PERSPECTIVES IN LIFE SCIENCES



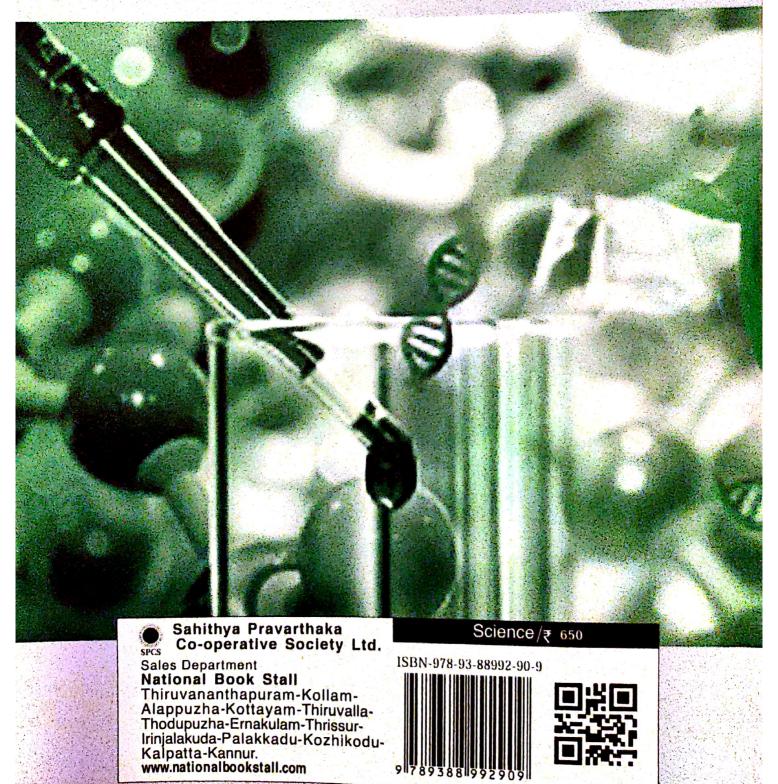
Editor: Dr. M.V. Sudhakaran







SAHITHYA PRAVARTHAKA CO-OPERATIVE SOCIETY Ltd Kottayam, Kerala



(English)

PERSPECTIVES IN LIFE SCIENCES

SCIENCE

© UGC-HRDC University of Calicut

Chief Editor

Dr. M. A. Joseph

Editor

Dr. M. V. Sudhakaran

Published by

UGC-HRDC University of Calicut

Malappuram, Kerala

In association with

Sahithya Pravarthaka Co-operative Society Ltd. No. 2458

Kottayam, Kerala

Email: spcsktm@gmail.com

Price: Rs. 650.00

Cover Design

Vinod Kumar C. S.

First Published December 2019

Printed at

Romanson Print House, Thiruvananthapuram

ISBN 978-93-88992-90-9

978000031767

Sales Department

National Book Stall

Thiruvananthapuram-Kollam-Alappuzha-Thiruvalla

Kottayam - Thodupuzha-Ernakulam (Marine Drive)-Irinjalakkuda

Thrissur-Palakkadu-Kozhikkode-Kalpatta-Kannur

www.nationalbookstall.com

S 10220 B 6267 128/19-20 1-80

Editorial Board

Managing Editor Prof. (Dr.) M.A. Joseph, Director, UGC-HRDC, University of Calicut

Chief Editor

Dr. M.V. Sudhakaran, Reader, UGC-HRDC, University of Calicut

Associate Editors

Dr. P. Praseetha

Assistant Professor, UGC-HRDC, University of Calicut

Dr. Binu Thomas

Assistant Professor of Botany, St. Joseph's College, Deveagiri, Calicut

Dr. Vinod K.V.

Assistant Professor of Zoology, Nirmala College, Muvattupuzha

Dr. Shibin Mohanan N.

Assistant Professor of Botany, Nirmala College, Muvattupuzha

Editorial Advisory Committee

Dr. Gayathri Devi D.

Assistant Professor of Life Sciences, University of Calicut

Dr. Leyon Varghese

Assistant Professor of Zoology, Christ College, Irinjalakuda

Dr. Sangeetha G. Kaimal

Assistant Professor of Zoology, Providence Women's College, Calicut

Dr. Abhilash E.S.

