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ALECTRA AND STRIGA ASPERA IN BURKINA FASO

As part of field surveys of parasitic weeds with ICRISAT, we have noticed *Alectra vogeliifor* the first time in Burkina Faso attacking cowpeas 5 km east of Gode and groundnuts in Toussiana village 50 km, southwest of Bobo-Dioulasso. Two plants were present on cowpea and several on groundnuts; In both localities sorghum was interplanted with the legumes and was itself parasitized by *Striga hermonthica.* Cowpea was parasitized by ***S. gesnerioides,*** a common occurence in Burkina Faso. The Flora of West Tropical Africa **(FWTA)** records ***A. vogelii*** from Nigeria, Ghana, and Guinea. Recently Parker **(1984)** reported ***A. vogelii*** on cowpeas in Mali. According to FWTA, this parasite **is** a serious pest at at least one site in Cameroon. In southern Africa it is reported to be serious on cowpeas, groundnuts and bambara groundnuts *(Vignasubterranea).* We have not seen it on bambara in Burkina Faso but further surveys are needed.

Striga aspera, a species which closely resembles *S. hermonthica,* is usually considered a sort of biological curiosity when it is found parasitizing grain crops. However, in a large sugar plantation near Banfora this species was heavily damaging sugarcane. Likewise, we found heavy infestations in maize. No doubt some reports of damage from ***S. hermonthica*** actually involve ***S. aspera.***

K. V. Ramaiah, S. B. Safa,
L. J. Musselman

CUSCUTA SPECIES AS CONTAMINANTS IN SEED SHIPMENTS

During the past several years, we have been investigating the occurrence of *Cuscuta spp.* in commerical shipments of seeds, especially niger seed *(Guizotiaabyssinica)* which is imported in large quantities into the United States largely for birdseed. Much of t seed originates in India. The Plant Protectioi and Quarantine service of the U ***S*** Departme of Agriculture has the responsibility of determining contaminants at ports of entry. These have been shipped to the Foreign We Research Center at Frederick, Maryland whe we have grown them to flowering for identification. To date we have found that all contaminants belong to only two species: C. *pentagona (syn. C. campestris)* and ***C. australis.*** *Cuscuta pentagona* is native to the United States (the type specimen was collect not far frcm Old Dominion University!) but is becoming established in many parts of the world. We have recently seen it in India on niger seed and in Burkina Faso on roadside weeds. It is ironic that it is now being reintroduced into the United States. *Cuscuta australis* superfically resembles *C. pentagona* but has different corolla lobes. Preliminary work indicates that seed surface characteristi may be useful in distinguishing among specie

Richard Craeger, U ***S*** Department of Agriculture, Agricultural Research Service, Frederick, Maryland and
L. J. Musselman

CHROMOSOME NUMBERS OF SOME STRIGA SPECIES

In this preliminary study, new chromosome counts were obtained for ***S.*** *elegans* (N=18), *S. asiatica* (N=19), and ***S.*** *forbesii* (N=22). **A** correlation of P=0.27 was found between chromosome number and pollen exostructure. Further work is needed to determine relationships within the genus using as many characters **as** possible.

Cynthia L. White, Old Dominion University

HAUSTORIUM TEN YEARS OLD!

HAUSTORIUM was started ten years ago as an outcome of a *Striga* workshop in Khartoum. Our newsletter now has **a** mailing list of **450** "subscribers" in **71** countries. The purpose remains the same-to provide communication among workers on any group of parasitic plants. This includes basic and applied researchers as well **as** many library subscribers. Most of our subscribers are in developing countries and so we often get requests from these colleagues for copies of articles we review in the literature section. We regret this is not possible but it may be possible to produce more lengthy reviews or abstracts if there is a large enough demand.

Remember, HAUSTORIUM is a newsletter, not a journal, **so** articles should be informal but accurate and informative. We are happy to receive any information you wish to share. For the format, see **a** recent copy. Please consider sending any information on your work with parasites. No articles, no newsletter!

IS STRIGA HERMONTHICA NATIVE TO MOST OF WEST AFRICA?

Recent field work in West Africa has raised this question because *Striga hermonthica* is seldom, if ever, seen in native grasslands. This is in contrast to *S. aspera* and S. *asiatica* which are often frequent in natural plant communities. Has Striga *hermonthica* been widely spread along with its most common hosts, sorghum and millet?

GENETIC DIVERSITY IN STRIGA HERMONTHICA

The genetic diversity of the millet and sorghum strains of *Striga hermonthica* in Burkina Faso is being studied in **a** joint effort with ICRISAT. Using the technique of allozyme analysis eight enzymes have been examined by starch gel electrophoresis. Preliminary results indicate that there is variation within populations but little variation among populations as would be predicted for an obligate outcrosser. These results contrast sharply with the situation in *Striga* asiatica, a strongly autogamous species, in which there is great genetic uniformity within the American population as determined by Werth et al.

