elected President for the year 1933, and took the chair. The remaining office-bearers were elected as follows :—

*Vice-Presidents.*—Dr. A. Nell, Prof. N. G. Ball, Prof. F. O'B. Ellison, Mr. G. M. Henry and Dr. J. Pearson.

*Honorary Secretary.*—Dr. W. Fernando.

*Honorary Treasurer.*—Prof. W. C. O. Hill.

*Council.*—Mr. C. T. Symons, Mr. W. W. A. Phillips, Dr. S. E. Fernando, Mr. E. C. T. Holsinger, Mr. L. G. O. Woodhouse, Mr. P. E. P. Deraniyagala and Mr. S. E. Dias.

Dr. J. Pearson then gave an account of ' The Principles of Zoological Nomenclature '.

Mr. A. L. Johnpulle exhibited slides of *Culicoides anophelis*, a dipteran parasite of the mosquito, *Anopheles culicifacies*, and of an abnormal mosquito which was apparently a female but was provided with palpi pertaining to a male.

Mr. D. R. R. Burt exhibited a series of mice obtained by crossing the Ceylon House Mouse, *Mus dubius*, with the albino variety of the European mouse, *Mus musculus albula*.

## One Hundred and Sixteenth General Meeting

Minutes of the One Hundred and Sixteenth General Meeting of the Ceylon Natural History Society, held on 7th March, 1933.

18——J. N. 53305 (2/36)

The President, Mr. D. R. R. Burt, took the chair; there were twenty-one members and visitors present.

The minutes of the last General Meeting were read and confirmed.

Dr. W. C. O. Hill exhibited specimens of *Tarsius spectrum* and *Nycticebus* sp.

Mr. W. W. A. Phillips then read a paper on ' The Work and Aims of the Ceylon Game and Fauna Protection Society '.

Mr. Phillips gave an account of the history of the Ceylon Game and Fauna Protection Society and the continuous efforts made by the Society, since its inception in 1894, to combat the pitiless course that continues with us to the present day and which is still the chief enemy that periodically threatens the existence of many species of our wild life—namely ' commercial exploitation '. He said the chief aim of this Society is to persuade Government to provide the necessary funds and machinery for the enforcement of the Game Laws either as they exist at present or in an amended form in order to give greater protection to some of the rarer or more interesting forms and the provision of suitable Wild Life Sanctuaries, or Fauna and Flora Reserves, in each of the three climatic zones of the Island as being the surest method of ensuring the survival of all the most interesting endemic species.

At the conclusion of Mr. Phillip's paper the following resolutions were unanimously adopted by the Society:—

1. That this Society fully sympathizes with the work the Ceylon Game and Fauna Protection Society is doing for the preservation of Wild Life in Ceylon.

2. That this Society views with alarm the continued destruction of the Island's Wild Life and earnestly requests the Minister of Agriculture and Lands to make better provision for the enforcement of the existing Game and Wild Life Protection Laws for more adequate protection of the unique fauna of this Island.

The meeting terminated with a vote of thanks to Mr. Phillips.

## One Hundred and Seventeenth General Meeting

Minutes of the One Hundred and Seventeenth General Meeting of the Ceylon Natural History Society, held on 18th July, 1933.

The President, Mr. D. R. R. Burt, took the chair and forty-three members and visitors were present.

Mr. D. R. R. Burt exhibited a specimen of *Ichthyophis glutinosus* and Mr. G. M. Henry exhibited specimens of *Ancistrodon hypnale*, the hump-nosed viper.

The Very Rev. Father M. J. LeGoc delivered a lecture on ' Climate and vegetation in Ceylon '.

He said that vegetation in any part of the world is largely dependent on climate. The chief climatic factors which affect plant life or create types of vegetation are light, temperature, and atmospheric precipitations, humidity of the air, exposure, air movements and air pressure. In Ceylon, light, if anything, is excessive. Plants, though they can to a certain extent adapt themselves to different temperatures need an optimum temperature round about 30° C. Where rainfall is deficient, a high temperature is detrimental. Atmospheric precipitation mainly determines the supply of soil water. In Ceylon, rainfall is regulated by two monsoons. During the south-west monsoon, most rainfalls on the south-western part and centre of the Island, while during the north-east monsoon, the centre of condensation is close to the south-west. As regards vegetation what matters is not so much the total amount as the even distribution of rainfall.

*Zzzzzzz, Mr Somasekeran, Nandalal Ranasinghe, Kumar Perumal, sssss at Sitawake Botanical Gardens – March 2016*

A dry atmosphere, air movements and reduced pressure will cause excessive transpiration and are responsible for stunted vegetation, especially where the water supply from the soil is deficient.

The distribution of vegetation coincides with that of climate and different types of vegetation characterize different climatic areas or zones. In Ceylon, these are usually divided into:—

A. *Arid zone.*—Rainfall 25″-50″. North of Jaffna, Mannar, Puttalam and Hambantota. In these regions we get the thorn forest, with thorny shrubs bearing small thick leaves. Grasses and herbaceous plants are rare, epiphytes and climbing plants almost absent.

B. *Dry zone.*—Rainfall 50″-75″. North-Central and North-Western Provinces and also the eastern part of the Island. In this region shrubs are abundant and thorny lianas and epiphytes are found. Grasses and herbaceous plants are abundant during the brief rainy seasons. Here are characteristic plants such as satinwood, ebony, milla, iron wood, *Dipterocarpus*, *Euphorbia*, etc.

C. *Intermediate zone.*—Rainfall 75″-100″. Kurunegala, Matale, Bibile. The vegetation is transitional between that of the dry and the wet zones. Lianas and epiphytes are numerous, undergrowth is more abundant, trees which belong to the dry and the wet zones are included.

D. *Wet zone.*—Rainfall over 100″. This is subdivided into the up-country wet zone and the low-country wet zone. These are the regions of the Rain Forests. The low-country wet zone contains tall trees with dense foliage; epiphytes are especially abundant and jungle crowded with undergrowth. Dipterocarps are characteristic, also Dillenias and *Wormia triquetra*. Epiphytes are numerous, including many orchids and among ferns, *Polypodium quercifolium* and *Drymoglossum heterophyllum*. In the up-country wet zone, the trees are smaller and young leaves are frequently coloured. Ground vegetation is extremely dense and includes *Selaginellas* and Mosses, *Marchantia*, being abundant. Tree ferns, *Cyathea* and *Alsophila* are also characteristic. Epiphytes are abundant; orchids numerous. The tree reaching highest elevation is *Rhododendron arboreum*. Many European genera are also found, *e.g.*, *Ranunculus*, *Viola*, *Berberis*, *Rubus*, *Plantago*, etc.

The lecturer concluded by referring to plantations introduced or controlled by human agency, *e.g.*, paddy, coconut, tea, and rubber.

## One Hundred and Nineteenth General Meeting

Minutes of the One Hundred and Nineteenth General Meeting of the Ceylon Natural History Society, held on the 17th October, 1933.

The President occupied the chair, and thirty-eight members and visitors were present.

The minutes of the previous meeting having been read and confirmed, a vote of condolence was passed on the death of Sir Graeme Thomson, the Patron of the Society.

Mr. D. R. R. Burt exhibited a specimen of *Rattus ohiensis*, and Dr. W. Fernando showed lantern slides of five new Trematodes from Ceylon described by him. Dr. J. Pearson then delivered a lecture on ' Marine Biology in Ceylon '.

He first dealt with the seasonal changes in salinity and temperature, which have been revealed through an analysis of hydrographical observations made in the Gulf of Mannar. These observations have been taken for a number of years at certain

19——J. N. 53305 (2/36)

stations in the Gulf of Mannar (surface, 50m., 100m., and 300m.). During the south-west monsoon period (May-October) it was found that oceanic water of comparatively high salinity (not less than 35.25 at the surface) and low temperature (not greater than 26°C at the surface) passed into the Gulf. During the north-east monsoon (November to April) the water had a relatively low salinity (not greater than 34.50) and a high temperature (not less than 28°C).

It has been found that the spawning habits of the pearl-oyster are correlated with these seasonal changes, and that there are two spawning optima in the year, one in June-July and the other in December-January. The spawning seasons are not clear-cut and well-defined, and are in accordance with the hydrographical conditions which do not show sudden changes at any time of the year.

In contrast to these conditions, reference was made to Lake Tamblegam, a shallow, land-locked backwater of Trincomalee Harbour, with an area of nearly six square miles. Several rivers empty into the southern part of the lake, and during the wet season (November-December) large quantities of fresh water enter the lake. Consequently, the salinity of the lake shows a sudden drop as soon as the wet season begins. This sudden change from a comparatively high to an extremely low salinity in December acts as a spawning stimulus and it is found that the Window-pane oyster spawns in December-January and it is not unlikely that most animals living in the lake have their breeding season at this time of the year.

## One Hundred and Twentieth General Meeting

Minutes of the One Hundred and Twentieth General Meeting of the Ceylon Natural History Society, held on 14th November, 1933.

The President took the chair and there were present twenty-nine members and visitors.

The minutes of the previous meeting were read and confirmed.

Dr. Joseph Pearson was elected a Foreign Member of the Society in appreciation of the services rendered by him to the Society of which he was the founder.

Prof. W. C. O. Hill delivered a lecture on ' Lorisoids '. The lecturer explained that the Lorisoids are a group of primitive Primates composed of (*a*) the Slender Lorises of Ceylon and South India, (*b*) the Slow Lorises of Malaya, and (*c*) the Galagos and Pottos of Ethiopian Africa. The peculiar geographical distribution of the group was explained as the result of wanderings in various directions from a dispersal centre in the Sivalik Hills during the Ice Age. The Lorisoids are related to the Lemuroids, but approach the Tarsioids even more closely in several respects. They are more generalized than the true Lemurs, and are close to the main line of human evolution though not so near to that line as the Tarsioids.

The chief points about them are their nocturnal habits, large eyes, small noses, woolly coats and insectivorous diet. The Oriental forms are tailless, but the Ethiopian forms are tailed, the Galagos possessing bushy tails like the Lemurs.

The lecturer concluded by exhibiting living examples of Lemurs, Galagos and some new Ceylonese races of Lorises, descriptions of which have recently been published in the *Ceylon Journal of Science*.

Mr. D. R. R. Burt exhibited an example of twinning in the kitten.

## One Hundred and Twenty-first General Meeting

Minutes of the One Hundred and Twenty-first General Meeting of the Ceylon Natural History Society, held on the 12th December, 1933.

The President took the chair and seventeen members and visitors were present.

When the minutes of the previous meeting had been read and confirmed, Prof. W. C. O. Hill exhibited specimens of the following Australian mammals:—Jerboa Mouse (*Notomys*), Dormouse phalanger (*Dromicia*), Honey mouse (*Tarsipes*) and young; pouch embryo of Kangaroo; pouch embryo of *Perameles* and Pouched Mouse (*Sminthopsis murina*).

Dr. J. P. C. Chandrasena then delivered a lecture on ' Colouring Matters, Natural and Synthetic '.

The lecturer pointed out the considerable part the quest of luxuries has played in the migrations of human races and in the spread of civilizations. By way of example, he cited the influence of the search for raw material for the manufacture of perfumes and spices as it affected Ceylon.

After explaining the difference between dyes and stains, he said that the earliest known dyes would belong to that class known as vat dyes, that is, those which are colourless when fresh but are oxidized by atmospheric oxygen to coloured substances. Two members of this class most important in History are tyrian purple and indigo. The former is obtained from a certain kind of Mollusc found in the Mediterranean, and the latter from the indigo plant, which grows in India. The lecturer then dealt with the synthesis of mauveine by Sir William Perkin and the chemical investigations which followed, culminating in the foundation of the synthetic dye industry. Special mention was made of Adolf von Baeyer's investigations which resulted in the manufacture of indigo napthalene.

An account was next given of the recent work on the carbocyanine dyes which have made infra-red photography possible.

The part played by dyes in the amenities of modern life and the application of dyes in biological experiments were also mentioned in brief.

*All blocks illustrating this Part by courtesy of the Survey Department, Ceylon.*

## One Hundred and Twenty-third General Meeting.

The One Hundred and Twenty-third General Meeting was held on 12-III-1934, at 5.30 P.M., in the Lecture Hall of the Colombo Museum. The President took the chair and there was an attendance of twenty-one members and visitors. The minutes of the previous meeting were read and confirmed.

Mr. D. Obeyesekera, proposed by Dr. S. E. Fernando, was elected an ordinary member of the Society, and Mr. K. Satchithananda, proposed by Mr. L. J. D. Fernando and seconded by Mr. S. E. Dias, was selected to serve in the Council of the Society as the representative of the Student Members.

Mr. G. M. Henry exhibited two rare specimens of a centipede and a spider.

Mr. L. G. O. Woodhouse then delivered his lecture on " Ceylon Butterflies ". Mr. Woodhouse said that Ceylon, for a tropical country, is comparatively poor in butterflies. Of the 14,000 species known throughout the whole world, about one-tenth come from India, Burma and Ceylon, and of this only 233 species are from Ceylon. But the difference in size, shape and the glorious shades of colour are astonishing. The lecturer then proceeded to show, with the help of the epidiascope, his preparations of the wings of over 35 species of Ceylon butterflies. He also discussed the migrations of butterflies. At the conclusion of the lecture, Mr. G. M. Henry and Mr. E. C. T. Holsinger spoke in appreciation of Mr. Woodhouse's new method of preparation of the wings of butterflies.

## One Hundred and Twenty-fourth General Meeting.

The One Hundred and Twenty-fourth General Meeting was held on 10-VII-1934, at 5.30 P.M., in the Lecture Hall of the Colombo Museum. The President took the chair and there was an attendance of eighteen members and visitors. After the minutes of the previous meeting were read and confirmed, the President called upon Prof. R. Marrs to deliver his lecture on " Kant and the Biological Sciences ".

