Dear IPPS Members,

We are pleased to invite you to the 9th World Congress on Parasitic Plants, which will be held on Sunday June 3 to Thursday June 7, 2007 in Charlottesville, Virginia. The congress continues a long tradition of regularly assembling the world’s experts on parasitic plants for professional and scientific meetings, which started in 1973 with the first international meeting in Malta. The venue was chosen to be in Virginia, thanks to the long tradition of parasitic plants research in this state, and its significant contribution to the understanding of plant parasitism. Charlottesville is also a very pleasant city, with the historic university that was planned by Thomas Jefferson, third president of the United States, who was not only a gifted architect, but also a scientist.

The Congress will bring together scientists representing a wide spectrum of disciplines, research approaches, and geographical representation of parasitic plant research. Assembling specialists with different perspectives, all focused around the common theme of plant parasitism, provides a stimulating environment for learning, exchanging ideas, meeting with old and new colleagues, and making new acquaintances. The Congress will include presentations on the cutting edge of parasitic plants research and on management technologies of parasitic weeds. A major emphasis in the Congress will be the fostering of interaction among participants.

Please seriously consider attending the Congress, mark the Congress dates in your diary, and indicate your interest in attending the Congress by submitting the preliminary registration form that is included below.

Almost five years have passed since Professor Edward S. Teryokhin has passed away. Professor Teryokhin was one of the most important specialists in broomrape taxonomy, with original contributions to the understanding of parasitic plants. His book on broomrapes, first published in Russian (1988) and then translated into English under the title Weed Broomrapes is a valuable contribution for all students of root parasites, and especially those interested in anatomical, taxonomic, ecological and embryological aspects of these plants. As a deep-rooted revolutionist of broomrape taxonomy, he insisted on separating the two important tribes of the genus Orobanche into two distinct genera: Orobanche and Phelipanche. The name Phelipanche was first given to P. ramosa by Auguste Pomel (1821-1898), a French mines engineer stationed in Algeria, who was very active in the study of North African fauna and flora. Under the developing molecular knowledge, and in particular with the recent studies by Gerald Schneeweiss and his colleagues in Vienna, splitting Orobanche into separate genera is now widely accepted. As a result, we should now use the names Phelipanche ramosa (L.) Pomel and P. aegyptiaca (Pers.) Pomel instead of O. ramosa and O. aegyptiaca.

These aspects and many others, including basic and applied problems with both weedy and non-weedy parasites will be discussed in the coming IPPS Congress, together with a comprehensive discussion on ways for parasitic weeds management.

We are looking forward to meeting you at the Congress!

Danny Joel, IPPS President

9TH WORLD CONGRESS ON PARASITIC PLANTS

Sunday June 3 to Thursday June 7, 2007
Omni Hotel, Charlottesville, Virginia USA

PROGRAM

Contribution and participation from researchers on any weedy and non-weedy parasitic plants is encouraged.

The program will consist of oral presentations and posters. Oral presentations will be invited or selected from submitted preliminary abstracts.
Topics will include but are not limited to the following:

- Evolution and phylogeny of parasitic plants
- Parasite biochemistry and physiology (including molecular biology)
- Floral biology
- Ecology and population biology of parasitic species
- Host-parasite communication (including germination stimulation, haustorial induction, etc.)
- Host and non-host responses to parasitism
- Parasitic weed management
- Regulation and Phytosanition

Or any other aspects, descriptions, approaches and ideas related to parasitic plants.

Participation of students and young researchers is strongly encouraged.

Scientific Advisory Committee

Jim Westwood, USA (Chair)
Abdel Gabar T. Babiker, Sudan
Philippe Delavault, France
Grama Dhanapal, India
Atef Haddad, Syria
Joseph Hershenhorn, Israel
Erika Maass, Namibia
Lytton Musselman, USA
Jeremy Ouedraogo, Burkina Faso
Alejandro Perez de Luque, Spain
Julie Scholes, UK
Simon Shamoun, Canada
Kushan Tennekoon, Sri Lanka
Mike Timko, USA
Maurizio Vurro, Italy
John Yoder, USA
Anna Williams, Australia
Andrea Wolfe, USA
Koichi Yoneyama, Japan

THE VENUE

Charlottesville and the surrounding area

Charlottesville is home to the University of Virginia and close to several important US historic sites, including Monticello home to Thomas Jefferson and his legacies, the homes of James Monroe, fifth president of the United States, and James Madison, fourth president and author of the Constitution. Dining out in Charlottesville is an experience you won’t want to miss. You’ll find everything from your taste buds desire. The Downtown district alone has more than 50 locally owned restaurants.

Conference Site

The Conference will be held at the Omni Charlottesville. The Omni is a first class conference hotel conveniently located within easy walking distance of many shops and restaurants on the Downtown Mall. Hotel website: [http://www.omnihotels.com/FindAHotel/Charlottesville.aspx](http://www.omnihotels.com/FindAHotel/Charlottesville.aspx).

Local Organizing Committee

Michael P. Timko - Chair
Lytton Musselman
Jim Westwood

REGISTRATION

The registration fee includes admission to all talks and posters, an opening reception, two coffee breaks each day, lunches, a banquet, and a field trip to see local parasites and visit the house, gardens, and plantation of Monticello, the mountaintop home of Thomas Jefferson, third president of the United States, who was not only a gifted architect, but also a plant scientist.

Approximate registration fee: $380
Hotel rates: $117/night + tax.

A second circular, with a preliminary program will be distributed in September 2006.

Meanwhile, please provide an indication of your interest in attending the Congress by filling in the form at the end of this newsletter and sending it to Jim Westwood.

INTERNATIONAL SYMPOSIUM ON INTEGRATING NEW TECHNOLOGIES FOR STRIGA CONTROL: TOWARDS ENDING THE WITCH-HUNT

November 5-11, 2006 Addis Ababa, Ethiopia. Sponsored by International Sorghum and Millet Collaborative Research Support Program (INTSORMIL), Purdue University and Ethiopian Institute of Agricultural Research (EIAR).
The parasitic weed *Striga* (witchweed) is the scourge of agriculture in much of Africa, parts of Asia, and even in the United States. *Striga* attacks the major cereal grains and legumes in sub-Saharan Africa, on average halving the already very low yields of subsistence farmers. The *Striga* problem has been a major reason why crop productivity has remained at or below subsistence, leaving poor farmers with no way out of a situation that is only getting worse.

For many decades, research approaches on *Striga* targeted eradication, suppression, or breeding for host crops that support fewer emerged *Striga* plants. Decades of such efforts have led to few successes. More recently, basic research efforts that have focused on the more fundamental biology of the parasite and its association with its hosts have led to a far better understanding of the enemy. That understanding, in turn, led to series of successes in the field that are being expanded slowly throughout Africa. Will these technologies be sustainable or will they fail? Highly successful weeds such as *Striga* have a tendency to evolve resistance to all types of control. Ways to circumvent these pitfalls need to be crafted. As no single method is likely to be perfect, it is clear that proven methods must be integrated with each other. However, integration is often an anathema to basic scientists who are taught to alter single variables at a time in their experiments. That is why we are bringing together key leaders in development of the new knowledge based control strategies—both those that have been successfully deployed in the field and those currently under development that show great promise. Bringing these experts together will allow discussion of strategies that can be integrated with each other to develop more durable and sustainable methods that will be useful for decades to come. For major speakers, we have invited leaders in the field who have been supplying the basic biology, genetics, biochemistry, and molecular information that have offered insights and generated technologies for dealing with *Striga*.

