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MESSAGE FROM THE IPSS PRESIDENT

Greetings to IPSS Members!

I am happy to bring you the new issue of *Haustorium* that has continuously been growing in content and volume, thanks to great efforts of Chris, Lytton, and Harro. In this issue, you will find two important notices for the IPSS events.

As already announced in the last issue, our next major conference, the 13th World Congress on Parasitic Plants, will take place in Kunming, the City of Eternal Spring, at Kunming Dianchi Garden Hotel & Spa, China, from July 5 to 10, 2015. Airon Li at Kunming Institute of Botany, Chinese Academy of Sciences and her colleagues with other Chinese scientists are busy organizing the congress. John Yorder will lead the program committee. We are looking forward to welcoming you in Kunming. Details will be found in the conference website;
<http://wcpp13.csp.escience.cn/dct/page/65540>

The second notice is the election of the IPSS Executive Committee. According to the schedule confirmed at the last meeting, we are expected to elect half the positions in the Executive Committee; this time, Editor and Treasurer. Details will be sent in a separate mailing. I would like to ask your active participation in this important event in your society.

In Japan, fortunately, we have not yet experienced serious crop losses due to weedy parasitic plants. However, some Japanese companies that have their own crop fields or contract-farmers in areas infested by root parasitic weeds have come to notice the problems caused by these noxious weeds. An example is posted in this issue – *Striga gesnerioides* infection on tobacco in Zambia. I believe that it is important to educate people especially farmers in parasitic weeds free areas and/or regions about potential damages posed by these devastating weeds. This would help reduce, stop, and limit potential infection by parasitic weeds.

Sincerely,

Koichi Yoneyama, IPSS President
 yoneyama@cc.utsunomiya-u.ac.jp

13TH WORLD CONGRESS ON PARASITIC PLANTS

The Organizing Committee cordially invites you to the 13th World Congress on Parasitic Plants (WCPP13) to be held from 5-10 July 2015 in Kunming, the City of Eternal Spring, in Southwest of China mainland. Organized by Kunming Institute of Botany (KIB), Chinese Academy of Sciences (CAS) under the auspices of the International Parasitic Plant Society (IPSS), this 6 day event will bring the WCPP legacy to East Asia for the first time.

WCPP13 will continue the long tradition of regularly assembling experts on parasitic plants from all over the world for academic meetings that started in 1973 in Malta. With the theme '**Parasitic plants: the good, the bad, and the mysterious**', this congress seeks to stimulate a productive exchange of information and ideas among researchers from around the world representing a wide spectrum of disciplines and perspectives, but all focused around the common theme of plant parasitism. Conference sessions will be designed to find common interests and to include presentations at the cutting edge of parasitic plants research (concerning both weedy and non-weedy species) and of management technologies of parasitic weeds.

The ultimate objectives of WCPP13 can be summarized as '**Concern, Control, and Collaboration**', and our meeting activities reflect these three elements: 'Concern' in that we hope to raise more concern on currently non-weedy parasitic plants before they become a problem; 'Control' in the activities that are leading to new technologies and applications for a better management of parasitic weeds; and Collaboration, the hallmark of WCPP13 permeating through all our activities.

We are looking forward to meeting researchers from all over the world for an exciting and varied scientific program. In addition to an engaging scientific program, attendees will enjoy a range of diverse social events as well as Kunming's many attractions, including a visit to Yunnan Ethnic Village that showcases the culture and customs of all the ethnic groups in Yunnan Province. We hope that you will take the opportunity to socialize and network with new acquaintances, and build upon

those relationships which have already been established to sustain our collaboration.

Please consider attending the 13th World Congress on Parasitic Plants. Mark the date in your calendar and register for the Congress. On behalf of the Organizing Committee and the Society, we are looking forward to meeting you in Kunming.

The Congress website is:

<http://wcpp13.csp.escience.cn/dct/page/65540>

Professor Koichi Yoneyama IPPS President
Professor Airong Li Local Organizer

PARASITIC PLANTS IN THE ALGARVE REGION OF SOUTHERN PORTUGAL

The Algarve of southern Portugal has one of the richest floras in Europe. The region has an Atlantic outlook; however its flora is typically Mediterranean, and noteworthy for its extraordinary diversity of parasitic plants in particular, a handful of which are described here. A full species list of the parasitic plants in the region is included in the recently published *Field guide to the wildflowers of the Algarve* (Thorogood and Hiscock 2014) – the most comprehensive field guide of the flora written to date.

One of the most spectacular parasitic plants which grows in the Algarve is *Cistanche phelypaea*, a striking yellow holoparasite of halophytic shrubs in the Amaranthaceae family, for example *Arthrocnemum perenne* and *Atriplex halimus*. The species is rare in Europe, but fairly frequent around the coasts of the Algarve, typically in estuaries, saltmarshes and dune systems. Indeed in some places such as on the saltmarshes of Faro (the Algarve's administrative capital) it grows in great stands, and is a real spectacle in late March to early April. Like many parasitic plants in the region, the abundance of the plant varies from year to year, and in some years (for example in 2014), it can be very scarce. The large, bright yellow, campanulate corolla suggests that the plant is insect-pollinated, however little is known about the breeding system of this species. The seeds are much larger than those of related *Orobanche* species, and are presumably water-dispersed. Attempts by the author to cultivate *Cistanche* in pots of *Atriplex halimus* grown in brackish water have been unsuccessful. Another even rarer holoparasite that occurs in the region is the Maltese Fungus, *Cynomorium*

coccineum. This peculiar and poorly understood species was previously more widespread in the Algarve, but has suffered a dramatic reduction through tourist-driven development of the region's southern coastline in recent decades. For example, the plant appears to have all but vanished from a previous stronghold at Alvor, previously a quaint fishing village where it grew alongside *C. phelypaea* in the saltmarshes, which have now been developed beyond recognition. *Cynomorium coccineum* can still be found on a few unstable sea cliffs in the Portimão area on the south coast of the Algarve in April and May. Like *C. phelypaea*, *C. coccineum* is a halophytic holoparasite which is parasitic on shrubs in the Amaranthaceae family. Very little is understood about the ecology and host specificity of this curious parasite.

The Algarve is of particular interest for its diversity of broomrapes (*Orobanche* spp.). *Orobanche foetida* is among the most common species in the west, which parasitizes legumes such as *Ononis natrix* and sends up spectacular, blackish-purple spikes up to a metre tall in late spring.



The far southwest of the Algarve is also home to a myriad of host-specific ecotypes in the taxonomically complex *Minores* group, for which further systematic attention is required. Common broomrape (*Orobancha minor*) is frequent in ruderal habitats on exotic host species, for example on *Gazania* spp. and *Tropaelium majus* on road cuttings and landscaped areas. *Orobancha minor* also grows on the windswept and isolated Cape St. Vincent on vetches such as *Onobrychis humilis*, alongside stands of an, as yet, undescribed taxon which shares morphological characteristics with both *O. minor* and *O. picridis*, and exclusively parasitizes carline thistles (*Carlina corymbosa*). These taxa co-occur with a third, poorly understood species, *O. calendulae* which has rather more robust spikes and a yellow (rather than pink) stigma, and infests clumps of calendula (*Calendula suffruticosa*). Gene flow amongst these co-occurring taxa cannot be ruled out. Like many of the rarer broomrapes, *O. calendulae* is poorly circumscribed and its relatedness within the *Minores* group remains unclear. It is uncommon in the region, and restricted to rocky sea cliffs and shale slopes in the far southwest. Finally, populations of a fourth cryptic taxon occur locally on dunes and coastal shales on the western sea belt of the Algarve which are parasitic on *Plantago coronopus*. This taxon is characterised by very dense, ovoid inflorescences and based on its morphology appears to be closely related to *O. amethystea* (typical populations of which occur further east in the Algarve) and also *O. litorea*, a coastal species occurring on Sicily and Sardinia. A holistic approach encompassing host specificity, morphometrics and DNA sequence data is required to tease apart the relationships of this taxonomically difficult group in the Algarve and further afield.

The curious red and yellow holoparasite *Cytinus hypocistis* is fairly frequent on rock roses (*Cistus* spp.) on dunes, garrigue and maquis in the Algarve. The closely related *C. ruber* which has pink flowers and parasitizes *Cistus albidus* also grows in the Algarve but is much less frequent. Surveys carried out by the author demonstrate that populations of *C. hypocistis* are host specific in the region, (Thorogood and Hiscock 2007) showing preferences for either *C. monspeliensis*, *C. ladanifer* (and sister species *C. palhiniae*) or for *Halimium halimifolium*. Subtle morphological distinctions exist amongst these host-specific ecotypes, and it is possible that isolation by their respective hosts' distinct ecologies is driving their genetic divergence; indeed genetic races of *Cytinus* associated with host lineages have been reported

from across the Mediterranean basin (de Vega *et al.*, 2008). Like many parasitic angiosperms, little is known about the ecology and life history of *Cytinus*, but it has been established that the plant is ant-pollinated (de Vega *et al.*, 2009), and its minute, dust-like seeds appear to be wind-dispersed.

Among the most common hemiparasites in the Algarve are *Osyris alba* and *O. quadripartita* (also described as *O. lanceolata*). *Osyris alba* frequents the baroccal (eucalyptus forest fringes), whereas *O. quadripartita* is common to subdominant in sclerophyllous vegetation at sea level. Traditional morphological keys have placed importance on leaf dimensions and pinnate leaf venation which are continuous to a degree, at least in the Algarve, and flower morphology along with bract dehiscence in fruit, would appear to be more reliable diagnostics in the field. Vegetation surveys suggest that *Osyris* does not show strong host specificity in the region (Thorogood CJ and Hiscock SJ, unpublished data), and *O. alba* is established to parasitize a wide range of hosts (Qasem, 2006). However plants often appear in clumps alongside other berry-producing shrubs, presumably as a result of bird-mediated co-dispersion, which may be a catalyst for host availability.

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Chris Thorogood

***HELIXANTHERA CYLINDRICA* IN
CAMBODIA**



Dr Chung Gait Fee recently sent us photos of this colourful mistletoe from about 160 km SW of Phnom Penh in Cambodia (70 km N. of Sihanoukeville through National Road No 4). Dr Don Kirkup has confirmed its identity as *Helixanthera cylindrica* and notes that there is nothing else much like it with the lax racemes, long pedicels and relatively slender large flowers. It is quite widespread and often found on cultivated trees. Flora Malesiana gives the distribution as Burma to Vietnam; Malesia: (Sumatra, Peninsular Malaysia, Borneo, Java, Celebes, Bali) and the recorded hosts include *Dalbergia*, *Eugenia*, *Garcinia*, *Hevea*, *Leptospermum*, *Mangifera*, *Parkia*, *Planchonlla*, *Schima* and *Tristania*.spp.



Photos Mr Chung Gait Fee

***STRIGA GESNERIOIDES* ON TOBACCO IN
ZAMBIA**

In December 2013, *Striga gesnerioides* was seen to be affecting tobacco on a farm in the Choma area,

Southern Province, Zambia. A small number of crop plants were found to be infected. The parasite was then seen in a second field on the same farm in January, 2014 and was also found on a second farm where the infestation was much more extensive and the crop suffered serious symptoms of yellowing, wilting and eventually death.

The problem has been reported previously in Zimbabwe but this is thought to be the first report from Zambia.

With thanks to Messrs Peter Rorbye and Lars Gruner, Japan Tobacco International Zambia Ltd., for information and photos.

***OROBANCHE CRENATA* IN UK – AN UPDATE**

A serious infestation of *Orobanche crenata* in faba beans in Kent, UK, was briefly reported in Haustorium 63 and later discussed at the *O. crenata* Workshop in Rabat, Morocco (reported on in issue 64). The Kent infestation involved several fields, the main one having a uniform, dense population exceeding 100 spikes per sq m in places, over an area of about 15 ha. The crop was reduced by at least 80%. The origin of the infestation has not been fully explained but appears to involve the use, some time in the past, of uncertified seed (on this or the adjacent farm) obtained from a local cooperative granary which stores grain for farmers who can later retrieve seed - not necessarily their own. Such retrievals should be used only for feed, but if used for seed, it provides a possible means of spread from a distant farm. For local spread it is thought combine harvesting will have been a big contributor as the thrashing involved throws seeds into the air to be taken by the wind.

Now a new infestation has been reported further north in Hertfordshire, but somewhat nearer (20 miles) to the historic occurrences in Essex which have been recorded sporadically since the 1950s. These have been very local and usually involved only garden vegetables or wild *Vicia* species. Only in 1997 when peas were sown on a farm scale in the neighbourhood, there was a massive infestation of several 100 thousand plants (Adams, 2003). Peas have not been grown again and records since then for that district have once more been sporadic, the last recorded in 2006 (Rumsey, 2014).

There is no evidence for any new introduction from abroad in recent years, so it is assumed that all these instances originate from the Essex focus. We await

DNA study of seed samples to confirm this. A further unresolved question is why we have these apparently successful populations so far north of any other in Europe. Global warming is one possibility, but this should not directly favour the weed. Evolution or adaptation to local temperature and moisture conditions would seem more likely, but again no work has yet been devoted to comparing the germination and dormancy behaviour of UK samples to those from the Mediterranean.

Now there is concern that the problem could become more important in UK as new EU regulations increase the popularity of peas and beans as a rotational crop.

Meanwhile attention is drawn to the situation in Ethiopia as described by Tekley Abebe *et al.* (2013), listed below. There the problem was first seen in the late 1980s but is now spreading alarmingly and threatening farmers' ability to grow any pulse crops over a substantial and increasing area of Tigray and neighbouring Provinces.

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Chris Parker

PRESS REPORTS

Award for conservationist (extract)

Trevor Thompson has gone from trapping possums with his parents as a youngster to winning a national conservation award. Mr Thompson, of Mt Bruce, has been presented with New Zealand Forest & Bird's annual Golden Spade award for his volunteer conservation projects in Wairarapa. At present, he is working on three major projects - with renga renga lilies on the Wairarapa coast, native species of mistletoe and the *Coprosma wallii* shrub.

Mr Thompson said he first developed a passion for conservation when he laid his first possum trap as a boy. 'Like many kids of my generation, I went possum trapping for a bit of pocket money,' said Mr Thompson. 'After that, I just kept going. I'm interested in nature and protecting it because my parents brought me up to appreciate it.'

