antennal pits, central portion of pronotum on either side of median dorsal carina, central portion of scutellum, piceous.

Measurements of male in millimetres: Length 4.32; Fore wing 3.17; Scutellum 0.72. All the drawings were drawn with a camera lucida except wings which were drawn with a microprojector. All the magnification lines were drawn to 0.2 mm except in case of wings which were drawn to 1.0 mm.

Holotype ♂, INDIA: Pusa-Bihar, "Duranta", 19-vii-1913, H. N. Batra (Wings and genitalia on slides and the rest on tag).

Paratype ♀, INDIA, Uttar Pradesh, Delhi, ex light, 27-vii-1974, P.K.R.

The type specimens have been deposited in the National Pusa Collections, New Delhi.

ACKNOWLEDGEMENT

Thanks are due to Dr. N. C. Pant, former Head of the Division of Entomology. I.A.R.I., New Delhi for the facilities and encouragement given in these studies.

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A NEW SPECIES OF FERN FROM SOUTH INDIA[1]

N. RAVI[2] AND J. JOSEPH[3]

(With five text-figures)

Illustrated description of a new species of fern-*Grammitis pilifera* (Grammitidaceae) from Ponmudi Hills, Trivandrum District, Kerala State is dealt with.

Grammitis medialis (Bak.) Sledge affinis, tamer differt praesertim fronde, facie dorsali, hirsuto quam glabro; paleis rhizomatis peltatis quam basifixis; et sporangiis unisetosis.
Holotypus: Ponmudi Hills *Ravi* 5711 A (CAL); Isotypus *Ravi* 5711 B-E (MH) et Isotypus 5711 F (RH).

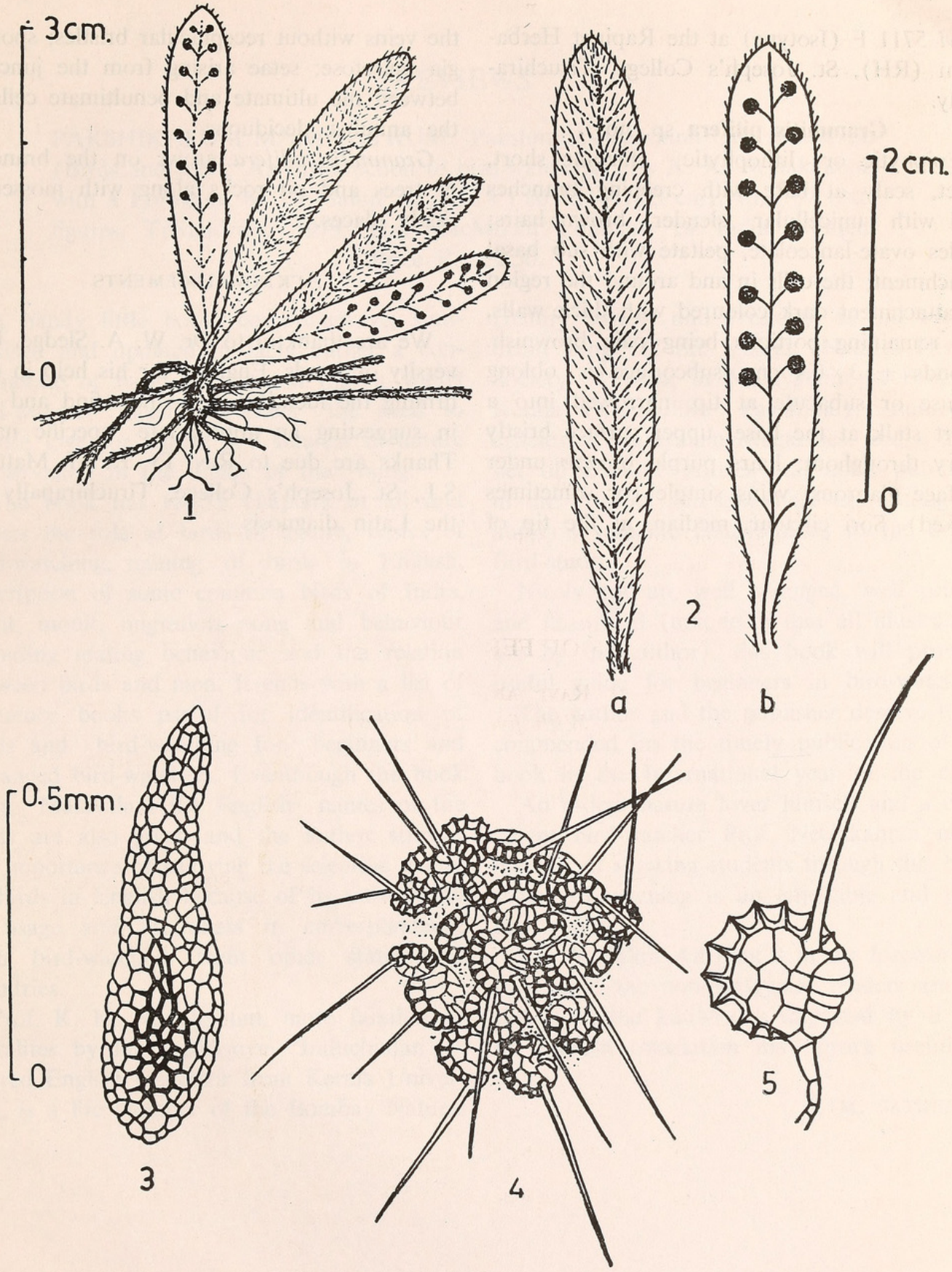
Grammitis pilifera sp. nov. is allied to *G. medialis* (Bak.) Sledge, but differs mainly in the frond being hirsute on the dorsal side instead of glabrous; scales on the rhizome peltate instead of basifixed and sporangia unisetose.