Other scientists (molecular biologists, breeders, agronomists, and social scientists) who have been key in the fight against *Striga* are also invited to engage in structured panel discussions. Together with facilitators who are experts at stimulating people to integrate knowledge into practice, we hope this meeting will provide the forum for crafting new and creative suggestions for a series of integrated management packages that can render effective control of *Striga*.

The symposium is open to all scientists dealing with *Striga* who want to learn and share knowledge. Invited speakers will present lectures and lead discussions. All other participants are encouraged to present posters of their most recent findings and observations. See Forthcoming Meetings for contact details.

**HYDNORA RESEARCH AT THE PLANT PARASITE LAB, OLD DOMINION UNIVERSITY, USA**

Our research group in collaboration with University of Namibia and University of Peradeniya, Sri Lanka have been working extensively on the biology of the strange root holoparasite *Hydnora*. The center of diversity of this ancient lineage is southern Africa. We are interested in a broad range of anatomical, ecophysiological, and taxonomic aspects of this bizarre genus.

Specifically we have completed an anatomical study of the novelty of tissue arrangement (homeosis) in the vegetative body of *H. triceps*. Other anatomical problems elucidated include the unique seedling morphogenesis in the group. Work continues on the specific details of the host parasite interface, in relation to nutrient acquisition. Furthermore, we have completed studies of the mineral and stable isotope (13C and 15N) profiles of different *Hydnora*-host associations.

During field work in Namibia and South Africa in 2005, we confirmed the extreme host specificity of *H. triceps* on *Euphorbia dregeana* and the relatively broad ranges of *H. africana* and *H. abyssinca* (syn. *H. johannis*). In addition, the insect trapping mechanism of the *H. africana* chamber flower was experimentally evaluated, and seed dispersers were identified.

We are currently soliciting tissue samples for a molecular phylogeny of the Hydnoraceae. If you have any interest in this group, locations to report, or wish to collaborate, please do not hesitate to contact us. For further details please consult our website:

http://www.odu.edu/webroot/instr/sci/plant.nsf/pages/hydnora

**Collaborators:**

Jay Bolin ibolin@odu.edu and Lytton Musselman lmusselm@odu.edu, Dept. of Biology, Old Dominion University, Norfolk VA 23529 USA

Kushan Tennakoon: kushant@pdn.ac.lk, Dept. of Botany, University of Peradeniya, Peradeniya 20400 Sri Lanka

Erika Maass: emaass@unam.na, University of Namibia, Dept. of Biology, Private Bag 13301 Windhoek Namibia

**CURIOSITIES**

I wonder how many others writing about *Orobanche ramosa* have suffered the problem that at least some versions of
Word including mine (Office Word 2003) automatically correct ‘ramosa’ to ‘ramose’. Key it in quickly and move on and you notice nothing. It happens in both US and UK English. No warning – no wiggly red lines such as come up with all other latin terms, including ‘diffusa’, ‘alata’, ‘striata’ etc. Go into ‘Tools – Auto correct options’ and you find the hundreds of words that are automatically corrected, but no ‘ramosa’. Fortunately, if you insert the instruction that ‘ramosa’ be replaced with ‘ramose’ all is well!

Chris Parker.

NOTES FROM A ROAMING EDITOR

On a recent visit to the island of Raratonga (Cook Islands) in the S. Pacific it was notable how introduced invasive species were locally dominating both fauna and flora. The only land bird seen in a week was the exotic myna bird from India, introduced to control insect pests of coconut and now utterly dominant. Vegetation was often also dominated by exotics including the dreaded ‘mile-a-minute’ Mikania micrantha, but this in turn was being parasitized at at least one site by Cuscuta campestris. This is perhaps the first report of this species on the islands.

Chris Parker.

COST 849 - PARASITIC PLANT MANAGEMENT IN SUSTAINABLE AGRICULTURE

This programme, funded by European Union via European Science Foundation, has had no new meetings in the past 6 months but is now being wound up. Its final workshop will now be held in Lisbon, Portugal on 23-24 November (not in Israel in October as previously planned). The programmes, abstracts and reports of past meetings, and information on the November meeting, are on the COST849 web-site (http://cost849.ba.cnr.it/) or will be added in due course.

A NEW EWRS WORKING GROUP: PARASITIC WEEDS

A new Working Group ‘Parasitic Weeds’ has recently been established within the European Weed Research Society (EWRS).

Background

Parasitic plants are becoming a severe constraint to Mediterranean and Tropical agriculture on major crops and the efficacy of available means to control them is minimal. The most economically damaging parasitic weeds are members of the genera Striga (witchweeds) and Orobanche (broomrapes). Various species of the latter are important in southern and eastern Europe, the Middle East and North Africa. For example, O. crenata causes huge damage to legume crops (faba bean, lentil, pea and common vetch) in southern Europe; O. cumana threatens sunflower in southern and eastern Europe; O. minor is important in central Europe on clover; O. ramosa attacks potato, tobacco, tomato and hemp; and species such as O. foetida that cause problems in N. Africa are also present in Europe.

The main focus of research on parasitic weeds has been on their management when infecting important crops. Control strategies have centred around agronomic practices and the use of herbicides, although success has been marginal. Novel integrated control programmes are necessary. In addition, global warming together with changing land use patterns means that some geographical areas and farming systems that do not currently suffer from parasitic weeds in Europe could become affected within coming decades. It is therefore desirable to pre-empt the spread of parasitic weeds and to consider, for example, how quarantine regulations might achieve this.

WG Objectives

The main objective of the WG is to increase the understanding of the interaction between parasitic weeds and their hosts and to implement sustainable means to control the parasites.

The lack of interdisciplinary involvement has been a major factor that has impeded progress in the sustainable control of parasitic weeds. The establishment of the new WG aims to address this deficiency, by including weed scientists who specialize in botany, ecology, plant anatomy, physiology, biochemistry, molecular biology, breeding, plant pathology, chemistry and agronomy. Joint research within the proposed WG will encourage the transfer of fundamental research into control strategies for field application and should ultimately yield sustainable management measures for the variety of parasitic weeds that affect agriculture and forestry in Europe.

The WG will integrate fundamental, biotechnological and marker-technology science and applied research concepts to develop sustainable means of parasitic weed management, integrating cultural practices, genetic resistance, and novel methods of biological- and chemical control.

Research topics to be covered

Considering the involvement of groups with different expertise in the WG, many different fields of research will be covered, including:
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- Parasitic weeds of three different groups: root parasites (mainly Orobanche), climbers (Cuscuta), and mistletoes (mainly Viscum).
- Physiology of parasitism: seed germination, attachment, parasite development, interactions between the host and the parasite.
- Integrated weed management strategies and the economics of controlling parasitic plants.
- Identification, augmentation, exploitation and formulation of biocontrol agents.
- Novel cultural practices.
- Molecular and classical taxonomy and race identification.
- Developmental aspects of host-parasite interaction, including structural, physiological, genetic and molecular agro-ecology of parasitic plants that will have significant implications in the development of control measures.
- Distribution, incidence and importance of the parasitic weeds in Europe, including the invasion and progression of parasitic weeds under predicted global climate change scenarios, as well as evolutionary changes within the species.
- Quarantine measures and regulations for control of spread of parasitic plants.
- Monitoring the parasitic plant populations for frequency of virulence factors and for genetic variation.
- Development and evaluation of methods for screening and assessment of crop resistance to parasitic plants, and identification of both resistance genes and resistance mechanisms.

