Fig News

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Fig News

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FROM THE EDITORS

This is the first issue of Fig News. We hope that you find it useful and decide that it is worth contributing to. Despite this being the first issue, Fig News already has quite a long history. Several years ago Kees Berg and Snowy Baijnath independently came up with the idea that a newsletter for workers interested in fig biology would be a good thing, and at the 1988 AETFAT meeting in Hamburg it was formally agreed to set up a newsletter with the (not especially original) title of Fig News. Little happened after that until the 1991 AETFAT meeting, when we volunteered to take up the editorial baton and produce what you see before you.

Whether Fig News is a success or not will depend on the quantity of news items, bibliographies etc. that we receive. The number of people who specialise in fig biology has certainly grown over the last few years, but is still pretty small. This means that a relatively high per capita input is required. We, nonetheless, hope that Fig News will also prove to be worth supporting by people with more general research interests in areas such as tropical ecology, mutualisms, co-evolution, fruit dispersal, chalcid taxonomy etc.

The objectives of Fig News are simple, to provide a medium whereby those interested in fig biology can communicate with each other. In this trial issue we have followed pretty closely the format of the highly successful newsletter Chalcid Forum. The attached questionnaire provides an opportunity to comment on what you consider should or should not be included in future issues. We look forward to hearing from you.

STEVE COMPTON & TONY WARE

Then, I shall try and conclude my revisions of the Indo-Australian pollinators, such as *Eupristina* and *Waterstoniella*, those from the *Ficus*-sections Kalosyce and Rhizocladus, *Blastophaga*, *Kradibia* and *Wiebesia*, and all species taken together in *Ceratosolen*. All this will keep me busy for the next two or three years - I shall do little else, in the few hours per day that I can work

KEES BERG:

In the course of 1991 my taxonomic studies on African figs will be largely finished after publication of the book on African fig trees and fig wasps (co-author Koos Wiebes) and my contribution to *Flora Zambesiaca*. I'll remain interested in the African fig flora: trying to solve some of the still existing taxonomic problems, identification of material, and contributions to research for which my taxonomic expertise can contribute.

I'll concentrate on the taxonomy of Neotropical taxa of *Ficus*, largely through the preparation of regional (flora) studies as has been done for the African fig flora. It will be a continuation of studies such as the fig flora of Amazonian Brazil (published in 1986), the Guianas (manuscript submitted), and Venezuela (manuscript submitted), and will be followed in the near future by a treatment of the West Indies (1992-3).

The taxonomic studies of the Neotropical fig flora will be carried out in co-operation with Marcelo Vázquez Avila, who started with the revision of the *Ficus* of Argentina, and continued with the study of taxa of Paraguay, Bolivia and Peru, in addition to the studies on the taxonomy of the Neotropical fig wasps. We plan to join forces for the study on taxa of Ecuador and Columbia (countries with very rich fig floras and, partly due to undercollecting, still poorly known). We have started with a provisional survey of the species of the section *Pharmacosycea*.

I would like to become better aquainted with the figs of the Asian-Australasian region, partly in connection with the question marks regarding the classification of the genus. I have no definite plans in this regard.

In the course of time I have built up a collection of living material of fig species (ca. 70 in a Milde greenhouse) to study morphology (e.g. juvenile stages) and chromosome numbers. I want to extend the collection, and would be grateful for any *Ficus* seed from any part of the world.

Proceedings of the Twelth Plenary Meeting of AETFAT, Hamburg, September 4-10, 1988

Published in *Mitt. Inst. Allg. Bot. Hamburg*, 23 (1990).

Abbiw, D. K. The traditional significance of *Ficus* in West Africa. pp. 395-400.

The normal uses of plants tell us something about their properties. However, other uses of plants are based almost entirely on beliefs, values, symbols or signs. For example the abundant cluster of figs in some *Ficus* L. is a symbol of fertility - and used to promote conception. This symbolic use is an important aspect of tradition.

While compiling the traditional uses of plants in the region, it was learned that the uses of *Ficus* by the Hausa of N. Nigeria include prescriptions of the aerial root decoction for vanishing charms. The 'Flora of West Tropical Africa' Vol. 1 (1954) does not record which species of the genus have aerial roots. It is an irony that a collection of traditional practices and beliefs could lead to a scientific omission and suggest further research.

This paper gives details of the traditional uses of *Ficus* in the region from literature and from elders and medicine-men. A list of *Ficus* in which so far aerial root systems have been observed is given, with a request to plant collectors to record this information.

Berg, C. C. Distribution of African taxa of *Ficus* (Moraceae). pp. 401-405.

The phytogeography of the 105 *Ficus* species recognized for the African flora region, including the Malagasy subregion, is discussed: the representation of Subgenera and Sections in the various parts of the region, representation of species and subspecies in major and minor phytogeographic subregions, and ecological differentiation in the genus.

Friis, I. Distribution patterns of *Ficus* in tropical N.E. Africa. pp. 407-424.

The geographical distribution of the 22 species of *Ficus* L. known from tropical N.E. Africa is recorded and maps for 16 species are presented. The distribution patterns are compared with the distribution of vegetation types of the region, altitude, etc.

Wiebes, J.T. African figs and their pollinators - a brief overview. pp. 425-426.

Pollinators were reared from 70 out of the 105 described species of African figs. In general, the classification of the pollinators shows conformity with that of the figs, in that the *Ficus*-sections are characterised by the genus (in one instance, group of genera) of pollinator. Within this one group of related wasp genera, however, there is a classificatory fit for only three of the six Subsections.