Ravi 5711 A collected from Ponmudi Hills, Trivandrum District, Kerala State, on 13th November, 1975 at 750 m. has been designated as Holotype and deposited in the Central National Herbarium, Calcutta (CAL), *Ravi* 5711 B-E (Isotypes) are deposited in the Regional Herbarium, Coimbatore (MH) and

[1] Accepted November 1977.

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Figs. 1-5. *Grammitis pilifera* sp. nov.: 1. Habit; 2. Frond: a. Upper surface; b. Lower surface; 3. Scale; 4. Sorus; 5. A single sporangium. (4 & 5 not to scale).

Ravi 5711 F (Isotype) at the Rapinat Herbarium (RH), St. Joseph's College, Tiruchirapally.

Grammitis pilifera sp. nov.

Epiphytic or lithophytic; rhizome short, erect, scaly at base with creeping branches and with unicellular slender brown hairs; scales ovate-lanceolate, peltate with sub basal attachment; the cells in and around the region of attachment dark coloured with thick walls, the remaining portions being pale brownish. Fronds ± 3 × 0.4 cm., subcoriaceous, oblong obtuse or subacute at tip, narrowed into a short stalk at the base; upper surface bristly hairy throughout; hairs purple brown; under surface glabrous; veins simple (or sometimes forked). Sori circular, median, at the tip of the veins without receptacular bristles; sporangia unisetose; setae arising from the junction between the ultimate and penultimate cells of the annulus, deciduous.

Grammitis pilifera grows on the branches of trees and on rocks along with mosses in shady places.

ACKNOWLEDGEMENTS

We are thankful to Dr. W. A. Sledge, University of Leeds, England for his help in confirming the identity of the new find and also in suggesting an appropriate specific name. Thanks are due to Rev. Fr. K. M. Matthew S.J., St. Joseph's College, Tiruchirapally for the Latin diagnosis.

REVIEWS

PAKSHIKALUM MANUSHYRUM: Pakshinirikshanathinu Oru Amukham (Birds and Men: An introduction to bird-watching). By K. K. Neelakantan, with a Foreword by Dr. Sálim Ali. pp. v + 80 (24 × 18.5 cm), with 67 text-figures. Trivandrum, 1979. The MacMillan Company of India Limited. Price Rs. 12.50.

A handy little book, comprehensive, summarised and updated in facts, rather a conglomerate of basic information that a young bird-watcher needs, it meets the need to arouse love for nature and interest in nature conservation in the minds of the young.