Proposed activities for the years 2006-07

Formal inauguration of the WG will take place at the International Conference ‘Novel and Sustainable Weed Management in Arid and Semi-Arid Agro-Ecosystems’ to be held at the Hebrew University of Jerusalem, Rehovot, Israel, October 15-20, 2006, and it will have a joint session with the last meeting of the European COST849 action ‘Parasitic plant management in sustainable agriculture’.

A specific workshop on parasitic weeds may be organized in 2007 as part of the EWRS symposium in Norway.

A mailing list is being created for distribution of announcements and requests, and a website is being prepared. Meanwhile, information will be available on the EWRS website (http://www.ewrs.org/).

Contact - Maurizio Vurro
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THESIS


This thesis presents the results of a study on the interaction between the parasitic weed Striga hermonthica (Del.) Benth. and sorghum (Sorghum bicolor [L.] Moench). The main objective of the study was to investigate the effects of time and level of Striga infection on the interaction between host plant and parasite. Consequences for sorghum performance and the growth and development of the parasite were examined. A comparison between two sorghum cultivars differing in level of Striga tolerance, revealed that the absence of a negative effect of Striga infection on photosynthetic rate and a delayed time of first Striga infection both contributed to the lower extent of yield reduction of the tolerant cultivar. Likewise, in an experiment with a wide range of Striga seed infestation levels, it was observed that higher soil infestations levels did not only result in a higher Striga infection level, but also in an advanced time of first Striga infection. The importance of time of infection was further investigated in a pot experiment in which the time of infection was artificially delayed. Striga parasitism and reproduction, and the detrimental effects of Striga on crop performance could be strongly reduced by delaying the time of first infection. Prospects of reducing Striga parasitism by means of cultural control methods that are based on the principle of a delayed onset of Striga attachment were assessed. In a pot experiment, the combination of shallow soil tillage, deep planting and the use of transplants resulted in a four-week delay in first emergence of the parasite, a strongly reduced infection level of the sorghum host and highly improved sorghum yields. Evaluation of these methods under field conditions resulted in a 85% reduction in Striga-infection level, but as no delay in time of parasite infection was established, no beneficial effect on crop yield was obtained. Potential causes of the absence of a delay in Striga infection time under field conditions were discussed and alternative options for establishing a delayed infection in the field were proposed.
SANDALWOOD

Contrary to the announcement in Haustorium 47, one further issue of Sandalwood Research Newsletter (No. 21) was published in March 2006. But all future issues will now be published electronically by James Cook University in PDF format, on www.jcu.edu.au/school/tropbiol/srn/ the web-site on which all back issues can also be found. For any further information and to be included on the SRN email alert list please contact the new editor Tony Page at James Cook University, P.O. Box 6811, Cairns, 4870 Australia (tony.page@jcu.edu.au).

FORTHCOMING MEETINGS

Novel and sustainable weed management in arid and semi-arid agro-ecosystems (also the inauguration of the new EWRS working group ‘Parasitic weeds’), Rehevot, Israel, 15-21 October, 2006. Further information from the Organizing Committee at wgarid@agri.huji.ac.il or visit: www.agri.huji.ac.il/aridconference.

STOP PRESS – ABOVE POSTPONED


International Workshop on faba bean breeding and agronomy, Cordoba Spain, 25-27 October, 2006. Further information from Ana Maria Torres, email: anam.torres.romero@juntadeandalucia.es

International Symposium on Integrating new technologies for Striga control: towards ending the witch-hunt, Addis Ababa, Ethiopia, November 5-11, 2006. Contact: Gebisa Ejeta: gejeta@purdue.edu

9th World Congress on Parasitic Weeds, Charlottesville, Virginia, USA, 3-7 June, 2007. See full notice above.

GENERAL WEB SITES

For individual web-site papers and reports see LITERATURE

For information on the International Parasitic Plant Society, past and current issues of Haustorium, etc. see: http://www.ppws.vt.edu/IPPS/

For past and current issues of Haustorium see also: http://web.odu.edu/haustorium

For the ODU parasite site see: http://www.odu.edu/webroot/instr/sci/plant.nsf/pages/parasitic_page

For Lytton Mussleman’s Hydnora site see: http://www.odu.edu/webroot/instr/sci/plant.nsf/pages/lecture_sandarticles

For Dan Nickrent’s ‘The Parasitic Plant Connection’ see: http://www.science.iu.edu/parasitic-plants/index.html

For The Mistletoe Center (including a comprehensive Annotated Bibliography on mistletoes) see: http://www.rmrs.nau.edu/mistletoe/welcome.html

For information on activities and publications of the parasitic weed group at the University of Hohenheim see: http://www.uni-hohenheim.de/~www380/parasite/start.htm

For information on, and to subscribe to PpDigest see: http://omnisterra.com/mailman/listinfo/pp_omnisterra.com

For information on the EWRS Working Group ‘Parasitic weeds’ see: http://www.ewrs.org/

For the Parasitic Plants Database, including ‘4000 entries giving an exhaustive nomenclatural synopsis of all parasitic plants’ the address is: http://www.omnisterra.com/bot/pp_home.cgi

For a description and other information about the Desmodium technique for Striga suppression, see: http://www.push-pull.net

For information on EC-funded project ‘Improved Striga control in maize and sorghum (ISCIMAS) see: http://www.plant.dlo.nl/projects/striga/

For the work of Forest Products Commission (FPC) on sandalwood, see: www.fpc.wa.gov.au

For past and future issues of the Sandalwood Research Newsletter, see: www.jcu.edu.au/school/tropbiol/srn/

For information on the meetings in Rehevot, Israel, 15-21 October, 2006 (see above), see: www.agri.huji.ac.il/aridconference

For information on the work of the African Agricultural Technology Foundation (AATF) on Striga control in Kenya, see: http://africanpcrops.net/striga/
LITERATURE

Abubacker, M.N., Prince, M. and Hariharan, Y. 2005. Histochmical and biochemical studies of parasite-host interaction of Cassytha filiformis Linn. and Zizyphus jujuba Lamk. Current Science 89: 2156-2159. (Histochmical studies revealed the presence of specialized glandular cells facilitating adhesion of the parasite to the host, and high phosphatase activity in the parasite. Some photosynthesis was detected.)

Adler, L.S. 2003. Host species affects herbivory, pollination, and reproduction in experiments with parasitic Castilleja. Ecology 84: 2083-2091. (Castilleja indivisa grew much more vigorously and was more attractive to pollinators when growing on a lupin host than on a grass. This and other observations confirm that both direct and indirect effects may shape the selective pressures mediating interactions between hosts and parasites.)

Ahonen, R., Puustinen, S. and Mutikainen, P. 2006. Host specificity of a Brazilian mistletoe, Arceuthobium indivisum. Flora (Jena) 201(2): 127-134. (An English version of the paper by Arruda and Carvalho, 2004 (see Haustorium 47, describing the involvement of strigolactones in the branching of arbuscular mycorrhizae and hence an explanation for the wide occurrence of these compounds in root exudates.)

Akiyami, K. and Hayashi, H. 2006. Strigolactones: chemical signals for fungal symbionts and parasitic weeds in plant roots. Annals of Botany 97: 925-931. (A full version of the work described in a letter to Nature in 2005, which also formed the basis for a Literature Highlight in Haustorium 47, describing the involvement of strigolactones in the branching of arbuscular mycorrhizae and hence an explanation for the wide occurrence of these compounds in root exudates.)