Verkerke, W. Fig anatomy and reproductive biology of African *Ficus* species (Moraceae). pp. 427-431.

The functional anatomy and floral morphology of some African *Ficus* species were studied. There are marked differences in the flower organization and anatomy between the monoecious and the gynodioecious species, which can be correlated with their different strategies to maintain a balance between seed production and fig wasp production.

Galil, J. Adjustment of development spans in organisms participating in fig symbioses. pp. 433-440.

In the interplay between individual characters of the figs and the wasps in the very complicated fig symbiosis, two main types of traits are recognizable: the complementary traits which entail the two participants of the symbiosis, and substitutive characters, where each partner can exert a similar effect on the eventual behaviour of the syconium. Actually, the latter consist of analogical replacement characters. For ensuring the success of the symbiosis, adjustment

of the development spans is essential. Since the wasps represent the more sensitive component of the symbiosis, the imposition of their development cycle on that of the fig is essential for the success of both partners. In this regard, the sycophilous wasps adopted certain substitutive characters, due to which the further development of the figs is ensured up to the maturation of the wasps. These consist of prevention of fig-dropping, care for wasp nutrition, and finally, prevention of untimely fig ripening. Adoption of such characters enables parasitic non-pollinating primary sycophilous wasps to survive even in the absence of the pollinators.

Compton, S.G. and Nefdt, R.J.C. The figs and fig wasps of *Ficus burtt-davyi*. pp. 441-450.

The biology of *Ficus burtt-davyi* HUTCH. was studied in Grahamstown, South Africa. Fig crops were produced throughout the year, but due to within-tree synchronisation self-pollination was effectively absent. Within the figs, style length variation was continuous with no separation into 'long'- and 'short'-styled flowers. Even the longest styled flowers contained pupae of the pollinator wasp *Elisabethiella baijnathi (Agaonidae)*.

Prezygotic biomass allocation in *F. burtt-davyi* was female biased, and the pollen : ovule ratio was also atypical for an outcrossing species. The numbers of pollinators entering the figs was recorded, together with the amount of pollen they were carrying. These counts showed that the figs were receiving an average of less than two pollen grains per female flower, a shortage which was reflected in a poor seed set.

Ramcharun, S., Baijnath, H. and Van Greuning, J.V. Some aspects of the reproductive biology of the *Ficus natalensis* complex in southern Africa. pp. 451-455.

In Natal, *Ficus natalensis* subsp. *natalensis* and *F. thonningii* occur abundantly and evidence for hybridization between these species has been found. Both species are pollinated by *Elisabethiella stuckenbergi* in the study area.

Pollinator specificity is an important taxonomic character in the genus and the reasons for such non-specific pollination is unknown. A second subspecies of *F. natalensis*, viz. subsp. *leprieurii* which occurs in West and Central Africa, is pollinated by *Alfonsiella fimbriata*. Therefore the taxonomy of certain subsections of the sect. *Galoglychia* may require revision.

Laurent Ake Assi. Utilisation de diverses especes de *Ficus* (Moraceae) dans la pharmacopee traditionnelle africaine en Cote D'Ivoire. pp. 1039-1046.

In the traditional African medicine of the Ivory Coast several species of *Ficus* L. are employed in the treatment of a number of diseases.

For this report, we have chosen six species among those well known and commonly used. They are: *Ficus dicranostyla* (abcess, furuncle), *Ficus exasperata* (asthma, cough), *Ficus glumosa* (women's sterility), *Ficus ovata* (psychoneurosis), *Ficus sur* (emmenagogue, galactopoietic), *Ficus thonningii* (epilepsy).

RECENT PUBLICATIONS

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Wiebes, J. T. and Compton, S. G. (1990). Agaonidae (Hymenoptera Chalcidoidae) and *Ficus* (Moraceae): fig wasps and their figs, VI (Africa concluded). *Proc. Kon. Ned. Akad. Wet.* 93, 203-222.

THESIS ABSTRACT

HéLèNE PERRIN (1991). Muséum National D'Histoire Naturelle (Entomologie), 45 Rue de Buffon, F-75005 Paris.

Biosysematics and evolutionary ecology of *Curculio* (Coleoptera, Curculionidae). Double radiation on *Ficus* (Moraceae) and Fagales.

Field work data in west tropical Africa and sparse bibliographic records provide definitive evidence of an explosive radiation of weavils of the genus *Curculio* in figs *(Ficus* spp., Moraceae) in tropical Africa and Asia.

There are at least 16 species of fig-breeding *Curculio* in Africa and 19 in Asia. This newly-evident speciation pathway parallels the explosive speciation of *Curculio* relatives that was previously known to have independently occurred on Fagales (47 species) in the holartic region. From paleontological and biogeographical considerations a new evolutionary scenario is proposed for the genus *Curculio* and possible modes of speciation discussed. Emphasis is made on population ecology of the two fig-breeding *Curculio* species (*C. congoanus* and *C. lachaisei*) which coexist on sympatric fig species (*F. sur* and *F. vallis-choudae*) in Lamto. Capture-release-recapture methods have allowed the following of fig weavils individually. Results show that the evolutionary stable foraging strategy, which is similar in the two sympatric fig *Curculio* populations, is far from optimal. Predictions of Charnov's "marginal Theorem" are not met.

Finally, it is pointed out that the sexual dimorphism within the curculionid family has evolved in some, but not all the species and, most interestingly, that it may be due to either females or males having longer rostrums. When in females as in *C. congoanus* it does not result in sexual selection.

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