The book has twelve chapters in all and covers the role of birds in nature, basics of bird-watching, naming of birds in English, description of some common birds of India, flight, moult, migration, song and behaviour including mating behaviour and the relation between birds and men. It ends with a list of reference books useful for identification of birds and bird-watching for beginners and advanced bird-watchers. Eventhough the book is in Malayalam the English names of the birds are also given and the author stresses the importance of studying the scientific names of birds in English because of its universality in usage and usefulness in correspondence with bird-watchers from other states and countries.

Prof. K. K. Neelakantan, more familiar to Keralites by his pseudonym 'Induchudan', a retired English professor from Kerala University, is a life member of the Bombay Natural History Society and President of the Trivandrum wing of the Kerala Natural History Society. A book in Malayalam on Birds of Kerala (Keralathile Pakshikal), numerous articles in Malayalam Magazines, and a number of scientific articles and notes published in this *Journal* and elsewhere are among the author's valuable contributions to the art of Bird-study.

Nicely got up, well arranged, well printed and illustrated (unique in that all illustrations are by the author), this book will prove a useful guide for beginners in bird-watching.

The author and the publisher deserve to be commended on the timely publication of the book in the International year of the child.

An ardent nature lover himself and a competent bird-watcher Prof. Neelakantan meets his aim of showing students through this book that bird-watching is an enjoyable and thrilling hobby.

As Dr. Sálim Ali puts it in the foreword to this book, the non-Malayalee readers are deprived of the knowledge imparted by it and an English translation may prove useful.

S. M. SATHEESAN

A BUNDLE OF FEATHERS: Proferred to Sálim Ali on his 75th Birthday in 1971. Edited by S. Dillon Ripley II. pp. 241 (16×23 cm), with many illustrations and plates. New Delhi, 1978. Oxford University Press. Price Rs. 85/-.

We have in this volume a bundle of essays mainly on feathered bipeds proferred to the greatest Indian friend of them all—Dr. Sálim Ali by an international group of his friends and admirers. It is a most enjoyable book from which you will gleam a variety of fascinating facts. To mention just a few: while the north Indian bayas choose to nest on the babul tree, their south Indian brethren prefer the coconut tree; the half-a-million swiftlets from the great cave at Niah in Borneo consume no less than 20 million individuals of winged ants over the canopy of the rain forest every single day; the hill mynas imitate some of the calls of their neighbours of the same sex, but the call repertoire of the males and females is kept entirely distinct; the habits of the Himalayan honey-guides were accurately recorded by the authors of Chinese Materia Medica no less than a thousand years ago; many birds of high Andes and Tibet regularly use burrows of mammals for their nests; the starlings arrived in the North Americas with only three out of four lice that infect them in their original home in Europe; and, finally that our Indian cattle egret has prospered mightily in the U.S. over the last forty years. But the book is not a mere collection of interesting facts about the natural history of birds, it is a collection of some fifteen serious scientific papers ranging over the whole span of avian biology from biochemical changes in the migratory rosy pastor and the fauna of Narcondam islands to the migration of gannet in the Mediterranean and the role of birds in the natural foci of tick-borne arboviruses. The authors also range over the three continents of North America, Europe and Asia and include many leading ornithologists of the world.

The book is divided into four sections. The first is biographical and includes a most charming portrait of Sálim Ali by Zafar Futehally. The second section on life history and field biology has eight papers; of these I particularly enjoyed two. Tom Harrison's paper on the food of swiftlets at the Niah great cave in Borneo is a model of careful field work half-a-million swiftlets in this cave spread far and wide over the forest canopy and specialize on winged ants and termites. Harrison looks carefully at the composition of the diet of the two species and provides new insights into their role in the ecosystem. Yu A Isakov's paper on the great bustard, *Otistarda* is a fascinating account of the historical changes in the pattern of land use in Central Asia and Europe and the consequent rise and fall of the populations of the great bustard.

The section on zoogeography and systematics has seven papers, beginning with an interesting one on the discontinuous distribution of *Muscicapa latirostris*. The Stressemann's show that the one isolated population on the island of Sumba has diverged from the palaearctic populations, while those nesting in India, coming under the swamping influence of the migratory population do not do so. Theresa Clay in a paper on the distribution of bird lice brings out how these can be used to elucidate phylogenetic and distributional history of their bird hosts.