Refer to the provided PDF for the complete list of references.
A. americanum on P. banksiana. Symptoms of infection usually occurred after 13-15 months.)
Calvin, C.L. and Wilson, C.A. 2006. Comparative morphology of epicortical roots in Old and New World Loranthaceae with reference to root types, origin, patterns of longitudinal extension and potential for clonal growth. Flora (Jena) 201(1): 51-64. (A detailed survey of epicortical roots, the most common haustorial type for Loranthaceae outside Africa. Three types are described; basal, cauline and adventitious and their patterns of axis extension – by monochasial sympodium, dichasial sympodium or monopodium. The wide distribution of genera with epicortical roots suggests it is an ancestral trait for aerial Loranthaceae.)
Chlebicki, A. 2005. Some species of the genus Diatrype from the Czech Republic preserved in PRM, BRNM and KRAM. Czech Mycology 57(1/2): 117-138. (One species of Diatrype, possibly D. disciformis, recorded on Loranthus europaeus.)
Colquhoun, J.B., Eizenberg, H. and Mallory-Smith, C.A. 2006. Herbicide placement site affects small broomrape (Orobanche minor) control in red clover. Weed Technology 20: 356-360. (Neatly demonstrating that control of O. minor by imazamox depends on translocation of herbicide from the foliage to the roots of the host clover where it is absorbed directly from the host and/or via exudation into the rhizosphere.)
Combes, C. 2005. The art of being a parasite. Chicago, USA: University of Chicago Press. 291 pp. (Translated from the French by Daniel Simberloff this book is primarily concerned with animal parasites, but of potential relevance to plants.)
Cooney, S.J.N. and Watson, D.M. 2005. Diamond firetails (Stagonopleura guttata) preferentially nest in mistletoe. Emu, Journal of the Royal Australasian Ornithologists Union 105: 317-322. (Although mistletoe (unspecified in abstract) accounted for no more than 2.3% of the canopy, 30% of the nests of the bird S. guttata were in mistletoe.)
Cooney, S.J.N., Watson, D.M. and Young, J. 2006. Mistletoe nesting in Australian birds: a review. Emu, Journal of the Royal Australasian Ornithologists Union 106(1): 1-12. (Contrary to the curious title, this paper comprehensively reviews the nesting of birds in mistletoe, adding excellent data from Australia, where 217 species from 29 families are recorded using mistletoes for nesting (though none are obligate users), increasing the known world-wide occurrence from 43 to 60 bird families. Suggesting various reasons for the habit, including micro-climatic effects and greater safety from predators.)
Demirkan, H. 2005. (Investigation on allelopathic effects of some plant materials on the growth of Orobanche ramosa L.) (in Turkish) Ege Üniversitesi Ziraat Fakültesi Dergisi 42(3): 45-54. (Various effects observed when a range of plant materials were incorporated into the soil.)
(An inventory of the mistletoes of this region included 8
species in Loranthaceae (4 Scurrula spp., Taxillus
vestitus, Helizanthera ligustrina, Macrosolen
cochinchinesis and Loranthus odoratus) and 4 Viscum
spp. Hosts included 95 tree species in 45 families.
Loranthaceae generally had wider host range than
Viscum spp. Degraded marginal forests, sunny warm
slopes and ridges below 3000 m were most favoured
sites.)

monoicum Roxb. ex DC. (Viscaceae) for the Nepal
(Reporting the first record of Viscum monoicum from
Nepal Himalayas, at 980m in Central Nepal, on the host
tree Shorea robusta.)

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phenolic compounds and related enzymes in sorghum
varieties for resistance and susceptibility to biotic and
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2688. (Showing that levels of proanthocyanidins and
particularly 3-deoxyanthocyanidins, in sorghum seeds
are useful markers for resistance to a range of biotic
stresses, including Striga, while content of phenolics is
not.)

Dobbertin, M., Hilker, N., Rebetez, M., Zimmermann, N.E.,
Wohlgemuth, T. and Rigling, A. 2005. The upward shift
in altitude of pine mistletoe (Viscum album ssp.
austriacum) in Switzerland - the result of climate
warming? International Journal of Biometeorology
50(1): 40-47. (Noting the frequent occurrence of V.
album on Pinus sylvestris and the increased mortality of
infected trees. Also the upper limit of distribution is now
1,250 m, compared with 1,000-1,100 m found in a
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could be 1,600 m by 2030.)

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20th century. Phytotaxa 34: 111-114. (Discussing
hand pulling, use of resistant cultivars, late sowing and
sowing density as techniques being used or researched
currently – in early 21st century, not early 20th.)

control in flax (Linum usitatissimum, L.). Egyptian
Journal of Agricultural Research 81: 1735-1746.
(Recording the damaging effects of C. epilinum on flax,
and the partial control and increased yields achieved
with butralin and imidazolinone herbicides.)

Effect of root exudates from different tomato genotypes
on broomrape (O. aegyptiaca) seed germination and
tuber development. Crop Protection 25: 501-507. (In
comparisons of tomato cultivars with wild species, the
most resistant were Lycopersicum pennellii LA 716, L.
hirsutum PI 247087, L. pimpinellifolium hirsute and L.
chilense LA 169. The exudates from the first two of
these were less stimulatory than those from the cultivars,
while that from L. pennellii LA 716 was distinctly
inhibitory.)

Elzein, A., Kroschel, J. and Leth, V. 2006. Seed treatment
technology: an attractive delivery system for controlling
root parasitic weed Striga with mycoherbicide.
Biocontrol Science and Technology 16(1/2): 3-26. (Gum
arabic, carboxymethylcellulose (CMC) and pectin were
compared as seed-coating materials combined with
microconidia or dried chlamydospores of Fusarium
oxyporum (Foxy 2). In pot experiments chlamydospores
in gum Arabic gave best results, reducing germination of
S. hermonthica by at least 70%.)

Evidente, A., Andolfi, A., Fiore, M., Boari, A. and Vurro,
M. 2006. Stimulation of Orobanche ramosa seed
germination by fusicoecin derivatives: a structure-
(Comparing 25 analogues and derivatives of fusicoecin
and cotylenol for stimulant activity on O. ramosa and
concluding that the most important structural feature for
activity appears to be the primary hydroxy group at C-
19, and noting that the highly active dideacetyl
derivative of fusicoecin could be readily synthesized and
perhaps used for suicidal germination.)

Peninsula. Candollea 59: 231-253. (Reviewing the
taxonomy, ecology and distribution in Arabia of
Cistanche phelypaea, C. rosea and C. violacea and 13
species of Orobanche - O. aegyptiaca, O. ramosa, O.
perangustata (sp. nov.) O. muteliformis (sp. nov.), O.
schultzii, O. bungeana, O. eriophora, O.
hypertomentosa, O. cernua, O. crenata, O. minor, O.
dhorearensis and O. abyssinica. O. lavanduacea may
also occur.)

Fraga, P., Garcia, O. and Pons, M. 2003. (Notes and
ccontributions to the knowldge of the flora of Menorca
(V.) (in Spanish) Bolletí de la Societat d’Història
Natural de les Balears 46: 51-64. (Recording Orobanche
santolinae for the first time in Minorca, Balearic
Islands.)