One of Mr Thompson's most involved projects is propagating various species of mistletoe throughout Wairarapa, which he has been working on for 25 years. 'I did some reading on mistletoe in Wairarapa and it said that the Tararuas should be ablaze with red with all the mistletoe plants,' he said. 'I knew that certainly wasn't the case.' There are currently nine species of native New Zealand mistletoe, but populations have declined since the early 1900s due to pests and a decline in native bird species, which act as pollinators. At one point, said Mr Thompson, only three examples of *Alepis flavida* (yellow mistletoe) existed in Wairarapa, all living in one tree - but he since increased the number of host trees to seven and propagated a dozen plants. He runs workshops for people interested in planting and propagating mistletoe, which he said is 'quite an involved process'.

Erin Kavanagh-Hall, The New Zealand Herald July 1, 2014

The hunt for *Dendropemon caymanensis*.1

The Cayman Islands Department of Environment (DoE) are currently collaborating on a project with longtime partner Royal Botanic Gardens Kew (RGB Kew), UK, to locate a mysterious mistletoe species - *Dendropemon caymanensis* (Loranthaceae) - known to be located only on Little Cayman. There is very little known about this parasitic plant but records from botanist George Proctor, author of *Flora of the Cayman Islands*, indicate that it is possibly located within the northeastern interior of Little Cayman and is a parasite of the Headache Bush (*Capparis cynophallophora*) and the Black Candlewood (*Erithalis fruticosa*). No one has seen this plant since 1991 and there is no photographic record - just a single herbarium collection as proof of its existence. In order to find this plant, the DoE and RGB Kew used a mini unmanned aerial vehicle (UAV). The UAV is a small flying vessel with a camera; it weighs less than a kilogram and is controlled by a sophisticated remote computer system. It takes aerial photographs on a pre-programmed course, mapped using GPS coordinates.

The search team included DoE's Research Officers Jessica Harvey and Jane Haakonsson, and GIS Officer Jeremy Olynik; and RGB Kew's Species Conservation Assessment Officer Steven Bachman and Kew's GIS Officer Justin Moat; and from the Blue Iguana Recovery Programme (BIRP), Frederic Burton, acting as the local plant specialist. Mr Moat and Mr Bachman are highly trained and certified UAV pilots with previous experience in the UK and Peru, and both are off to Burkina Faso after their trip to Cayman. The DoE worked closely with the Civil Aviation Authority (CAA) to establish and follow all safety protocols. This included ensuring all launch and search sites were inspected and approved by the CAA prior to the project start date. Approval also was granted by the Lands and Survey Department, and all flights were coordinated and approved by the Grand Cayman and Cayman Brac Air Traffic Control towers prior to takeoff. This is very important as flying UAVs without authorisation could be a hazard to all types of aircrafts, including police helicopters and mosquito jets. Launching and landing sites were also granted permission from the relevant land owners.

Survey areas included the Colliers Reserve and Salina Reserve in Grand Cayman, where locations of the host plant species are already known. Images taken from these areas will be compared with images taken in Little Cayman. The project will also allow the DoE to try a new method of monitoring the booby colony in the Booby Reserve on Little Cayman, which could prove highly time and energy efficient compared to previous monitoring techniques.

Upon completion of this project the DoE hopes to determine the true status of the endemic *Dendropemon caymanensis* in the Cayman Islands, while also gathering data on the current status of the booby breeding area in the Booby Pond Reserve. This project was possible with assistance from the Mohamed Bin Zayed Conservation Group, which donated just more than US\$3,000 to the project through a grant; the Cayman Islands National Trust including BIRP; the CAA; and RGB Kew.

This project started on 12 June and was completed on 19 June. For more information, contact the DoE at doe@gov.ky, at 949-8469 during working hours or on our Facebook page.

Angela Piercy, Cayman Islands Government
4 July 2014

The hunt for *Dendropemon caymanensis*. 2

Extract from further press release: **Researchers hunt down mystery plant**

Although the search team was unable to see any signs of the species, Ms. Harvey said there is a chance it could show up in the footage captured through a mini aerial drone, which takes photographs on a pre-programmed course mapped out using GPS coordinates. 'We are still waiting for all the imagery from the drone to be processed, which may take some time ... We hope to get it in the next couple weeks,' she said.

Mr. Proctor discovered two specimens of the plant in Little Cayman, which he said was related to *D. purpureus* and *D. rigidus* but a lot smaller.

Jewel Levy, Cayman compass.com
18 July, 2014

NB See also the literature item Caraballo-Ortiz and Carlo, 2013.

Results show Africa can eradicate *Striga*

In the last three years, the ISMA project has deployed an integrated approach for managing *Striga* while improving soil fertility and reducing the *Striga* seed bank for sustainable increases in crop yields in some selected communities in Nigeria and Kenya. Dr David Chikoye, IITA Director for Southern Africa, said results from the project showed that the battle against *Striga* could be won. 'We will eradicate *Striga* in Africa just as America did,' he said at the Annual Review and Planning Meeting of ISMA in Abuja held 21-23 May.

IITA Deputy Director General for Research, Dr Ylva Hillbur, in her opening remarks called for concerted efforts from partners to tackle the *Striga* challenge. Over 70 stakeholders gathered in Abuja for the 3-day annual event which sought to evaluate the successes, challenges, and opportunities of the project, identify gaps, and plan how to implement the decisions to successfully scale out *Striga* management technologies to rural farmers in the next coming year.

Dr Mel Olouch, ISMA Project Manager, said 'We have established partners and stakeholder capacity in Kenya and Nigeria and installed *Striga* seed processing facilities in Kenya; awareness is high. Already, registration of the herbicide has been

achieved in both countries and we expect to release two IR maize varieties in Nigeria in 2014 (see following item). He said that some of the scaling up approaches that need to be adopted include the use of volunteer farmers to reduce costs and increase ownership, and use of complementary inputs and empowerment of stakeholders to give farmers the best technologies.

Specifically, these included cultural practices such as intercropping maize with legumes (soybean and groundnut); crop rotation of maize with soybean; a 'push-pull' technology that involves intercropping cereals with *Striga*-suppressing *Desmodium* forage legume; using *Striga*-resistant maize and cowpea varieties; using maize varieties resistant to Imazapyr (IR)—a BASF herbicide (StrigAway®) which is coated on the maize seeds and which kills the *Striga*; and adopting *Striga* biocontrol technologies which uses a *Striga* host-specific fungal pathogen.

The Senior Program Officer for Agriculture Development of the Bill & Melinda Gates Foundation, Dr Yilma Kebede, in his address, looked at future plans for the project while expressing that the project is close to reaching farmers and addressing their concerns/problems due to *Striga*. He emphasized that there needs to be concerted efforts to profile the farmers reached such that the take-home message will be sustainable for them in the long run. 'Demonstrations need to be focused and there is greater need to engage a wide range of stakeholders in controlling *Striga*. The various institutions involved should synergize to promote the project and scale out to farmers because no one partner will be responsible for the success of the technologies in the end,' he said.

Infesting up to 4 million hectares of land under maize production in sub-Saharan Africa, *Striga* causes farmers yield losses of up to 80% representing about US\$1.2 billion, and affects approximately 100 million people on the continent.

Project partners include CIMMYT, AATF, ICIPE, Bayero University, KNARDA, BSADP, seed and chemical companies, extension workers, scientists and the private sector.

Adeleke Mainasara, Africa Science News
26 May 2014

Nigeria releases first generation of herbicide-resistant hybrids

The Nigerian National Variety Release Committee (NVRC) has released the first generation of maize hybrids, resistant to metsulfuron methyl herbicide, that are also endowed with resistance to the noxious parasitic weed *Striga hermonthica*. The hybrids were developed by the International Institute of Tropical Agriculture (IITA) in partnership with DuPont Pioneer Seeds using conventional breeding with funding from IITA and the Integrated *Striga* Management in Africa (ISMA) project as part of strategies to control *S. hermonthica* in maize. The hybrids were released as P48W01 and P48W02 and are recognized as IITA IR-Maize Hybrid 2 and IR-Maize Hybrid 4. The hybrids have a yield potential of up to 5 t/ha under *Striga* infestation in comparison with local varieties that produce less than 1 t/ha in such conditions. 'These hybrids are the product of introducing a single nuclear gene that confers resistance to imidazolinone herbicides, including metsulfuron methyl (MSM), into inbred lines with known field resistance to *S. hermonthica*,' IITA Maize Breeder, Dr. Abebe Menkir, said.

Recent baseline studies conducted under the ISMA project showed that farmers ranked *Striga* as the number one constraint to maize production in northern Nigeria, with 50 to 100% of the households reporting *Striga* incidence in their farms. The parasitic weed infests more than 9 million ha planted to millet, maize, and sorghum in Nigeria and severely lowers the production capacity of these crops. Dr Menkir said yield losses in maize from damage by *S. hermonthica* varied from 20 to 80% among subsistence farmers, but 100% loss could occur in susceptible cultivars under severe infestation in marginal production conditions.

The released herbicide-resistant hybrids allow seeds to be planted that have been treated with low doses of metsulfuron methyl herbicide. This targets *S. hermonthica* before or at the time of its attachment to the maize root, killing the parasite underground before it inflicts damage on the crop. These hybrids can thus be used to deplete the *Striga* seed bank in the soil and minimize yield losses in subsequent cereal crops. MSM-treated seeds of these hybrids can be integrated into the diverse farming systems in Nigeria because the herbicide effectively controls the parasite at a low rate of application.

The ISMA project works with the private sector to catalyze the process of producing and marketing

treated seeds of herbicide-resistant maize hybrids to smallholder farmers in Nigeria to control *S. hermorrhica*. Other collaborating partners engaged in extensive testing of these hybrids include the Institute for Agricultural Research (IAR) and Agricultural Development Programs in Bauchi and Kano States. The ISMA project is being implemented by IITA in partnership with CIMMYT, ICIPE, BASF Crop Chemical, AATF and national partners in Kenya and Nigeria.

Crusoe Osagie, ThisDayLive
01 Jul 2014

New initiative to upscale commercialisation of anti-striga weed in maize technology launched

A new initiative has been launched to upscale use of commercialisation of StrigAway™ – an herbicide-resistant seed and treatment – to improve productivity and competitiveness of smallholder maize farmers. The initiative funded by the USAID brings together the African Agricultural Technology Foundation (AATF) and Feed the Future Partnering for Innovation and will help AATF and its partners, BASF, International Maize and Wheat Improvement Center (CIMMYT), and six local seed companies, promote the technology package in Kenya, Tanzania, and Uganda.

‘This partnership is really about increasing the food security of thousands of smallholder farmers in East Africa. Farmers who have access to this technology will have better maize yields and higher earnings from the sale of excess produce,’ said Denis T. Kyetere, the Executive Director, AATF.

StrigAway™ combats *Striga*, a parasitic plant that affects the agricultural productivity of approximately 1.4 million hectares in Kenya, Tanzania, and Uganda. Commonly known as witchweed, this parasitic plant can cause a 20 to 80 percent crop loss in maize, leading many farmers to abandon fields with heavy *Striga* infestation. Maize, the staple food for the majority of East Africans, is especially susceptible to *Striga* and continuous cereal monocropping has intensified the *Striga* problem. StrigAway™, which includes conventionally bred herbicide resistant maize varieties and an herbicide seed coating, was developed by BASF and CIMMYT.

As part of the United States government’s Feed the Future Initiative, Partnering for Innovation is expanding commercial access of transformational

technologies to smallholder farmers to improve productivity and incomes quickly and sustainably. ‘Large problems can’t be solved alone, which is why this is Feed the Future Partnering for Innovation’s largest grant to date, totaling more than US\$3 million. It involves multiple partners including an international NGO, a multi-national corporation, a research institute, and local private sector companies,’ said Brenna McKay, Partnering for Innovation Grants Program Director.

By the end of the three-year performance-based grant, there will be a total of 4,000 demonstration plots and nearly 1,000 metric tonnes of seed sold to over 20,000 smallholders in the target countries. Technical support for local seed companies will ensure the seed is commercially multiplied, treated, and available for purchase through a vast network of agricultural input retailers for smallholder farmer customers. AATF will work with partner seed companies to promote StrigAway™, including managing a discount programme for select agro-dealers, offering promotional seed packs to farmers, and leading a campaign to increase the understanding of the product.

Raymond Gichuki, Africa Science News
04 February 2014

Finding a cure for cancer with mistletoe? Believe Big is helping to kiss cancer goodbye

Mistletoe therapy is used widely in Germany and Switzerland for cancer treatment. However, until a clinical trial is done here in the United States, it cannot be offered to patients as standard of care. Studies in Europe have shown that mistletoe treatments along with a high alkaline diet are key components that can aid the body when fighting and overcoming cancer. The liquid extract of the mistletoe plant has been used as an alternative method to treat cancer for close to a century. Mistletoe injections are among the most widely used unconventional cancer treatments in Europe. In Europe, the most common commercial preparations are sold under the trade names Iscador and Helixor. Currently, only the European species of the mistletoe plant (*Viscum album*) is used for cancer.

Believe Big founder, Ivelisse Page, was cured of her stage 4 colon cancer by using mistletoe extract and a high alkaline diet. She is now 5 years cancer free. Clinical trials are typically funded by pharmaceutical companies but mistletoe is natural, so this is not an option. This is truly an historic event because this clinical trial is patient driven and

is being entirely funded by private donations. Currently only 50 Anthroposophic physicians are trained to treat with mistletoe in the U.S. 'We have 90% of the money needed to start Phase I of the trial. We are thrilled to be taking the first steps towards a cure for this devastating disease,' said Patty Buddemeyer, Assistant Director of Believe Big.

European oncologists have used extracts of mistletoe for the past 90 years. One study showed that individuals who took mistletoe extract in addition to their conventional treatment lived 40% longer. Currently, 1 out of every 3 oncologists in Germany prescribes mistletoe. Not only has mistletoe been found to diminish tumor-related pain, increase the immune response, prevent re-occurrence during the watchful waiting period, but it also offsets the terrible side effects of chemotherapy—nausea, vomiting, and lack of appetite.

