HAUSTORIUM
Parasitic Plants Newsletter
Official Organ of the International Parasitic Seed Plant Research Group

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● FIFTH SYMPOSIUM ON PARASITIC WEEDS

The Fifth Symposium on Parasitic Weeds is scheduled for June 1991 in Nairobi, Kenya. Current sponsors are IPSPRG and CIYMNT. If you are interested in being placed on the mailing list for future announcements, return the attached form by 15 April 1990. Like other IPSPRG symposia, plans are to have papers prepared from camera ready copy available at the meetings. All areas and parasites are to be included, as in past meetings. Although emphasis will be on African Striga. A two day field trip to see parasites is planned. Registration and other information will be sent with the second circular no later than June 1990.

● STRIGA BIBLIOGRAPHIES

1. 1957 USDA Striga Bibliography. This invaluable resource has been reprinted by the parasitic Plant Laboratory. It contains summaries of 298 papers and along with several indices of Striga and host species. It is a model bibliography and the most exhaustive review of the literature. Single copies of the 132 page publication are free upon request. In addition, the entire bibliography is available on disk. Specify disk site and choice of WordPerfect 5.0 or ASCII formats. Production and distribution of this bibliography is made possible by grant 59-319R-9-003 from the U.S. Department of Agriculture, Office of International Cooperation and Development.

2. A second bibliography has been prepared by Dr Joel Ransom, CIYMNT maize agronomist. It contains more than eight hundred entries of selected Striga literature, without summaries, through 1989. Single copies are available upon request as are disk copies.

3. Exhaustive Striga bibliography in progress. Under the direction of Dr Vasudeva Rao, ICRISAT has collected all known papers on Striga. Summaries of the more than 1400 titles are now being prepared and publication. As a joint effort between ICRISAT and the Parasitic Plant Laboratory, it is planned for late 1990 or early 1991. The entire bibliography with summaries will be available on disk. Plans are also underway to determine the feasibility of optically scanning papers for computer output of papers upon demand.

● MISTLETOES ON RUBBER TREES IN NIGERIA

Severe infestations of mistletoes (Loranthaceae)-perennial, woody, parasitic plants-have been observed in rubber. Hevea brasiliensis plantations in southern Nigeria. Two mistletoes have been observed as most prevalent. Although they have similar vegetative characters, they are easily recognized by their flower color. Loranthus inca­nus has yellow flowers with pink streaks while Loranthus brunneus has red flowers with black streaks; this latter species is mainly restricted to the tree top of abandoned rubber plantations. Amongst monoclonal plantations surveyed, the RRIM 600 and PR 107 have been found to be more susceptible to L. inca­nus infestation. Because of the distance between the crown and the ground, the presence of the parasite is hardly noticed until flowering. The mistletoes flower twice a year and shed their leaves approximately one month earlier than their hosts. The obvious
effect of this is the decrease in the rubber latex yield. Due to the excessive weight of the parasite, parasitized limbs readily break in the wind. Furthermore, the effects of the parasite on the crown, coupled with the root parasite *Thonningia sanguinea* and the white wood rot fungus (*Fomes lingus*) on the lower portion of the bole ultimately lead to tree fall. All this results in losses not yet quantified.

L. S. Gill and H. I. Onyibe, University of Benin (Nigeria)

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**STRIGA HERMONTICA ON BARLEY IN ETHIOPIA**

*Striga hermonthisca* is a common occurrence in sorghum and maize in many parts of Ethiopia. In 1988 it was found growing on tef (*Eragrostis tef*) in several fields in East and West Gojam and North Wello Administrative Regions. Last September *S. hermonthisca* was found growing on barley (*Hordeum vulgare*) in a field where sorghum was growing the previous year. The owner of the farm said that he had not expected *Striga* to grow on barley and that he had changed from sorghum to barley in an attempt to escape the menace of *Striga*. The area, in general, has heavy *Striga* infestation in almost every sorghum and/or tef field. But the attack on barley was observed only in one field. On several plants, during the coming (1990) cropping season, more surveys in the region will be made.

Ahmed M. Sherif, Holetta Research Center

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**A SEW TERMINOLOGY FOR PARASITIC PLANTS**

Parasitic flowering plants have been studied for more than 150 years by scientists from different fields of research. The result has been a large number of publications (e.g. Kuijt 1969). In the last 20 years in particular, there has been an explosion of papers on taxonomy, morphology, anatomy, ecology, physiology and biochemistry of parasitic plants. New aspects, phenomena or structures, described in different languages, have resulted in a chaos of terms. even in the same language. We propose the development of a uniform terminology which can be used by everyone who studies these plants by eliciting the input for all workers. A series of definitions will be published in the next issues of *HAUSTORIUM*. Send your criticisms and/or alternative definitions to Hans Christian Weber. Fachbereich Biologie. Philipps University. D-3550 Marburg, West Germany or to Lytton Musselman. After receiving all your input, we shall prepare a glossary for distribution at the Nairobi meeting. The first installment follows.