Effect of olive jift and sublethal glyphosate applications
on faba beans (Vicia faba). Acta Agronomica Hungarica
54(1): 61-68. (Confirming that faba beans were not
esignificantly affected by being grown in soil amended up
to 50% with olive jift (a milling byproduct, reported to
suppress Orobanche spp. in Jordan), nor by foliar sprays
of glyphosate at 40 g a.i./ha.)

of multipurpose trees on the life cycle of Striga asiatica
leaf extracts of Seshania sesban, Leucaena leucocephala,
Acacia angustissima and Calliandra calothyrsus caused
24-49% reduction in germination of S. asiatica in a Petri dish assay.)


Grenz, J.H., Manschadi, A.M., DeVoil, P., Meinke, H. and Sauerborn, J. 2005. Assessing strategies for Orobanche sp. control using a combined seedbank and competition model. Agronomy Journal 97: 1551-1559. (Describing the development of a model combining Orobanche crenata seedbank dynamics and Vicia faba/O. crenata competition within the simulation framework of the Agricultural Production Systems Simulator (APSIM). Yet to include some external factors, such as temperature, but giving indications close to field observation and helping to emphasize the need for integrated systems for long-term reduction.)

Haidar, M.A. and Sidahmed, M.M. 2006. Elemental sulphur and chicken manure for the control of branched broomrape (Orobanche ramosa). Crop Protection 25: 47-51. (Elemental sulphur up to 12 t/ha had no influence on crops or O. ramosa. Chicken manure at 20 t/ha reduced O. ramosa and increased yield in both aubergine and potato.)


Hedberg, A.M., Borowicz, V.A. and Armstrong, J.E. 2005. Interactions between a hemiparasitic plant, Pedicularis canadensis L. (Orobanchaceae), and members of a tallgrass prairie community. Journal of the Torrey Botanical Society 132: 401-410. (In pot studies with all combinations of P. canadensis with Andropogon gerardii, Solidago canadensis and Desmodium canadense, the parasite had moderate effect on S. canadensis but little or none on the others. Competitive relationships between these host species were not affected, but in natural prairie, species richness was positively correlated with increasing P. canadensis cover.)


Humphrey, A.J. and Beale, M.H. 2006. Strigol: biogenesis and physiological activity. Phytochemistry 67: 636-640. (Reviewing recent work on biosynthesis and mode of action of strigolactones, and suggesting that they may be more widely distributed and have a greater physiological significance than has hitherto been appreciated.)

Hunsberger, L.K., Autio, W.R., DeMoranville, C.J. and Sandler, H.A. 2006. Mechanical removal of summer dodder infestations and impacts on cranberry yield. HortTechnology 16(1): 78-82. (Partial removal of Cuscuta gronovii from cranberry (Vaccinium macrocarpon) with bamboo rakes reduced weed cover substantially but had less effect on total parasite biomass and no beneficial effect on crop yield.)

Idžočić, M., Pernar, R., Lisjak, Z., Ždelar, H. and Ančić, M. 2005. (Hosts of yellow mistletoe (Loranthus europaeus Jacq.) and intensity of infestation in the area of the forest administration Požega.) (in Croatian) Šumarski List 129(1/2): 3-17. (A survey recorded L. europaeus most commonly on Quercus petraea, also on Q. robur, Q. pubescens and Q. frainetto, least on Q. cerris and not at all on Q. rubra or Castanea sativa.)


Iuoras, M., Stanciu, D., Ciucă, M., Năstase, D. and Geronzi, F. 2004. Preliminary studies related to the use of marker assisted selection for resistance to Orobanche cumana (Mistletoe). Romanian Agricultural Research 21: 33-37. (Describing efforts to find RAPD and SSR markers associated with the Or5 resistance trait.)

Janjic, V., Marisavljevic, D. and Pavlovic, D. 2005. (Doddler and its control.) (in Serbian) Biljni Lekar (Plant Doctor) 33: 590-595. (Noting the increasing importance of Cuscuta trifoli and C. campestris in lucerne and red clover in Serbia, the differences between the two species, and some methods of control.)

Jeet Ram, Beena Tewari and Chanda Pant. 2006. Infestation of oak trees by the flowering parasite (Taxillus vestitus (Wall.) Danser) at Nainital in Uttarakhand. Current Science 90: 562-563. (Occurrence of T. vestitus on Quercus leucotrichophora and Q. floribunda was greatest on older trees on disturbed sites, perhaps due to lopping of the trees.)

Karadjic, D., Lazarov, V. and Milenkovic, M. 2004. The most significant parasitic and saprophytic fungi on...
common mistletoe (*Viscum album L.*) and their potential application in biocontrol. Glasnik Šumarskog Fakulteta, Univerzitet u Beogradu 89: 115-126. (Recording a total 22 species of fungus on *Arceuthobium oxycedri*, *Loranthus europaeus* and *Viscum album* in Serbia, among which *Botryosphaeria dothidea* causes leaf spot on many trees and shrubs, while *Gibberidea visci* and *Sphaeropsis visci* occur on *V. album*, the latter considered to be of potential interest for biocontrol.)

Kenaley, S., Howell, B. and Mathiasen, R. 2006. First report of *Cladocolea cupulata* on *Pinus douglasiana* and *P. herrerai* in northern Mexico. Plant Disease 90: 681. (C. *cupulata* (Loranthaceae) caused little apparent damage to host trees.)


Kureh, I., Alabi, S.O. and Kamara, A.Y. 2005. Response of soybean genotypes to *Alectra vogelii* infestation under natural field conditions. Tropiccul 23: 183-189. (Among 22 soybean genotypes tested in N. Nigeria, 16 showed apparent resistance, 4 were susceptible, and two (SAMSOY2 and TGX1485-1D) were apparently tolerant, yielding well even when heavily infested.)

Kusumoto, D., Chae SangHeon, Mukaida, K., Yoneyama, K., Yoneyama, K., Joel, D.M. and Takeuchi, Y. 2006. Effects of fluridone and norflurazon on conditioning and germination of *Striga asiatica* seeds. Plant Growth Regulator 48: 73-78. (Fluridone and norflurazon shortened the conditioning period for *S. asiatica* and prevented the inhibitory effects of light and of supra-optimal temperature on germination. They also stimulated germination after normal conditioning, while fluridone also promoted haustorial initiation. Diffufeniclan proved inactive in these respects.)

Lamien, N., Boussim, J.I., Nygard, R., Ouédraogo, J.S., Odén, P.C. and Guinko, S. 2006. Mistletoe impact on Shea tree (*Vitellaria paradoxa* C.F. Gaertn.) flowering and fruiting behaviour in savanna area from Burkina Faso. Environmental and Experimental Botany 55(1/2): 142-148. (Careful measurements of the growth and yield of un-infested branches of *V. paradoxa*, and those infected by mistletoes *Agelanthus* (=*Tapinanthus*), *Tapinanthus globiferus* and *T. ophioides* failed to detect significant effects on yield of fruit. Possible reasons are discussed.)

Lanini, W.T. and Kogan, M. 2005. Biology and management of *Cuscuta* in crops. Ciencia e Investigación Agraria 32(3): 165-179. (Reviewing cultural and chemical control methods for *Cuscuta* and noting that the parasite is not readily controlled by use of herbicide in herbicide-resistant crops.)