Believe Big is a non-profit organization formed in 2011 to help families navigate the cancer journey by providing resources, direction and hope. Now Believe Big and Johns Hopkins are collaborating on a mistletoe clinical trial that brings the conventional and complementary medical communities together. Johns Hopkins researchers say mistletoe treatment can change the way doctors go after cancer. Dr. Luis Diaz, professor of oncology and senior researcher at Johns Hopkins, and Dr. Peter Hinderberger, expert in complementary medicine, both treated Ivelisse and are leading the clinical trial at Johns Hopkins. Dr. Hinderberger has used mistletoe in his practice successfully for over three decades. The clinical trial team is hoping that with this study, mistletoe will be included in the standard of care treatment protocol for cancer.

For more information about Believe Big and to find an Anthroposophic physician who is currently treating with mistletoe, visit <http://www.believebig.org>.

Anyone wishing to be a part of this historic event can make a tax deductible donation for this trial by visiting <http://www.gofundme.com/believebig-mistletoeTrial>.

Read the full story at <http://www.prweb.com/releases/2014/02/prweb11548215.htm>

Read more at:
<http://www.digitaljournal.com/pr/1719032#ixzz2swCLw025>

Digital Journal, Baltimore, MD
February 04, 2014

THESES

Influence of Dwarf Mistletoe (*Arceuthobium americanum*) on stand structure, canopy fuels, and fire behavior in lodgepole pine (*Pinus contorta*) forests 21-28 years post-mountain pine beetle (*Dendroctonus ponderosae*) epidemic in Central Oregon. Michelle C. Agne. MSc in Science in Sustainable Forest Management, September 18, 2013. Supervisor: David C. Shaw

Abstract:

Lodgepole pine (*Pinus contorta*) forests are widely distributed throughout western North America. However, the lodgepole pine forests of central Oregon are ecologically unique to the region, with a mixed severity fire regime, low cone serotiny, and their presence as a climax species. Although much research has been conducted regarding the stand structure and disturbance regimes of lodgepole pine, most of the research regarding lodgepole pine has occurred in the intermountain west. Research findings from other geographical locations may not be applicable to central Oregon lodgepole pine forests, given their distinctive ecological attributes. Lodgepole pine forests are subject to three widespread disturbance regimes: mountain pine beetle, dwarf mistletoe, and fire. Although much is known about each of these disturbances in lodgepole pine, little is known about their interactive effects. These disturbances occur pervasively in lodgepole pine and are known to co-occur on the landscape, so their effects must be investigated and interpreted simultaneously. This thesis describes the combined influences of dwarf mistletoe and mountain pine beetle on stand structure, canopy fuels, and fire behavior in central Oregon lodgepole pine forests.

We randomly selected and sampled 39 0.075-hectare plots within 13 stands in the Deschutes National Forest in central Oregon. The plots varied from 0 to 4 in average dwarf mistletoe rating (DMR) and all had experienced a mountain pine beetle mortality event 21 to 28 years prior to sampling. In Chapter 2, we compared stand density, stand basal area, canopy volume, proportion of the stand in dominant/codominant, intermediate, and

suppressed cohorts, and average height and average diameter of each cohort, across the range of DMR. We found strong evidence of a decrease in canopy volume, suppressed cohort height, and dominant cohort diameter with increasing DMR. There was strong evidence that as DMR increases, proportion of the stand in the dominant/codominant cohort decreases, while proportion of the stand in the suppressed cohort increases. Structural differences associated with dwarf mistletoe create heterogeneity in this forest type and may have a significant influence on the productivity, resistance, and resilience of these stands. These findings show that it is imperative to incorporate dwarf mistletoe effects when studying stand productivity and ecosystem recovery processes.

In Chapter 3, we compared canopy base height, the fuel parameter that drives passive crown fire, and canopy bulk density, the fuel parameter that drives active crown fire, over the range of DMR to determine the effect of dwarf mistletoe on canopy fuels. We then used BehavePlus to model passive crown fire and active crown fire in our plots. We found strong evidence of a decrease in canopy base height with increasing DMR. There was suggestive evidence of decrease in canopy bulk density with increasing DMR, after accounting for stand density. The results of the fire behaviour modelling suggest that at low to moderate wind speeds, likelihood of passive crown fire increases with increased DMR. However, under more extreme weather (wind speeds >20 mph), the effect of dwarf mistletoe on passive crown fire potential was not shown to be important. The potential for active crown fire was extremely low in our plots, regardless of DMR. These findings show that dwarf mistletoe is having a significant effect on the potential for passive crown fire in lodgepole pine forests 21 to 28 years post-mountain pine beetle epidemic, and should be considered in future research regarding post-mountain pine beetle fuels and fire behaviour.

Resistance of chickpea (*Cicer arietinum*) and tomato (*Solanum lycopersicum*) to field dodder (*Cuscuta campestris*). Hadas Miryamchik. MSc Thesis Hebrew University of Jerusalem July 2013. Supervisors Raruch Rubin and Yaakov Goldwasser

Summary

Field dodder (*Cuscuta campestris* Yuncker), is a worldwide troublesome above-ground holoparasite that sustains on plants and substantially reduces crop yields. Field dodder seedlings coil around host stems and leaves, produce pre-haustoria that establish a connection to the host plant by haustoria

that penetrate and fuse into the host vascular tissues. The parasite then exploits the host plant by withdrawing assimilates and other solutes causing severe damage to the host plant.

At first I scanned a wide range of chickpea genotypes in order to reveal resistant genotypes to field dodder infection. Those genotypes were determined by using a parasitic development index set by visual parameters. Two genotypes which exhibited good tolerance to the parasite were found: the variety 'ICCV 95333' from ICRISAT and the Israeli variety 'Hazera 4' from 'Hazera Genetics'. In addition- two dodder-resistant, 'Heinz' canning tomato varieties were included. Both genotypes were grown in pots sown with field dodder. In the resistant genotypes the parasite failed to penetrate the epidermis and the vascular systems of the host. We found that this phenomenon also occurs but at less intensity in secondary attachments obtained by placing coiling field dodder stem segments on the mature resistant chickpea and tomato host plants.

Anatomic sectioning and microscopic

examination- This staining was carried out by the assumption that woody materials such as lignin contribute to the resistant mechanism in the resistant genotypes. Samples of tomato and chickpea stems infested by field dodder were collected and fixed in FAA, embedded in paraffin and in the end were sliced by microtome (Leica RM2245) at a thickness of 12 microns. The samples were stained in safrin and fast green and then examined under a light microscope. I found that the internal structure of the stems was similar in the susceptible genotype and resistant genotype whether parasitized or non-parasitized with field dodder. These data suggest that the observed tolerance is due to factors in the outermost stem layer that separate the plant from the surrounding environment. In the resistant tomato genotype, pre-haustoria could not penetrate through the epidermis. Cells in the outer layer of the pre-haustoria turned black, which indicates cell death resulting from a HR (Hypersensitive Response) reaction at the contact area.

Image processing system LC-PolScope- This system was used in order to evaluate the cellulose fibers content. This image processing system helps calculate the Retardance parameter which indicates cellulose fiber layer thickness and density. I found that the resistance mechanism in tomato and chickpea is not associated with the thickness of the cellulose crystal structure in the stems.

Removal of the epicuticular layer and epidermis of the host plant- This experiment was carried out by applying a uniform layer of cellulose acetate dissolved in acetone on the plant stem or by fine cutting with a scalpel. The results suggest that those layers in chickpea and tomato plants may have a partial role in the mechanism of resistance. While working on this thesis I found that in some experiments the resistance phenomena decreased. So I decided to examine the influence of different environmental factors on the resistant phenomena and tried in parallel to increase the parasite control by combining the resistant genotype with selective herbicides as described below.

Environmental factors: temperature, day length and shading- Each of these factors was examined separately in a controlled Phytotron. High temperatures of 43/82 °C (day/night) negatively affected dodder germination, penetration and later on the development of attachments to the host. All the environmental factors affected the vitality of the host and thus indirectly affected the development of the attached parasite. A short day regime (8 light hours) influenced the development of chickpea plants by encouraging vegetative growth but did not affect the resistance mechanism to field dodder. Light intensity (shading) affected plant growth and development and as the shading increased, the vitality of the host plant reduced, resulting in a concomitant parasite-inhibited growth. These experiments that were conducted under controlled environment conditions did not reveal differences between susceptible and resistant genotypes. Although I could not detect a specific factor affecting the resistance phenomenon, it is likely that environmental factors influence host-parasite interaction. Further studies should focus on the interaction of these environmental factors in order to elucidate the role of environmental factors involved in this phenomenon.

In addition to the studies mentioned above I examined the effect of various herbicides including cell division inhibiting herbicides (pendimethalin, trifluralin, pronamid and isoxaben) and ALS (acetolactate synthase) inhibiting herbicides (imazapic, imazamox, sulfosulfuron and rimsulfuron) by direct application to field dodder seedlings, host foliage, and root application by drench to tomato and chickpea plants parasitized by dodder.

Cell division inhibitors applied directly to dodder seeds in Petri-dish experiments delayed dodder seedling early development, and inhibited their

growth when applied post emergence on chickpea grown in pots. Pronamid direct application to germinating field dodder seedlings in Petri-dish experiments reduced dodder shoot length to about 40% of the untreated control. Post-emergence application of pronamid in pot experiments caused lesser damage to the parasitized chickpea host than to the non-parasitized control plants, probably due to the fact that some of the herbicide was drawn from the host by the parasite as the parasite employs a strong metabolic sink in host-parasite interactions. Nevertheless in some of the plants, after a short period I observed a regeneration of treated dodder. ALS- inhibiting herbicides did not inhibit the growth of germinating dodder seedlings when applied directly to the seeds in Petri dish. However, they were quite effective on dodder when applied on the host foliage or roots (by drench) to chickpea and tomato genotypes. The application of ALS-inhibiting herbicides on field dodder that did succeed to parasitize resistant tomato plants, in most cases significantly reduced field dodder weight in a higher manner than the reduction of field dodder weight parasitizing the susceptible tomato genotypes treated with the same herbicides. This was evident especially with the herbicide rimsulfuron. It seems that application of these herbicides on resistant genotypes results in better dodder control along with minimal damage to the host. In the majority of herbicides applied on dodder-parasitized chickpea and tomato plants we observed initial inhibition of field dodder but after a certain period stem regeneration occurred. Total parasite control was achieved only in imazapic application on tomato and chickpea plants.

The approach of combining repeated applications of reduced herbicide rates on resistant crop genotypes is promising, but further research is needed before implementing this approach safely and effectively under field conditions.

OTHER FORTHCOMING MEETING

5th International Conference on Alternative Methods of Crop Protection. Lille, France, 11-13 March, 2015. Sessions will include one on resistance and varietal selection.

For information contact AFPP, 42 rue Raymond Jaclard, F-94140 Alfortville. Email afpp@afpp.net. Website www.afpp.net.

SEARCH ALL ISSUES OF HAUSTORIUM IN JUST TWO FILES

In the inaugural issue of *Haustorium* (December 1978) the purpose of the newsletter was stated as serving ‘. . . a useful purpose in keeping workers in contact with each other and with research results which are not always readily available to all concerned.’ From the beginning, an emphasis of our newsletter has been to provide reviews of parasitic plant research, research that has grown exponentially in the more than 35 years we have published *Haustorium*.

In a continuing commitment since then, Chris Parker has assiduously searched archival and non-archival literature for *Haustorium* and with characteristic pith and clarity has written brief summaries that are published in each issue of the newsletter. On few occasions, he asks other experts to write them. These entries provide the world’s most extensive review of the literature on parasitic plants, a database of inestimable value for researchers. Recently, he collated all the published issues into two large, searchable pdf files. Issues 1 through 48 can be accessed at <http://ww2.odu.edu/~lmusselm/haustorium/pdf/haustorium1-48.pdf> and issues 49 through 64 at <http://ww2.odu.edu/~lmusselm/haustorium/pdf/haustorium49-64.pdf> New issues will be added to the latter, as they are published.

We hope this resource will enhance the value and accessibility of this literature.

Lytton John Musselman, Old Dominion University

GENERAL WEB SITES

For individual web-site papers and reports see
LITERATURE

For information on the International Parasitic Plant Society, current issue of *Haustorium*, etc. see: <http://www.parasiticplants.org/> (N.B. currently a little out of date)

For past and current issues of *Haustorium* see also: <http://www.odu.edu/~lmusselm/haustorium/index.shtml>

For the ODU parasitic plant site see: <http://www.odu.edu/~lmusselm/plant/parasitic/index.php>

For Dan Nickrent’s ‘The Parasitic Plant Connection’ see: <http://www.parasiticplants.siu.edu/>

For the Parasitic Plant Genome Project (PPGP) see: <http://ppgp.huck.psu.edu/>

For information on the EU COST 849 Project (now completed) and reports of its meetings see: <http://cost849.ba.cnr.it/>

For information on the COST/STREAM conference see: <http://streamisrael2013.wix.com/stream-israel-2013>

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

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

For information on the work of the African Agricultural Technology Foundation (AATF) on *Striga* control in Kenya, including periodical ‘Strides in *Striga* Management’ and ‘Partnerships’ newsletters, see: <http://www.aatf-africa.org/>

For Access Agriculture (click on cereals for videos on *Striga*) see: <http://www.accessagriculture.org/>

For The Mistletoe Center (including a comprehensive Annotated Bibliography on mistletoes up to 1995, but apparently incomplete since then) see: <http://www.rmrs.nau.edu/mistletoe/>

For information on future Mistel in der Tumorthherapie Symposia see: <http://www.mistelsymposium.de/deutsch/-mistelsymposien.aspx>

For a compilation of literature on *Viscum album* prepared by Institute Hiscia in Arlesheim, Switzerland, see: <http://www.vfk.ch/informationen/literatursuche> (in German but can be searched by inserting author name).