At the conclusion of this interesting lecture, the President proposed a hearty vote of thanks to Professor Marrs which was carried with acclamation.

## One Hundred and Twenty-fifth General Meeting.

The One Hundred and Twenty-fifth General Meeting was held on 11-IX-1934, at 5.30 P.M., in the Lecture Hall of the Colombo Museum. The President took the chair and there was an attendance of twenty-nine members and visitors. Mr. Wait then delivered his presidential address on Darwin's " Origin of Species ".

## One Hundred and Twenty-sixth General Meeting.

The One Hundred and Twenty-sixth General Meeting was held on 16-X-1934, at 5.30 P.M., in the Lecture Hall of the Colombo Museum. The President took the chair and there was an attendance of twenty-two members and visitors. After the minutes of the previous meeting were read and confirmed, Mr. P. E. P. Deraniyagala delivered his lecture on " The Turtles' Shell ". The lecture was illustrated by a large number of drawings, and various types of turtles' shells were exhibited.

## One Hundred and Twenty-seventh General Meeting.

The One Hundred and Twenty-seventh General Meeting was held on 13-XI-1934, at 5.30 P.M., in the Lecture Hall of the Colombo Museum. The President took the chair and there was an attendance of seventy-three members and visitors. After the minutes of the previous meeting were read and confirmed. Prof. F. O'B. Ellison

delivered his lecture on " Eyes ". The lecturer began by tracing the evolution of the eye from the simple pigment spot of *Euglena* and its allies through the various organs for the perception of light in the separate phyla of the animal kingdom, and described the structure and mode of function of the compound eyes of the Arthropoda and the well developed eye of the Cephalapoda. He explained how the Cephalapod eye differs from that of the Vertebrates. He then discussed some forms of animal life from the depths of the ocean where practically no light enters, and showed that they are either blind or that they possess very large eyes and phosphorescent organs. In conclusion, he demonstrated some examples of optical illusion.

## One Hundred and Twenty-eighth General Meeting.

The One Hundred and Twenty-eighth General Meeting was held on 11-XII-1934, at 5.30 P.M., in the Lecture Hall of the Colombo Museum. The President took the chair and there was an attendance of twenty members and visitors. After the minutes of the previous meeting were read and confirmed, Prof. F. O'B. Ellison showed two lantern slides of photographs taken by him with the lenses of a beetle's eye.

Mr. Philip Fowke then delivered his lecture on " Trout Culture in Ceylon ".

## One Hundred and Twenty-ninth General Meeting.

The One Hundred and Twenty-ninth General Meeting was held on 15-I-1935, at 5.30 P.M., in the Lecture Hall of the Colombo Museum. In the absence of the President, the chair was taken by Mr. D. R. R. Burt, and there was an attendance of thirty-three members and visitors.

Prof. W. C. Osman Hill next delivered his lecture on " Primitive Primates ".

The Primates are difficult to define as they possess characters which are also possessed by other orders of mammals. In the Primates, however, there is a combination of characters, which, though occurring individually in other types, is never in the same combination as in the Primates.

It follows that among the more generalized members of the order there are forms which it is difficult to assign to their correct position in the mammalian scale. Some would debar the Lemurs from Primate rank entirely. Others would include such primitive forms as the Tupaioids in the Primate Order.

Undoubtedly the Tupaioids are closely related to the forms from which the true Primates sprang in the early days of mammalian life on earth. They show some extremely generalized mammalian traits, including some which are usually coupled with a marsupial type of organization.

The earliest Primates must have been but little more advanced than the Tupaioids, but, as far as present knowledge goes, it would appear that these forms early differentiated into a number of distinct evolutionary trends, and these have remained separate ever since. Among them must be mentioned the Tarsioids, the Lorisoids, the Cheiromyoids (Aye-Ayes) and the Lemuroids proper. The last-named have undoubtedly been separated from the Lorisoids for a considerable time. The Lorisoids are in many respects more nearly related to the Tarsioids than the Lemuroids.

The early Primates migrated from a dispersal centre in the Siwalik region of the Himalayas. An early Lorisoid migration took place into Africa giving rise to Pottos and Galagos. The Lemuroids also had an African branch, but this was soon cut off in Madagascar, in which Island they were left to pursue their evolutionary trends unhindered. The Tarsioids were represented in early times both in America

and Europe, and there is sufficient evidence to believe that they were ancestral to the Catarrhine Monkeys and Man. It is distinctly possible that the Platyrrhine Monkeys are the descendants of a Lorisoid stock which was separated off in South America when that continent severed its former connection with Africa. The Marmosets, however, show some Tarsioid affinities. In the more peripheral parts of Asia such as Ceylon, Malaya, Java, Borneo, and the Philippines are to be found the last relics of the most primitive types of Lorisoids (*Loris* and *Nycticebus*) and also the only living representative of the Tarsioids (*Tarsius*).

The following living Primates were on exhibition:—

*Galago crassicaudatus panganiensis* (Tanganyika, East Africa).
*Lemur fulvus* (Madagascar).
*Hapale jacchus* (Brazil).
*Saimiris sciurea* (Brazil).

## Twenty-third Annual General Meeting.

The Twenty-third Annual General Meeting was held on 19-II-1935, at 5.30 P.M., in the Lecture Hall of the Colombo Museum. The President took the chair and there were fourteen members and visitors present. The minutes of the previous meeting being read and confirmed, the following office-bearers were elected for the year 1935:—

*Patron.*—His Excellency Sir R. E. Stubbs, G.C.M.G.
*Vice-Patron.*—Sir Solomon Dias Bandaranaike, K.C.M.G.
*President.*—A. H. Malpas, Esq.
*Vice-Presidents.*—E. C. T. Holsinger, Esq., Dr. S. E. Fernando, D. R. R. Burt, Esq., Dr. A. Nell, Prof. W. C. O. Hill.
*Honorary Secretary.*—D. C. Gunawardena, Esq.
*Honorary Treasurer.*—P. Kirtisinghe, Esq.
*Council.*—Prof. F. O'B. Ellison, Prof. N. G. Ball, P. E. P. Deraniyagala, Esq., Very Rev. Fr. M. J. Le Goc, O.M.I., W. W. A. Phillips, Esq., L. G. O. Woodhouse, Esq., Dr. P. C. Sarbadhikari.

New members elected were—

Mr. and Mrs. D. J. Unwin.—Ordinary Members.
Dr. H. C. P. Gunawardena.—Ordinary Member.
Mrs. H. Millen.—Ordinary Member.
Mr. M. J. Tambimuttu.—Student Member.

Dr. A. Nell then delivered his lecture on " Plants, etc., mentioned in the Mahavansa ". Nearly every plant recorded in the Mahavansa had been identified with some certainty. There were numbers of workers on the subject and revisions were not uncommon. Dr. Nell, with his knowledge of the country, attempted to make some corrections but did not claim any finality for his identifications. The lecturer referred among others to the ancient Bo-tree at Anuradhapura (*Ficus religiosa*), which was brought from Gaya (India), about 240 B.C. The Sal tree (*Shorea robusta*) was connected with the Buddha's birth and death. The following trees were commonly grown in gardens and parks:—Coconut, Areca, Palmyrah, the Tamarisk (*Tamarix gallica*), Embul-Bakmee (*Anthocephalous cadamba*). The 73rd chapter of the Mahavansa, the best chapter of all, mentioned 20 trees in a park called Nandana. Among the fragrant flowers were Lotus, Geta piccha, (*Jasminum Sambac*) Olu or Water lily with white crimson, yellow, violet and blue flowers.

The first mention of the mango was in the middle of the third Century, B.C., in the fabulous account of the devas bringing it from the Himalayas as gifts to Asoka. When the missionary priest Mahinda catechized King Devanampiyatissa (circa 247-207 B.C.), he made the mango tree his illustration.

Dr. Nell argued as follows for the presence of cotton trees in ancient Ceylon. The " Kathina " offerings of the Buddhists, of which at least six notable occasions are mentioned in the Mahavansa, have a ritual of their own. The cotton has to be plucked off the bush, spun into yarn; the yarn woven into cloth; the cloth dyed, cut into seven pieces and sewn into a monk's robe—all within the short period of a day and a night. It was reasonable, therefore, to infer that cotton was widely grown and that spinning and weaving were customary and habitual occupations with a large section of the common people. Besides, the philosophers who accompanied Alexander the Great, when he came to India in 520 B.C., were surprised to find people wearing clothes made of some wool " growing on trees ". This wool was cotton.

In the discussion which followed, the Secretary referred to the early work of J. M. Senaveratna and of T. Petch, E. Senaratne and A. H. G. Alston of Peradeniya. The problem of identification was difficult, as these early workers did not possess a knowledge of both Botany and Pali and Sanskrit. He suggested that the Society should form a Committee of Orientalists and Botanists and carry on the work of identification. Mr. E. Senaratne informed the house that they at Peradeniya, had indexed 90 per cent. of the identified names.

Prof. Ellison referred to the omission by Dr. Nell of the Temple flower tree (*Plumeria acutifolia*), which was found in nearly all temples and shrines in this country. Dr. Nell in reply stated that the Temple flower was introduced from Mexico to China in the 11th or 12th Century and came to Ceylon about the 15th Century.

## One Hundred and Thirty-first General Meeting.

The One Hundred and Thirty-first General Meeting was held on 19-III-1935, at 5.30 P.M., in the Lecture Hall of the Colombo Museum.

The President took the chair and there was an attendance of thirty-four. The minutes of the previous meeting having been read and confirmed, Mr. P. Kirtisinghe delivered his lecture on " Some Products from the Sea ". He referred to the economic values which may be derived from the " teeming life in the ocean " and laid special emphasis on fish and fishing. This industry could be much improved, as it has been done in other countries, by the adoption of modern methods and the education of public opinion. The lecture was well illustrated.

## One Hundred and Thirty-second General Meeting.

The One Hundred and Thirty-second General Meeting was held on 16-VII-1935, at 5.30 P.M., in the Lecture Hall of the Colombo Museum.

The President took the chair and there was an attendance of fifty-one members and visitors.

The minutes of the last meeting being read and confirmed, Messrs. V. Claasz and K. M. Mehta, were elected Ordinary Members of the Society.

The Secretary exhibited a Mangrove plant from a lagoon in Chilaw. The plant was not identified. Dr. S. E. Fernando commented on some specimens of intestinal Coleoptera, (*Onthophagus bifasciatus*). Their occurrence in children is well known.

The Sinhalese refer to it as ' *Kurumini Mandama* ',—Beetle rickets. The specimens were passed round. Prof. Ellison offered remarks. More data was necessary to establish definitely the intestinal nature of these Coleoptera.

The main business of the day was a lecture by Mr. E. C. T. Holsinger on " The Dwellers of the Soil ". The lecture was well illustrated. Mr. Holsinger referred to the active community of living animals and plants in the soil. The fertility of the soil was increased by heating it before tilling. This was an ancient practice, but had received scientific explanation only in recent years. There was thus a new conception of the soil and soil analysis should include not merely a chemical analysis but a microbiological analysis as well.

## One Hundred and Thirty-third General Meeting.

The One Hundred and Thirty-third General Meeting was held on 10-IX-1935, at 5.30 P.M., in the Lecture Hall of the Colombo Museum.

In the absence of the President, the chair was taken by Mr. D. R. R. Burt, and there was an attendance of twenty-seven members and visitors. The minutes of the last meeting having been read and confirmed, Dr. R. Child of the Coconut Research Scheme, delivered a very interesting lecture on " Vitamins ".

He began by tracing the development of the history of vitamins in the past fifteen years and proceeded to deal with the chemical method of attack on different vitamins. He referred to the incidence in Ceylon of the condition known as " sore mouth " and " toad skin ", and mentioned the work of Dr. Nicholls in the asylums and in the poor Vernacular Schools. Two-thirds of the numerous cases of blindness are to be ascribed to vitamin ' A ' deficiency.

Mr. E. C. T. Holsinger, Dr. F. O'B. Ellison and Mr. P. Kirtisinghe offered remarks. Dr. Child suitably replied.

The Chairman said that the absence of rickets in Ceylon to any great extent might be due not only to the fact that children were exposed to the sunlight, but because the people were not in a position to afford dried milks, which were deficient in vitamin ' D '. The children were naturally fed and natural milk contained a good percentage of calcium.

## One Hundred and Thirty-fourth General Meeting.

The One Hundred and Thirty-fourth General Meeting was held on 8-X-1935, at 5.30 P.M., in the Lecture Hall of the Colombo Museum. The President took the chair and there was an attendance of forty-one members and visitors.

The minutes of the last meeting which were read by Mr. L. de Fonseka, in the absence of the Secretary, were confirmed.

Prof. W C. Osman Hill then delivered a very interesting lecture on " Anthropoid Apes ". The lecture was well illustrated, and Prof. Hill had before him for the inspection of the audience a variety of specimens to illustrate the points he was dealing with in the course of his lecture. The lecturer defined Anthropoid Apes as " large, tailless Catarrhine Primates, distinguished from Man by more complete hairy coat and by presence of a big toe which arises from the inner margin of the foot instead of in line with the other toes ". The earliest known is *Propliopithecus* of the Oligocene period, discovered in the Fayûm deposits of Upper Egypt. This was smaller than a Gibbon, but was definitely in advance of the monkey.

Next came *Dryopithecus*, a large tree ape as big as a Chimpanzee and with dental characters approaching the human even more closely than those of modern large apes.

This was a Miocene form, and various species are known from Europe and from the Siwalik Hills in the Punjab. Several other fossil apes are known from these latter deposits (e.g., *Palaeopithecus* and *Sivapithecus*) as well as a jaw indistinguishable from that of a modern Orang-utan (*Pongo*).

