

To: Purchasers of Symposium Proceedings

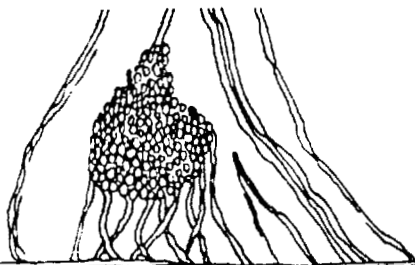
Two pages, 181 and 181, in the original printing were in error. Correct copies are enclosed

STORIUM

ITIC

PLANTS NEWSLETTER

OLD DOMINION UNIVERSITY



No. 4 Official Organ of the International Parasitic Seed
Plant Research Group

December 1979

Rafflesiaceae in Libya

On April 1979 during a field trip to Gebel Akhdar area (Cyrenaica) in the region of Ra Helal, Kubba and Derna, the plant collectors were attracted by bursts of brilliant yellow and red among the green beneath the shrub; Cistus parviflorus L. Dr. M. H. Jafri of the Herbarium in the Faculty of Science, Tripoli identified it as Cytinus hypocistis L. which infects the roots of the above shrub.

This holo-root parasite is restricted to the Old World. It occurs in the Mediterranean region, Madagascar, and Cape region of S. Africa. The species has been known since the time of the Greek Herbals as reported by R. T. Gunther in his book Dioscorides (1968). It has been reported by H. G. Keith in Libyan Flora (1965) and also in Italy by D. E. Baroni in Guida Botanica D'Italia (1955), in France by E. Burnat in Prodrome de la Flore Corse, Tome I, (1951) and in Lebanon and Syria by P. Mouterde in Nouvelle Flore du Liban et de la Syrie, Tome Premier, Atlas, (1966),

As indicated by Kuijt in The Biology of Parasitic Flowering plants, (1969), little is known about the host range, seed germination and the manner in which entry into the host is affected. These problems are now under investigation.

M. A. Abou-Raya

Variations in metabolites and pretreatment requirement in different samples of *Striga asiatica* (L.) Kuntze

Seed samples of *Striga asiatica* (L.) Kuntze collected from sorghum and pearl millet fields of Mandya (sample A) and Bellary (samples B and C) districts, Karnataka, India were found to differ in their seed weight, proteins, phenolic level and germination per cent in response to host root exudates, kinetin and GR 7. Extended studies show that these samples also differ in their metabolite levels before and after the pretreatment and the minimum pretreatment period required to induce germination.

Prior to pretreatment sample B showed the maximum levels of reducing sugars and RNA whereas, A ranked the highest with regard to free amino acids. Total protein content was at the same level in A and B but less in B. Following pretreatment there was significant increase in reducing sugars, which came to almost the same level in all the three samples, amino acids to the maximum in B and RNA to the highest in A and C. Proteins declined to a great extent in B and phenolics in A and C.

With regard to the electrophoretic pattern of proteins following pretreatment, in sample A, out of the six bands that were present, one completely disappeared, the intensities of the other five were decreased and two new bands appeared. In B the pretreatment caused the disappearance of all the three bands and appearance of four new bands and in C, out of the five bands two disappeared, the intensities of the other three were lowered and new bands appeared. Among the new bands that appeared subsequent to pretreatment, one of the two in A corresponded with one of those in B and the other with one of those in C,

The minimum pretreatment period required to induce germination was four days in A, seven days in B and six days in C.

These findings reinforce the inference drawn from our earlier data that the samples A, B and C are different populations.

Bharathlakshmi and Jayachandra

Orobanche Research at ICARDA

The International Centre for Agricultural Research in the Dry Areas has as an overall mandate the improvement of the agricultural production and consequently the standard of living for the rural population of West-Asia and North-Africa, by means of agricultural research. To this end the center follows a farming systems approach integrating crop improvement, agronomic practices and other relevant approaches.

