



# HAUSTORIUM

## *Parasitic Plants Newsletter*

Official Organ of the International Parasitic  
Seed Plant Research Group

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### ● FIFTH SYMPOSIUM ON PARASITIC WEEDS JUNE 1991

The Fifth Symposium on Parasitic Weeds is scheduled for June 1991 in Nairobi, Kenya. By now you should have received registration material. If not, please contact Dr. Joel K. Ransom, CIMMYT, Post Office **Box** 25171, Nairobi, Kenya. Telex: **22040 ILRAD**; Fax: **593499 ILRAD**.

### ● HAUSTORIUM IN TROUBLE AGAIN!

Once again, our newsletter has received the ax! Through a grant administered by the U S Department of Agriculture, Office of International Cooperation and Development we were able to mail the last two issues of HAUSTORIUM in addition to the preparation and mailing of the *Striga* bibliographies. This was tentatively a three year grant but due to budget cuts, only one year was funded. Thus, we have no sponsor. This issue is being produced by Old Dominion University and postage paid from residual monies from the 1984 symposium. Can any one help?

### ● DEFINITIONS OF PARASITIC PLANTS

This column in the last issue of HAUSTORIUM provoked considerable interest. Here are some of the responses.

From M. Jones, Clwyd, UK-- Are these hyperparasitic mistletoes only found on other species of parasites or can they also grow on free-living hosts? If not is hyperparasitism congruent with epiparasitism, which has been defined by Calvin and Weins (1987) as the obligate occurrence of one mistletoe on

another? Should polygonal parasitism (see Moran, 1987) also be referred to in the definition. If hyperparasitism and epiparasitism have the same meaning how should non-obligate associations such as those recorded for *Cuscuta* on *Striga* and *Cuscuta* on *Orobanche* be referred?

From 4. Lane, Long Ashton Research Station, Bristol, UK-- Haustorium: an outgrowth from a parasite which penetrates a tissue or cell of its host and acts as an organ for absorbing nutrients. In fungal/host relationships, the haustorium is "a special hyphal branch within a living host cell". The fungal cells on the surface of the penetrated host cell are not regarded as part of the haustorium. They are not inside the cell nor are they involved in nutrient absorption.

In these terms, the use of haustorium is often misleading when applied to plant parasites. Haustorium should be restricted to the absorptive part of the parasite which is within the living host tissue.

On this basis all parasitic plants have haustoria. However, many species of parasitic plants, e.g. *Dicentra vogelii*, *Striga gesnerioides* and *Orobanche minor*, also have a large organ on the surface of the host root. A preferable term for this small swelling or nodule is tubercle (sensu Kuijt page 97).

From B. Fineran, University of Canterbury, Christchurch, New Zealand-- Parasitic flowering plant. I feel this needs a slight modification to clarify the nature of the living host. The present wording "a living host" is too vague and conceivably could include anything

from an animal, fungus, to any form of plant life. I don't know of any functional hosts other than vascular plants. Also, since we have one example of a parasitic gymnosperm, perhaps the heading should recognize this fact. Thus, the whole entry might read as follows: Parasitic seed plant. A plant which penetrates a living vascular plant host for nutrition.

### 2 - 3. Endoparasite and ectoparasite

I can't say that I am overly fond of either of these terms. They smack too much of what I remember from my zoology student days. However, if you wish to introduce such terms into the botanical literature then I suggest the following (to improve the tense and precision of meaning).

**Endoparasite.** A seed plant in which most of the vegetative tissues of the parasite lie embedded within the host plant.

The term "plant body" is not favored by many botanists outside North America. They consider its meaning too ill-defined. I have introduced the term "vegetative tissues" to distinguish this part of the parasite from its reproductive tissue, which typically lie outside the host.

**Ectoparasite.** A seed plant in which only a small portion of its tissues penetrate the host plant.

**4. Hyperparasitism.** This definition seems fine, but it is not strictly grammatically correct. "Hyperparasitism" is a condition (i.e., a state of being); it cannot be a plant. The definition should therefore read: Either (a) **Hyperparasitism:** The condition in which a parasitic seed plant is an obligate parasite on another parasitic seed plant, as found among some mistletoes, or (b) **Hyperparasite:** A parasitic seed plant which is an obligate parasite on another parasitic seed plant. Typically found among some mistletoes.

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## ● SEW CEREAL HOSTS OF *STRIGA* *HERMONTHICA* IN ETHIOPIA

The cereals of Ethiopia, in order of importance, are: t'ef (*Eragrostis tef*), maize, sorghum, wheat, barley and dagussa (finger millet, *Eleusine coracana*). *Striga* *herrnonthica* is a serious pest of sorghum, maize and dagussa in many parts of Ethiopia at altitudes below about 2,000 metres, but is **has** not been reported on the other, more temperate cereals.

However, in 1988 *S. herrnonthica* was found growing on t'ef in three areas of northern Ethiopia at altitudes between 1,500 and 2,000m: in south-eastern Gojam, in the middle Abay (Blue Nile) Gorge and in northern Welo. A fuller account of these occurrences and a discussion of their implications for t'ef cultivation is given in the I.A.R. Newsletter of Agricultural Research (Ethiopia) 4(1): 1-3 (1989).

The same year (1988) *S. herrnonthica* was also found growing on barley in Gojam Administrative Region.

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### JOHANN H. VISSER

It is with extreme sadness that we record the untimely death of Johann Visser, one of the most prominent workers in the field of parasitic flowering plants. Johann had a tremendous love and boundless enthusiasm for these plants, well beyond pure scientific interest. He underwent surgery in May 1989 to remove a brain tumor and died in January 1990.

Johann had a remarkable ability to combine both field and laboratory research and as a result had a keen understanding of the biology of parasitic plants. His love for the field was evident to any of us who enjoyed his hospitality and followed him hounding through the veld. He took immense pleasure in taking his visitors around southern Africa to see the fascinating array of parasitic plants. In addition to work in South Africa, he established strong links with labs around the world and was always eager to assist in the collection of material for his colleagues.