It is believed that the Siwalik area was one of active Primate evolution and dispersal. With the upheaval of the Himalayas and the occurrence of glaciation, migrations took place, and one of the latest of these was responsible for the migration, (*a*) of *Dryopithecus* into Europe, (*b*) the ancestors of the Chimpanzee and Gorillas into Tropical Africa, and (*c*) the Gibbons and Orangs into Malaya.

*Australopithecus*, originally described as an Ape-man, is now known to have been an immature Ground Ape allied to the Gorilla, but of pigmy proportions and definitely less arboreal, and, therefore, approaching Man more closely than the existing Gorilla. Of the Gorillas, the highland from (*G. beringei*) is more terrestrial than the lowland animal, and has, as a result, evolved the most human foot of any living anthropoid.

The Chimpanzees have evolved into local races comparable to the races of human beings. These are characterized by pigmentary and hairy characters. Some Chimpanzees, like humans, go bald with age : others are black-faced and bearded, whilst some are white-faced or beardless. The most interesting is the black-faced Pigmy Chimpanzee (*Pan paniscus*) recently discovered on the south of the River Congo where Chimpanzees had previously not been suspected to occur.

Orangs are confined to Sumatra and Borneo. The Sumatran Orang is larger than the Bornean. Orangs have poor or no brow ridges, cheek pads, beards, and a shaggy coat of red hair. They are essentially arboreal, with long arms and short, weak legs.

Gibbons form a group of about a dozen kinds, scattered over East Bengal, Burma, Siam and Malaya. They have perfected arboreal progression and in so doing have departed from the line which led to the emergence of Man and the heavier anthropoids.

It is clear on geological as well as other grounds that Man and the Apes have developed *pari passu*, both having existed as such from Pliocene times. Gibbons and Chimpanzees little differing from modern types were already in existence in East Africa, at a time when modern types of Man had also been evolved. The apes are to be regarded rather as brothers of Man. No modern ape could possibly be regarded as Man's ancestor. Both are derivable from a common ancestor, which possessed generalized characters not definitely human nor definitely anthropoid in its modern sense. *Propliopithecus* could have been close to this hypothetical ancestor.

## One Hundred and Thirty-fifth General Meeting.

The One Hundred and Thirty-fifth General Meeting was held on 12-XI-1935, at 5.30 P.M., in the Lecture Hall of the Colombo Museum. The President took the chair and there was an attendance of thirty-three members and visitors.

The minutes of the previous meeting were read and confirmed.

Miss A. K. Joshua, B.Sc. (Lond.), was elected an Ordinary Member of the Society.

The President then called upon Prof. N. G. Ball to deliver his lecture on " Vegetation in Ceylon ". Prof. Ball showed a number of very interesting photographs taken by himself and coloured in natural colours by Mrs. Ball, illustrating the type of vegetation to be found in different parts of the Island. The photographs emphasized the fact that vegetation varied in different parts of the Island according to local climatic conditions. Those that could adapt themselves to live in those regions survived and the rest were eliminated. If often happened that two places had similar

climates, but differed in the actual specimens they presented. There were perhaps no places in the tropics, which could show so many varieties of plant life in such a small area.

At the conclusion of the lecture, remarks were offered by the President and Prof. F. O'B. Ellison. The lecturer suitably replied.

## One Hundred and Thirty-sixth General Meeting.

The One Hundred and Thirty-sixth General Meeting was held on 10-XII-1935, at 5.30 P.M., in the Lecture Hall of the Colombo Museum. The President occupied the chair and there was an attendance of fifty-six members and visitors.

After the minutes of the previous meeting were read and confirmed, Mr. L. G. O. Woodhouse delivered his lecture on " The Meaning of Colour and Adornment in Butterflies." Mr. Woodhouse expounded the theory of Major Hingston that colours in butterflies were more to terrify rivals or enemies rather than to attract males, as Darwin had explained. The lecture was very well illustrated. In the discussion which ensued, Messrs. R. H. Bassett, D. R. R. Burt, Prof. Ellison and Mr. P. Kirtisinghe took part.

*All blocks illustrating this Part by courtesy of the Survey Department, Ceylon.*

# PROCEEDINGS OF THE CEYLON NATURAL HISTORY SOCIETY, 1936-1937 SESSIONS

## Twenty-fourth Annual General Meeting

Minutes of the 24th Annual General Meeting, held 18-II-1936, at 5.30 P.M., in the Lecture Hall of the Colombo Museum. The President occupied the chair and there was an attendance of 45 members and visitors. After the minutes of the previous meeting were read and confirmed, Mr. D. Y. Padmaperuma, was elected an Ordinary Member of the Society.

The following Office-bearers were elected for the session 1936-37 :—

*Patron.*—H. E. Sir R. E. Stubbs, G.C.M.G.

*Vice-Patrons.*—Sir Solomon Dias Bandaranaike, K.C.M.G., Hon. Mr. D. S. Senanayake, the Minister of Agriculture and Lands.

*President.*—Prof. F. O'B. Ellison.

*Vice-Presidents.*—Mr. D. R. R. Burt, Dr. A. Nell, Prof. W. C. O. Hill, Prof. N. G. Ball, and Mr. A. H. Malpas.

*Honorary Secretary.*—Mr. D. C. Gunawardena.

*Honorary Treasurer.*—Mr. P. Kirtisinghe.

*Council.*—Messrs. E. C. T. Holsinger, P. E. P. Deraniyagala, G. M. Henry, L. G. O. Woodhouse, Dr. P. C. Sarbadhikari and Dr. S. E. Fernando. No student Member was elected.

Prof. F. O'B. Ellison and Mr. E. C. T. Holsinger were nominated for the office of President. A ballot resulted in Prof. Ellison being elected by 10 votes to 7. The new President thanked the Society for the honour they had done him and proposed a hearty vote of thanks to the retiring Office-bearers.

After the adoption of the reports of the Honorary Secretary and the Honorary Treasurer, Prof. W. C. O. Hill exhibited a preserved specimen of a double-headed calf, and a live specimen of a Lion Marmoset (*Leontocebus leoninus*).

Mr. A. H. Malpas then delivered his Presidential Address on " The Ceylon Pearl Oyster." The lecture was well illustrated. After explaining the general structure and life history of the Pearl Oyster, the lecturer referred to the cyst pearls which were most important commercially. The origin of pearls was still a matter of doubt. Pearls were not a natural product of the oyster, but an accidental one due to the stimulation of the mother of pearl cells by some foreign body. Reference was made to the commercial enterprise of Mr. Michimoto of Japan, who was well known for the culture of pearls.

In conclusion Mr. Malpas recommended research into the formation of pearls. Questions were asked by Prof. W. C. O. Hill, Messrs. P. Kirtisinghe, D. R. R. Burt and the President. The lecturer replied suitably.

Proceedings were brought to a close with a hearty vote of thanks proposed by the President to Mr. Malpas for his very interesting lecture.

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## One Hundred and Thirty-eighth General Meeting

Minutes of the 138th General Meeting, held 24-III-1936, at 5.30 P.M., in the Lecture Hall of the Colombo Museum.

The President occupied the chair and there was an attendance of 35 members and visitors. After the minutes of the previous meeting had been read and confirmed, Mr. A. L. John Pulle was elected to represent the Student Members in the Council of the Society.

Prof. W. C. O. Hill exhibited a series of specimens showing the development of the Grey Leaf-monkey (*Semnopithecus priam*) before birth. As compared with the human embryo, that of the Grey Leaf-monkey showed very little difference at about nine mm. Various differences, however, appeared as time went on. The crest on the head was important as it distinguished the Grey Leaf-monkey from the Black Leaf-monkey and separated the Madras and Ceylon animals from those of Northern India which had no crest at all.

Mr. D. R. R. Burt described the New Zealand Tuatara (*Sphenodon*) which was rapidly becoming extinct. A skeleton of this ' living fossil ' was passed round. The skull showed an aperture in the centre of the forehead for a third eye found in primitive types, but this was covered with skin as in the case of the water monitor.

The President gave an account of methods of Colour Photography and showed a number of slides illustrating this process. Professors N. G. Ball and W. C. O. Hill showed some slides of colour photography which they had prepared, after which proceedings were brought to a close.

## One Hundred and Thirty-ninth General Meeting

Minutes of the 139th General Meeting, held on 14-VII-1936 at 5.30 P.M., in the Lecture Hall of the Colombo Museum.

The President occupied the chair and there was an attendance of 39 members and visitors. After the minutes of the previous meeting had been read and confirmed Dr. L. Nicholls delivered his lecture on " The Food of the People of Ceylon." Dr. Nicholls had made an intensive study of the diets in use in Ceylon and of the effects on the poorer classes of the poor diets which many of them consumed. The lecture was illustrated with lantern slides and graphical sharts showing the heights and weights of children. From his nutritional survey Dr. Nicholls had arrived at the following conclusions :—

1. A considerable proportion of the skin eruptions and diseases of the teeth of the poorer classes are due to dietary deficiencies.

2. The diet of the vernacular school children was deficient in proteins, too rich in carbohydrates, insufficient in fats and oils and deficient in minerals and vitamin A.

3. The result of a difference in diet showed that the boys of the Royal College—composed mainly of the sons of the rich—were taller and heavier than the boys in the other secondary schools, who in turn were taller and heavier than the vernacular school boys.

4. Strict vegetarianism was bad for growing children and expectant mothers. There never was a vigorous well grown vegetarian race of men. If better races were to appear in Ceylon it was necessary to increase the production of foodstuffs of animal origin,

Mr. D. R. R. Burt, Dr. A. Nell and Prof. W. C. O. Hill and the Secretary offered remarks.

Proceedings were brought to a close by the Chairman who proposed a hearty vote of thanks to Dr. Nicholls for his very interesting and instructive lecture.

## One Hundred and Fortieth General Meeting

Minutes of the 140th General Meeting, held on 8-IX-1936, in the Lecture Hall of the Colombo Museum.

The President occupied the chair and there was an attendance of 32 members and visitors.

After the minutes of the previous meeting had been read and confirmed, Mr. G. M. Henry exhibited two Giant Moths and two species of the Tarantula. The Atlas Moth was one of the largest in the East. It made its cocoon specially on the cinnamon leaf, while the Tusser Moth, from which tussore silk was made, showed a partiality for the leaves of the country almond.

The two species of Tarantula, showed no cannibalistic tendencies nor did they eat birds, in spite of the popular reference to them as bird-eating spiders.

Mr. P. E. P. Deraniyagala, exhibited a live *Dryophis* (snake), popularly known as Henakandaya. Though it was much dreaded by people, it was only mildly poisonous. He next showed some crocodile skins and exhibited a brood of young crocodiles. The mother which belonged to the species *Crocodylus porosus* was shot in the Bolgoda Lake. Its skin, unlike that of other species, had a great commercial value. He proposed to watch the growth of the baby crocodiles and experiment on the possibilities of rearing them on a commercial basis.

Mr. P. Kirtisinghe demonstrated some specimens of fossilized crabs found in Trincomalie and described them briefly.

The President brought the proceedings to a close by displaying under the microscope different types of sand he had gathered from the seabeach at Hambantota. They possessed a remarkable richness of colour and in lustre were akin to precious stones.

## One Hundred and Forty-first General Meeting

Minutes of the 141st General Meeting, held on 13-X-1936, in the Lecture Hall of the Colombo Museum.

The President occupied the chair and there was an attendance of 20 members and visitors.

After the minutes of the previous meeting had been read and confirmed, the President gave a brief account of the formation of igneous rocks and exhibited under the microscope some slides of igneous rocks from the British Isles.

Prof. W. C. O. Hill exhibited a mounted specimen and the bones of a Sumatran Orang-utan and described it fully. It had died in course of shipment in Colombo. It was a rare and almost extinct form of Orang and was much larger than the Bornean type. This was clear by a comparison of the skeletons. But it was not quite certain whether they were two different species.

Mr. G. M. Henry next exhibited a caterpillar of the Tusser Moth and a small Centipede (*Orphnaeus brevilabiatus*). The Velvet Mite (*Trombidium grandissimum*) were parasitic on the grasshopper in the early stages and lived in burrows later. They were common in the dry regions during the rains. The Tarantula lives in crevices and dark places. Its bite is harmless to man.

The Secretary in a note on the Natural History of Mannar showed some photographs and exhibited specimens illustrative of the flora of Mannar. Those adapted to physical drought were the Umbrella Tree, the Cockspur Thorn and the Baobab Tree which was introduced to Ceylon by the Arabs in ancient times; while those adapted to physiological drought were *Salicornia*, *Suaeda* and *Sesuvium*.

Of zoological interest were the Mushroom-like sponge, the *Murex* the source of the ancient purple dye, and the Catfish or Crucifix Fish, the male of which guarded the nest and the young. The observation of Aristotle in the waters of the Acheolus was confirmed only in the 19th century by Agassiz who discovered a similar phenomenon in the American Catfish.

## One Hundred and Forty-second General Meeting

Minutes of the 142nd General Meeting, held on 18-IX-1936, in the Lecture Hall of the Colombo Museum.

The President occupied the chair and there was an attendance of 59 members and visitors.

After the minutes of the previous meeting had been read and confirmed Dr. R. L. Spittel gave a description of the life and habits of the Veddahs, illustrating his remarks by screening two reels depicting Veddah life. At the conclusion of the lecture several questions were asked to which the lecturer replied suitably and the meeting terminated.

## One Hundred and Forty-third General Meeting

Minutes of the 143rd General Meeting, held on 8-XII-1936, in the Lecture Hall of the Colombo Museum.

The President occupied the chair and there was an attendance of 23 members and visitors.