For the work of Forest Products Commission (FPC) on sandalwood, see: <http://www.fpc.wa.gov.au> (Search *Santalum*)

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- indicates web-site reference only

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- Arroyo, J.M., Munguia-Vega, A., Rodríguez-Estrella, R. 2014. Bascompte, J. 2013. Isolation of 18 microsatellite loci in the desert mistletoe *Phoradendron californicum* (Santalaceae) via 454 pyrosequencing. Applications in Plant Sciences 1(12): 1300048. [Concluding that levels of polymorphism are adequate for studies of diversity and fragmentation in natural populations of *P. californicum*. Cross-species amplifications in *P. juniperinum* and *P. diguetianum* only showed four markers that could be useful in *P. diguetianum*.]
- Asha Arora and Vinita Paliwal. 2013. Diversified hypoglycemic plants and management of diabetes mellitus II. International Journal of Drug Discovery and Herbal Research (IJDDHR), 2013, October/December: 687-689. [*Viscum album* listed among plants used traditionally for treatment of type II diabetes.]
- Atera, E.A., Kondo, F. and Itoh, K. 2013. Evaluation of intercropping and permaculture farming system for control of *Striga asiatica* in maize, Central Malawi. Tropical Agriculture and Development 57(4): 114-119. [A cowpea intercrop reduced *S. asiatica* but failed to increase yield. 'Permaculture' (maize planted in the same plot with soybean, bambara bean, cotton, pigeon pea and marigold) reduced *Striga* and increased maize yield by 28%.]**
- Austad, I. and Rydgren, K. 2014. Establishment of herb-rich hay-meadows. Results from a field experiment at the The Heiberg Collection-Sogn Folk Museum. Blyttia 72(1): 3-18. [*Rhinanthus minor* among species used to enrich hay meadows and relatively easy to introduce.]
- *Aybeke, M., Sen, B. and Okten, S. 2013. *Aspergillus alliaceus*, a new potential biological control of the root parasitic weed *Orobanche*. Journal of Basic Microbiology 2013. (<http://www.ncbi.nlm.nih.gov/pubmed/23686407>) [Confirming the potential of *A. alliaceus* against *O. cumana*.]
- Azam, M.N.K., Ahmed, M.N., Rahman, M.M. and Mohammed Rahmatullah. 2013. Ethnomedicines used by the Oraon and Gor tribes of Sylhet district, Bangladesh. American-Eurasian Journal of Sustainable Agriculture 7(5): 391-402. [Noting the use of *Cuscuta reflexa* for treatment of anthrax in cattle.]
- Badu-Apraku, B., Fakorede, M.A.B. and Oyekunle, M. 2014. Agronomic traits associated with genetic gains in maize yield during three breeding eras in West Africa. Maydica 59(1): 49-57. [A review concluding that substantial progress has been made in breeding for cultivars with combined tolerance/resistance to the three stresses – *Striga*, drought and low nitrogen - during the past 22 years.]**
- Bai Ying, Li HaiYan and Chen ShiXian. 2013. Composition analysis and immunological activities of the oligosaccharides isolated from

- Cistanche deserticola*. International Proceedings of Chemical, Biological and Environmental Engineering (IPCBE) 50: 157-162. [Tests indicated that extracts of *C. deserticola* presented significant effect on the mouse spleen index, increasing the phagocytosis activity of macrophages and stimulating antibody-producing cell proliferation.]
- Bajwa, A.A., Shahida Khalid, Sehrish Sadia, Muhammad Nabeel and Wahaj Nafees. 2013. Influence of combinations of allelopathic water extracts of different plants on wheat and wild oat. Pakistan Journal of Weed Science Research 19(2): 157-166. [Extracts of *Cuscuta reflexa* alone and in mixtures suppressed germination of *Avena fatua*, but also damaged wheat.]
- Bakhit, B.R. and Abdel-Fatah, B.E. 2013. Gene action and molecular markers associated with *Orobanche* resistance in faba bean (*Vicia faba* L.). Biotechnology 12(1): 1-13. [Identifying 6 markers associated with *O. crenata* tolerance in progeny from a cross between Misr-1 (tolerant) and Giza-2 (susceptible).]
- Baltazár, T., Pejchal, M. and Varga, I. 2013. Evaluation of European mistletoe (*Viscum album* L.) infection in the castle park in Lednice. Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis 61(6): 1565-1574. [Assessing the levels of infection of *Acer campestre* and *Tilia cordata* by *V. album* in the Czech Republic and finding a general correlation with tree age and (lack of) tree vitality.]
- Barbu, C. 2013. Radial increments distribution on silver fir trees' stems affected by mistletoe (*Viscum album* ssp. *abietis*). A case study in Eastern Carpathians. Lucrări Științifice, Universitatea de Științe Agricole Și Medicină Veterinară "Ion Ionescu de la Brad" Iași, Seria Horticultură 56(2): 419-424. [Confirming increasing reductions in radial growth of silver fir with increasing density of *V. album*.]
- Bardgett, R.D. and 25 others. 2012. Plant-soil interactions and grassland diversity restoration. Aspects of Applied Biology 115: 31-34. [A study exploring the role of introductions of *Rhinanthus minor* into species-poor swards to debilitate competitive grasses.]
- Başaran, M.S., Ozdem, A. and Kovačević, D. 2013. Weed species and their management in organic sweet cherry production in Isparta (Egirdir) province. Fourth International Scientific Symposium "Agrosym 2013", Jahorina, Bosnia and Herzegovina, 3-6 October, 2013. Book of Proceedings: 211-216. [*Cuscuta campestris* among the most frequent weeds in organic cherry orchards in Turkey.]
- Bellot, S. and Renner, S.S. 2014. The systematics of the worldwide endoparasite family Apodanthaceae (Cucurbitales), with a key, a map, and color photos of most species. Phytotaxa 36: 41-57. [Using morphological, nuclear 18S, and mitochondrial matR data, the taxonomy of Apodanthaceae was revised. The 36 names published in the family were reduced to ten biological species in two genera, *Apodanthes* and *Pilostyles*. *Berlinianche aethiopica* is now recognized as *Pilostyles aethiopica*.]
- Bertin, R.I. 2013. Changes in the native flora of Worcester County, Massachusetts. Journal of the Torrey Botanical Society 140(4): 414-452. [Orobanchaceae among several families showing high rates of loss or decline in Massachusetts and elsewhere in the NE USA.]
- Bin ZhenJun, Wang JingJing, Zhang WenPeng, Xu DangHui, Cheng XueHan, Li KeJie and Cao DeHao. 2014. (Effects of N addition on ecological stoichiometric characteristics in six dominant plant species of alpine meadow on the Qinghai-Xizang Plateau, China.) (in Chinese) Chinese Journal of Plant Ecology 38(3): 231-237. [*Pedicularis kansuensis* among 'dominant' plants studied, and shown to respond to N.]
- Caires, C.S., Gomes-Bezerra, K.M. and Proença, C.E.B. 2014. A new combination in *Peristethium* (Loranthaceae) expands the genus' range into the Amazon-Cerrado ecotone. Acta Amazonica 44(2): 169-173. [A new combination, *P. reticulatum*, is proposed, based on *Struthanthus reticulatus*.]
- Cakovic, D., Stešević, D., Ikočić, V., Knežević, M. and Latinović, N. 2014. Contribution to the knowledge of weed flora in Bjelopavlići plain. Agriculture and Forestry 58(4): 25-41. [*Cuscuta caesattiana* listed among 10 invasive species. No information on hosts.]
- Campagna, G. and Geminiani, E. 2014. (Integrated strategies for weeding of beet.) (in Italian) Informatore Agrario 70(1): 51-56. [Including advice on use of herbicides for control of *Cuscuta* spp.]
- Caraballo-Ortiz, M.A. and Carlo, T.A. 2013. Resurrection of *Dendropemon sintenisii* (Loranthaceae): an endemic mistletoe from Puerto Rico. Phytotaxa 82(1): 1-6. (<http://dx.doi.org/10.11646/phytotaxa.82.1.1>) [*D. sintenisii* was thought to be known only from its original collection in Puerto Rico in 1885 and Kuijt (2011) (see Haustorium 61) included it in *D. caribaeus*, but the authors have re-identified

- 40 specimens as *D. sintenisii* that were collected in Puerto Rico from 1913 to 2012. They explain the taxonomic confusion and provide illustrations, information on morphology, distribution, host plants and an updated key of the 4 species found in Puerto Rico.]
- Cardoso, C. And 16 others. 2013. Natural variation of rice strigolactone biosynthesis is associated with structural variation and the deletion of two MAX1 orthologs. PNAS 111: 2379–2384.
- Chaskda, A.A., Mwansat, G.S. and Ottosson, U. 2013. Implications of flower developmental stage, plant isolation and microclimatic condition on a hemiparasitic plant-avian pollinator interaction. Journal of Natural Sciences Research 3(15): 26-32. [Visits by pollinating birds in Nigeria are shown to be maximum when flowers of *Tapinanthus sessilifolius* are ripe but unopened. Higher temperatures decreased visits.]
- Chen Chen, Zhao XiaoHui, Yue HuiLan, Li YuLin and Chen Tao. 2014. Separation of phenylpropanoid glycosides from a Chinese herb by HSCCC. Journal of Chromatographic Science 52(5): 395-399. [Identifying verbascoside and isoacteoside from the Tibetan medicinal plant *Pedicularis longiflora*. var. *tubiformis*.]
- Chen, W., Dugan, F.M. and McGee, R. 2014. First report of dodder (*Cuscuta pentagona*) on chickpea (*Cicer arietinum*) in the United States. Plant Disease 98(1): 165. [In Washington state.]
- Chen JiHang, Wong HoiShan and Ko KamMing. 2014. Ursolic acid-enriched Herba Cynomorii extract induces mitochondrial uncoupling and glutathione redox cycling through mitochondrial reactive oxygen species generation: protection against menadione cytotoxicity in H9c2 cells. Molecules 19(2): 1576-1591. [Herba Cynomorii = *Cynomorium songaricum*.]
- Chen JiHang, Wong HoiShan, Leung HoiYan, Leong PouKuan, Chan WingMan, Chen Na and Ko KamMing. 2014. An ursolic acid-enriched extract of *Cynomorium songaricum* protects against carbon tetrachloride hepatotoxicity and gentamicin nephrotoxicity in rats possibly through a mitochondrial pathway: a comparison with ursolic acid. Journal of Functional Foods 7: 330-341. [*C. songaricum*, is used for treating impotence in Chinese medicine and is also a popular health-promoting food, particularly in Inner Mongolia.]
- Chen Rong, Zhang XinHua and Ma GuoHua. 2014. (Studies on parasitic relationship between *Santalum album* L. and leguminous plants.) (in Chinese) Journal of Tropical and Subtropical Botany 22(1): 53-60. [Showing that excellent hosts for *S. album* were *Calliandra haematocephala*, *Caesalpinia sappan*, *Acacia confusa*, *Erythrina corallodendron* and *Acacia mangium*, while *Dalbergia odorifera* and *Cassia surattensis* were intermediate and *Delonix regia*, *Ormosia pinnata*, *Leucaena leucocephala* and *Bauhinia blakeana* were unsuitable.]
- China, T.F.C., Olounlade, P.A. and Salifou, S. 2014. Ethnobotanical study of endogenous methods used for the treatment of diseases of Somba cattle breed in northern Benin. Journal of Drug Delivery and Therapeutics 4(3): 91-99. [*Ximenia americana* among species included in the study.]
- Chirag Prajapati and Falguni Majmudar. 2014. Diabetes mellitus, obesity, hypertension: risk factors for Metabolic Syndrome.. World Journal of Pharmacy and Pharmaceutical Sciences (WJPPS) 3(2): 2453-2466. [*Viscum album* among species showing some good therapeutic activity against 'metabolic syndrome'.]
- Chitagu, M., Rugare, J.T. and Mabasa, S. 2014. Screening maize (*Zea mays*) genotypes for tolerance to witchweed (*Striga asiatica* L. Kuntze) infection. Journal of Agricultural Science (Toronto) 6(2): 160-169. [A pot experiment in which 7 out of 10 entries showed little damage and were apparently tolerant to *S. asiatica*.]
- Costea, M., García-Ruiz, I., Dockstader, K. and Stefanovic, S. 2013. More problems despite bigger flowers: systematics of *Cuscuta tinctoria* clade (subgenus *Grammica*, Convolvulaceae) with description of six new species. Systematic Botany 38(4): 1160-1187. [This installment in a series of works on subgenus *Grammica*, uses molecular (*trnL-F* and ITS) and morphological evidence to clarify the evolution and taxonomy of these dodders. An identification key, descriptions, geographical distribution, ecological data, and illustrations are provided for all taxa, some of which are newly described here.]
- Dadwal, V.S. and Nisha Singh. 2013. Occurrence and management of diseases in medicinal plants of Madhya Pradesh and Chattisgarh. Journal of Tropical Forestry 29(1/2): 42-53. [Noting damage to *Santalum album* caused by *Curvularia lunata*.]
- Dakskobler, I., Anderle, B., Zupan, B. and Vreš, B. 2014. (Novelities in the flora of Slovenia.) (in Slovenian) Hladnikia 33: 3-30. [Mentioning new records for *Orobancha panicii*, *Tozzia alpina* and *Viscum abietis*. In the same issue of this journal (pp. 73-77) there is an anonymous item