Leake, J.R. 2005. Plants parasitic on fungi: unearthing the fungi in myco-heterotrophs and debunking the 'saprophytic' plant myth. Mycologist 19(3): 113-122. (This review describes the diversity of plants that derive all or part of their nutrition through living fungal networks, and dismisses the notion that any plant species are themselves saprophytic.)

Lehtonen, P., Helander, M., Wink, M., Sporer, F. and Saikkonen, K. 2005. Transfer of endophyte-origin defensive alkaloids from a grass to a hemiparasitic plant. Ecology Letters 8: 1256-1263. (A study of interactions between *Rhinanthus serotinus*, *Lolium pratense*. *Festuca pratensis*, the symbiotic endophytic fungus *Neothyphodium uncinatum* and the aphid *Aulacorthum solani*. Showing that uptake of defensive mycotoxins from the endophyte-infected host grass enhances the resistance of the hemiparasitic plant to the aphid, increasing the parasite’s vigour and in turn reducing that of the grass host.)


López-Curto, L., Márquez-Guzmán, J. and Díaz-Pontones, D.M. 2006. Invasion of *Coffeea arabica* (Linn.) by *Cuscuta jalapensis* (Schlecht.): in situ activity of peroxidase. Environmental and Experimental Botany 56(2): 127-135. (Emphasising and discussing the importance of peroxidase in the penetration of the outer host tissues by the *Cuscuta* haustorium. Also referring to the probable participation of free radicals in the invasion process.)

Lye, D. 2006. Charting the isophasic endophyte of dwarf mistletoe *Arceuthobium douglasii* (Viscaceae) in host apical buds. Annals of Botany 97: 953-963. (Using novel techniques to demonstrate that the endophyte of *A. douglasii* is much more extensive in the host, *Pseudotsuga menziesii* than previously realised, reaching into dormant buds from which it is able to infect and develop in the following season’s growth.)

Mackes, K., Shepperd, W. and Jennings, C. 2005. Evaluating the bending properties of clear wood
specimens produced from small-diameter ponderosa pine trees. Forest 55(10): 72-80. (Reporting some significant reduction in elasticity in timber from *Pinus ponderosa* trees infected by *Arceuthobium vaginatum*.)


Mariam, E.G. and Suwanketnikom, R. 2004. Effect of nitrogen fertilizers on branched broomrape (*Orobanche ramosa* L.) in tomato (*Lycopersicon esculentum* Mill.). Kasetsart Journal, Natural Sciences 38: 311-319. (In pot experiments in Ethiopia, rates of urea, ammonium sulphate and ammonium nitrate up to 276 kg/ha and goat manure up to 30 t/ha reduced *O. ramosa* and improved tomato yield but highest rates of ammonium salts caused some crop damage.)

Mariam, E.G. and Suwanketnikom, R. 2004. Screening of tomato (*Lycopersicon esculentum* Mill.) varieties for resistance to branched broomrape (*Orobanche ramosa* L.). Kasetsart Journal, Natural Sciences 38: 434-439. (In pot experiments in Ethiopia, a number of tomato varieties showed partial resistance, supporting 7-13 rather than 31-33 shoots of parasite, as in the most susceptible varieties Caribe and Floradade, but yields were still reduced. A variety ‘South Africa’ showed some degree of tolerance.)


Mayer, A.M. 2006. Pathogenesis by fungi and by parasitic plants: similarities and differences. Phytoparasitica 34: 3-16. (A review, cautioning that while many superficial similarities exist between pathogenesis by fungi and parasitic plants, the differences are far greater. Parasitic plants have many unique features.)

McDonald, G.L., Richardson, B.A., Zambino, P.J., Klopfenstein, N.B. and Kim, M.S. 2006. *Pedicularis* and *Castilleja* are natural hosts of *Cronartium ribicola* in North America: a first report. Forest Pathology 36(2): 73-82. (Presenting evidence for *P. racemosa* and *C. miniata* behaving as alternate hosts of the pine blister rust, *C. ribicola*, as well as *Ribes* spp.)


Menkir, A. 2006. Assessment of reactions of diverse maize inbred lines to *Striga hermonthica* (Del.) Benth. Plant Breeding 125: 131-139. (Sixteen new inbred lines of maize supported significantly fewer attached parasites compared with the susceptible inbred check.)

Menkir, A., Kling, J.G., Badu-Apraku, B. and Ibi kunle, O. 2006. Registration of 26 tropical maize germplasm lines with resistance to *Striga hermonthica*. Crop Science 46: 1007-1009. (Describing the development of 17 inbred lines (TZSTRI101 to 117) suitable for lowlands, based partly on *Zea diploperennis*, and a further 9 lines (TZSTRI118-126) for mid-altitudes. The lowland lines also incorporate resistance to southern corn leaf, southern corn root and maize streak virus, while mid-altitude lines have resistance to northern leaf blight.)


Miller, M.R., White, A. and Boots, M. 2006. The evolution of parasites in response to tolerance in their hosts: the good, the bad, and apparent commensalism. Evolution 60: 945-956. (No reference to parasitic plants but this thoughtful analysis is fully relevant to them.)

Motti, R. and Ricciardi, M. 2005. (The flora of the Phlegrean Fields (Gulf of Pozzuoli, Campania, Italy).) (in Italian) Webbia 60: 395-476. (In a survey, 748 taxa were recorded, including *Orobanche arenaria*, a new record.)

Mousavi, A. 2005. Walnut as new host for mistletoe *Viscum album* in Zandjan province. Iranian Journal of Forest and Range Protection Research 3(1): 91-95, 105. (In this province of Iran *Arceuthobium oxycedri* is an important cause of die-back in *Juniperus excelsa*, while *V. album* is recorded on a range of hosts including walnut, *Juglans regia*.)

Mueller, R.C. and Gehring, C.A. 2006. Interactions between an above-ground plant parasite and below-ground ectomyorrhizal fungal communities on pinyon pine. Journal of Ecology (Oxford) 94: 276-284. (Pinyon pine (*Pinus edulis*) infected by *Arceuthobium divaricatum* had lower shoot growth. Higher mistletoe infestation was associated with higher ectomyorrhizal colonization, a shift in the dominance of ascomycete fungi, increased
fungal inoculum under the crowns of the host, and increased numbers of pine seedlings.)


Nelson, D.A. 2005. Evaluation of Penstemon as host for Castilleja in garden or landscape. Native Plants Journal 6: 254-262. (Confirming P. strictus to be a suitable host for Castilleja integra and C. indivisa but noting that the micro-environment may need to be balanced for best results.)


Osadebe, P.O. and Akabogu, I.C. 2006. Antimicrobial activity of Loranthus micranthus harvested from kola nut tree. Fitoterapia 77(1): 54-56. (Extracts in various solvents were obtained from L. micranthus in Nigeria. A methanol extract showed the best activity against Escherichia coli and Bacillus subtilis while a petroleum ether extract showed best antifungal action.)

Ouyang Jie, Wang XiaoDong, Zhao Bing and Wang YuChun 2005. Enhanced production of phenylethanoid glycosides by precursor feeding to cell culture of Cistanche deserticola. Process Biochemistry 40: 3480-3484. (The production of phenylethanoid glycosides was enhanced by adding pre-cursors phenylalanine, L-tyrosine, sodium acetate and phenylacetic acid to cell cultures. Phenylalanine could increase production by 75%).

Pâcuraeanu-Joita, M., Stanciu, D., Petcu, E., Raranciuc, S. and Soreaga, I. 2005. Sunflower genotypes with high oleic acid content. Romanian Agricultural Research 22: 23-25. (Selective breeding program identified lines that have improved oil quality and resistance to O. cumana.)