After the minutes of the previous meeting had been read and confirmed, Dr. A. W. R. Joachim delivered his lecture on " The Important Soil Groups of Ceylon and their General Distribution ". Before dealing with the subject proper, the lecturer outlined the principle and methods underlying modern soil classification and survey work. He then classified the major soil groups of Ceylon as follows :—

1. The laterite and lateritic, red and yellow loams of the wet and dry zones.

2. Soils derived from limestones (Miocene and crystalline) and Jurassic rocks red loams.

3. Organic deposits overlying red and yellow earth—the patna soils fern-land or kekilla soil and low lying peat soils.

4. Residual and transported deposits—Coconut soils, cinnamon soils and gravelly soils.

5. The recent alluvial and marine deposits—paddy soils and coastal sands.

The lecture was illustrated by several charts and a map and some samples of Ceylon soils were exhibited. After a few questions were asked and suitably replied to, the Chairman expressed the thanks of the Society to Dr. Joachim for his interesting lecture after which proceedings were brought to a close.

## One Hundred and Forty-fourth General Meeting

Minutes of the 144th General Meeting held on 12-I-1937, in the Lecture Hall of the Colombo Museum.

The President occupied the chair and there was an attendance of 30 members and visitors.

After the minutes of the previous meeting were read and confirmed, Mr. P. E. P. Deraniyagala delivered a lecture on " The Big Game Fishes of Ceylon ". A game fish was not merely a large fish but one that fought hard until it was landed. Big game fishes were of interest in that they disclosed distinct migratory tendencies and serve in studying those seasonal changes in the ocean that affected the migrations of the other food fishes.

The best known fresh water game fish was the Mahseer (Lehella) found in the rivers and around Rakwana. Next was the Valleya, a catfish. The Ara (*Ophicephalus marulius*) frequently leapt at Kingfishers and at times seized snakes basking on branches overhanging the river. The lagoons had two good game fishes: the Modha (*Lates calcarifer*) and the Kalava (*Polydactylus sexifilis*). They were common at Elephant Pass. Strictly marine were the Mackerel-like forms, which are the swiftest and strongest of the hard-boned ocean fishes. The Sier-fishes (Thoru) were common especially off Point Pedro.

The Tunnies or blood fishes were the Bonito (Balaya) used in the preparation of Maldive fish and the smaller Atevalla. Dolphin fishes were beautifully coloured, their flesh was dark and resembled meat. The best of the game fishes were the beaked forms. The Broad-billed Sword Fish (Kadu Koppera) was now known to be found in the Indian Ocean. The big game fishes were important for economic purposes and sport. With careful mapping out of the regions and periods of migration, extensive fishing could be begun in the Indian Ocean as is done in the Pacific.

At the conclusion of the lecture several questions were asked to which the lecturer replied. A suggestion was made to the Council of the Society to consider the alteration of the time of the meeting from 5.30 to 6 P.M. After a hearty vote of thanks proposed to the lecturer by the President, the meeting terminated.

## Twenty-fifth Annual General Meeting

Minutes of the 25th Annual General Meeting, held on 9-II-1937, in the Lecture Hall of the Colombo Museum.

The President occupied the chair and there was an attendance of 41 members and visitors.

After the minutes of the previous meeting had been read and confirmed, Mrs. L. M. Steele and Mr. A. C. J. Wirakoon were elected ordinary members of the Society.

The Reports of the Honorary Secretary and Honorary Treasurer were then adopted.

The following Office-bearers were elected for the session 1937-1938:—

*Patron.*—H. E. Sir R. E. Stubbs, G.C.M.G.

*Vice-Patrons.*—Sir Solomon Dias Bandaranaike, K.C.M.G., Hon. Mr. D. S. Senanayake, the Minister of Agriculture and Lands.

*President.*—Prof. W. C. O. Hill.

*Vice-Presidents.*—Prof. N. G. Ball, Mr. A. H. Malpas, Dr. P. C. Sarbadhikari, Mr. W. W. A. Phillips, Prof. F. O'B. Ellison.

*Honorary Secretary.*—Mr. D. C. Gunawardena.

*Honorary Treasurer.*—Mr. P. Kirtisinghe.

*Council.*—Mr. P. E. P. Deraniyagala, Mr. G. M. Henry, Dr. S. E. Fernando, Mr. D. R. R. Burt, Dr. A. Nell, Mr. R. B. Naish.

Prof. F. O'B. Ellison delivered his Presidential Address on " Living Lights ". He said that the property of giving off light is found in plants only among the fungi; some bacteria and some mushrooms alone showing the phenomena of luminosity. The claim has been made for some mosses, e.g., *Schistostega osmundacea* found in caves, and even some flowering plants, but the apparent light from the former is only reflected light, like a cat's eye in the dark or a luminous reflecting road sign, and luminosity in the latter has not been confirmed. Some bacteria and some mushrooms, however, shine brightly. Luminous bacteria are used for testing filters for leaks.

Luminous animals on the other hand are found among the Protozo, Coelenterata, Molluscoide, Annulata, Echinodermata, Arthropoda, Mollusca and the Chordata, but no fresh water forms are known.

The nature of the light: It is due to a chemical reaction. A protein *luciferin* (very stable and may be boiled with acid) is oxydised to *oxyluciferin* by an enzyme *luciferase*, not necessarily in the animal's body but often in the surrounding water into which the mixture is discharged, but oxygen must be present.

The light is remarkable for its economy, practically no heat being produced. Efficiency 96 per cent., electric arc 7 per cent., ½ watt lamp 3 per cent., Spectrum yellow to blue only.

Structure of light organs: light often associated with granules. The structures are glandular or eye-like.

Function of the light production: in bacteria probably accidental, also in fungi and protozoa.

In some it may be a warning sign; in others a lure for its prey. In some worms, a distraction, like the wriggling, severed tail of a lizard. In the deep-sea fishes, undoubtedly for a lantern to find their way about and see their food, as it is pitch dark below 2,000 feet and luminous fishes have good large eyes.

The lecture was fully illustrated and a very interesting discussion followed in which several members took part. The President proposed a hearty vote of thanks to the lecturer for his very illuminating address.

Two decisions of the Council were then announced to the meeting (*a*) that meetings would in future be held at 6 P.M. and not at 5.30 P.M. (*b*) that each lecturer or exhibitor should give the Secretary a summary of his talk for insertion in the minutes and later in the *Ceylon Journal of Science*. This summary should reach the Secretary at least 10 days before the next meeting; otherwise there would be no report of the talk either in the minutes or in the Proceedings which are published in the *Ceylon Journal of Science*.

## One Hundred and Forty-sixth General Meeting

Minutes of the 146th General Meeting, held on 9-III-1937, in the Lecture Hall of the Colombo Museum.

The President occupied the chair and there was an attendance of 31 members and visitors.

After the minutes of the previous meeting were read and confirmed, Dr. A. Nell read a paper on the Proposed Fauna and Flora Ordinance.

The Honorary Secretary exhibited nests of the Weaver bird, *Ploceus philippinus*, from Katuwana in the Southern Province, and Tamarisk plants from the mouth of the Aruvi Aru. There were many theories of the so called ' male nest ' and the truth could be arrived at only by field observations. Mr. G. M. Henry referred to the field observations of Mr. S. Ali in an issue of the *Journal of the Bombay Natural History Society*, which disproved the old theories. The Tamarisk, *Tamarix indica*, a variety of which is referred to as the manna in the Bible, flourished on the sand-banks of the Aruvi Aru. The *Mahavamsa* showed that the Tamarisk was once cultivated as an ornamental tree in the Royal Park at Anuradhapura. The shrub is beautiful in foliage as well as in flower, and its cultivation in Colombo gardens was worth considering.

The President showed a coloured cinematograph film (on a projector kindly lent by Dr. R. L. Spittel), which he had taken during December, 1936, when the Pelicans and the Painted Storks at the Museum Zoo, were engaged in nest building and incubating eggs. The Pelican was shown sitting on her nest made of sticks on top of one of the large aviaries. The male bird was shown on guard at the top of one of the high trees. On one side of the Polican's nest, was shown a nest also of sticks, &c., built by the Painted Storks. The second half of the film showed the waterfowl being fed with fish at the pond. Besides the species already mentioned, examples of Spoonbill, Ibis, Grey Heron and Parson Stork, were presented on the film.

It was decided to celebrate the 25th Anniversary of the Society by a Natural History Exhibition. The Secretary was requested to make the necessary arrangements and invite the co-operation of the members and of kindred Societies. The meeting then terminated.

## Twenty-fifth Anniversary Celebrations

The 25th Anniversary Celebrations was held on 27-VII-1937 at 5 P.M., in the Lecture Hall of the Colombo Museum.

The exhibits and demonstrations were as follows :—

Prof. W. C. O. Hill.— { The Evolution of Primates.
The Evolution of the Primate Brain.

Dr. A. Nell.—Prehistoric Stone Implements.

Prof. F. O'B. Ellison.—Radiation Pressure of Light.

Miss A. K. Joshua.— { Vertebrate Embryology.
Plant Nutrition.

Dr. P. C. Sarbadhikari.—Some living and ancient Plants.

D. C. Gunawardana, Esqr.— { Male Nests of the Weaver Bird.
Branched Areca Palm.

W. Richard de Silva, Esqr.—Fungi, Thorny Plants, &c.

*Lantern Slides.*

Rev. Fr. M. J. Le Goc, O.M.I.— { Cycas.
Double Orchids.

Prof. F. O'B. Ellison.—Ceylon Sunsets in Colour.

A large number of visitors were present. Explanatory talks on their exhibits were given by the President, Prof. F. O'B. Ellison, Dr. A. Nell, and Miss A. K. Joshua and Fr. M. J. Le Goc.

Tea was served at 5.30 P.M.

The President brought the meeting to a close by thanking all the members and visitors for their kind presence and encouragement. The Secretary wishes to express his sincere thanks to those members who co-operated with him to make the exhibition a success by their exhibits and demonstrations.

## One Hundred and Forty-eighth General Meeting

Minutes of the 148th General Meeting held on 14-IX-1937, in the Lecture Hall of the Colombo Museum.

The President occupied the chair and there was an attendance of 29 members and visitors.

After the minutes of the previous two meetings were read and confirmed, Prof. E. K. Wolff delivered his lecture " On the Principles of Prevention of Tuberculosis in Ceylon ". The lecture was well illustrated. (See *C. J. of Sci. D.* Vol. IV, pp. 165-178 for full account.)

Proceedings were brought to a close by the Chairman who proposed a hearty vote of thanks to the lecturer.

## One Hundred and Forty-ninth General Meeting

Minutes of the 149th General Meeting held on 19-X-1937, in the Lecture Hall of the Colombo Museum.

The President occupied the chair and there was an attendance of 24 members and visitors.

After the minutes of the previous meeting were read and confirmed, Prof. E. K. Wolff, M.D.; Mr. J. R. de la H. Marett, B.Sc., and Mr. P. I. Roberts, B.A., were elected ordinary members and Messrs. T. Samuel, T. de Kretser, and K. C. A. Silva were elected student members.

Mr. G. M. Henry exhibited three grasshoppers (*Tettigoniidae*) and briefly explained their habits.

Mr. J. R. de la H. Marett then delivered his lecture on the " Genetical Theory of Natural Selection ". After a brief outline of the mechanism of heredity as understood to-day, the lecturer set out first of all to describe the effect on the Darwinian hypothesis produced by the discoveries of Mendel and of the many facts of genetical science that have since been established. Modern genetics sprang from the work of Morgan who showed that what Bateson had recognized as unit hereditary characters or Mendelian factors must be the result of so-called genes lineally arranged on the chromosomes that were visible within the cell nuclei. Following the development of a technique of fruit-fly breeding, whereby genes could be mapped and their progress traced through succeeding generations, Müller and others were able artificially to transform these gene-effects thus bringing about the mutations first recognized by de Vries and since his day regarded as the most probable source of that novelty on which the constant variability called for by the theory of Evolution through Natural Selection must depend.

None the less, closer acquaintance with the facts of modern genetics revealed almost as many shortcomings in the so-called genetical theory of Natural Selection as it provides supports. Thus the lecture resolved itself into a brief recapitulation of some difficulties that are fairly well recognized followed by an attempt to offer some constructive and in some cases original suggestions as to how, despite the apparently unsatisfactory device of random mutation, certain accelerating and regulatory devices might together be believed to have used it as a foundation and so, in combination with it, contributed towards the adaptational perfection that we observe in Nature. The devices in question which were dealt with serially, were inbreeding, sexual selection, racial mixture, and a fourth so-called Neo-Lamarckian process based on a presumed variability in the inherited capacity for self modification through effort and experience.

An interesting discussion followed, after which a vote of thanks was passed to Mr. Marett for his interesting lecture.

## One Hundred and Fiftieth General Meeting

Minutes of an Extraordinary General Meeting held on 6-XII-1937, at 9 P.M. in the Lecture Hall of the Colombo Museum.

His Excellency the Governor presided and there was a large attendance of members and visitors. Prof. W. C. O. Hill demonstrated two preserved specimens of the primitive South American Monkey *Aotes*.

Mr. L. G. O. Woodhouse then delivered his lecture on " Ceylon Butterflies ". The lecture was well illustrated. The meeting terminated with a vote of thanks proposed by the Chairman to Mr. Woodhouse for his interesting lecture.

*All blocks illustrating this Part by courtesy of the Survey Department, Ceylon.*

# Some NHS Publications

## The "Knuckles Expedition" as described in PG Cooray's "Knuckles Massif – A Portfolio" (1998)



### THE KNUCKLES EXPEDITION, 1956

In August, 1956, there took place the first, and probably the only organised scientific expedition to any part of Sri Lanka. It was what became known as the 'Knuckles Expedition' and it was made to the heart of the Knuckles Massif, a hitherto unexplored and little known area of the island. The expedition was jointly organised by the Ceylon Geographical Society and the Ceylon Natural History Society, with the support of the Ceylon Army and the Ceylon Observer. The aim of the Knuckles Expedition was to carry out a reconnaissance survey of the area in respect of the physiography, geology, vegetation and animal life.