- referring to an older record (pre-1952) of *Corallorhiza trifida*.]
- Das, S.C. and Jagatpati Tah. 2013. Effect of GA₃ on seed germination of sandal (*Santalum album* L.). International Journal of Current Science 8: 79-84. [Confirming the value of GA₃ in germination of *S. album*.]
- de Vega, C., Herrera, C.M and; Dötterl, S. 2014. Floral volatiles play a key role in specialized ant pollination. Perspectives in Plant Ecology, Evolution and Systematics 16(1): 32-42. [The volatiles 4-oxoisophorone, (*E*)-cinnamaldehyde, and (*E*)-cinnamyl alcohol were the most abundant compounds in *Cytinus hypocistis* flowers, attracting 4 ant pollinator species.]
- Demey, A., Rütting, T., Huygens, D., Staelens, J., Hermy, M., Verheyen, K. and Boeckx, P. 2014. Hemiparasitic litter additions alter gross nitrogen turnover in temperate semi-natural grassland soils. Soil Biology & Biochemistry 68: 419-428. [Results support the hypothesis that litter from hemi-parasitic plants increases soil N availability more than non-parasitic litter, but contradicts the expectation that the hemiparasitic litter effect would be more pronounced in an oligotrophic system (involving a *Pedicularis* sp.) as compared to a mesotrophic one involving a *Rhinanthus* sp.]
- Demirkan, H., Türkseven, S., Nemli, Y., Uludağ, A. and Kaçan, K. 2014. (Investigation on chemical control of broomrape (*Phelipanche ramosa* (L.) Pomel/*P. aegyptiaca* (Pers.) Pomel) in tomato fields.) (in Turkish) Ege Üniversitesi Ziraat Fakültesi Dergisi 51(1): 101-107. [Reporting the results of preliminary herbicide trials but results not clear from the English summary.]
- Detke, G.A., Lima, L.F.P. and Waechter, J.L. 2011. *Phoradendron argentinum* (Viscaceae), new mistletoe for the Brazilian flora and its general distribution in South America. Darwiniana 49(1): 86-89. [A brief description of *P. argentinum*, a key including the taxonomically closest species, photographs and a distribution map of the species are given.]
- Dev, S.A., Muralidharan, E.M., Sujanapal, P. and Balasundaran, M. 2014. Identification of market adulterants in East Indian sandalwood using DNA barcoding. Annals of Forest Science 71(4): 517-522. [The common adulterant of *Santalum album*, *Osyris wightiana* could be readily identified using DNA barcoding.]
- Dibong, S.D., Tchatat, M., Yinyang, J., Mvogo, O.P.B., Ndjib, R.C. and Mpondo, M.E. 2011. Valuation of special non-timber forest products of plant origin sold in East markets Douala (Cameroon). Journal of Animal and Plant Sciences (JAPS) 20(1): 3067-3078. [*Coula edulis* (Olacaceae) among species sold in markets for their therapeutic value.]
- Dicu, G., Teodorescu, E.A., Dumitrescu, N.C., Boaghe, N. and Ionita, M. 2011. Research regarding the virulence of broomrape parasite (*Orobancha cumana* Wallr.) in southeastern of Romania. Scientific Papers - Series A, Agronomy 54: 256-261. [While *O. cumana* races E and F have been well controlled by resistant varieties. Race G is proving more difficult and it is suspected that a new race G+ may have evolved, partially overcoming the resistance in variety PR64A71.]
- Dikshit, S.S., Sajeed Ali and Samuel Rai. 2014. Angiospermic phyto-parasites of the Darjeeling Himalayas and their ethnomedical importance. Environment and Ecology 32(2): 491-494. [Reviewing the ethno medicinal uses of *Viscum album*, *V. articulatum*, *Cuscuta reflexa* and *Dendrophthoe falcata*.]
- Dimitrijevic', A., Pejovic', I., Imerovski, I., Dedic', B., Pajevic', S. and Miladinovic', D. 2013. DNA isolation from dry samples of broomrape - the effect of isolation method and sample storage on DNA yield and quality. Romanian Agricultural Research 30: 349-357. [DNA isolation with DNeasy® Plant Mini Kit, Qiagen and a protocol by Rogers and Bendich (1985) could be recommended for future studies based on dried material of *Orobancha cumana*.]
- Domina, G., Greuter, W., Marino, P. and Schäfer, P.A. 2013. Types of names of *Orobancha* taxa described from North Africa. Plant Biosystems 147(3): 758-766. [Accepted names and synonyms of the recognized taxa are given. Three species are illustrated, and one new combination (*O. inexpectata*) is proposed.]
- Dong ShuQing, Gao RuiBin, Yang Yan, Guo Mei, Ni JingMan and Zhao Liang. 2014. Simultaneous determination of phenylethanoid glycosides and aglycones by capillary zone electrophoresis with running buffer modifier. Analytical Biochemistry 449: 158-163. [Relating to analysis of extracts of *Cistanche* spp.]
- Dor, E., Aly, R. and Hershenhorn, J. 2014. Pomegranate (*Punica granatum*) as host of the broomrapes *Phelipanche aegyptiaca* and *Orobancha crenata* in Israel. Plant Disease 98(6): 859. [A first report of *Orobancha* spp. on pomegranate.]
- Dor, E.; Eizenberg, H., Joel, D.M., Smirnov, E., Achdari, G. and Hershenhorn, J. 2014. *Orobancha palaestina*: a potential threat to agricultural crops in Israel. Phytoparasitica 42(2): 285-291. [*O. palaestina* normally

- parasitises *Notobasis syriaca* and *Cirsium phyllocephalum* but is shown to be able to parasitise safflower, lettuce, gazania (*Gazania uniflora*), vetch (*Vicia sativa*) and artichoke. Sunflower, tomato, carrot, chrysanthemum and cabbage did not support the parasite.]
- Dostálek, T., Münzbergová, Z. and Plačková, I. 2014. High genetic diversity in isolated populations of *Thesium ebracteatum* at the edge of its distribution range. Conservation Genetics 15(1): 75-86. [Populations of the endangered *T. ebracteatum* in Central Europe occupying an area greater than 300 m² showed high genetic diversity, whereas small populations contained less genetic diversity. Conservation priorities are discussed.]
- Drumeva, M., Yankov, P., Nenova, N. and Shindrova, P. 2014. Investigation on the resistance of doubled haploid sunflower lines to some biotic factors. Agricultural Science and Technology 6(1): 11-13. [Gamma-induced parthenogenesis was applied to 15 doubled haploid fertility restorer sunflower lines. Seven lines showed resistance to *Orobanche cumana* (races A-F) and 4 of these were also resistant to downy mildew.]**
- Du You, Wei Min, Ma Zhao and Guo YuHai. 2013. Effects of paclobutrazol on growth characteristics and dry matter distribution of *Tamarix chinensis* and *Cistanche tubulosa*. Journal of China Agricultural University 18(6): 107-112. [Suggesting that paclobutrazol could increase the dry matter of *C. tubulosa* by inhibiting plant height and improving net photosynthetic rate of *T. chinensis*.]
- Duca, M. and Glijin, A. 2013. The broomrape effect on some physical and mechanical properties of sunflower seeds. Analele Științifice ale Universității 'Al I. Cuza' din Iași. (Serie Nouă) Secțiunea II a. Biologie Vegetală 59(2): 75-83. [Studying the effects of *Orobanche cumana* infection on sunflower seed parameters and finding the most affected were 1000-grain weight (-20,1%) and mass of 1000 kernels (-20,7%).]
- Duca, M., Glijin, A. and Acciu, A. 2013. The biological cycle of sunflower broomrape. Journal of Plant Development 20: 71-78. [Reviewing the biology of *Orobanche cumana*.]
- Dunn, R.M., Tallowin, J.R.B., Peel, S., Chesterton, C., Cooke, A., Jefferson, R., Martin, D., Smith, B., Smith, S. and Tallowin, J. 2012. Negative effect of early-stage restoration plant species on recruitment of late-stage restoration species. Aspects of Applied Biology 115: 151-156. [Sowing *Rhinanthus minor* at 10 kg/ha was among treatments used in a study which concluded that the hypothesis that generalist species used in the early stage of biodiversity restoration act as facilitators for the establishment of late-stage habitat specialists, is wrong.]
- Dzoyem, J.P., Tchuengem, R.T., Kuate, J.R., Teke, G.N., Kechia, F.A. and Kuete, V. 2014. *In vitro* and *in vivo* antifungal activities of selected Cameroonian dietary spices. BMC Complementary and Alternative Medicine 14: 58. [*Olex subscorpioidea* extract exhibited the highest antifungal activity particularly against *Candida albicans* and *C. tropicalis*.]
- Effiong, O.O., Udo, N.V. and Monday, E.N. 2014. Reduction in serum bilirubin concentration following administration of crude leaf extract of *Viscum album* (Mistletoe) in high salt fed rats. British Journal of Pharmaceutical Research 4(3): 352-361. [Concluding that oral administration of *V. album* reduces serum bilirubin concentration in high salt fed animals.]
- El-Halmouch, Y., Mehesen, A. and El-Shanshoury, A.E.R.R. 2013. The potential of cell-free cultures of *Rhizobium leguminosarum*, *Azotobacter chroococcum* and compost tea as biocontrol agents for faba bean broomrape (*Orobanche crenata* Forsk.). Journal of Plant Pathology and Microbiology 4(1): 205. [Some reduction of *O. crenata* obtained (in Egypt) but exact nature of treatment not clear.]
- Encheva, J. 2013. Application of embryo culture method in combination with gamma irradiation and ultra sounds (Part I). Helia 36(59): 71-83. [Mutation caused by gamma ray and ultra sound respectively contributed to the paternal components of sunflower hybrids Rada and Yana, each showing immunity to *Orobanche cumana* race G.]
- Etedali, P., Behbahani, M., Rahiminejad, M.R. and Rad, J.S. 2014. Effect of crude extracts and fractions of *Cuscuta campestris* and two different hosts on peripheral blood mononuclear cells and HIV replication. International Journal of Biosciences (IJB) 4(9): 83-89. [Concluding that lutein and lupeol, in extracts of *C. campestris* (on hosts *Alhagi maurorum* and *Calendula officinalis*) are good candidates for proliferation of peripheral blood mononuclear cells, and hence of interest in the treatment of HIV.]
- Evans, B. and Borowicz, V. 2013. *Verbesina alternifolia* tolerance to the holoparasite *Cuscuta gronovii* and the impact of drought. Plants 2(4): 635-649. [Parasitism by *C. gronovii* reduced both shoot and root mass of *V. alternifolia* more

- strongly in well-watered conditions than those under drought stress, indicating reduced tolerance to parasitism when water was readily available.]
- Fadini, R.F., Mellado, A. and Ghizoni, L.P. 2014. A host creates an enemy-free space for mistletoes by reducing seed predation caused by a woodboring beetle: a hypothesis. *Biotropica* 46(3): 260-263. [An intriguing report suggesting that the beetle *Hypothenemus obscurus* may contribute to the host-specificity of *Psittacanthus plagiophyllus* in Brazil, as it preys on the parasite seeds on non-host trees but avoids the main host tree (sadly un-named in the abstract) apparently because of its gum exudates.]
- Fan BoYi, Luo JianGuang, Gu YuCheng and Kong LingYi. 2014. Unusual ether-type resin glycoside dimers from the seeds of *Cuscuta chinensis*. *Tetrahedron* 70(11): 2003-2014. [A range of glycosides from *C. chinensis* show cytotoxic activity toward MCF-7, SMMC-7721, and MG-63 cell lines.]
- *Fant, J.B., Weinberg-Wolf, H., Tank, D.C. and Skogen, K.A. 2013. Characterization of microsatellite loci in *Castilleja sessiliflora* and transferability to 24 *Castilleja* species (Orobanchaceae). *Applications in Plant Sciences* 1(6): 1200564. (<http://www.bioone.org/doi/full/10.3732/apps.1200564>) [Twelve loci were identified in *C. sessiliflora* and found effective on 24 additional *Castilleja* species.]
- Fernando, H.S.D. and Karunaratne, M.M.S.C. 2013. Mella (*Olax zeylanica*) leaves as an eco-friendly repellent for storage insect pest management. *Journal of Tropical Forestry and Environment* 3(1): 64-69. [Results confirm that the powder or methanol extracts of *O. zeylanica* act as repellants for the rice weevil *Sitophilus oryzae*.]
- Fierbinteanu, A. and Dinca, V. 2013. Research on genetic and breeding sunflower for resistance to broomrape parasite (*Orobanche cumana*) in Romania. *Scientific Papers - Series A, Agronomy* 56: 242-245. [Reviewing the occurrence of *O. cumana* in Romania, the difficulty in finding resistance to new races and suggesting recommendations for reducing sunflower yield loss.]
- *Filella, I., Primante, C., Llusà, J., González, A.M.M., Seco, R., Farré-Armengol, G., Rodrigo, A., Bosch, J. and Peñuelas, J. 2013. Floral advertisement scent in a changing plant-pollinators market. *Scientific Reports* 3(3434): srep03434. (<http://www.nature.com/srep/2013/131205/srep03434/full/srep03434.html>) [Showing that scent advertisement is higher in species that bloom early in the flowering period when pollinators are scarce than in species blooming later in the season (including *Orobanche latisquama*) when there is a surplus of pollinators relative to flowers.]
- Gao Zhen, Lu Yong, Upur, H., Jing Jing and Xu Dan. 2013. Study of osteoporosis treatment principles used historically by ancient physicians in Chinese Medicine. *Chinese Journal of Integrative Medicine* 19(11): 862-868. [Including mention of *Cistanche* spp.]
- García, M.A., Costea, M., Kuzmina, M. and Stefanovic', S. 2014. Phylogeny, character evolution, and biogeography of *Cuscuta* (dodders; Convolvulaceae) inferred from coding plastid and nuclear sequences. *American Journal of Botany* 101(4): 670-690. [This is the first phylogenetic study (using *rbcL* and nrLSU) of *Cuscuta* that sampled all recognized sections and subsections of the genus. After removing discordant taxa, 4 well-supported major clades were recovered. Ancestral state analyses showed dehiscent fruits and globose stigmas to be ancestral whereas style number was ambiguous. Biogeographical reconstructions suggest an Old World origin for the genus and subsequent spread to the Americas as a consequence of one long-distance dispersal.]**
- Gaudin, Z., Cerveau, D., Marnet, N., Bouchereau, A., Delavault, P., Simier, P. and Pouvreau, J.B. 2014. Robust method for investigating nitrogen metabolism of ¹⁵N labeled amino acids using AccQ.Tag ultra performance liquid chromatography-photodiode array-electrospray ionization-mass spectrometry: application to a parasitic plant-plant interaction. *Analytical Chemistry (Washington)* 86(2): 1138-1145. [Showing that young parasite tubercles assimilate inorganic N as ¹⁵N-ammonium when supplied directly through batch incubation but not when supplied by translocation from host root phloem, whereas ¹⁵N₂-glutamine mobility from host roots to parasite tubercles suggests that the host-derived glutamine acts as an important nitrogen-containing storage compound in the young tubercle of *Phelipanche ramosa*.]
- Gea-Izquierdo, G., Viguera, B., Cabrera, M. and Cañellas, I. 2014. Drought induced decline could portend widespread pine mortality at the xeric ecotone in managed Mediterranean pine-oak woodlands. *Forest Ecology and Management* 320: 70-82. [Noting the greater susceptibility of *Pinus sylvestica* to drought than *Quercus pyrenaica* in Spain and interestingly