Bharathalakshmi, Old Dominion University

SCREENING FOR RESISTANCE TO STRIGA FORBESII

The development of *Striga*-resistant sorghum cultivars is considered to be the most economically feasible form of witchweed control for it requires minimal input from subsistence farmers. In a recent cooperative project with Dr. **A.** B. Obilana (SADCC/ICRISAT) and Old Dominion University some *S. asiatica*-resistant (SAR) cultivars developed at ICRISAT Center were screened for their performance against ***S.*** *forbesii* in Zimbabwe using the advanced screening checkerboard layout.

Evaluation of test entry performance was obscured by poor and variable host emergence, however, general trends were evident. Cultivars supporting no or very little emerged witchweed included **SAR** 29, SAR

33, and SAR 19. RADAR, PMC, RED SWAZI, and SAR 26 were found to be quite susceptible. Information on yield was not recorded due to extensive cow and bird damage.

The fact that SAR lines show promising levels of resistance to *S. forbesii* indicates the possibility of broad-based resistance to problem witchweeds.

David A. Knepper, Old Dominion University

LITERATURE

Riches, C. R. 1987? Witchweeds (*Striga* species) of Southern Africa. A field Identification Guide. SADCC/ICRISAT Sorghum and Millet Improvement Program, Bulawayo, Zimbabwe. (An attractively printed, four page pamphlet with colored pictures of *Striga hermonthica*, *S. asiatica*, *S. gesnerioides*, *S. forbesii*, and *Alectra vogelii*. There is a mimeographed insert with a key to ***Striga*** species of economic importance in southern Africa. SADCC/ICRISAT is to be complemented on developing this very practical pamphlet which should make farmers in the region more aware of the *Striga* problem.)

Chang, M., Netzly, D. H., Butler, L. G., and D. G. Lynn. 1986. Chemical regulation of distance: Characterization of the first natural host germination stimulant for ***Striga asiatica***. Journal of the American Chemical Society 108: 7858-7860. (Strigol, an exudate from cotton roots, was identified and later synthesized several years ago. But cotton is not a host for ***Striga asiatica*** so this report is the first identification of a germination stimulant from a host of ***Striga asiatica***. The compound is as a benzoquinone derived from sorghum root exudate. It is apparently very labile. The ability of *Striga* to recognize this labile hydroquinone allows it to commit itself to a host through germination only within the distance through which the compound can diffuse before being oxidized. This report demonstrates th biological committment of this parasite to a transient chemical species that ca define viability of and distance to a potential host.)

Chang, M. and D. G. Lynn. 1986. The haustorium and the chemistry of host recognition in parasitic angiosperms. Journal of Chemical Ecology 12(2): 561-579. (2,6-dimethoxy-p-benzoquinone (2,6-DMBQ) from sorghum root exudate is described as "haustoria-inducing principle" in ***Agalinis***, a hemiparasite of the Scrophulariaceae, and *Striga*. The parasite apparently exudes an enzyme which digests part of the host root, releasing 2,6 DMBQ which, in turn, triggers haustorial development.)

Williams, C. E. and R. K. Zuck. 1986. Germination of seeds of ***Epifagus virginiana*** (Orobanchaceae). Michigan Botanist 25: 103-106. (*Epifagus* ***virginiana*** is the most common member of the Orobanchaceae in most parts of Eastern North America. It is an obligate parasite of beech trees (*Fagus* ***grandifolia***), flowers in the late fall, and produces large quantities of dust-like seeds which have never been known to germinate! Using soil from beneath *Epifagus* plants, small quantities of seeds were germinated. These are illustrated in the paper.)

Rozema, J., Broekman, R., Letschert, W. Arp. J., Van Esbroek, M. and H. Punte. 1986. A comparison of the mineral relations of a halophytic hemiparasite and holoparasite. Acta Botanica Neerlandica 35(2): 105-109. (This study compares the salt uptake of ***Odontites verna,*** a hemiparasite, and

Cuscuta salina, a holoparasite. The holoparasite did not concentrate salts even though it was parasitizing a host with high salt concentration while the hemiparasite took up **a** high concentration of salt.)

FIFTH PARASITIC PLANTS SYMPOSIUM Planning has begun for a fifth parasitic plants symposium, tentatively scheduled for 1990, following the successful 1987 symposium held in F.R. Germany. Suggested venues include **Spain,** Sudan, Zimbabwe, and Botswana. Anyone with suggestions for a site, or other ideas, is invited to contact one of the editors.

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