The Knuckles Expedition team consisted of :-

| | | |
|---|---|---|
| P.G. Cooray. | - Geologist and Leader | S.B.V. Perera – Geographer |
| R.A. de Rozario | - Forester & Deputy Leader | D.K. Erb – Geographer |
| Victor Merritt | – Forester | Alan Caldera - Geographer |
| Christopher Wickremasinghe | - Wild Life Observer | Hemapala & Punchirala - Cooks |
| | | 40 Bearers |
| B.A. Abeywickrema | - Botanist | |
| S. Sivalingam | – Zoologist | |
| R.A.P. Malalasekera | - Zoologist | |
| Cecil Wickramanayake | - Ceylon Observer Correspondent | |

The Expedition began from Corbet's Gap on 15 August and ended on 25 August at Bambrella Estate, during which time the team traversed on foot an area of about 60 sq. miles, ranging from 1000 to 4500 feet above m.s.l. The main Expedition was preceded by an Advance Party, made up chiefly of army personnel led by three officers, one of whom was Lt. Godwin Schokman. The main objectives of this advance party were to establish a route for the main Expedition and to set up a camp on Kalupahana. They achieved their objectives by splitting up into two parties, one starting from Mimure and the other from Bambrella (see Map 4) and meeting at the foot of Kalupahana, where a camp was established at 4100 ft. The Advance Party experienced very bad weather from the start, and at one stage it looked as if the Expedition would have to be postponed. In addition, the Bambrella party had the arduous task of cutting a path through bamboo thicket and tangled stunted vegetation before finding a route across the main Knuckles range.

The Knuckles Expedition programme :-

Aug. 15 : Colombo to Dehigolla Estate. Night at Dehigolla

Aug. 16 : Dehigolla – Corbet's Gap – Mimure, 3000 ft. below Corbet's Gap and eight miles away.

Aug. 17 : Traverses to places around Mimure, eg. Lakegala, by individuals and small groups.
Nights at Mimure.

Aug. 18 : Expedition team to Nitre Cave.

Aug. 20 : Mimure to Advance Camp, Kalupahana.

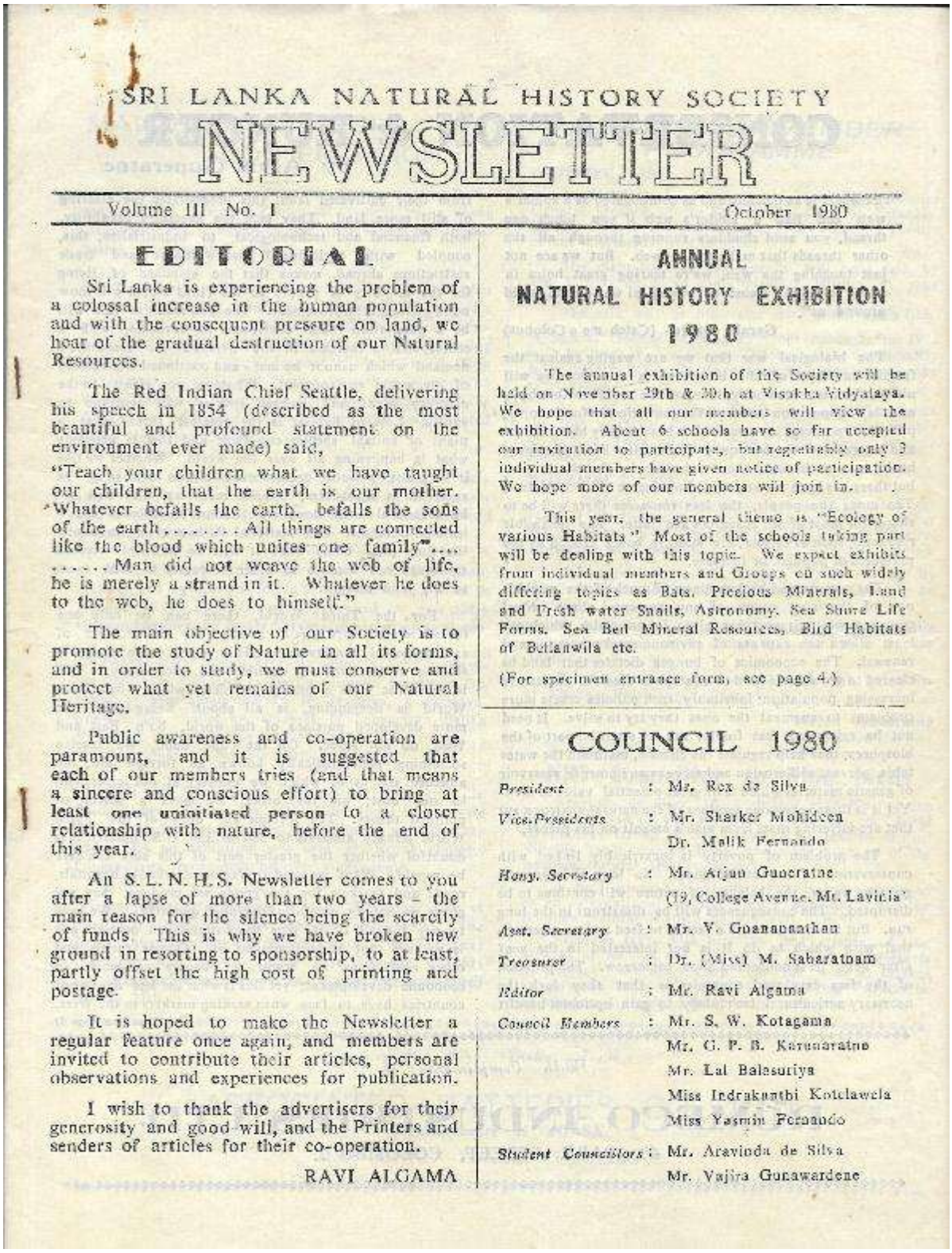
Aug. 21-23 : Traverses to Wanarabugala, The Palana and Selvakanda Plateau.
Celebratory Dinner & Impromptu Concert.

Aug. 24 : Kalupahana – Selvakanda – Bambrella Estate. To Madulkele for the night.

Aug. 25 : Return to Colombo.

# Newsletter of the Society circa 1980

In 1980, a newsletter for the society was introduced. There was no previous record of the presence of such a publication. It was edited by Ravi Algama during the Presidency of Rex De Silva.



SRI LANKA NATURAL HISTORY SOCIETY

NEWSLETTER

Volume III No. 1 October 1980

## EDITORIAL

Sri Lanka is experiencing the problem of a colossal increase in the human population and with the consequent pressure on land, we hear of the gradual destruction of our Natural Resources.

The Red Indian Chief Seattle, delivering his speech in 1854 (described as the most beautiful and profound statement on the environment ever made) said,

"Teach your children what we have taught our children, that the earth is our mother. Whatever befalls the earth, befalls the sons of the earth..... All things are connected like the blood which unites one family"..... ..... Man did not weave the web of life, he is merely a strand in it. Whatever he does to the web, he does to himself."

The main objective of our Society is to promote the study of Nature in all its forms, and in order to study, we must conserve and protect what yet remains of our Natural Heritage.

Public awareness and co-operation are paramount, and it is suggested that each of our members tries (and that means a sincere and conscious effort) to bring at least one uninitiated person to a closer relationship with nature, before the end of this year.

An S. L. N. H. S. Newsletter comes to you after a lapse of more than two years - the main reason for the silence being the scarcity of funds. This is why we have broken new ground in resorting to sponsorship, to at least, partly offset the high cost of printing and postage.

It is hoped to make the Newsletter a regular feature once again, and members are invited to contribute their articles, personal observations and experiences for publication.

I wish to thank the advertisers for their generosity and good will, and the Printers and senders of articles for their co-operation.

RAVI ALGAMA

## ANNUAL NATURAL HISTORY EXHIBITION 1980

The annual exhibition of the Society will be held on November 29th & 30th at Visakha Vidyalaya. We hope that all our members will view the exhibition. About 6 schools have so far accepted our invitation to participate, but regrettably only 3 individual members have given notice of participation. We hope more of our members will join in.

This year, the general theme is "Ecology of various Habitats". Most of the schools taking part will be dealing with this topic. We expect exhibits from individual members and Groups on such widely differing topics as Bats, Precious Minerals, Land and Fresh water Snails, Astronomy, Sea Shore Life Forms, Sea Bed Mineral Resources, Bird Habitats of Bellanwila etc.

(For specimen entrance form, see page 4.)

## COUNCIL 1980

| | | |
|---|---|---|
| *President* | : | Mr. Rex de Silva |
| *Vice-Presidents* | : | Mr. Sharker Mohideen |
| | | Dr. Malik Fernando |
| *Hony. Secretary* | : | Mr. Arjun Gunaratne |
| | | (19, College Avenue, Mt. Lavinia) |
| *Asst. Secretary* | : | Mr. V. Gnanasathan |
| *Treasurer* | : | Dr. (Miss) M. Saharatnam |
| *Editor* | : | Mr. Ravi Algama |
| *Council Members* | : | Mr. S. W. Kotagama |
| | | Mr. G. P. B. Karunaratne |
| | | Mr. Lal Balasuriya |
| | | Miss Indrakanthi Kotelawela |
| | | Miss Yasmin Fernando |
| *Student Councillors* | : | Mr. Aravinda de Silva |
| | | Mr. Vajira Gunawardene |

# CONSERVATION & HUNGER

by Arjun Guneratne

"The world is as delicate and as complicated as a spider's web and like a spider's web if you touch one thread, you send shudders running through all the other threads that make up the web. But we are not just touching the web, we're tearing great holes in it; we're waging a sort of biological war on the world around us".

**Gerald Durrel** (Catch me a Colobus)

The biological war that we are waging against the fragile envelope of the biosphere is one that we will ultimately lose. Ironically, many of the problems that beset us today - population increases that outstrip the food supply, pollution, poverty- are ones which have largely been created and aggravated by our quest for a better life. Improved health care has brought about a decline in the death rate, but there has been no corresponding degree of birth control. The more the people, the less resources there will be to share; for most of our resources are finite. The renewable resources, such as forests, are steadily being eroded by the pressures of population increase.

The poverty and backwardness of much of the world is one of the root causes of environmental abuse. Most environmental misuse takes place in countries which can least afford the expense of environmental protection and renewal. The economics of hunger dictates that land be cleared to grow more food to attempt to feed the constantly increasing population; inevitably, such policies create more problems to augment the ones they try to solve. It need not be reiterated that forests are an essential part of the biosphere; they help regulate the climate, maintain the water table, prevent soil erosion and serve us an immense reservoir of genetic material which is of great potential value to man. Yet it is these very same sections of the natural environment that are suffering most from man's assault on his planet.

The problem of poverty is inextricably linked with conservation of the environment. So long as large scale poverty exists, the balance of nature will continue to be disrupted. The consequences will be disastrous in the long run. But the peasant with a family to feed and no wherewithal with which to do it is not interested in the year after next; he is concerned about tomorrow. The problem of the less developed countries is that they lack the necessary agricultural technology to gain optimum benefit from their cultivated land; this necessitates the clearing of still more land. They lack the necessary capability, both financial and technological, to industrialize; this, coupled with agricultural backwardness and trade restrictions abroad, means that the standard of living for the majority of people in the Third World will show no significant improvement. The end result of this will be a population that continues to increase, with a corresponding increase in the demand for resources-a demand which cannot be met - and continued destruction of the world environment. Whatever our efforts to the contrary, plant and animal species will continue to vanish. Loss of habitat is the greatest threat that a plant or animal species can face; and this is precisely what is happening all over the world. Whether we like it or not, present conservation efforts can only be regarded as short-term, interim measures; they will not be successful in the long run, except possibly in a few isolated instances. Our National Parks are not inviolate; the time will come when it will be political wisdom (although not wisdom in other respects) to feed them to the land hungry.

For the Third World, there can be only one successful and permanent solution to the problem of environmental conservation. This is the more equitable sharing of the world's wealth and technology. This is what the New Economic Order, which the Third World is demanding, is all about. Regrettably, the more developed portions of the world, both East and West, do not agree. On the one hand, we receive something euphimistically known as foreign aid, the attached strings of which we unravel at our leisure and to our cost; on the other, we have a surfeit of political theory. The foreign aid debt of the Third World already amounts to 300 billion U.S. dollars; it is doubtful whether the greater part of this sum can ever be repaid. What we need are factories, schools, hospitals, roads and markets for the goods we produce; they are given us but in carefully controlled quantities. We have to pay for all of it, plus the interest; an outright gift is so rare that it is remarked on. Quotas, tariffs and other restrictions on trade are hardly conducive to economic development; yet this is what the less developed countries have to face when seeking markets in the West.

**(Continued on Page 4)**

# CONSERVATION & HUNGER

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(Continued on Page 4)

## MARCHING ON FOR CONSERVATION.....

The planting of a Thimbiri Tree near the Restaurant of the Dehiwela Zoological Gardens by a young Conservationist, inaugurated the first March for Conservation on May 10th 1980.

The march itself was the culmination of a number of activities ranging from Essay, Poster & Photographic contests for schools to a Wildlife Exhibition and all these were organized by a committee formed by the following Field Ornithology Group, Natural History Society, Ruk Rakaganno, Wildlife and Nature Protection Society and Young Zoologists' Association, under the patronage of the Department of Wildlife Conservation and co-sponsored by the New York Zoological Society.

Headed by a massive model of an elephant, a very impressive procession of Kandyan Dancers, a baby elephant and over five hundred Conservationists young and old poured out of the Zoo.

Even though it was high noon, more and more school children and teachers joined the procession, which, when it reached Galle Face Green had swelled to over three thousand banner and poster carrying, slogan shouting people

At the Night Bazaar Area, the campaign for conservation wound up with speeches by Dr. Osmund Jayaratne, Dr. (Miss) M. Subaratnam and Mr. H. Jayesena, a conservation-oriented ballet by students of Sangamitta Balika Vidyalaya and a film on leopards by Mr. Dieter Plage.