Assistant Professor of Botany,

Sree Narayana Guru College, Chelannur, Calicut

Dr. Ambili T.R.

Assistant Professor of Zoology, Alphonsa College, Pala, Kottayam

Dr. Aswathi P.

Assistant Professor of Zoology, St. Joseph's College, Deveagiri, Calicut

Dr. Jisha Jacob

Assistant Professor of Zoology, St. Joseph's College, Deveagiri, Calicut

Coliform growth inhibition by lagenandra toxicaria Levon Varghese	225-228
Larvicidal activity of selected plant extract and Bacillius spores on mosquito Remya V.K. & prathibha V.R.	229-244
Butterfly diversity of Vengalam Mangroves, Calicut, Kerala Sangeetha G. Kaimal & Femi E. Benny	245-255
Histological, histochemical and phytochemical s studies of the raw drug <i>Punarnava</i> from different raw drug markets of kerala Sereena K.	
A preliminary study on diversity of butterflies (order Lepidoptera) during post monsoon season in a heritage garden in Thrissur District of Kerala Shaun Paul Adambukulam	: 267-278 e
Fungal chromism on bacterial territory Wafha K.A. & Shibin Mohanan	279-292
Insecticidal effects of four plant extracts on stored grain pests: Sitophilus oryzae and Callosobruchus chinensis Shijina K. & Libin Kumar B.	293-300
Taxonomy of mutillidae (insecta: hymenoptera) - challenges and prospects with special reference to indian scenario Sudheesh Kumar T.K.	301-30
	Leyon Varghese Larvicidal activity of selected plant extract and Bacillius spores on mosquito Remya V.K. & prathibha V.R. Butterfly diversity of Vengalam Mangroves, Calicut, Kerala Sangeetha G. Kaimal & Femi E. Benny Histological, histochemical and phytochemical s studies of the raw drug Punarnava from different raw drug markets of kerala Sereena K. A preliminary study on diversity of butterflies (order Lepidoptera) during post monsoon season in a heritage garden in Thrissur District of Kerala Shaun Paul Adambukulam Fungal chromism on bacterial territory Wafha K.A. & Shibin Mohanan Insecticidal effects of four plant extracts on stored grain pests: Sitophilus oryzae and Callosobruchus chinensis Shijina K. & Libin Kumar B. Taxonomy of mutillidae (insecta: hymenoptera) - challenges and prospects with special reference to indian scenario

BUTTERFLY DIVERSITY OF VENGALAM MANGROVES, CALICUT, KERALA

Sangeetha G. Kaimal and Femi E. Benny Department of Zoology, Providence Women's College, Malaparamba PO., Calicut - 673 009, Kerala.

Introduction

Butterflies, one of the most beautiful insects with large and brightly coloured wings and conspicuous fluttering flight, regarded as one of the best taxonomically studied group of insects, stemmed in the Palaeocene period about 56 million years ago [1]. These winged Lepidopterans belong to the Class Insecta of Phylum Arthropoda. Butterflies are represented by three super families - the large super family Papilionoideae, and two smaller groups, super family Hesperioideae (the skippers) and super family Hedyloideae (moth-butterflies). Hesperioideae consists of a single family of Hesperidae (skippers) and Papilionoideae comprises four families viz., Papilionidae (swallow tails), Pieridae (whites and yellows), Nymphalidae (brush footed butterflies) and Lycaenidae (blues). A total of 18,000 species are identified till date in the world. The Indian subcontinent bearing a diverse terrain, climate and vegetation hosts about 1504 species of butterflies.

Butterflies enable sustenance of ecosystem services through their role in pollination and serve as important food chain components. Being potential pollinating agents of their nectar plants as well as indicators of the health and quality of their host plants and the ecosystem as a whole, exploration of butterfly fauna thus becomes important in identifying and preserving potential habitats under threat. Of late, we are rapidly losing greenery in the name of development. There has also been an alarming rise in industrial and automobile pollution in Indian metropolitan cities. With the shrinking of greenery and increase in pollution, butterflies, birds and all