One of the main crop improvement programs is on food legumes, such as lentil (Lens culinaris) and faba (Broad) bean (Vicia faba). One serious constraint in improving production of these crops in the region is their susceptibility to the parasitic weeds broomrape (Orobanche spp.) which are present over the main areas where food legumes are grown,

ICARDA has therefore embarked on a control program with financial assistance from IDRC (International Development and Research Centre, Ottawa, Canada) involving the part-time expertise of two scientists (Mr. F. Basler and Prof. A. R. Saghir) and the full-time work of research assistants. The work is carried out at the centre's facilities in Aleppo, Syria and at the American University in Beirut, Lebanon. In Aleppo research concentrates on field work, in Beirut mostly laboratory and greenhouse experiments are carried out,

The program involves:

- 1) Selection of Orobanche resistant cultivars from a large genetic stock available in ICARDA of faba bean (against O. crenata) and lentil (against O. aegyptiaca and O. crenata) and lentil (against O. aegyptiaca and O. crenata) as well as tomato (against O. ramosa) from various sources,
- 2) Testing synthetic stimulants such as GR-7 (provided by Prof. A. W. Johnson, Sussex University, Brighton, UK),
- 3) Developing chemical control means.
- 4) Study the usefulness of trap crops, also referred to as false host crops,
- 5) Study of the seed behavior of Orobanche with emphasis on dormancy and periodicity patterns. (This study has been taken up in collaboration with Dr. Pieterse at the Royal Tropical Institute in Amsterdam, outside the IDRC financial assistance.)

Some progress has been made lately with some of the control approaches studied.

New biological control newsletter

The Commonwealth Agricultural Bureau (CAB) have just released a sample issue of the new "Biocontrol News and Information". This contains several pages of news items on biological control and some 500 relevant abstracts selected from their various abstract journals, **issue will** also contain a review article and the topic of this first issue is by chance "potential for biological control in the suppression of parasitic weeds" by D. J. Girling, J. Greathead, A. I. Mohyuddin and T. Sankaran all of Commonwealth Institute of Biological Control (CIBC). This gives an excellent overview of the present possibilities and prospects for biological control of all **four** main groups of parasitic weeds - Striga, Orobanche, Cuscuta and mistletoes,

The sample is free, and the journal will appear quarterly from March 1980 priced £1.00 in the first year. Further information can be obtained from D. J. Girling, CIBC, Inform Service, 56 Green's Gate, London SW7 5JR, UK.

C. Parker

Annotated bibliographies on parasitic weeds

Four **new** bibliographies are now available in the WRO series. These consist of sets of abstracts mainly reproduced from CAB "Weed Abstracts". They are:-

- No 133 on Orobanchaceae (91 abstracts, 1977-79). Price £4.00 in UK, 4.80 overseas
- No 134 on Scrophulariaceae (including Striga) and Santalales (59 abstracts, 1977-79) Price 3.50 in UK, 4.20 overseas.
- No 135 on Cuscuta species (69 abstracts, 1976-79). Price £3.50 in UK, 4.20 overseas
- No 136 on mistletoes (111 abstracts, 1974-79). Price £4.00 in UK 4.80 overseas,

Please send remittance made payable to ARC Weed Research Organization with your order. For those in developing countries who would have difficulty in sending payment please add requests direct to me at, Weed Research Organization, Yarnton, Oxford OX5 1PF, UK. Lists of earlier bibliographies in the series are also available.

C. Parker

IPSPRG Sews and Notes

Symposium proceedings - Copies are **still** available from Prof. A. D. Worsham, Crop Science Dept., Box 5155, N.C. Univ., Raleigh, N.C. 27607. Cost is \$8.00 for the proceedings and supplement.

Symposium group picture - contact L. Musselman for details as to cost, etc.

Sixth Symposium on Morphology, Systematics, Univ. Ulm 9-12 March 1981 - Parasitic flowering plants will be the theme of meeting. For information contact: Dr. H.-C. Weber, Bio. V. Univ. Ulm, D-7900 Ulm, West Germany.

Index of Current Research - Response to this program (see HAUSTORIUM No. 3) has been encouraging and we can now provide names, addresses, publications, etc. of researchers upon

request. Contact L. Musselman.

Previous issues of HAUSTACUM - these are all exhausted,

From the Editors

Very best wishes **for** the mistletoe season and **for** the coming year!