Altogether 12 Schools participated.

This was followed up with another programme in Polonnaruwa. From the 15th - 22nd June, films were shown and lectures delivered in 8 villages, and from the 24th - 28th an exhibition was held at Royal College, Polonnaruwa, patronised by over 6000 people.

Another programme was held on September 26th at the Kandy Districts Scouts Jamboree at Polwatte. The theme at the Jamboree was "conservation". While posters and films were shown, prizes were awarded for Art and Oratorical Competitions. A Route March followed on the 27th.

## OCTOBER - NOVEMBER PROGRAMME

**OCTOBER 1980**

1. Notice is hereby given that the 376th Ordinary General Meeting of the Society will be held on Saturday, October 11th at 6.15 p.m. in the Biology Lecture Theatre of the University of Colombo.

The main item on the agenda will be a talk by Dr. T. S. U. de Zylva on "Natural History at your Doorstep".

The talk will be illustrated with slides and a film.

A Special General Meeting to adopt Accounts for 1979 will be held at 6 p.m. on October 11th, immediately prior to the 376th Ordinary General Meeting, at the same venue.

2. Bird Study Group - Field Trips to Bellanwila on the 18th and 25th of October. Members meet at Temple at 4 p.m. (Bus route 119 or 119/3 from Dehiwela Junction).

**NOVEMBER 1980**

1. Notice is hereby given that the 377th Ordinary General Meeting will be held on Saturday, November 8th at 6.15 p.m. in the Biology Lecture Theatre, University of Colombo.

The main item on the agenda will be a talk by Dr Osmund Jayaratne of the University of Colombo on 'Clouds'.

2. Bird Study Group - Field Trips to Bellanwila on November 15th & 22nd, Members meet at the Temple at 4 p.m.

3. Annual Exhibition on 29th & 30th November at Visakha Vidyalayaya, Colombo 4.

Arjun Gunaratne
*Hony Secretary.*

## NHS Councillor to Ring Birds

Aravinda de Silva, 18, a student councillor of the SLNHS is one of two members chosen by the Field Ornithology Group of Sri Lanka to be trained in Bird Ringing Techniques in India, under the auspices of the Bombay Natural History Society.

A Bird Ringing Programme too, is being organised as an international project jointly conducted by the Bombay Natural History Society and FOGSL.

Aravinda takes with him the best wishes of the SLNHS as well as our felicitations to our counterparts in Bombay. We are certain that the wide experience he gains in India will benefit the Ringing Projects to be conducted in Sri Lanka, early next year.

# BATS (Order Chiroptera)

— Dr. Malik Fernando.

*Abstract of a talk by the author to the SLNHS on August 30th 1980, illustrated by reference to a live Pipistrellus mimus - Southern Coast Pipistrel*

Bats are nocturnal flying mammals, showing interesting adaptations for this mode of existence. All bats fly well, but there is variation within the group as regards food, hunting range (vertical), roosting habits etc.

The flying surfaces consist of skin membranes supported by the four limbs and tail. The upper limb is greatly elongated, especially the 2nd to 5th digits, forming a wing. (The name of the Order 'Chiroptera' is taken from the Greek words meaning Hand-Wing.)

The fruit-eating bats can be distinguished by their cheek teeth, which are relatively smooth with a shallow groove. They also have relatively large eyes and the root of the ear describes a circle. There are 4 species in one family in Sri Lanka.

The insect-eaters have cheek teeth which bear sharp cusps. We have 25 species in 5 families in this country, feeding on flying insects generally harmful to man like mosquitoes, beetles, termites and moths. Members of one family, the Oriental Vampire Bats, also feed on small animals like geckoes. Some bats in other parts of the World feed on fishes and the Vampire Bats of Central and South America feed on mammalian blood. Other distinguishing features of these bats are large, forward directed ears with a non-circular root, relatively small eyes and, in 2 families, large structures on the nose termed nose-leaves. These nose-leaves and the large ears are part of the bats' echo-location apparatus (similar to radar) with which they find their way about in the dark. The two families with nose leaves are the most highly specialized nocturnal hunters and feed within a few feet of the ground, in and around bushes and dwellings. The other three families hunt for their insects over the tops of bushes and trees (1 family) or far above tree leave), 30' to 100, above ground.

Bats are, by and large, beneficial to man, destoying vast numbers of insect pests. The fruit-eaters, however, can be pests in orchards. We do not have the disease-carrying Vampire Bats in Sri Lanka.

## ANNUAL EXHIBITION 1980

**Specimen Entrance Form**

1. Name of Participant/School:.....
   .....
2. Topic of Exhibit:.....
   .....
3. Requirement of Table Space:.....
   (in square feet)
4. Requirement of Wall Space:.....
   (in square feet)
5. Any other requirements:.....
   (provision can't be guaranteed)
   .....
   .....

.....  .....
Date  Signature

(Continued from Page 2)

In addition, the excessively consumer oriented life style of the more developed world makes heavy demands on the planet's available natural resources, such as timber. When the population increases, the existing pressures on the environment will also increase. History has shown that the birth rate falls significantly only when the standard of living rises significantly for the majority of the people. For this to happen on a world - wide scale international co-operation is necessary. When it is a question of sharing wealth, international co-operation is conspicous by its absence.

This, then is the vicious circle we face today: poverty leading to population growth which in turn means more pressure on the environment. Environmental impoverishment means a further decline in living standards, more poverty and more hardship. A fairer sharing of wealth and resources could well lead to a healthier planet Earth: the tragedy is that this seems, disturbingly, a Utopian dream.

# PATTERN & COLOURATION IN FISHES

by Rex De Silva F.Z.S.

*(The following article has been culled from the presidential address delivered by Mr. Rex de Silva, at the Annual General Meeting of the SLNHS held on April 26th. 1980.)*

There are few groups of animals which exhibit the diversity of pattern and colouration found in the marine fishes - perhaps the only rivals to the fish in this respect are the butterflies and birds. Let us therefore carefully consider this group and attempt to find out what purposes this variety of patterns and colouration serve.

To begin with, certain rough generalisations may be made in relation to habitat. For instance the free - swimming pelagic fish are often dark on their backs, have silvery sides and white ventral surfaces. Again many bottom dwellers exhibit intricate markings above with pale or whitish ventral surfaces. There also appears to be some co-relation of colour with depth. A large number of pelagic oceanic species exhibit silvery colouration in the upper regions of the water, red in the middle depths and violet or black in the greatest oceanic depths.

Let us now briefly examine the mechanisms responsible for the colouration of marine fishes. There are two types of cells which are responsible for the colouration and pattern. They are:

I. The Iridiocytes - "mirror" cells containing mainly guanin. These mirror cells reflect the colour of the environment. It is these cells which give the iridiscent appearance to many fish.

II. Chromatophores - the pigment cells often present in the skin or sometimes outside or below the scales. The cytoplasmic inclusions (pigment granules) are the actual sources of colour. Chromatophores come in a variety of colours, for instance orange (erythrophores), yellow (xanthophores), black (melanophores) etc. A combination of two or more types of chromatophores gives rise to the many shades of colour found in fishes. For example, melanophores and xanthophores combined give the impression of brown. Many fish are able to disperse or concentrate the pigment granules in their chromatophores and this accounts for the rapid colour changes exhibited in such species. (Eg - flatfish).

Cott (1940) considered that colouration could serve three purposes :- (i) concealment
(ii) disguise
(iii) advertisement.

Concealment and Disguise can be treated together although they are not necessarily identical.

(to be continued in the next issue)

## DID YOU KNOW.....

1. That Australia is the only continent that has more venomous than non venomous snakes?
2. How the following are described?
   a) Flesh eaters as carnivorous
   b) Fish eaters as piscivorous
   c) Fruit eaters as frugivorous
   d) Dung eaters as coprophagous
   e) Insect eaters as insectivorous

## OBITUARY

Mr. D. L. F. Pedris

(Life Member)

Died: October 2nd. 1980.

In 1995 a Newsletter was reintroduced during the Presidency of Chris Corea edited by himself.

SRI LANKA NATURAL HISTORY SOCIETY
Established 1912
NEWSLETTER VOL. 95/4

The last OGM was attended by over forty members and guests who braved a torrential downpour to be present. Dr Prithiviraj Fernando had to work hard to make himself heard over the sound of the raindrops beating down on the roof of the art class at the museum - the usual venue for our meetings. - Editor.

The office bearers of your society for 1995 are:

PATRON - Dr Malik Fernando
V PATRONS - Dr P.M. Perera
- Mr E. Dabrera

PRESIDENT - Chris Corea
V PRESIDENT - Rohan de Soysa
SECRETARY - Kumudini Gomes
TREASURER - Kanishka Samarasinha
COUNCIL MEMBERS:
Lester Perera
Naresh Subramaniam
Enoka Corea
Lal Balasuriya

SOCIETY MEMBERSHIP

New members are always welcome.

| | |
|---|---|
| Registration: Rs | 100 |
| Annual Subs : Rs | 100 |
| Junior Subs : Rs | 50 |
| Life m'ship : Rs | 1000 |

SHRINKING HABITAT !

People, aided by technology change the environment in many ways to suit their growing needs. They convert forests and grasslands to agriculture and industry. They do not often think how these changes will affect the other living things that share that environment. Loss of habitat is the most serious threat to wild life today.

*Synopsis of the illustrated lecture on "Elephants and their Conservation" by Dr Prithiviraj Fernando on 21/4/95.*

Ongoing studies in Uda Walawe and Yala national parks show that elephants have home ranges that extend outside protected areas. However, definitive data on ranging patterns await a study using radio tracking techniques.

The main constraint to the survival of elephants in Sri Lanka is human elephant conflict (HEC). They are frequently killed by gunshot wounds, trap gun injuries, poisoning etc by cultivators trying to protect crops and homes.

Fragmented habitat without demarcation of nearby human settlements lead to high HEC. Elephants in such regions do not form viable populations.

Today, we have come to a stage where we need to think of the future of our protected areas (which are small artificial refuges) and actively manage them. Conservation is no longer a case of putting up a fence around an area and "letting nature take its course".

At Uda Walawe, mature high forest with high bio diversity in the 50's and before was felled in the 60's and 70's. This led to spreading grassland and savannah which could support more elephants but lower biodiversity. With time, the grassland is reverting to scrub and in 50-100 years we may have a forest with richer biodiversity but fewer elephants.

Much more research needs to be done to gather essential data for management and conservation of elephant populations in Sri Lanka.

DR (MRS) ENOKA COREA
111, INNER FLOWER ROAD
COLOMBO 3

FROM:Hony Secretary - S.L.N.H.S.
16 Gomes Path, Colombo 5
Res:582339 Off:580827-8

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SRI LANKA NATURAL HISTORY SOCIETY - 426th ORDINARY GENERAL MEETING
Wednesday, 14th June '95 at 5pm at the National Museum Art Class Room

Monitoring Bio-Diversity in Sri Lankan Forests - Mr P.B. Karunaratne

Mr Karunaratne worked with the Department of National Museums for 26 years studying vertibrates and entomology. He won the National Award for Scientific Achievement in 1985 for his work on the control of the "coconut pest" *Promecotheca Cumingi*.

He has published numerous papers and conducted numerous environmental assessment studies and conservation review surveys. He was a visiting researcher at the Smithsonian Institution in '92. He is currently working with IUCN as a National Consultant to the Forest Department.

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JUNIORS QUIZ

What are the subspecies of the Asian elephant ?
What are the differences between the Asian and the African elephant ?
What is the life span of an elephant ?
How many sets of teeth does an elephant develop ?
What is the gestation period of an elephant ?

ANSWERS TO THE JUNIORS QUIZ IN THE LAST NEWSLETTER:

The smallest mammal in Sri Lanka is the Pigmy Shrew.
The smallest mammal in the world is Kitti's Hog Nosed Bat (1.5 gms).
The species most closely related to the hyrax is the elephant.
There are over 4500 species of mammal in the world.
A monotreme is an egg laying mammal.

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H A P P E N I N G S

The field trip to the Salgala hermitage at Ruwanwella was pleasant indeed. The path to the hermitage meanders through relatively undisturbed wet zone forest and is cris-crossed by little streams. Bird life was plentiful but more heard than seen. Rufous and Crimson Backed Woodpeckers were the only notable sightings. The path winds its way past several meditation huts built into the rocky outcrops and ends at the top of a hill. One gets a panoramic view of the neighbouring hills. Before returning to Colombo we dipped in the Kelani and were treated to lunch at Mrs Ramani Gammanpila's ancestral home in Ruwanwella.

FIELD TRIP: Labugama Reservoir, on Sunday (18/06/95).
Confirmation and details at the next meeting.

Please use this document for admission to the museum premises.

This newsletter was continued by Tara Wikramanayake during her long stint as Secretary and Editor and became known as "Tara's Newsletter"!

SRI LANKA NATURAL HISTORY SOCIETY-Established 1912
NEWSLETTER VOLUME 2002/01

We held our 451st Ordinary General Meeting on the beach on 10th Nov. 2001. This unusual venue for a meeting was chosen as we had asked Dr. Malik Fernando our Patron, to lead us on a beach walk where we could observe and identify the forms of life both flora and fauna found on the beach.

We were favoured with good weather- Usually, at 3.30 p.m. on the beach it would have been scorching. Since the previous days were quite wet , we were wondering whether we would have to take an umbrella for protection. However, it was very pleasant- cloudy with no rain and this facilitated the meeting and lecture.

The sea was rough and we could not go towards the larger rocks which were further away from the shore. The beach, sadly, was full of litter. The ubiquitous plastic bags, plastic bottles and lids, bags full of refuse and even a large mattress were scattered all along the shore. We hope the authorities will initiate a clean up of this beach.