- commenting on the presence of mistletoe (presumably *Viscum album*) as a symptom, rather than a cause of crown decline.]
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- Distemonanthus benthamianus*. Research Journal of Pharmaceutical, Biological and Chemical Sciences 4(4): 1419-1430. [Confirming antioxidant activity in *O. subscorpiodea*, used medicinally in Cote d'Ivoire.]
- Kong XiangPei, Zhang MaoLin and Ding ZhaoJun. 2014. D53: the missing link in strigolactone signaling. Molecular Plant 7(5): 761-763. [A study of some new structures with strigolactone activity. They possess a common dimethylbutenolide motif but their structure varies in the ABC part of the molecules: one, '23' has the same ABC part as GR24, while '31' and AR36 carry, respectively, an aromatic ring and an acyclic carbon chain.]
- Konstantinovic', B., Blagojevic', M., Konstantinovic', B. and Samardžic', N. 2013. (Control of weed flora in nursery production of tree seedlings of ornamental plants.) (in Serbian) Biljni Lekar (Plant Doctor) 41(6): 663-671. [*Cuscuta campestris* among weed species in a woody plant nursery.]
- Kosic', I.V. and Britvec, M. 2014. (Floristic and vegetation characteristic of forest edges and grasslands of C'ić'arija (Croatia).) (in Croatian) Šumarski List 138(3/4): 167-184. [Noting the presence in 'used meadows' of *Orobancha minor*, and *Rhinanthus aristatus*.]
- Kouakou, C.K., Akanvou, L., Zoro Bi, I.A., N'Da, H.A. and Akanvou, R. 2014. The use of genetically tolerant maize (*Zea mays* L.) in the control of *Striga hermonthica* in Northern Côte d'Ivoire. American Journal of Experimental Agriculture 4(5): 563-574. [The yield of the *Striga*-tolerant IWD STR was reduced up to 60% by a range of 6 strains of *S. hermonthica* but were still 50% higher than the susceptible variety. Northern strains of *S. hermonthica* were more virulent than southern strains but strains from millet, sorghum or maize were equally tolerated.]
- Kountche, B. A., Hash, C.T., Dodo, H., Laoualy, O., Sanogo, M.D., Timbeli, A., Vigouroux, Y., This, D., Nijkamp, R. and Haussmann, B.I.G. 2013. Development of a pearl millet *Striga*-resistant genepool: response to five cycles of recurrent selection under *Striga*-infested field conditions in West Africa. Field Crops Research 154: 82-90. [Indicating moderate progress in the development of a *Striga*-resistant gene pool.]**
- Kuijt, J. 2013. A brief taxonomic history of neotropical mistletoe genera, with a key to the genera. Blumea 58(3): 263-266. [Contains the author's perspective on the taxonomic history of Loranthaceae, Viscaceae, and the eremolepidaceous mistletoes (Misodendraceae not discussed). The key is the first published that incorporates all the small-flowered X=8 neotropical Loranthaceae genera, including the recently resurrected genera *Peristethium* and *Passovia*.]**
- Kumar, A.M. 2014. Recurrence of sandal spike disease in Karnataka - an alert. Current Biotica 7(4): 253-255. [Reviewing the occurrence of this phytoplasma disease in sandal (presumably *Santalum album*) in Karnataka.]
- Kumar, K.N.S., Sangeetha, B., Rajalekshmi, M., Ravishankar, B., Muralidhar, R. and Yashovarma, B. 2013. Pharmacognostical and phytochemical studies on dyer's oleander mistletoe, *Viscum orientale* Willd. Indian Journal of Natural Products and Resources 4(3): 260-269.
- *Kuonen, R., Weissenstein, U., Urech, K., Kunz, M., Hostanska, K., Estko, M., Heusser, P. and Baumgartner, S. 2013. Effects of lipophilic extract of *Viscum album* L. and oleanolic acid on migratory activity of NIH/3T3 fibroblasts and on HaCat keratinocytes. Evidence-based Complementary and Alternative Medicine 2013: Article ID 718105. (<http://www.hindawi.com/journals/ecam/2013/718105/>) [Results support the observation that *V. album* lipophilic extract might modulate wound healing related processes *in vivo*.]
- Kurt, G. and Tepe, I. 2014. (Determination of seed dispersal mechanisms of smoothseed alfalfa dodder (*Cuscuta approximata* Bab.) in Van.) (in Turkish) Yüzüncü Yıl Üniversitesi Journal of Agricultural Sciences 24(1): 51-59. [Recording over 6000 seeds of *C. approximata* 100 g of alfalfa seeds, over 500 seeds in 100 g of manure, and an average of 21 seeds in 4 kg of soil, confirming crop seed as the main means of spread but manure also important.]
- Kwaga, Y.M. 2013. Direct and indirect contributions of yield attributes to the kernel yield of groundnut (*Arachis hypogaea* L.) grown under *Alectra* infestation at Samaru, Nigeria. American-Eurasian Journal of Agricultural & Environmental Sciences 13(12): 1622-1625. [In a 1999 study, the number of pods per plant exhibited the highest percentage yield contribution to kernel yield.]
- Lall, N. and Kishore, N. 2014. Are plants used for skin care in South Africa fully explored? Journal of Ethnopharmacology 153(1): 61-84. [*Ximenia americana* among species for treatment of skin hyperpigmentation problems.]

- Lawrence, J.F. and Slipinski, A. 2013. *Loranthophila*, a new genus of Australian Lyctinae (Coleoptera: Bostrichidae) associated with mistletoe. *Zootaxa* 3737(3): 295-300. [The new genus *Loranthophila* is described, based on *Minthea acanthacollis* in the bostrichid subfamily Lyctinae. The mistletoe is not specified.]
- LeBlanc, M., Kim, G.J., Patel, B., Stromberg, V. and Westwood, J. 2013. Quantification of tomato and *Arabidopsis* mobile RNAs trafficking into the parasitic plant *Cuscuta pentagona*. *New Phytologist* 200(4): 1225-1233. [Proposing that mRNAs traffic into *C. pentagona* via multiple routes, or that other mechanisms for selective uptake and mobility exist between host and parasite.]
- Le Corre, V., Reibel, C. and Gibot-Leclerc, S. 2014. Development of microsatellite markers in the branched broomrape *Phelipanche ramosa* L. (Pomel) and evidence for host-associated genetic divergence. *International Journal of Molecular Sciences* 15(1): 994-1002. [Individuals collected on oilseed rape were strongly differentiated from individuals collected on hemp or tobacco, suggesting that *P. ramosa* infecting oilseed rape forms a genetically diverged race.]
- Lee ShinHae, Kim InBo, Kim JongBae, Park DongHo and Min KyungJin. 2014. The effects of Korean mistletoe extract on endurance during exercise in mice. *Animal Cells and Systems* 18(1): 34-40. [*Viscum album* ssp. *coloratum* enhances the exercise performance in a sedentary mouse group, but did not further enhance it when combined with exercise training, suggesting that it could be an excellent mimetic of exercise.]
- Li Ying, Hess, C., von Wehrden, H., Härdtle, W. and van Oheimb, G. 2014. Assessing tree dendrometrics in young regenerating plantations using terrestrial laser scanning. *Annals of Forest Science* 71(4): 453-462. [The understory apparently included some Orobanchaceae, but no detail in abstract.]
- Liao Kuo, Gituru, R.W., Guo YouHao and Wang QingFeng. 2013. Effects of floral herbivory on foraging behaviour of bumblebees and female reproductive success in *Pedicularis gruina* (Orobanchaceae). *Flora (Jena)* 208(10/12): 562-569. [Noting substantial reduction in pollination of *P. gruina* in Germany by bees following damage by herbivores]
- Liu MinLu, Yu WenBin and Wang Hong. 2013. Rapid identification of plant species and iFlora: application of DNA barcoding in a large temperate genus *Pedicularis* (Orobanchaceae). *Plant Diversity and Resources* 35(6): 707-714. [Using *Pedicularis* spp., the results showed that species identification rates using the nuclear ITS locus surpassed those of the three chloroplast barcodes and all combinations of barcodes.]
- Liu Qing, Zhang YanXia, Matusova, R., Charnikhova, T., Amini, M., Jamil, M., Fernandez-Aparicio, M., Huang, K., Timko, M.P., Westwood, J.H., Ruyter-Spira, C. van der Krol, S. and Bouwmeester, H.J. 2014. *Striga hermonthica* MAX2 restores branching but not the Very Low Fluence Response in the *Arabidopsis thaliana* max2 mutant. *New Phytologist* 202(2): 531-541. [Results provide indirect evidence for *ShMAX2* functions in *Striga*. A putative role of *ShMAX2* in strigolactone-dependent seed germination of *Striga* is discussed.]
- Manish Mathur and Govind Vyas. 2013. Role of nanoparticles for production of smart herbal drug - an overview. *Indian Journal of Natural Products and Resources* 4(4): 329-338. [Referring to improved hepatoprotective and antioxidant performance from nanonised formulation of *Cuscuta chinensis*.]
- *Mansky, P.J., Wallerstedt, D.B., Sannes, T.S., Stagl, J., Johnson, L.L., Blackman, M.R., Grem, J.L., Swain, S.M. and Monahan, B.P. 2013. NCCAM/NCI phase I study of mistletoe extract and gemcitabine in patients with advanced solid tumors. *Evidence-based Complementary and Alternative Medicine* 2013: Article ID 964592. (<http://www.hindawi.com/journals/ecam/2013/964592/>) [Concluding that gemcitabine plus a *Viscum album* extract is well tolerated. No botanical/drug interactions were observed. Clinical response is similar to gemcitabine alone.]
- Mapongmetsem, P.M. and Diksia, M. 2014. Vegetative propagation of local fruit trees by air layering in the Guinean Savannah Highlands (GSH). *Journal of Sustainable Forestry* 33(1): 21-32. [Reporting that rooting of layered *Ximenia americana* was lower than for some other woody species.]
- Masciadri, S., Stutz, S. and García-Rodríguez, F. 2013. Modern pollen-vegetation relationship of plant communities in the Uruguayan Atlantic coast. *Brazilian Journal of Botany* 36(1): 31-44. [In a study of pollen capture by lakes (as a guide to palaeo studies), *Tripodanthus acutifolius* (Loranthaceae) was among good indicators of the coastal forest.]
- Mavundza, E.J., Maharaj, R., Chukwujekwu, J.C., Finnie, J.F. and van Staden, J. 2013. Larvicidal

- activity against *Anopheles arabiensis* of 10 South African plants that are traditionally used as mosquito repellents. South African Journal of Botany 88: 86-89. [The bark extract of *Olax dissitiflora* exhibited the highest larvicidal activity and may have the potential to be used as a larvicide against *A. arabiensis*.]
- Mayor, J.R., Wright, S.J. and Turner, B.L. 2014. Species-specific responses of foliar nutrients to long-term nitrogen and phosphorus additions in a lowland tropical forest. Journal of Ecology (Oxford) 102(1): 36-44. [*Heisteria concinna* (Olacaceae) included in a long-term study in Panama.]
- Medeiros, A.C., von Allmen, E.I. and Chimera, C.G. 2014. Dry forest restoration and unassisted native tree seedling recruitment at Auwahi, Maui. Pacific Science 68(1): 33-45. [*Santalum ellipticum* and *S. haleakalae* among species of concern, requiring conservation management.]
- Mehrvarz, S.S., Panah, S.P. and Faghir, M.B. 2013. A palynological study of the genus *Pedicularis* (Orobanchaceae) in Iran. Willdenowia 43(2): 279-285. [Describing the pollen of *P. cabulica*, *P. caucasica*, *P. condensata*, *P. pycnantha*, *P. rechingeri*, *P. rhinanthoides*, *P. sibthorpii*, *P. straussii* and *P. wilhelmsiana* and noting characters useful in identification.]
- Mendonça, A.V.R., Souza, J.S., Giuliatti, A.M. and van den Berg, C. 2013. (Estimation of biomass air caatinga north of Bahia.) (in Portuguese) Pesquisa Florestal Brasileira 33(76): 355-368. [Including methods for estimation of biomass of *Ximenesia americana* in the caatinga type forest in Brazil.]
- Méri, Á. and Karsai, J. 2013. Modelling the spatial and temporal dispersal of *Cuscuta europea* (Cuscutaceae). Polish Journal of Ecology 61(4): 811-817. [Studying the spatial patterns of *Cuscuta* species and presenting the results of field observations and mathematical models.]
- Miao ZhongQin, Liu HaiHong, Jia JunZhen and Guo YuHai, 2014. (Developmental and anatomical studies on *Cistanche tubulosa* seedling.) (in Chinese) Journal of China Agricultural University 19(2): 131-136. [Describing the processes involved in penetration of the *C. tubulosa* haustorium.]
- Midega, C.A.O., Salifu, D., Bruce, T.J., Pittchar, J., Pickett, J.A. and Khan, Z.R. 2014. Cumulative effects and economic benefits of intercropping maize with food legumes on *Striga hermonthica* infestation. Field Crops Research 155: 144-152. [Field work in Kenya comparing 5 potential legume intercrops with *Desmodium intortum*. Groundnut reduced *Striga* but failed to increase yield. Crotalaria and greengram intercrops reduced *Striga*. and increased yields to a lesser extent than *D. intortum*, which gave the highest economic return, but they could be of value as part of an integrated approach.]
- Miladinovic, D.L., Ilic, B.S., Nikolic, D.M., Markovic, M.S., Nikolic, N.D., Miladinovic, L.C. and Miladinovic, M.D. 2013. Volatile constituents of *Euphrasia stricta*. Chemistry of Natural Compounds 49(6): 1146-1147. [Recording iridoids, phenolic acids, phenylpropane, and flavonoid glycosides in *E. stricta*, used traditionally for eye problems in Serbia.]
- Mildenhall, D.C., Kennedy, E.M., Lee, D.E., Kaulfuss, U., Bannister, J.M., Fox, B. and Conran, J.G. 2014. Palynology of the early Miocene Foulden Maar, Otago, New Zealand: diversity following destruction. Review of Palaeobotany and Palynology 204: 27-42. [Mistletoes, including several species of Loranthaceae were present.]
- Misra, B.B. and Satyahari Dey. 2013. Quantitative and qualitative evaluation of sesquiterpenoids from essential oil and *in vitro* somatic embryos of east Indian Sandalwood (*Santalum album*) tree by HPTLC and GC. Open Access Journal of Medicinal and Aromatic Plants (OAJMAP) 4(1): 1-9. [Meaning sesquiterpenoids?]
- *Misra, B.B. and Satyahari Dey, 2014. Culture of East Indian sandalwood tree somatic embryos in air-lift bioreactors for production of santalols, phenolics and arabinogalactan proteins. AoB Plants 2013, plt025. (<http://aobpla.oxfordjournals.org/content/5/plt025.full>) [Results indicate that 10-L-capacity air-lift bioreactors are capable of supporting somatic embryo cultures of *Santalum album*, while the extracellular medium provides opportunities for production of industrial raw materials such as santalols, phenolics and arabinogalactan proteins.]
- Mohapatra, H. K and; Behera, L.M. 2014. Angiosperms affected with *Dendrophthoe falcata* (L.f.) Ettingsh in Deogarh District of Odisha. Advances in Plant Sciences 27(1): 115-117. [Recording 29 dicot host species belonging to 29 genera and 20 families.]
- Molina, J. and 16 others. 2014. Possible loss of the chloroplast genome in the parasitic flowering plant *Rafflesia lagascae* (Rafflesiaceae). Molecular Biology and Evolution 31(4): 793-803. [Illumina whole genome sequencing was used to generate a sequence which was assembled into a draft mitochondrial genome. Only fragments of plastid genes were detected]

