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 CIYMMT. 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 inforniation will he sent with the iecond 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 iiidicies 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 possihle 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, CIYMMT 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*. Sum**manes** of the more **than** 1400 titles are now being prepared and publication. as a joint effort between ICRISXT and the Parasitic Plant Laboratory. is planned for late 1990 **or** early 1991. The entire bibliography with summaries will he 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 the! 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 tlie wind. Furthermore, the effects of the parasite on the crown. coupled with the root parasite *Thonningia sanguinea* and the white wood rot fungus (Fomes *lingasus*) 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)

• *STRIGA HERMONTHICA* ON BARLEY IN ETHIOPIA

Striga *hermonthica* is a common occurence 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.** hermonthica **was** found growing on barley (Hordeum *vulgare*) in a field where sorghum was growing the previous vear. 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 very 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 survey in the region will be made.

Ahmed M. Sherif, Holetta Research Center

• A **SEW** TERMINOLOGY FOR PARASITIC PLANTS

Parasitic flowering plants have been studied for for'more than 150 years by scientists from different fields of research. The result has been a large number of publications (eg. 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 he'** 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 vour criticisms and/or alternative definitions to Hans Christian Weber. Fachbereich Biologie. Philipps University. D-3550 Marburg. West Germany or to Lvtton 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: Rafflesiaceae. 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.

• **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 8500kg/ha). regression equations were calculated to predict yield **losses** in maize using *Striga* plant count, early 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 varie**4** between 32 and 141 kg/ha per ***Striga*** plant/ m^2 for late counts, and 20 and 71 and 96 kg/ha per gm/ m^2 ***Striga*** dry weight. ***Striga*** emerging early in the season was consistently more damaging than *Striga* emerging late. Only 20 *Striga* plants,' m^2 late in the season were required to reduce yield by 50% in the lowest yielding trial while 43 plants,' m^2 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 conipetitive effect, 1 kg of weed growth will result in the reduction of 1 kg of crop growth. then onlv 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

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HAUSTORIUM is edited by L. J. Musselman. Parasitic Plant Laboratory. Department of Biological Sciences. Old Dominion University, Norfolk. Virginia **23529-0266** USA, electronic **mail** LJM100f at ODUVM. telex **823428** OLD DOM **NK,** fax **804-683-5155** and C. Parker. Long Ashton Research Station. University of Bristol. Bristol. BS18 **9AF,** ENGLAND, fax (0272) **394007.** It **is** published by Old Dominion University and sent free of charge under **a** grant **(59-319R-9-003)** administered **by** the Office of International Cooperation and Development of the U S Department of Agriculture and mailed twice a year. usually in January and July. Unsigned articles and literature **reviews** are by tlie editors. Send material for publication **to** either editor and requests for copies **to** L. J. Musselman.

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FIFTH INTERNATIOTAL SYMPOSIUM ON PARAS TIC WEEDS NAIROBI, JUNE 1991

FIRST CIRCULAR-JANUARY 1990

If you wish to he **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
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Norfolk. Virginia 23529-0266 USA

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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 thev will be computer read. Send to address on reverse side.

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

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

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

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5. Department:

6. Complete mailing address:

7. Telecommunications:

7a. Phone:

7b. Telex:

7c. Cable:

7d. Electronic mail:

8. Specific research interest (s):

8a.

8b.

8c.

9. Organisms (give genus and family of no more than four)

9a. (1):

9h. (2):

9c. (3):

9d. (4):

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 hooks).