Dr. Fernando explained that there were different forms of life in different strata- Those permanently in the water, those that are partly in the water and those that are not covered at all by water but which get an occasional splashing by the waves. He introduced us to the many forms of life on the sea shore by showing us some beautifully preserved specimens of a variety of plants and shells and these were circulated among those present. The algae in particular, were mounted on thick paper and then laminated. This process retained the original colour of the specimens. We thank Dr. Fernando for the time and trouble he took to make the lecture an interesting and unusual one.

The following were observed-

- Rocks which were at the water's edge were encrusted with Periwinkles- *Littoraria undulata*- a dainty black shell with white stripes and *Cellana raidata*- which were golden brown in colour.
- Bivalves observed were the oyster *Saccostrea cucullata* and the wedge clam *Latona cuneata* -a wing-shaped hinged shell dwelling of a mollusc.
- *Chthaalmus* - a Barnacle clinging to the rocks was found in profusion on the inter tidal rocks.
- *Chaetomorphia antennina* and *Ulva fasciata* were forms of Green Algae found. The former was a lovely fresh green in wiry clumps: the latter dark green, hanging in festoons
- Red algae seen was *Gracilaria corticata*.
- The Coffee Bean Snail *Melampus*, was found in its favourite habitat- at the foot of the cliff at the outer perimeter of the hotel premises bordering the shore, hiding under fallen leaves and feeding on them.
- Washed up on the beach were tusk shells *Dentalium* and *Spirula* shells

We are pleased to announce that Lester Perera a former President of the SLNHS, held a very successful exhibition of his paintings of birds at the Alliance Francaise from 29th Nov.- 4th Dec.-2001. Acrylics, water colours and line drawings, all executed meticulously in Lester's inimitable style were on display. Most of the paintings were snapped up the first day itself.

Here is a call to all **Ordinary Members**- In terms of the Constitution of the SLNHS, subscriptions for the current year are due in January. Please send your subscription for 2002 to the Hony. Secretary- Ms. Vijita De Silva, 57, Chitra Lane, Colombo 5.

**More events for your Diary-**

- **Sunday 13/01/02- 6 p.m.** Barefoot Gallery Col. 3 **Saving Gurney's Pitta -Brian Sykes** of the Oriental Bird Club. Gurney's Pitta is a jewel of a bird found in Thailand's rain forests. It is presently, only known in the wild from a small forest patch at Khao Nor Chuchi where about 30 birds may remain. The Oriental Bird Club is spear heading a campaign and lobbying the Thai Royalty, national agencies, decision makers etc. to save the Pitta from extinction. Brian will discuss the 'ground realities' of conservation when conflicting pressures are brought into play with birders, local villagers, conservationists all in the fray. THE SPEAKER Brian Sykes has been a Council Member of the Oriental Bird Club (OBC) for 6 years and is currently its General Secretary.
- **Wednesday 16/01/02- 6 p.m.** Barefoot Gallery, Col. 3. **The Sri Lankan Leopard, Andrew Kittle & Anjali Watson.**

MR CHRIS COREA
111, INNER FLOWER ROAD
COLOMBO 3

FROM: Ms Tara Wikramanayake, Hony. Secretary - S.L.N.H.S.
49/7A, Fife Road, Colombo 5. Tel: 500266 (Res.) 074 796277 (Office)

# THE SRI LANKA NATURAL HISTORY SOCIETY
## ANNUAL GENERAL MEETING
## on Saturday, 19th January 2002 at 3.30 p.m.

Dear Members,
A Happy and Prosperous New Year. May 2002 be filled with wonderful things for us all and may there be peace and prosperity in our beloved Island. We hope those in authority will make the right decisions with regard to the protection of our wild life and that all people will be sympathetic and caring towards the fauna and flora of our country.

Please make a special effort to be present at this meeting as the Office Bearers for 2002 will be elected.

**TRIP REPORT-**

The trip to Uda Walawe was full of thrills- in the form of a scary elephant charge and sightings of rare and exciting birds. Nine members set off on 27th October 2001 for Uda Walawe. We stopped at the Tanke Kelle forest at Ratnapura for breakfast. Although we heard the Indian Pitta all around us, it was shy and did not permit a sighting. However we saw the Ceylon Lorikeet, Tickell's Blue Flycatcher and Little Minivets in home gardens abutting the forest.

After lunch at the WNPS bungalow, we set off into the Park. We were indeed fortunate as we suddenly spotted a female Pallid Harrier in the grass beyond a small water body. Identification was difficult at first as it was partly covered by grass but we then saw the male flying overhead and this confirmed the sighting. At this same spot were 3 Grey-headed Fishing Eagles perched low – 2 on a dead branch and one on the grass. Painted Storks added a splash of colour to a small water body while Grey Herons, Common Sandpiper and Greenshank were nearby. Many Grey-headed Yellow Wagtails flew about. At another water body were literally hundreds of Little Cormorants and Shags in a frenzied fishing spree. The water and space immediately above, was one swirling dark mass. They were most probably trying to drive the fish into one spot as they kept swimming and flying round and round screaming. By contrast, the 30 odd Spot-billed Pelicans near the Cormorants were placidly floating by and were not raucous or as speedy as the former.

At a further spot we saw a large Raptor perched on a tall tree. Further investigation revealed it to be an Osprey. This was a "lifer" for most of us and it was a thrilling sight. The bird afforded us clears views while it was perched and then in flight.

We then came across a small herd of elephants- a nursing female, 2 babies who were not very small and 3 medium sized elephants. They continued feeding apparently unconcerned by our presence and we switched off our engines and watched them quietly. All of a sudden without any warning, the female charged us. She kept coming towards us despite the combined shouts of the males in our midst and stopped only a foot away from the front passenger's window. It was quite a frightening experience for some of us (the writer for one, was quaking!) but the males in our midst, with their stoic calmness took it all in their stride and were quite cool about the entire episode. Other elephant sightings were uneventful except for one incident where a young male, ears flapping, made a mock charge at us. The park was fresh and green after the recent rains and there was plenty of succulent green grass for the elephants.

We saw a Blyth's Pipit very clearly through the Scope thoughtfully provided by Lester Perera. The next morning we observed through the Scope, a male Pallid Harrier perched on a dead tree while it was preening. We were able to get quite close to it as it was not disturbed by our presence. We also had another sighting of the Osprey.

Other birds seen in the park included a Southern Sirkeer, Malabar Pied Hornbill, Hoopoe, Green Imperial, Pompadour and Orange-breasted Green Pigeons a Green Sandpiper, Jungle Fowl, Indian Pitta and all three sunbirds.

The grounds of the WNPS bungalow abounded with bird life. A Kestrel hovered over the roof of the bungalow, and a family of Rose-ringed Parakeets was screeching in the trees nearby. Baya & Striated Weavers flew into the grassy patches and 2 visiting Indian Pittas called to each other. A family of Thick-billed Flower Peckers was in the trees close by. Franklin's & Ashy Prinias flew in and out of the bushes and the nest of a Franklin's Prinia minus eggs, was seen in one of the bushes. The Peafowl's mournful call was heard constantly and many were seen around. This abundance of bird life in the premises increased the following morning when an unexpected source of protein was provided by Mother Nature- swarms of Winged Termites emerged overnight and after invading our bedding, were in a pulsating heap all over the verandah and the garden. Birds that alighted on the ground and helped themselves to this bounty were Brown-headed Barbets, Common Mynahs, a Blue-faced Malkoha and Purple-rumped Sunbirds. Having believed that Sunbirds are nectar feeders in their adult life, we thought they were picking the termites for their offspring but we saw them fly over to a perch and swallow the termites- an unusual sight. It was not only the birds who benefited from this feast- Two land Monitors were also picking up the termites- a young Monitor- just over a foot long was completely unafraid as it came close to us and picked up the termites. An evening walk on the Walawe Reservoir Bund turned out to be fruitful. Ceylon and Common Swallows swooped and dived overhead. A bonus was the sighting of an Alpine Swift in the midst of these Swallows.

The following trips are scheduled- **Monday 14th Jan. 2002**- a day trip to **Dikkele**- this is a forest planted with Mahogany, in the Pannala area. Birds we have seen here include the Trogon, Pigmy, Crimson-backed & Lesser Yellow- naped Woodpeckers. Contact the Secretary by 10th Jan. if you wish to join us.

As this is the season for migrant waders, **Palatupana** from **Saturday 16th - Sunday 17th Feb. (2 nights)** is the next venue. We will stay at the WNPS Bungalow. Numbers are restricted to 10 so please give in your names to the Secretary by 10th Feb. the latest.

A move toward Environmental Activism
(eventually, leading to the formation of the Environment Foundation Limited)

THE SRI LANKA NATURAL HISTORY SOCIETY

GEMMING AND FELLING IN THE PEAK WILDERNESS SANCTUARY
AND IN THE HORTON PLAINS NATURE RESERVE.

The Conservation Group of the Sri Lanka Natural History Society has reported that large scale gemming and felling operations are being conducted in the Peak wilderness Sanctuary and the Horton Plains Nature Reserve. Practically all operations within the PW Sanctuary are close to tea estates and the majority of miners are estate labourers. These operations are allegedly funded by rich Mudalalis.

The Police are aware of these activities and often raid these areas, but the gemmers are very persistent and return. The Police are reported to arrest as many as 50 to 100 illicit gemmers on occasion. These men are fined sums of money ranging from Rs 50/- to 100/-, which are apparantly paid by their Mudalali sponsors.

The major gemming areas are above Loinorn, Gartmore, Fairlawn and Upcot estates. The Superintendents of these estates are aware of these activities and some complain of large scale absenteeism on their upper divisions. These estate labourers are paid between Rs 40/- to 100/- a day for their illicit work by their sponsors. In addition they are sometimes paid a percentage of the value of the gem finds. Moonstones are said to be the major attraction but several other varieties are also found.

Our members Aravinda de Silva, Ravi Algama, Nalin Wikremanayake and Lalanath de Silva have visited the areas mentioned and report the following observations (colour photographs of some of this activity are available with the Hony. Secretary of the SLNHS for inspection) :

GEMMING ABOVE GARTMORE ESTATE

Over 20 men at work

Over 300 worked gem pits

About 6 felling operations

Several water course diversions

Over 25 acres of forest dug up, felled and ruined

GEMMING ABOVE FAIRLAWN AND FETRESSO ESTATES

About 5 acres of forest felled and dug up.

GEMMING ABOVE LOINORN ESTATE

50 men at work
250 worked gem pits

About 22 acres of land destroyed

4 Shelters

GEMMING ON HORTON PLAINS

4 men with equipment

40 to 50 worked gem pits in an area of 2 to 3 acres

The Plains had been fired near the gemming areas.

There was gemming activity near both Gem Pit Pool and at the foot of Kirigalpotha,

We are further informed that the Wild Life Ranger on Horton Plains, Mr. Liyanage, is fully aware of these activities, but is hampered in his work by the facts that his staff consists of only 7 to 9 men, his range extends beyond Nuwara Eliya to the north, Passara to the east and the Peak Wilderness and Belihul Oya on the southern aspect, and that his diesel fuel allocation is very inadequate.

P.T.O.

The police at Bogawantalawa are also active but their major problem is that they apparently receive no support in their work from either the Police Headquarters or from the State Gem Corporation. The police at Maskeliya on the other hand, appear to be ineffective. It is alleged that the Gem Mudalalis have a lot of influence over them.

Our member Lalanath de Silva has, on his own initiative, informed the authorities of some of this illegal activity, resulting in the GA Nuwara Eliya Mr. Austin Fernando raiding the area above Dartmore Estate with our member Nalin Wikremanayake as guide, accompanied by a police party. We are advised that His Excellency The President and the Hon. Minister of Lands and Land Development and Mahaweli Development had ordered a report on, and that the report confirmed, the allegations of our member.

The Sri Lanka Natural History Society requests the help and Co-operation of your Society in its efforts to combat the menace of illicit gemming operations which lead to degradation of the environment.

We intend taking the following courses of action and invite your comments and active participation:

1. Embark on a campaign to
   a) Publicise this matter nation-wide using the mass media.
   b) To organise small voluntary groups to go up into the affected areas and fill up these pits.

2. Consider
   a) Advising legal reforms to enable wider action under the State Gem Corporation Act No. 13/71.
   b) Enlisting the co-operation of the State Gem Corporation in discouraging illicit gemming.

3. Call for
   a) Enhanced penalties ( mandatory jail sentences without the option of fines ) for those convicted of illicit gemming in Sanctuaries and National Reserves.
   b) Enhancement of the effectiveness of the Dept. of Wildlife Conservation by ensuring an adequate allocation of funds and manpower.
   c) Powers to be given to Superintendents of estates to enable them to dismiss from employment persons convicted of illicit gemming.

# Our Logo

The logo that is currently in use was crafted circa 1992.

The then President, Architect Lal Balasuriya conducted a competition amongst his design students at the Department of Architecture, University of Moratuwa. Students were given the essential design elements and asked to design an appropriate logo. The winning entry by Varuna de Silva (now a Chartered Architect) was selected for use by the society.


The logo symbolizes earth, sea and sky with the magnifying glass indicating the study thereof. The magnifying glass cleverly doubles as a tree in the landscape.

The bird in flight represents the study of ornithology which has always been an important part of the activities of the society.

The Banner with the words Centenary 2012 was added to commemorate 100 years of the Society in 2012.

# Contemporary Naturalist Members

Many members of the Sri Lanka Natural History Society, some of them counting membership from their student days, have gone on to distinguish themselves in various fields of Natural History. We recognize them and appreciate their contributions in the past and thank them for continuing to be part of the Society. We expect this list to grow, as more people with an interest in nature, who make a contribution to our body of knowledge by documenting their findings and sharing their knowledge, join the Society. Some of them are professionals in the bio-sciences while the others, the majority, are professionals in various fields with natural history as a common link.