Page, T., Tate, H., Tungon, J., Sam, C., Dickinson, G., Robson, K., Southwell, I., Russell, M., Waycott, M. and Leakey, R. 2006. Evaluation of heartwood and oil characters in nine populations of Santalum austrocaledonicum from Vanuatu. Sandalwood Research Newsletter 21: 4-7. (S. austrocaledonicum is native to Vanuatu and is an important source of income. Broad sampling across six islands showed wide variation in sandalwood oil yield and quality. The results will contribute to a programme of domestication aimed at diversifying the genetic base, reducing pressure on depleted natural resources and enhancing local livelihoods.)


Pérez de Luque, A., Rubiales, D., Cubero, J.I., Press, M.C., Scholes, J., Yoneyama, K., Takeuchi, Y., Plakhine, D. and Joel, D.M. 2005. Interaction between Orobanche crenata and its host legumes: unsuccessful haustorial penetration and necrosis of the developing parasite. Annals of Botany 95: 935-942. (Concluding from detailed microscopy that the unsuccessful penetration of O. crenata into legume roots cannot be attributed to cell death in the host but is mainly associated with lignonification of host endodermis and pericycle cells at the penetration site.)

Pérez-de-Luque, A., Lozano, M.D., Cubero, J.I., González-Melendi, P., Riuéu, M.C. and Rubiales, D. 2006. Mucilage production during the incompatible interaction between Orobanche crenata and Vicia sativa. Journal of Experimental Botany 57: 931-942. (Mucilage and other substances secreted by the parasite block host vessels and obstruct the parasite supply channel, thus contributing to failure of the parasite on resistant V. sativa.)

Pérez-de-Luque, A., González-Verdejo, C.I., Lozano, M.D., Dita, M.A., Cubero, J.I., González-Melendi, P., Ríuèu, M.C. and Rubiales, D. 2006. Protein cross-linking, peroxidase and β-1,3-endoglucanase involved in resistance of pea against Orobanche crenata. Journal of Experimental Botany 57: 1461-1469. (In resistant wild relatives of pea, development of O. crenata was stopped in the host cortex. Accumulation of hydrogen peroxide, peroxidases, and callose were detected in neighbouring cells, apparently associated with protein cross-linking in the host cell walls. A peroxidase and a β-1,3-glucanase are differently expressed in cells of the resistant host.)

Procházká, F. 2005. (Distribution of Viscum album subsp. album on different host trees in the center of its occurrence distribution near Nová Hospoda location (dist. Pisek, South Bohemia).) (in Czech) Sborník Jihočeského Muzea v Českých Budějovicích, Přírodní Vědy 45: 61-69. (Careful recording of tree hosts revealed lower numbers of host spp. towards the edges of the distribution of V. album.)
Pryme, I.F., Bardocz, S., Pusztai, A. and Ewen, S.W.B. 2006. Suppression of growth of tumour cell lines in vitro and tumours in vivo by mistletoe lectins. Histology and Histopathology 21(1/3): 285-299. (Providing supporting evidence that mistletoe lectins from both European and Korean *Viscum* spp. are able to induce an antiangiogenic response in the host suggesting that the anti-metastatic effect observed on a series of tumour cell lines in mice is in part due to an inhibition of tumour-induced angiogenesis and in part due to an induction of apoptosis.)


Pusz, W. 2005. (Mycoherbicides, or the possibility of utilizing fungi for restricting weed infestations.) (in Russian) Ochrona Roslin 50(11): 30-32. (A brief history of biological weed control, including mention of the use in the former Soviet Union of *Alternaria* to control *Cuscuta* spp.)


Radi, A., Dina, P. and Guy, A. 2006. Expression of sarcotoxin IA gene via a root-specific tob promoter enhanced host resistance against parasitic weeds in tomato plants. Plant Cell Reports 25: 297-303. (Transgenic tomato plants expressing the sarcotoxin gene from an insect showed strong inhibition of *Orobanche aegeypitca* growth and significantly increased yield as compared with non-transgenic ones.)


Rietman, L.M., Shamoun, S.F. and van der Kamp, B.J. 2005. Assessment of Neomectria neomacrospora (anamorph *Cylindrocarpon clyndroides*) as an inundative biocontrol agent against hemlock dwarf mistletoe. Canadian Journal of Plant Pathology 27: 603-609. (An inoculum of *N. neomacrospora* applied to swellings on *Tsuga heterophylla* caused by *Arceuthobium tsugense* caused significant reduction in parasite shoots when swellings were first ‘wounded’ but had little effect when they were not.)

Rodenburg, J., Bastiaans, L., Kropff, M.J. and van Ast, A. 2006. Effects of host plant genotype and seedbank density on *Striga* reproduction. Weed Research 46: 251-263. (Studying the influences of crop variety on seed production of *Striga hermonlthica* and concluding that, although cultivars such as N13, IS9830 and SRN39 greatly reduce seed production, only at very low infestation levels would the use of these varieties alone lead to a reduced seed-bank.)

Ross, C.M. and Sumner, M.J. 2005. Early endosperm and embryo development of the dwarf mistletoe *Arceuthobium americanum* (Viscaceae). International Journal of Plant Sciences 166: 901-907. (Embryology in parasitic plants has long drawn attention because of the extreme reduction in the embryo sac of holoparasites. The development of a cell wall from vesicles as the zygote dislodged from the embryo sac has not previously been reported in angiosperms though the relationship of this phenomenon to parasitic plants is not clear.)


Rubiales, D., Pérez-de-Luque, A., Fernández-Aparico, M., Sillero, J.C., Román, B., Kharrat, M., Khalil, S., Joel, D.M. and Riches, C.R. 2006. Screening techniques and sources of resistance against parasitic weeds in grain legumes. Euphytica 147: 187-199. (A detailed and thoughtful review of screening techniques in relation to pathogen variation and sources of resistance, primarily in respect of grain legumes but of potential relevance also to cereals. Concluding that combination of different resistance mechanisms into a single cultivar can provide durable field resistance, and that this can be achieved by the use of in vitro screening methods combined with marker-assisted selection techniques.)

Rubiales, D., Moreno, M.T. and Sillero, J.C. 2005. Search for resistance to crenate broomrape (*Orobanche crenata* Forsk.) in pea germplasm. Genetic Resources and Crop Evolution 52: 853-861. (Screening of 575 accessions of pea against *O. crenata* yielded no complete resistance and the quantitative resistance observed was highly influenced by environmental conditions. This could be sufficient to prevent damage in ‘normal’ years but not in others.)

Serafini, M., Corazzi, G., Poli, F., Piccin, A., Tomassini, L. and Foddai, S. 2005. Phenylpropanoid glycosides in Italian *Orobanche* spp., sect. *Orobanche*. Natural Product Research 19: 547-550. (Orobanchoside and verbascoside were both detected in *O. gracilis* (typical form), *O. teucrrii*, *O. alba* and *O. caryophyllacea* but not in *O. gracilis f. citrina*.)


Simier, P., Constant, S., Degrande, D., Moreau, C., Robins, R.J., Fer, A. and Thalouarn, P. 2006. Impact of nitrate supply in C and N assimilation in the parasitic plant *Striga hermonthica* (Del.) Benth (Scrophulariaceae) and its host *Sorghum bicolor*. Plant, Cell and Environment 29: 673-681. (Demonstrating that sorghum tolerates much higher levels of nitrate than *S. hermonthica*. The latter copes with lower levels of N by converting it to asparagine, but is seriously damaged by higher levels, above 500 mg N per host plant.)