- and one third of these were derived from the host via horizontal gene transfer. These data suggest *Rafflesia* lacks a plastid genome or, if it is present, it is in cryptic form at very low levels.]
- Molinero-Ruiz, L., García-Carneros, A.B., Collado-Romero, M., Raranciuc, S., Domínguez, J., and Melero-Vara, J.M. 2014. Pathogenic and molecular diversity in highly virulent populations of the parasitic weed *Orobanche cumana* (sunflower broomrape) from Europe. *Weed Research (Oxford)* 54(1): 87-96. [Analyses of *O. cumana* populations confirmed race F present in Spain, Hungary and Turkey and race G also in Turkey. Populations within South Spain, Central Spain, Hungary and Turkey were each genetically uniform.]
- Montejo Valdés, L.A., Muñoz, B.C., Sánchez, J.A. and Gamboa, A. 2014. (Seed variability among plant species from a tropical evergreen forest in Sierra del Rosario, Cuba.) (in Spanish) *Bosque* 35(1): 37-47. [Undeveloped embryos of rudimentary types, linear or capitate, were found in *Schoepfia didyma* (Olacaceae).]
- *Morawetz, J.J. 2013 A clearing protocol for whole tissues: an example using haustoria of Orobanchaceae. *Applications in Plant Sciences* 1(1): 1200361. (<http://www.bioone.org/doi/full/10.3732/apps.1200361>) [Stockwell's bleach proved to be useful in removing tannins from haustoria within 3-10 days, after which they were successfully cleared in a solution of lactic acid saturated with chloral hydrate at 42°C.]
- Moupela, C., Doucet, J.L., Daïnou, K., Tagg, N., Bourland, N. and Vermeulen, C. 2014. Dispersal and predation of diaspores of *Coula edulis* Baill. in an evergreen forest of Gabon. *African Journal of Ecology* 52(1): 88-96. [Camera-trap photographs have shown 7 animal species involved in the dispersal/predation of *C. edulis* (Olacaceae), bush pig being the main consumer and predator of seeds. No seeds emerged intact from elephant faeces.]
- Mudrák, O., Mládek, J., Blažek, P., Lepš, J., Doležal, J., Nekvapilová, E. and Těšitel, J. 2014. Establishment of hemiparasitic *Rhinanthus* spp. in grassland restoration: lessons learned from sowing experiments. *Applied Vegetation Science* 17(2): 274-287. [Concluding from a range of field studies in the Czech Republic that mowing or grazing, litter removal, proper timing of sowing, and use of the seeds from local seed sources should considerably increase probability of the successful introduction of *Rhinanthus*.]
- Muhammad Qaiser, Anjum Perveen and Tahmeena Siddiqui. 2014. Pollen morphology of the genus *Euphrasia* L. (Orobanchaceae) from Pakistan and Kashmir and its taxonomic significance. *Plant Systematics and Evolution* 300(3): 483-492. [On the basis of a study of exine ornamentation in 25 *Euphrasia* spp., three distinct pollen types viz., *E. foliosa*, *E. multiflora*, and *E. incisa* are recognized.]
- Muniappan Ayyanar, Savarimuthu Ignacimuthu and Houghton, P.J. 2014. Threat status of medicinal plants used by the tribal people in Kalakad Mundanthurai Tiger Reserve, Southern Western Ghats, India. *Proceedings of the National Academy of Sciences India. Section B, Biological Sciences* 84(2): 419-429. [Noting the urgent need for conservation of plants used in traditional medicine; *Santalum album* among those 'red-listed'.]
- Munro, K.C., Jackson, J.R.M., Hartling, I., Sumner, M.J. and Friedman, C.M.R. 2014. Anther and pollen development in the lodgepole pine dwarf mistletoe (*Arceuthobium americanum*) staminate flower. *Botany* 92(3): 203-214. [A detailed description of the development and morphology of pollen in *A. americanum*.]
- Musselman, L.J. 2013. Cow wheat. Chinquapin. *The Newsletter of the Southern Appalachian Botanical Society* 21 (2): 9. [*Melampyrum lineare*]
- Musselman, L.J. 2013. Senna Seymeria. Chinquapin. *The Newsletter of the Southern Appalachian Botanical Society* 21(4): 27. [Describing *Seymeria cassioides*, which can cause severe damage to pine species in USA, and the less common *S. pectinata* which has a wider host range.]
- Musselman, L.J. 2014. *Cassytha filiformis*: Dodder Laurel or Devil's Gut. Chinquapin. *The Newsletter of the Southern Appalachian Botanical Society* 22(1):3. [*C. filiformis* occurs in Florida and Texas.]
- Musselman, L.J. 2014. The empress of root parasites *Macranthera flammea*. Chinquapin. *The Newsletter of the Southern Appalachian Botanical Society* 22(2):11. [A rare Gulf Coast endemic with large hummingbird-pollinated flowers.]
- Naik Raghavendra, Sneha, D.B., Harisha, C.R. and Acharya, R.N. 2013. A detailed pharmacognostical evaluation on leaf of *Olex scandens* Roxb. *Global Journal of Research on Medicinal Plants and Indigenous Medicine* 2(4): 246-253. [Leaves of *O. scandens* are edible and used for cure of headaches in India.]

- Napier, K.R., Mather, S.H., McWhorter, T.J. and Fleming, P.A. 2014. Do bird species richness and community structure vary with mistletoe flowering and fruiting in Western Australia? *Emu - Austral Ornithology* 114(1): 13-22. [Mistletoebirds (*Dicaeum hirundinaceum*) were significantly more likely to be recorded during months when ripe fruit of *Amyema preissii* and *A. miquelii* were present and the overall bird species richness was higher for these survey months.]
- Nardella, E., Gatta, G. and Giuliani, M.M. 2014. (Water stress on tomato, a high risk of low yields.) (in Italian) *Informatore Agrario* 70(12): 69-72. [Commenting that results were influenced by a dense infestation of *Orbanche ramosa* which is spreading fast in Foggia province.]
- Ndagurwa, H.G.T. and Dube, J.S. 2013. Evaluation of potential and effective rumen digestion of mistletoe species and woody species browsed by goats in a semi-arid savanna, southwest Zimbabwe. *Animal Feed Science and Technology* 186(1/2): 106-111. [*Erianthemum ngamicum*, *Plicosepalus kalachariensis* and *Viscum verrucosum* show a high nutritive value with potential for feeding goats, superior to that of their *Acacia* spp. hosts.]
- Ndagurwa, H.G.T., Dube, J.S. and Mlambo, D. 2014. The influence of mistletoes on nutrient cycling in a semi-arid savanna, southwest Zimbabwe. *Plant Ecology* 215(1): 15-26. [Confirming that *Erianthemum ngamicum*, *Plicosepalus kalachariensis*, and to a lesser extent *Viscum verrucosum* in Zimbabwe significantly increase litterfall and soil nutrients under the host tree *Acacia karroo*.]
- Neetu Bais, Arun Kakkar, Mishra, V.K., Rajendra Singh and Prachi Khare. 2014. Comparative study on antibacterial activity of ethyl acetate extract of *Cuscuta reflexa* grown on *Cassia fistula* and *Ficus benghalensis*. *International Journal of Pharmaceutical Sciences and Research (IJPSR)* 5(1): 137-141. [Extracts from *C. reflexa* grown on the two host species were effective against most of the bacteria tested but that grown on *Ficus* was inactive against *Salmonella typhi* while that grown on *Cassia* was inactive against *Escherichia coli*.]
- *Nemati, F., Dehpouri, A.A., Eslami, B., Mahdavi, V. and Mirzanejad, S. 2013. Cytotoxic properties of some medicinal plant extracts from Mazandaran, Iran. *Iranian Red Crescent Medical Journal* 15(11): e8871. (http://ircmj.com/?page=article&article_id=8871)
- 1) [Extracts of *Orobancha orientalis* inferior to those of several others.]
- Niasati, M., Palizdar, M.H., Pourelmi, M.R. and Pasha, C.H. 2014. Effect of methanolic extract of *Viscum album* on *in vitro* fermentation and digestibility of soybean meal. *Research Opinions in Animal and Veterinary Sciences* 4(7): 411-415.
- Nikolov, L.A., Endress, P.K., Sugumaran, M., Sasirat, S., Vessabutr, S., Kramer, E.M. and Davis, C.C. 2013. Developmental origins of the world's largest flowers, Rafflesiaceae. *Proceedings of the National Academy of Sciences of the United States of America* 110(46): 18578-18583. [Comparative studies of structure, development, and gene-expression patterns were used to investigate the homology of floral organs in Rafflesiaceae. The diaphragm in *Rafflesia* is derived from the petal whorl whereas in *Sapria* it develops from a ring structure located between the perianth and the stamen whorl; thus these tissues are not homologous.]**
- Nikolov, L., Staedler, Y., Manickam, S., Schönenberger, J., Endress, P., Kramer, E. and Davis, C.C. 2014. Floral structure and development in Rafflesiaceae with emphasis on their exceptional gynoecia. *American Journal of Botany* 101: 225-243. [Serial sectioning, SEM, and x-ray tomography of floral buds were employed to study the structure and development of all three Rafflesiaceae genera. The shoot apex of Rafflesiaceae forms secondarily via internal cell separation (schizogeny) along the distal boundary of the host-parasite interface. Similarly, the clefts of the gynoecium form via schizogeny within solid tissue, and no carpels are initiated from the floral apex. Secondary derivation of the inner gynoecium surface is otherwise unknown in angiosperms.]
- Nikolov, L., Tomlinson, P., Manickam, S., Endress, P., Kramer, E. and Davis, C. 2014. Holoparasitic Rafflesiaceae possess the most reduced endophytes and yet give rise to the world's largest flowers. *Annals of Botany* 114: 233-242. [Serial sectioning and staining were employed to characterize the structure of the endophytes in *Rafflesia*, *Sapria* and *Rhizanthus*. The endophyte consists of uniseriate filaments oriented radially within the host. A protocorm then forms an endogenously originating shoot apex by formation of a secondary morphological surface.]
- Nobis, M., Nowak, A., Nobis, A., Paszko, B., Piwowarczyk, R., Nowak, S. and Plášek, V.

2014. Contribution to the flora of Asian and European countries: new national and regional vascular plant records. *Acta Botanica Gallica* 161(1): 81-89. [Reporting new records for *Orobanche ritro* from Ukraine and Russia, with illustrations.]
- Norliette, Z.S.H., Emile, A.C., Bassiaka, O., Achille, A. and Adam, A. Brice, S. 2013. *Rhamphicarpa fistulosa* in lowland rice production in Africa: a review. *Advances in Environmental Biology* 7(14): 4567-4572. [A general review.]
- Noutcheu, R., Tchatat, M., Mony, R., Mokake, E.S., Taffouo, V.D. and Dibong, S.D. 2013. Phenology, parasitism of *Phragmanthera capitata* and myrmecofauna associated to host trees at the orchard of the chief's palace Ndogbong (Douala, Cameroon). *Agriculture and Biology Journal of North America* 4(5): 539-551. [*P. capitata* recorded in a range of hosts including *Citrus sinensis*, guava and cacao which suffer serious damage from the parasite. *Tapinanthus preussii* and *Phragmanthera batanga* also occurred on cacao at a low level. The study established that the commonest ant species *Crematogaster decracrema* caused marked reduction in flowering of *P. capitata* and could be considered as a biocontrol agent.]
- Okada, S., Zhou XueRong, Damcevski, K., Gibb, N., Wood, C., Hamberg, M. and Haritos, V.S. 2013. Diversity of $\Delta 12$ fatty acid desaturases in Santalaceae and their role in production of seed oil acetylenic fatty acids. *Journal of Biological Chemistry* 288(45): 32405-32413. [Studies on *Exocarpos cupressiformis* and *Santalum acuminatum* suggest that fatty acid desaturases with promiscuous and unique activities have been identified in Santalaceae and explain the origin of some of the unusual lipids found in this plant family.]
- Okubamichael, D.Y., Griffiths, M.E. and Ward, D. 2014. Reciprocal transplant experiment suggests host specificity of the mistletoe *Agelanthus natalitius* in South Africa. *Journal of Tropical Ecology* 30(2): 153-163. [*A. natalitius* grows on both *Acacia karroo* and *A. caffra*. In reciprocal transplant experiments, initial germination was normal on both host and non-host species, but development and survival was lower on non-hosts, suggesting adaptation of the mistletoe to the most frequently encountered host species.]
- Oldham, K. 2014. Geographical history and infraspecific morphological variation of the hemiparasitic wildflower American Cow-Wheat (*Melampyrum lineare*, Orobanchaceae). Chinquapin. The Newsletter of the Southern Appalachian Botanical Society 22(1): 1. [Report of a student project on *M. lineare* which parasitizes a range of forest species in eastern USA.]
- *Oliveira, A.A., Segovia, J.F.O., Sousa, V.Y.K., Mata, E.C.G., Gonçalves, M.C.A., Bezerra, R.M., Junior, P.O.M. and Kanzaki, L.I.B. 2013. Antimicrobial activity of Amazonian medicinal plants. *SpringerPlus* 2(2): 371. (<http://www.springerplus.com/content/2/1/371>) [*Ptychopetalum olacoides* (Olacaceae) inhibited the growth of *Klebsiella ozaenae* and *Acinetobacter baumannii* to at least 40% the level of the antibiotic ciprofloxacin.]
- Omeje, E.O., Khan, M.P., Osadebe, P.O., Tewari, D., Khan, M.F., Dev, K., Maurya, R. and Chattopadhyay, N. 2014. Analysis of constituents of the eastern Nigeria mistletoe, *Loranthus micranthus* Linn. revealed presence of new classes of osteogenic compounds. *Journal of Ethnopharmacology* 151(1): 643-651. [The study suggests a potential for *L. micranthus* (= *Ileostylus micranthus*) (parasitising *Kola acuminata*, *Citrus* spp. and *Garcinia kola*) in the management of diseases where lack of bone formation is the pathology.]
- Onuk, E.G., Ibrahim, H., Bello, M., Patrick, O. and Ibrahim, H. 2010. Socio-economic factors influencing the adoption of *Striga hermonthica* tolerant maize varieties among farmers in Panda development Area of Karu local government area, Nasarawa State. *Nigerian Agricultural Journal* 41(1): 46-51.
- Oran, S.A. 2014. A list of flowering wild plants in Tafila Province, Jordan. *International Journal of Biodiversity and Conservation* 6(1): 28-40. [Noting the presence of *Ostris alba*.]
- Paduch, R., Wozniak, A., Niedziela, P. and Rejdak, R. 2014. Assessment of eyebright (*Euphrasia officinalis* L.) extract activity in relation to human corneal cells using *in vitro* tests. *Balkan Medical Journal* 31(1): 29-36. [Confirming the beneficial effects of application of ethanol and ethyl acetate extracts, of *E. officinalis* on cultured human corneal epithelial cells but finding the heptane extract to be toxic.]
- Pan ShaoBin, Wang Xiao, Duan WenJuan, Yu ZongYuan, Zhang Lin and Liu Wei. 2014. Preparative isolation and purification of flavonoids from *Cuscuta chinensis* Lam. by high-speed countercurrent chromatography. *Journal of Liquid Chromatography & Related Technologies* 37(15): 2162-2171. [Five flavonoids, quercetin-3-O- β -D-apiofuranosyl-(1->2)- β -D-galactoside, hyperoside, kaempferol-3-O- β -D-glucoside, kaempferol, quercetin, and