**Shereen Amendra** was leader of the Urban Landscape Study Group in 1992-1993 and is now a Chartered Architect/ Chartered Landscape Architect. She continues her interest in trees and urban plantings teaching Urban Forestry, horticulture and landscape management at the Universities of Sri Jayewardenepura and Moratuwa and Environment to architecture students at the City School of Architecture.

**Rex I. de Silva** was President of the Society during the years 1979-1980 and again in 1994. A diver and underwater photographer, he has been included in the list of 'International Legends of Diving', starting his diving career during his school days. In his early life he was a commercial diver, functioning in many capacities, and maintains a website with the history of diving in Sri Lanka. His interest in the animals of the oceans led him to study and record shark species around the island and soon became an authority on these animals. Not confining his interests underwater he becamean ornithologist of no mean repute.His contributions to natural history included several seabird, as well as land bird species that had previously not been documented from Sri Lanka.In particular, his research, conducted over thirteen years, focused on the mass migration of seabirds off the western coast of Sri Lanka.He is also an astronomer of note, having served as a volunteer observer for the United States Naval Observatory, as well as the Royal Greenwich Observatory. He introduced this topic to the Society during his years as President and later. He was the promoter and leader of the special interest groups in the Society. A prolific writer, he has published around 110 scientific papers, articles, and book chapters on various subjects, starting as early as the 1960's. His most recent publication is The Sharks of Sri Lanka, published in 2015 by the Field Ornithology Group of Sri Lanka.

**Rohan de Soysa** is a knowledgeable ornithologist and outdoorsman. He has led the Society as President or Secretary for many years on and off between 1996 and 2011. He has wide experience in leading a number of other organisations in the fields of nature, agriculture and the arts. His major on-going contribution to nature conservation and creating awareness of the environment is the patronage and guidance he has lent to the grass-roots organisation 'Mihithala Mithuro'. This society manages a forest that he owns—Kodigaha Kande Forest—and through it raises environmental awareness at community level, especially among children in schools in the Horana district.

**Daniel Fernando**, diver and marine biologist, is a young man with a mission while working for his doctorate—to save some of the threatened marine species being over harvested. His main area of work centres around manta rays and mobula rays, as well as thresher sharks, in addition to wider issues of marine conservation.He is a co-founder of Blue Resources, an organisation for marine research and consultancy.

**Dr Jayaindra Fernando,** now a practicing surgeon, is a botanical painter. He made his debut drawing trees to illustrate his grand-mother Dorothy Fernando's book while still in his teens, progressing to water colour paintings of butterflies, flowers, trees and fruits. He maintains a private arboretum with a collection of indigenous plants, open to the public. Together with his wife Thivanshi, also a Society member, he has published *A Selection of the Fruits of Sri Lanka*.

**Dr Malik Fernando**, who was President in 1981 and 1982, is a retired physician. A diver, he spent more time on the seabed than on land during his spare time and became knowledgeable about marine invertebrates—especially jellyfish, echinoderms and molluscs—as well as seaweeds. He has published Shells of the Sri Lanka Seashore and was a co-author in Orchids of Sri Lanka - A Conservationist's Companion. His article A Colour Guide to some Green Seaweed Genera in Sri Lanka was published in Loris, the journal of the Wildlife and Nature Protection Society, of which he is a past president.His article Nudibranchs — Snails without Homes was also carried in Loris. Before his great interest in marine fauna and flora he had collected from the wild and reared a number of snakes. This interest enabled him to contribute to the work of the Sri Lanka Medical Association's (SLMA) Snakebite Committee as a member and later its Secretary. He was involved for many years in the publication of the SLMA Snakebite Management Guidelines. His diving activities in search of marine biodiversity brought him face to face with fish collector divers suffering from the 'bends' or decompression sickness. His medical skills were put to use with the publication of the SLMA Guide to Management of Decompression Sickness (Bends) as well as associated first aid pamphlets and safety guides for divers. A past President of the SLMA, his Presidential Address was titled 'Some Hazards of Diving' where he dealt with venomous marine animals as well as with physiological problems.

**Jagath Gunawardena** is a man for all seasons, when it comes to environment and natural history. A well-known environmental lawyer he has a phenomenal memory regarding wildlife law and his opinion is much sought. An ardent birder, he has published numerous articles in the press for the benefit of the general public. He has worked tirelessly to create awareness aboutgene piracy with regard to biodiversity and the related issue of patenting. Very much a field man, he has guided many a Society birding trip. He is by far the most important environmental activist today, fighting many environmental issues regarding Governmental proposals, both in and out of courts, mostly single handed.

**Kithsiri Gunawardena** was president in 2005 and 2006. He is an ornithologist and bird photographer of repute and was also responsible for introducing Society members to butterflies and dragonflies. He was a valuable member on Society excursions.Kithsiri was responsible for the re-discovery of the spot-billed duck in Mannar and is a member of the annual waterfowl count team. He is a Joint Secretary/Editor of the Ceylon Bird Club and a member of the Oriental Bird Club.

**Jayantha Jayewardene** is a wildlife person who has nurtured this interest since his childhood. He has a special interest in the elephant and has been in the fore-front of elephant conservation issues both in Sri Lanka and abroad, being a member of the IUCN Asian Elephant Specialist Group. He is the author of the book titled *The Elephant in Sri Lanka*. His numerous short articles on wildlife have been brought together in the book titled *The Diversity of Sri Lankan Wildlife*.His continuing contribution towards conservation and the environment is through the Biodiversity and Elephant Conservation Trust of which he is Managing Trustee. The Trust carries out regular awareness creation activities in 150 rural schools and gives support to needy children and families. This work is mainly in areas subject to human-elephant conflict.

**Rukshan Jayewardene** is a trained archaeologist and diver and was involved in the early maritime archaeology work in Sri Lanka. But he is best known as a terrestrial wildlife photographer and researcher, spending many years photographing leopards in the wild. His photographs, and much the text, appear in the book *For the Leopard, a tribute to the Sri Lankan Leopard*. He is currently the President of the Wildlife and Nature Protection Society.

**Namal Kamalgoda** was President from 2007 to 2010. A well-known bird and wildlife photographer with a deep knowledge of the subject, his slide talks are some of the most popular events in the Society. Namal and his colleagues—Gehan Rajapakse, Palitha Anthony and Sarinda Unamboowe—have together authored a series of coffee table books on wildlife: 'Encounters' in 2003, 'Enchanted' in 2007 and 'Elusive' in 2013. Crammed with outstanding photographs the books are a treat to behold. Gehan Rajapakse and Palitha Anthony are also Society members that we are proud to acknowledge. As Rohan Pethiyagoda says in a review of 'Elusive' they are "…friends united by their love of the wild and interest in photography." Namal is a member of the Ceylon Bird Club.

**Prof Sarath Kotagama** was Secretary of the Society in 1977 and 1978 as a young lecturer in the University of Colombo. He went on to become an ornithologist of repute with many publications on the subject and the Professor of Environmental Science in the University. He promoted vernacular names for Sri Lanka's birds, to popularise study of birds among a wider population. A one-time Director of the Wildlife Department he is now an advisor to the Minister of Wildlife. Professor Kotagama is probably best remembered as the brains behind the Field Ornithology Group of Sri Lanka, commonly abbreviated to FOGSL. It was founded in 1976 to promote the conservation of birds and preservation of the environment. The first 'March for Conservation' was also his idea. The MfC continued as a University based organisation for a number of years, conducting programmes to foster environmental awareness.

**Howard Martenstyn** is an independent marine researcher in the field of marine mammals, researching whales and whale behaviour and writing about them. He is a Director at CRIOMM, the Centre of Research for Indian Ocean Marine Mammals. His publication *Out of the Blue* is a mine of information about whales, based on his own research.

**Frederick Medis** was President of the Society in 1973 and brought with him his vast knowledge of matters concerning many aspects of the country. He calls himself an Antiquarian—but Walking Encyclopaedia might be a more apt description. Starting during his school days he had immersed himself in the study of the past and has led many a society either as President or Vice President such as the Royal Commonwealth Society, Ceylon Society of Arts, Royal Asiatic Society, Ceylon Numismatic Society and the Philatelic Society, not to mention being a Fellow of the Commonwealth Society of Antiquarians. A memorable talk he delivered to the Society was about the Ceylon Jungle Fowl. But his most recent talk delivered in November, 2013 at the conclusion of the 93rd Annual General Meeting bears re-visiting, as reported in the minutes: … invited by the President to say a few words - "he did with his usual flair, displaying his command of many languages. He kept the audience enthralled with snippets of information regarding the derivation of place names based on plants and natural phenomena, words in the English language derived from Sinhala and other languages, historical events relating to the country and Mendel's laws of inheritance and dolichocephalic skulls. Perhaps the piece de resistance was the descent of the Sri Lanka pariah dogs from Egyptian barkless basenji dogs carried by fishermen from that country."

**Lester Perera** was President in 1997 and is one of Sri Lanka's celebrated bird painters. He works at guiding bird watching tours and is knowledgeable about many aspects of the environment, besides birds.

**Nishan Perera** has been diving since his school days and became a valuable marine ornamental fish identifier in the NARA reef ecology team. In between working on a doctoral thesis centred around ornamental fish exports with an accent on sea horses, he runs a dive centre and carries out research in the field of marine conservation. He is the author of the book *Coral Reefs of Sri Lanka* published by the National Trust – Sri Lanka, and a co-founder of Blue Resources, an organisation for marine research and consultancy.

**Dr. Wasantha Punchihewa** has been an academic in agricultural biology at the Ruhuna University whose abiding interest is in honey bees and bee-keeping. His academic work was about pollination ecology.

**Dr Dinazarde Raheem** has been a Society member since her school days and was a member of a number of the special interest study groups in 1992/93. Her higher degree was earned with work on land snails, including Sri Lankan land snails as part of the Darwin Initiative project of the Natural History Museum, London. Some of her publications of use to local naturalists, in association with other workers, are: *Sri Lankan Snails* (also available in Sinhala)*, An Illustrated Guide to the Land Snails of Sri Lankan Natural Forest and Cultivated Habitats* and *An Illustrated Guide to the Land Snails of the Western Ghats of India*. These are illustrated guides published by the Natural History Museum, London.

**Douglas Ranasinghe** is a naturalist with an all-round interest in wildlife and birds. A member of the committee of the Wildlife and Nature Protection Society for many years he has been the editor of its Sinhala journal *Warana* for over 30 years. He has also been a key member of the WNPS Schools Nature Club Programme that was started in 1976. He has published a book (available in English and Sinhala) on the endemic birds of Sri Lanka; his most recent (2015) publication is the biography of Thilo Hoffmann —*The Faithful Foreigner: Thilo Hoffmann, the man who saved Sinharaja*.

**Iranganie Serasinghe** has been supporting the SLNHS in its work for many years, even hosting group meetings in her home during 1992-'93. She is remembered, as much for her film appearances, as for giving birth to Ruk Rekaganno, the society for the welfare and protection of trees, that she founded. This society has been at the fore-front of awareness creation of the importance of trees, especially in rural areas. For many years the society has managed the Sam Popham Arboretum near Dambulla—a collection of dry zone trees.

**Deepal Warakagoda** is a long standing member who is a prominent Sri Lankan ornithologist. He is credited, together with his co-workers, of discovering and naming an owl speciesnew to science—the Serendib scops owl: *Otus thilohoffmanni*Warakagoda & Rasmussen, 2004. Deepal is Joint Secretary of the Ceylon Bird Club and a member of the Oriental Bird Club.

**Prof Devaka Weerakoon** is based in the University of Colombo and has specialised in biodiversity issues. He speaks authoritatively on the distribution of animals and plants in relation to their environment. Much of his research studies have been about elephants, as well as invasive alien species. He is currently attached to the IUCN Country Office.

**Dr George Michael van der Poorten** is a graduate of the University of Peradeniya with a PhD earned in Canada. After a stint of work abroad he returned to Sri Lanka and has spent the last 20 years or more converting his estate off Wariyapola to include a five-acre butterfly garden. The plot is beautifully landscaped with trees and shrubs that are either host plants for caterpillars or nectar plants for adult butterflies. He has recorded on his land 125 species of butterflies and 97 species of birds. For the past 15 months or more he has been setting up butterfly gardens in many Keells hotels while also working with the Wildlife and Nature Protection Society (WNPS) establishing 100 butterfly plots around the island. Travelling the length and breadth of the country in search of butterflies and studying their habits and habitats, he has found Catopsilla syclla, a new butterfly species record for Sri Lanka. He has shared his knowledge with the younger generation and has encouraged many a budding butterfly enthusiast. But his main contribution to natural history is his comprehensive book: The Butterfly Fauna of Sri Lanka co-authored with is wife Nancy E. van der Poorten,published in 2016.

**Gehan de Silva Wijeyeratne** is a wildlife and nature enthusiast who has been promoting Sri Lanka's natural assets to the public, here and abroad. It was Gehan, through his writings, who brought to the notice of us all the annual Minneriya elephant gathering and the presence of herds of whales and dolphins around our shores.He has published over 300 articles and 15 books. He has written and photographed on birds, butterflies, dragonflies and primates.

**Tara Wikramanayake** was President in 2002 and Secretary for a period of 14 years from 1997 to 2011, during which period she raised the Society to new heights. She is an avid bird watcher and led the Society to be very bird-oriented for a period. Her ornithological expertise has earned her a place in the teams of workers who perform annual waterfowl counts for the Ceylon Bird Club, of which she is a member of the editorial board. She is also a member of the Oriental Bird Club.

# Photo Gallery


19/06/2015 05:16

# Acknowledgements

A work of this nature is necessarily the product of many minds working together to achieve a worthwhile goal – the documentation and commemoration of 100 years of an active and admired Society.

Many came to our assistance and for this we are deeply grateful. Unfortunately, it must also be said that some were most protective of their time and therefore could not make much more substantial contributions toward this publication.

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In thanking those who helped, we do apologize for any inadvertent omissions.

Asoka Siriwardena and Chris Corea

Editors