The last section deals with migration, biomedicine and learning. It contains a scholarly article by Netsky, Malkov and Bogdanov on the role of birds, ticks and mosquitoes in the natural foci of tick-borne arboviruses. Landsborough Thomson traces the migration of the Gannet and shows that the first year birds are much more apt to disperse, and that the birds do not migrate to the Balkan Sea the way they do into the Mediterranean.

All in all very varied and interesting fare. The articles differ widely in the originality of new information presented, the care with which it is analysed, breadth of the subject under review, the rigour of the argument and readability of the language. Some, such as the fauna of Narcondam islands is merely descriptive and of limited technical interest. Horace Alexander's article on what leads to an increase in the range of certain birds is a mere summary of well-known facts with what appear to me to be completely unjustifiable hand-waving arguments on the possible changes in the central part of the range of the birds. It is nevertheless a very readable article. Others such as the one on the biology of the olivaceous leaf warbler of the Tian-shan mountains present a lot of new data, but are somewhat difficult to read. Then there is Thorpe's masterly review of bird vocalization with special emphasis on duetting.

Taken altogether, there is something for everybody, but no substantial contribution of a type which would render the book an indispensable item in an ornithological or a bird-watcher's library. It may have been a much more important book if, for example, a theme had been chosen and a series of authoritative reviews on that theme brought together. The theme could have been conservation of bird species or bird migration; areas to which Sálim Ali has contributed so much. Or else it could have been a book in which professional ornithologists could have recounted major developments in avian biology in simple language for the amateur bird-watcher for whom again Sálim Ali has done a great deal through his bird book. But this caveat apart, I heartily recommend this bundle of feathers to all bird lovers the world over.

MADHAV GADGIL

FLORA MALESIANA—Series I—FLOWERING PLANTS, Vol. 8. General editor Dr. C. G. G. J. van Steenis. pp. i-cxv + 577 (17 × 24 cm) in three parts. The Netherlands, 1974-1978. Sijthoff & Noordhoff International Publishers.

Part I (1974) contains 2 articles:

A. CYCLOPAEDIA OF COLLECTORS AND COLLECTIONS—Supplement II by M. J. Van Steenis-Kruseman. Pp. i-cxv. This second and final supplement is in continuation of the supplement I (Flora Malesiana I : Pt. 5, 1958, pp. ccxxxvii-cccxlii). It contains an impressive list of 1049 collectors with their brief biographia, main contributions and photographs in many entries. It is a highly creditable work on the part of the compiler. An addenda to the 6 chapters of the main work is also appended. The information given here is relevant to all the students of tropical plants including India, where a large number of

floristic elements commonly occurring in Malesia are extant. The whole work is of interest to students of Indian floristics.

B. Revision of the family HYPERICACEAEA by N. K. B. Robson, pp. 1-29, figs. 20. This small family is expertly treated by the author. It gives distribution, ecology, anatomy, palynology, embryology, cytology and chemotaxonomy. The author feels Hypericaceae does not deserve the family rank and should be treated as a sub-family of Guttiferae. The following genera are treated: *Cratoxylum* (6 spp) and *Hypericum* (15 spp).

Part II: SYSTEMATIC REVISIONS (1977)

(i) ULMACEAE by E. Soepadmo (pp. 31-76, Figs. 27) contains generic description and brief notes on distribution, fossils, ecology, anatomy, palynology, embryology, cytology, chemotaxonomy and phylogeny. It treats 6 genera and 27 species (*Ulmus*-1, *Parasponia*-5, *Trema*-4, *Celtis*-9, *Aphananthe*-2 and *Gironniera*-6).

(ii) IRIDACEAE by D. J. L. Geerinck, pp. 77-84, figs. 6. Contains brief notes on distribution, ecology, morphology and uses. 6 genera are treated: *Patersonia* (1 sp.), *Sisyrinchium* (2 spp), *Belamcanda* (1 sp.), *Eleutherine* (1 sp.), *Gladiolus* (1 sp.) and *Trimezia* (1 sp.)