Sonwa, D.J., Weise, S., Adesina, A., Nkongmeneck, A., Tchatat, M. and Ndoye, O. 2005. Production constraints above 500 mg N per host plant. *Stipa hermonthica*. *Sorghum bicolor* 681. (Demonstrating that sorghum tolerates much higher levels of nitrate than *S. hermonthica*. The latter copes with lower levels of N by converting it to asparagine, but is seriously damaged by higher levels, above 500 mg N per host plant.)

Spurrier, S.E. and Smith, K.G. 2006. Watering blue palo verde (*Cercidium floridum*) affects berry maturation of parasitic desert mistletoe (*Phoradendron californicum*) during an extreme drought in the Mojave Desert. Journal of Arid Environments 64: 369-373. (Watering did not increase berry numbers of *P. californicum* but allowed them to mature. Excess (x 10) watering had no increased effect.)

Stanton, S. 2006. The differential effects of dwarf mistletoe infection and broom abundance on the radial growth of managed ponderosa pine. Forest Ecology and Management 223: 318-326. (Concluding that in the case of *Arceuthobium campylopodium* infections on *Pinus ponderosa* the occurrence of brooms causes no consistent reduction in radial growth of the trees, and their removal may have no economic benefit, while reducing wildlife habitat.)


Touré, M.A. and Singh, B.B. 2005. Registration of 'Korobalen' cowpea. Crop Science 45: 2648-2649. (The new variety Korobalen has resistance to aphids, to a range of diseases, and to the Malian strain of *Striga gesnerioides*.)

Touré, M.A. and Singh, B.B. 2005. Registration of 'Sangarakar' cowpea. Crop Science 45: 2648. (The new variety Sangarakar has resistance to aphids, to a range of diseases and to both *Striga gesnerioides* and *Alectra vogelii*. It also stimulates germination of *Striga hermonthica*.)


van Ast, A. and Bastiaans, L. 2006. The role of infection time in the differential response of sorghum cultivars to *Striga hermonthica* infection. Weed Research 46: 264-274. (Confirming that infection by *S. hermonthica* tends to be earlier on susceptible variety CK-60B than on the tolerant Tiemarifing, also that artificially delaying infection significantly reduces damage to the susceptible variety, and suggesting ways in which such a delay might be achieved in the field.)

van Ast, A., Bastiaans, L. and Katile, S. 2005. Cultural control measures to diminish sorghum yield loss and parasite success under *Striga hermonthica* infestation. Crop Protection 24: 1023-1034. (Deep planting, the use of transplants, and shallow soil-tillage strongly delayed and reduced *Striga* infection and improved crop growth in pot experiments but not in the field. Possible reasons are discussed.)

Vasey, R.A., Scholes, J.D. and Press, M.C. 2005. Wheat (*Triticum aestivum*) is susceptible to the parasitic angiosperm *Striga hermonthica*, a major cereal pathogen in Africa. Phytopathology 95: 1294-1300. (In spite of the rarity of reports of *Striga* occurrence on wheat in the field, this study confirmed that modern cultivars of wheat, Hereward and Chablis, and a range of ancestral *Triticum* and *Aegilops* spp., all supported the germination and development of *S. hermonthica* and were severely damaged by it.)

Vericad, M., Stafforini, M. and Torres, N. 2003. Floristic records from the Balearic Islands (XVII.) (in Spanish) Bolleti de la Societat d'Història Natural de les Balears
46: 145-151. *(Orobanche clausonis* is listed as a ‘novelty’ on the island of Eivissa.)


Vurro, M., Boari, A., Pilgeram, A.L. and Sands, D.C. 2006. Exogenous amino acids inhibit seed germination and tubercle formation by *Orobanche ramosa* (broomrape): potential application for management of parasitic weeds. Biological Control 36: 258-265. (Reporting that 2 mM methionine almost totally suppressed germination of *Orobanche ramosa* and suggesting ways in which this observation might be exploited.)


Westbury, D.B. and Davies, A. 2005. Yellow rattle – its natural history and use in grassland diversification. British Wildlife 17(2): 93-98. (A useful review of the biology of *R. minor* and the history of its fall and rise in popularity as a grassland species. Concluding that, although its efficacy in increasing species diversity is complex, depending on site specifics, it can be a useful agent for positive change in species-rich grassland restoration.)


Wilson, C.A. and Calvin, C.L. 2006. An origin of aerial branch parasitism in the mistletoe family, Loranthaceae. American Journal of Botany 93: 787-796. (Presenting molecular and morphological evidence that the root-parasitic *Nuytsia floribunda* is ancestral to the family; that aerial parasitism has had multiple origins; that the first aerial parasitism had epicortical roots; and that the origin of aerial parasitism in one Old World clade involved epiphytic growth following germination on tree branches, without any climbing intermediate.)

Wisler, G.C. and Norris, R.F. 2005. Symposium: interactions between weeds and cultivated plants as related to management of plant pathogens. Weed Science 53: 914-917. (Noting the role of *Cuscuta* spp. in the spread of pathogens such as cucumber mosaic virus.)

Wu, X.M. and Tu, P.F. 2005. Isolation and characterization of α-(1 → 6)-glucans from *Cistanche deserticola*. Journal of Asian Natural Products Research 7: 823-828. (NaOH extracts of *C. deserticola* yielded 3 unique glucan-based polysaccharides, their structures differing from that of linear starch.)

Yonli, D., Traoré, H., Hess, D.E., Sankara, P. and Sérémé, P. 2006. Effect of growth medium, *Striga* seed burial distance and depth on efficacy of *Fusarium* isolates to control *Striga hermonthica* in Burkina Faso. Weed Research 46: 73-81. (In pot experiments a range of isolates of ‘*Fusarium spp.*’, *F. equiseti* and *F. oxysporum* (34-Fo) grown on compost or on chopped sorghum straw and mixed into the top 5 cm of sterilised soil all reduced *Striga* emergence and increased sorghum growth, but compost proved superior. The inocula were somewhat less effective against *Striga* buried at 10 cm, than at 5 cm depth. Isolate 34-Fo gave best results.)

9TH WORLD CONGRESS ON PARASITIC PLANTS

Sunday June 3 to Thursday June 7, 2007
Omni Hotel, Charlottesville, Virginia USA

Preliminary registration

Name:
Affiliation:
Postal address:
E-mail:
Telephone:
FAX:

I would like to present an oral presentation ____yes ____no
I plan to present a poster _____yes _____no

Please indicate which of the following areas would be your primary choice:

_____ Evolution and phylogeny of parasitic plants
_____ Parasite biochemistry and physiology (including molecular biology)
_____ Flowering and floral biology
_____ Ecology and population biology of parasitic species
_____ Host-parasite communication (including germination stimulation, haustorial induction, etc.)
_____ Host and non-host responses to parasitism
_____ Parasitic weed management
_____ Regulation and Phytosanitation

_____ Other aspect of parasitic plant biology; please specify __________________________

Return this form to Jim Westwood, Dept. of Plant Pathology, Physiology and Weed Science, Virginia Tech, Blacksburg, VA 24061-0331, USA.  
email westwood@vt.edu or fax:(+1) 540-231-7477).