**Parasitism**

1. Parasitic flowering plant—A plant which penetrates a living host for nutrition.

2. Endoparasite—Plants in which the majority of the plant body is inside the host. Examples: Raflesiaceae, some mistletoes.

3. Ectoparasite—Plants in which the majority of the plant body is outside the host. Most parasites are in this category.

4. Hyperparasitism—Plants which are obligate parasites of other parasites, as some mistletoes.

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**YIELD LOSSES IN MAIZE DUE TO STRIGA ASIATICA IN THE CAROLINAS, 1989**

A better understanding of the actual and potential yield losses associated with *Striga* is needed if sufficient resources are to be committed to its control. From a number of experiments conducted in 1989 in North and South Carolina which varied in planting date, nitrogen rate, and yield potential (2400 kg/ha to 8500 kg/ha), regression equations were calculated to predict yield losses in maize using *Striga* plant count, ear in the season (70-75 days after planting), and *Striga* above ground dry weight at the time of maize harvest. The predicted loss of maize yield varied between 32 and 141 kg/ha per *Striga* plant/m² for late counts, and 20 and 71 and 96 kg/ha per gm/m² *Striga* dry weight. *Striga* emerging early in the season was consistently more damaging than *Striga* emerging late. Only 20 *Striga* plants/m² late in the season were required to reduce yield by 50% in the lowest yielding trial while 43 plants/m² were needed to produce the same effect in the highest yielding trial. Nevertheless, these data suggest that yield losses due to *Striga*, even in a well managed crop (i.e., adequately fertilized and free from other damaging pests) can be substantial.
Based on these data, 1 gm of above ground *Striga* growth represents a 4 to 15 gm reduction in maize growth (based on the assumption that the harvest index of the maize was 40% and not considering any *Striga* which attached, grew, but failed to emerge from the soil). Assuming that with a competitive effect, 1 kg of weed growth will result in the reduction of 1 kg of crop growth, then only 7 to 25% of the reduction in the growth of maize in these experiments can be attributed to competition. More information on the "toxic" effects of *Striga* is needed.

Joel K. Ransom. Maize agronomist CIMMYT, Nairobi

**LITERATURE**


Anonymous. 1989. *Striga*-Improved Management in Africa. FAO Plant Protection and Production Paper 96. 205 pages. (This is the published proceedings of the All-Africa Government Consultation on *Striga* Control held in Cameroon in 1987 and sponsored by OAU/FAO).


Bewick, T.A., L.K. Binning, and B. Yandall. 1988. A degree day model for predicting the emergence of swamp dodder in cranberry. Journal of the American Society for Horticultural Science 113(6): 839-841. (A model that predicts the onset of *Cuscuta gronovii* emergence using growing degree days and low temperature thresholds was developed. This dodder is a serious problem on cranberries and and blueberries. both species of the genus *Vaccinium*).

El-Hiweris, 5.0. 1988. Growth inhibitors of *Sorghum vulgare* Pers. from *Striga hermonthica* (Del.) Bent. Arab Gulf Journal of Scientific Research B 6(2): 163-172. (Some of this work has been reported earlier. Extracts of infected sorghum plants inhibited non-infected sorghum).


FIFTH INTERNATIONAL SYMPOSIUM
ON PARASITIC WEEDS
NAIROBI, JUNE 1991

FIRST CIRCULAR-JANUARY 1990

If you wish to be placed on the mailing list for further announcements of the symposium, fill out this form and return it by April 15 1990 to:
Fifth Symposium on Parasitic Weeds
Parasitic Plant Laboratory
Old Dominion University
Norfolk, Virginia 23529-0266 USA

NAME (First, middle initial last):
TITLE:
ADDRESS (include mailing code):
TELEX:
ELECTROSIC MAIL:
Do you need an official invitation to attend?
Will you need financial assistance to participate?
TENTATIVE TITLE OF YOUR PRESENTATION:
Other information:
INDEX OF PARASITIC SEED PLANT WORKERS

Several years ago, an attempt was made to produce an index of of workers and others interested in parasitic plants. Facilities and resources are now available to do this. Please TYPE your responses as they will be computer read. Send to address on reverse side.

1. Same (first, middle initial, last):

2. Title (Dr., Prof., Ms, etc):

3. Position (Research assistant; supervisor, etc):

4. Institutional affiliation:

5. Department:

6. Complete mailing address:

7. Telecommunications:
   7a. Phone:
   7b. Telex:
   7c. Cable:
   7d. Electronic mail:

8. Specific research interest (9):

9. Organisms (give genus and family of no more than four)
   9a. (1):
   9b. (2):
   9c. (3):

10. Publications. List three of your most recent or most important by last name. initials of first author followed by initials and last name of other authors. Date. Title. FULL NAME OF JOURNAL. REPORT. PROCEEDINGS. ETC (do not abbreviate!). Volume (number). Pages. City and publisher (for reports and books).

Index of Parasitic Seed Plant Workers