(iii) CORNACEAE by K. M. Matthew, pp. 85-97. Figs. 6. Treats the genus *Mastixia* with 10 spp. and several subspecies.

(iv) ONAGRACEAE by P. H. Raven, pp. 98-113, figs. 10. Contains brief notes on distribution, dispersal, pollination, morphology and anatomy, chromosomes, hybridization and chemotaxonomy. Two genera—*Ludwigia* (8 spp.) and *Epilobium* (2 spp.) are treated. 2 species of *Fuchsia* and *Oenothera* (1 sp.) which occur in cultivation are also mentioned.

(v) BIGNONIACEAE by C. G. G. J. van Steenis, pp. 114-186, figs. 39, gives notes on distribution, flower biology, pollination, dispersal, germination, taxonomy, genetics, palynology and chemotaxonomy. 30 species under 15 genera are treated. 27 spp. of cultivated plants are added.

(vi) CRYPTERONIACEAE by R. J. van Beusekom-Osinga, (Pp. 187-204, figs. 13) gives notes on distribution, ecology, morphology, anatomy, taxonomy and uses. 3 genera *Crypteronia* (4 spp.), *Dactylocladus* (1 sp.) and *Axinandra* (3 spp.) are treated.

(vii) SYMPLOCACEAE by H. P. Nooteboom, pp. 205-274, figs. 20. *Symplocos* is treated under 2 subgenera *Symplocos* and *Hopea*, 58 species and several subspecies are treated.

(viii) LENTIBULARIACEAE by P. Taylor, pp. 275-300, figs. 26. *Utricularia* with 22 species is well treated under distribution, ecology, pollination, genetics and morphology.

Part III—SYSTEMATIC REVISIONS is dedicated to the memory of F. A. W. Miquel, whose biography and main works are appended. pp. 1-16. List of abbreviations and signs are given on pp. 17-19.

(ix) LABIATAE by H. Keng, pp. 301-394, figs. 32, is treated with notes on distribution, ecology, dispersal, palynology, phytochemistry. Taxonomy and uses have been summarized. An elaborate key to 32 genera is provided. In all 87 species and 10 subspecies are treated. Cultivated plants are also noted.

(x) ANACARDIACEAE by Ding Hou, pp. 395-548, figs. 69 is treated with notes on Distribution, morphology, dispersal, galls, germination, taxonomy, phytochemistry, chromosomes, uses etc. 22 genera and 151 species are given. An addenda, Corrigenda et emendanda is given on pp. 549-552 concerning systematic revisions given in Vols. 4, 5, 6 and 7.

Index to scientific plant names is appended on pp. 553-577.

On the whole this volume containing revisions of 10 interesting families which are common in this part of the world contains very valuable information worked out by well-known scholars in plant taxonomy and will prove very useful to the systematic botanists in India.

P. V. BOLE

THE OXFORD BOOK OF TREES: By A. R. Clapham. Illustrated by B. E. Nicholson. pp. 216 (18 × 24 cm) with many coloured and Black-and-White illustrations. London, 1975. Oxford University Press. Price £4.95.

One of a series of several publications on plant and animal life in Britain, this fascicle is truly fascinating particularly on account of its illustrations of which more than 500 are in colour.

The introduction tries to explain differences between trees and shrubs with reference to the woody vegetation of Britain. It defines with the help of suitable illustrations the shapes and types of trees and their variations.

The main text gives an enumeration of native British trees with their habit such as woodlands, wet-places and hedges. It differentiates the conifers and has separated the trees introduced to Britain from other parts of the world.

Each of the species described is superbly supported by the fascinating colour portraits by Barbara Nicholson. A key to identify the various genera and species of trees is appended together with a glossary, further reading references and general index. Winter aspects of about 30 species are drawn on the inside covers of the book.

This book excels in production value, is moderately priced and can be considered an essential reference work for any student of temperate tree flora. All public libraries must have such an excellent production for reference.

P. V. BOLE



Ravi, N and Joseph, J. 1979. "Grammitis pilifera New species of Fern from South India." *The journal of the Bombay Natural History Society* 76, 348–355.

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