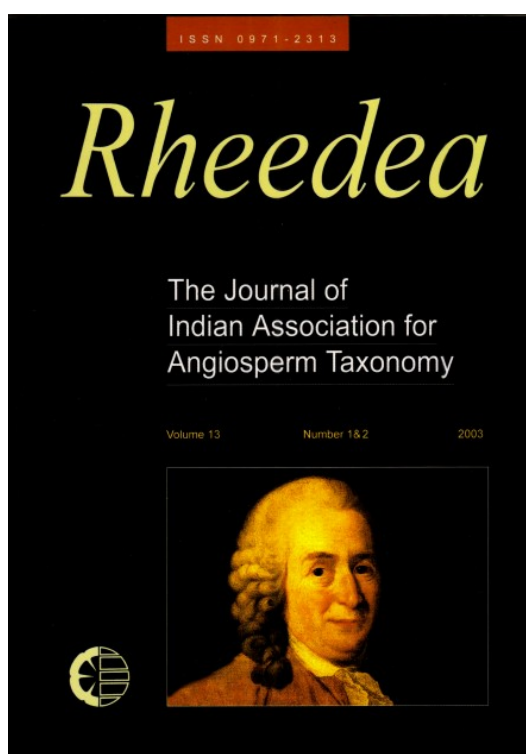




## Book Review: The Genus *Arisaema* - A monograph for Botanists and Nature Lovers

Udai C. Pradhan



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## Book Review

Guy and Liliane Gusman 2002

### **The Genus *Arisaema*- A monograph for Botanists and Nature Lovers**

A. R. G. Ganter Verlag K G, Lichenstein. 438 pp., 29 figures,  
17 tables and 468 photographs of species and herbarium sheets. US \$ 100

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Of the 105 genera that comprise the monocot family Araceae- the genus *Arisaema* is the third largest and consists of some of the world's most remarkable plants. Engler attempted the first classification in 1879 in A & C Candolle's *Monographiae Phanerogamarum*. Schott in 1910 made the first sectional division within the genus. No modern effort has been made to monograph the genus except for regional treatments. Hence Guy and Liliane Gusman's book, although not a true monograph, is a preliminary attempt in assembling together information on the genus at this crucial point in its history, when explorations are revealing more species and such wide variations within species thereby compounding difficulties in taxonomic inferences. It is undoubtedly a brave attempt and an excellent effort that calls for appreciation from enthusiasts of this magnificent genus that has been ascending in popularity amongst plant lovers worldwide.

The authors, husband and wife team, both physicists and teachers with deep love for botany, have traveled all over the world gathering information on the genus and growing them passionately in their garden in great detail.

The introductory chapter describes how they got their first introduction to this fascinating group of plants and took up the challenge of providing a modern updated account of the genus. The chapter on morphology describes the *Arisaema* plant in great details with excellent line drawings and photographs. Terms currently used to describe the plant are discussed. The chapter on the use of *Arisaema* in medicine, though interesting, is brief but indicates the possibilities of future application of the plant in medicine. The chapter, "In the wild and in cultivation" discusses the distribution of the genus, growing conditions in the wild, hardiness, feeding, pests and diseases and flowering periods in the authors' garden in Belgium. The information can be of great use in the cultivation of species.

The chapter on propagation outlines the vegetative multiplication of the tubers and propagation through seeds. It details a novel way of pollinating and seed setting which can be of great use to hybridizers and horticulturists who must propagate and add new varieties for the garden.

In the chapter on the Systematics, the authors trace the history of the genus and recent methods being used in investigating the subject. Cytology is discussed with a listing of chromosome numbers of 81 species and subspecies. Diagnosis of the genus is provided with key to Sections and Subsections. The authors classify the genus into 14 sections: Anomala, *Arisaema*, Decipienta, Dochfa, Fimbriata, Flagellarisaema, Franchetiana, Lobata, Nepenthoidea, Pedatisecta, Sinarisaema, Tenuipistillata and Tortuosa. The Section Trisecta has been renamed as Section *Arisaema* to conform to the Tokyo Code. The authors modify Murata's classification and add Section Lobata. Section Fimbriata has been divided into Section Fimbriata for the fimbriate deciduous species and Section Anomala for the evergreen rhizomatous species. Hara's Section Flagellarisaema has been resurrected. However, the authors fail to validate their sections with Latin diagnosis.

While the authors have made an effort to introduce dynamic characters obtained from observations of living specimens in the wild and in cultivation, what one misses is the advantage of a dichotomous system of sectional and specific keys. The chapter on Systematics, though extremely valuable in elucidating dynamic characters, fails to hold the attention of the layperson who would probably be more keen on a simple workable key. It is nearly impossible to get a clear idea of natural affinities of the species in sections as they have been arranged alphabetically both section wise and species wise. The authors could have provided simple dichotomous keys for Section and species in addition to their newly derived classification.

The book scores remarkably well in making the genus more familiar and accessible to amateurs through the photographs and drawings. Most species were not known by the majority of people and through this book they can now get to know them better. Doubtful and imperfectly known species have been put together in the chapter after the main text describing the Section and species. Illustrations of most of the species with photographs, half tone drawings and herbarium sheets of type specimens are very helpful in making identifications. A list of natural hybrids so far recorded, a very useful glossary of botanical terms, an exhaustive bibliography and an index to scientific names conclude the book.

The book can not be considered a monographic revision in the true sense of the term because it lacks some vital characteristics of a monographic treatment like proper identification key and a complete revision of the genus.

Typological approach in use of characters often results in unnecessary splitting whereas in modern taxonomy the current trend is to think of species as part of evolutionary groups and allow all minor to vary. The use of seed-leaf (eophyll simple or trifoliate), for instance as a major character to introduce new Subsection *Exappendiculata* seems unreliable because *Arisaema concinnum* and *A. consanguineum* can produce both types of eophyll and it thus seems to be a more clonal variation than to create a new Subsection. The illustration of a tuber of *Arisaema costatum* on page 103 belongs to *A. galeatum*. *A.*

*costatum* tubers look pale pinkish-white and are depressed globose and may grow as big as 12 cm across.

The book also misses out more in-depth information on pot-cultivation and it would have been helpful in the chapter on pests and diseases to cover fungal and bacterial infections as well as additional insect pests (such as the larvae of root fly) as they are the main cause of death in cultivation.

Mention of tissue-culture as a way to propagate *Arisaema* and the role of tissue-culture in the protection and conservation of good forms of species that could play important role in hybridization and development of unique garden worthy plants in the future is missing. Tissue culture of excellent forms of species and making them available for the market can contribute constructively to conservation by lowering pressure on wild populations.

We must accept the fact that no scientific work can be complete or perfect at any given time as human mind goes on developing new concepts and methods in an electronic world. As a lover of the genus from a developing country, I find the book a bit expensive for my pocket, though the contents fully justify its price. Guy and Liliane Gusman's work is certainly not the final say in the *Arisaema* world, but one that will be guiding everyone interested in these magnificent plants for sometime to come. They need to be congratulated for putting the pieces together and providing everyone interested in this magnificent genus a reference book of tremendous value.

UDAIC. PRADHAN (Kalimpong)



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