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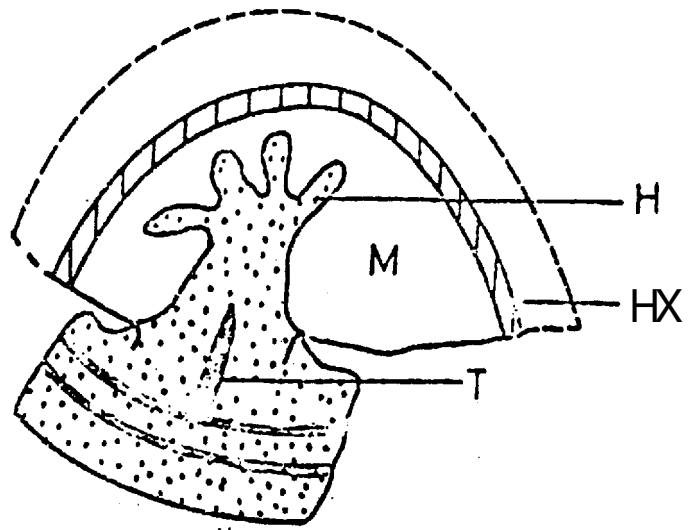


Fig. 3

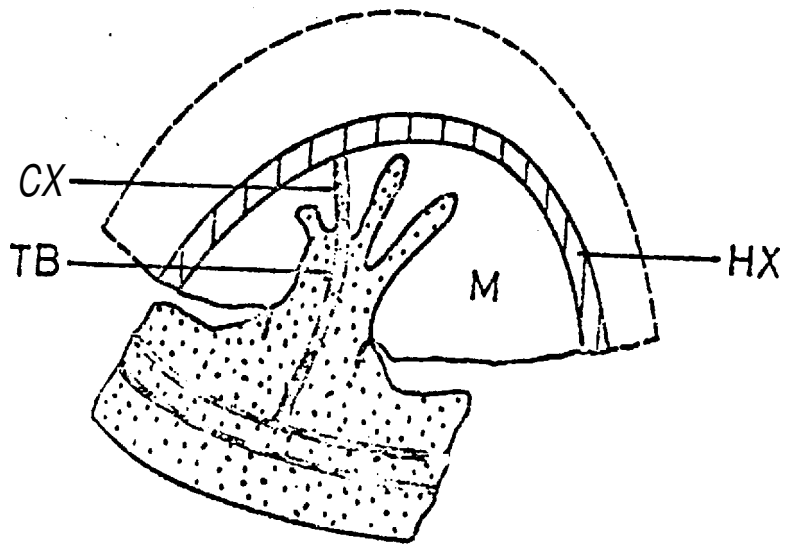


Fig. 4

Table 1

Cuscuta and Viscum species, their hosts, intensity of infestation and location in the middle and northern parts of Jordan

Parasite Generic Name	Host Generic Name	Intensity of Infesta- tion	Location ⁷
<u>C. campestris</u> Yunk.	<u>Alhagi maurorum</u> (W) ¹ 3	S ²	Jordan Valley
	<u>Corchorus olitorius</u> (C)	L ⁴	Alroussaifa
	<u>Prosopis fraxta</u> (W)	S	Jordan Valley
	<u>Trifolium alixandrinum</u> (C)	L	Zarqa
<u>C. epilinum</u> Wiehl.	<u>Artemisia herba alba</u> (W)	S	Yajouz
	<u>Nicotiana tabacum</u> (C)	L	Greenhouse
<u>C. monogyna</u> Vahl.	<u>Citrus deliciose</u> (C)	L	Kreimeh
	<u>Vitis vinifera</u> (C)	M ⁵	Irbid
<u>C. planiflora</u> Ten.	<u>Capparis spinosa</u> (W)	L	Karak
<u>V. cruciatum</u> Sieb.	<u>Amygdalus communis</u> (C) ⁶	S	Wadi Shu'aib, Ajlun
	<u>Crataegus azarolus</u> (F)	L	Ajlun
	<u>Olea europea</u> (C)	None/S	Jarash to Ajlun
	<u>Punica granatum</u> (C)	M	Wadi Shu'aib
	<u>Quercus sp.</u> (F)	L	Kufr abil
	<u>Betama raetam</u> (F)	L	Arda Rd.
	<u>Rhamnus palaestina</u> (F)	S	Ajlun to Wadi rum

¹W = wild

²S = severe

³C = cultivated

⁴L = light

⁵M = moderate

⁶F = forest trees

⁷

Location on the attached map.