- chlorogenic acid isolated from the seeds of *C. chinensis*.]
- Parker, C. 2014. The continuing threat from parasitic weeds. Outlooks on Pest Management 25(3): 237-242. [Here he goes again – trying to scare us into thinking parasitic weeds are important! Reviewing the on-going menace from spread and/or intensification of *Striga*, *Orobanchae*, *Alectra*, *Cuscuta* and *Arceuthobium* spp. Nice pictures.]**
- Patel, P.K. 2013. *Cuscuta campestris* Yunck. (Cuscutaceae): a new species record from Gujarat State, India. Lifesciences Leaflets, 6(6): 55-58.
- Patel, S. and Panda, S. 2014. Emerging roles of mistletoes in malignancy management. 3 Biotech 4(1): 13-20. [A general review, apparently relating mainly to *Viscum album*.]
- Pelser, P.B. and Barcelona, J.F. 2013. Discovery through photography: *Amyema nickrentii*, a new species of Loranthaceae from Aurora Province, Philippines. Phytotaxa 125: 47–52. [A. *nickrentii* differs from all other described *Amyema* species in having a whorled leaf arrangement with mostly nine flat linear leaves per node. NB Congratulations to Dan on the second species to be named in his honour, the first being *Phoradendron nickrentii* (Kuijt, 2011, Novon 21:444-462).]**
- Pelser, P.B., Tandang, D.N., and Barcelona, J.F. 2014. *Balanophora coralliformis* (Balanophoraceae), a new species from Mt. Mingan, Luzon, Philippines. Phytotaxa 170(4): 291-295. [One of the most unusual species in the genus *Balanophora* is described. Its above-ground tubers look like coral owing to repeated branching of the elongated stem.]
- Pereira, R.N., Delistioianov, N., Perotta, J.H., Magalhães, G.M., Favoretto, S.M. and Alessi, A.C. 2014. Catuama and bilobalide on peripheral nerve regeneration in rats following sciatic nerve section. Ciência Rural 44(5): 854-860. [*Ptychopetalum olacoides* (Olacaceae) is one of 4 components in 'Catuama', used in Brazil for its neuroprotector, anti-inflammatory, antioxidant and antidepressant effects. But not showing significant effect in this study.]
- Petcu, E. and Joița-Păcureanu, M. 2012. The uses of wild species *Helianthus argophyllus* for obtaining sunflower germplasms with improved resistance to drought and broomrape infestation. Scientific Papers - Series A, Agronomy 55: 220-224. [Crosses between cultivated sunflower and *H. argophyllus* yielded progeny with promising resistance to *Orobanchae cumana* races F and G.]
- Pineda-Martos, R., Velasco, L. and Pérez-Vich, B. 2014. Identification, characterisation and discriminatory power of microsatellite markers in the parasitic weed *Orobanchae cumana*. Weed Research (Oxford) 54(2): 120-132. [SSR markers showed high resolving power; UPGMA cluster analysis allowed proper classification of *Orobanchae* spp. samples into species (*O. cumana* and *O. cernua*), geographical origin and host.]
- Pop, C., Ranga, F., Fetea, F. and Socaciu, C. 2013. Application of three alternative technologies (spray drying, fluid bed drying and freeze drying) to obtain powdered formulas from plants with antimicrobial potential. Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca. Animal Science and Biotechnologies 70(1): 95-103. [Spray drying and freeze drying were superior to fluid bed as techniques for preparation of extracts including those from *Viscum album*.]
- Pop, C., Vodnar, D., Ranga, F. and Socaciu, C. 2013. Comparative antibacterial activity of different plant extracts in relation to their bioactive molecules, as determined by LC-MS analysis. Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca. Animal Science and Biotechnologies 70(1): 86-94. [Extracts of *Viscum album* were active against *Escherichia coli*.]
- Prabhakar, R. and Ramakrishna, H. 2014. Palynodiversity in the climbers of Adilabad district in Andhra Pradesh. Research Journal of Pharmaceutical, Biological and Chemical Sciences 5(3): 1873-1883. [*Cassytha filiformis* among species studied.]
- Prajwal Paudel, Prabodh Satyal, Samjhana Maharjan, Nawal Shrestha and Setzer, W.N. 2014. Volatile analysis and antimicrobial screening of the parasitic plant *Cuscuta reflexa* Roxb. from Nepal. Natural Product Research 28(2): 106-110. [Activity of oil from *C reflexa* had negligible activity against *Bacillus cereus*, *Staphylococcus aureus*, *Escherichia coli* and *Pseudomonas aeruginosa* and only marginal activity against *Aspergillus niger*.]
- Prider, J. and Williams, A. 2014. Using dazomet to reduce broomrape seed banks in soils with low moisture content. Crop Protection 59: 43-50. [Pot and field studies in Australia confirmed the effectiveness of dazomet for control of *Orobanchae ramosa* but noted that it took longer to be effective under drier conditions.]
- *Priyanka Sharma, Aksha Sharma, Meera Agarwal and Joshi, S.C. 2013. A review on antifertility efficacy of plants in males. International Journal

- of Pharma and Bio Sciences 4(4): P-413-P-428. (http://www.ijpbs.net/cms/php/upload/2730_pdf.pdf) [A review including mention of *Dwendrophthoe falcata*.]
- Pujadas Salvà, A.J. 2013. (*Orobanche alsatica* (Orobanchaceae) in the Iberian Peninsula.) (in Spanish) Acta Botanica Malacitana 38: 155-159. [Presenting a description of *O. alsatica*, also known from Central and Eastern Europe.]
- Pujadas Salvà, A.J. 2013. (*Orobanche icterica* and *O. ritro* (Orobanchaceae) in the Iberian Flora.) (in Spanish) Acta Botanica Malacitana 38: 160-162. [Presenting descriptions of *O. icterica* and *O. ritro* and highlighting their synonyms.]
- Puneetha, G.K., Murali, M., Thriveni, M.C. and Amruthesh, K.N. 2014. Phytochemical screening, antioxidant and antibacterial properties of *Taxillus cuneatus* (Roth.) Danser - a hemi-parasitic angiosperm. International Journal of Current Microbiology and Applied Sciences 3(5): 702-711. [Assessing the range of active ingredients in *T. cuneatus* growing on *Spondias pinnata* and demonstrating antioxidant and reducing power activities.]
- Quan JiShu, Jin MeiHua, Xu HuiXian, Qiu DeLai and Yin XueZhe. 2014. BRP, a polysaccharide fraction isolated from *Boschniakia rossica*, protects against galactosamine and lipopolysaccharide induced hepatic failure in mice. Journal of Clinical Biochemistry and Nutrition 54(3):181-189. [Results suggest that a polysaccharide fraction isolated from *B. rossica* alleviates galactosamine/lipopolysaccharide-induced liver injury by enhancing antioxidative defense system, suppressing inflammatory responses and reducing apoptotic signaling.]
- Qin Shuai, Ge Huan and Zhao LiQing. 2014. (New data of vascular plants in Inner Mongolia.) (in Chinese) Acta Botanica Boreali-Occidentalia Sinica 34(2): 397-400. [*Cuscuta campestris* newly reported from Inner Mongolia.]
- Queijeiro-Bolaños, M., Cano-Santana, Z. and García-Guzmán, G. 2014. Incidence, severity, and aggregation patterns of two sympatric dwarf mistletoe species (*Arceuthobium* spp.) in Central Mexico. European Journal of Forest Research 133(2): 297-306. [Relating to *A. vaginatum* and *A. globosum*, both attacking *Pinus* spp.]
- Raghavendra Naik, Borkar, S.D., Acharya, R.N. and Harisha, C.R. 2013. Development of random amplified polymorphic DNA markers for authentication of *Olex scandens* Roxb. Global Journal of Research on Medicinal Plants and Indigenous Medicine 2(7): 538-545. [*O. scandens* has food and medicinal uses in India.]
- Rahmad, Z.B., Addo-Fordjour, P., Asyraf, M., Fadzly, N. and Rosely, N. 2014. Mistletoe abundance, distribution and associations with trees along roadsides in Penang, Malaysia. Tropical Ecology 55: 255-262. [1431 mistletoes in 5 species, 4 genera and 2 families were identified. These were found on 29 tree species belonging to 24 genera and 13 families. The most abundant species was *Scurrula ferruginia* (718 individuals) followed by *Dwendrophthoe pentandra* (585 individuals).]
- Raina, R.H., Saini, M.S. and Khan, Z.H. 2013. Population variation in *Bombus asiaticus* (Hymenoptera: Apidae) from northwest Indian Himalaya. Entomological News 123(5): 321-332. [*Pedicularis* spp. among hosts for *B. asiaticus*.]
- Raya-Pérez, J.C., Ramírez-Pimentel, J.G., Covarrubias-Prieto, J., Acevedo-Lara, B. and Aguirre-Mancilla, C. 2014. Mineral and chlorophyll content of the *Psittacanthus calyculatus* (DC) G. Don hemiparasitic plant and four host trees. Revista Chapingo. Serie Ciencias Forestales y del Ambiente 20(1): 109-117. [Studying the contents of Mg, Al, Si, P, S, K, Ca, chlorophyll and protein in *P. calyculatus* and its hosts *Salix taxifolia*, *Ulmus divaricata*, *Fraxinus uhdei* and *Prosopis laevigata*. Noting particularly that the content of K in the parasite was at least double that in any of the hosts.]
- *Raza, M.A., Rukhsana Kausar, Rana, F.A., Muhammad Danish, Durre Shahwar and Farwa Anwar. 2014. *Loranthus pulverulentus*: a potent source of natural antioxidants and alternative medicine. Journal of Chemistry 2013: Article ID 250739. (<http://www.hindawi.com/journals/jchem/2013/250739/>) [Analyses suggest that phenolic contents are the major constituents responsible for antioxidant activity of *L. pulverulentus* (= *Scurrula pulverulenta*).]
- Robertson, O., Maron, M., Buckley, Y. and McAlpine, C. 2013. Incidence of competitors and landscape structure as predictors of woodland-dependent birds. Landscape Ecology 28(10): 1975-1987. [Abundance of the noisy miner is more important than other factors, including unspecified mistletoe abundance, in the decline of woodland bird diversity.]
- Rocha, D., Ashokan, P.K.; Santhoshkumar, A.V., Anoop, E.V. and Sureshkumar, P. 2014. Influence of host plant on the physiological attributes of field-grown sandal tree (*Santalum album*). Journal of Tropical Forest Science 26(2): 166-172. [Concluding that *S. album* depended on the host *Casuarina equisetifolia*

- mainly for maintaining plant water level and reducing water stress and the raised K status of the leaf played a significant role in this.]
- *Rumpf, S.B., Semenchuk, P.R., Dullinger, S. and Cooper, E.J. 2014. Idiosyncratic responses of high Arctic plants to changing snow regimes. *PLoS ONE* 9(2): e86281. (<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0086281>) [Reduced snow levels and earlier as well as later snowmelt had a negative effect on the average plant size of *Pedicularis hirsuta*.]
- Rumsey, F. 2014. *Orobancha crenata* Forssk. (carnation-scented or bean broomrape) – a growing problem? *BSBI News* 125: 46-47. [An account of the outbreak of *O. crenata* in faba bean in UK last year with an outline of the previous history of the weed going back to 1950 in Essex, UK but not seen in that area since 2006 (until this year – see Update above).]
- Sadananda, T.S., Govindappa, M. and Ramachandra, Y.L. 2013. Isolation and characterization of D-isolation and characterization of D-galactose, N-acetylgalactosamine, fructose, maltose specific lectin from eight different endophytic fungi of *Viscum album* L. *Asian Journal of Biomedical and Pharmaceutical Sciences* 3(26): 11-20. [Confirming the presence of lectins in *V. album* and in a range of endophytic fungi including *Aspergillus flavus*, *Fusarium moniliforme*, *F. oxysporum* and *Trichothecium* sp.,]
- Sakulnarmrat, K., Srzednicki, G. and Konczak, I. 2014. Composition and inhibitory activities towards digestive enzymes of polyphenolic-rich fractions of Davidson's plum and quandong. *LWT - Food Science and Technology* 57(1): 366-375. [A polyphenolic-rich fraction from the fruits of quandong (*Santalum acuminatum*) comprising quercetin and cyanidin 3-glucoside, was the most effective inhibitor of pancreatic lipase.]
- Sánchez, O.P. and Piepenbring, M. 2014. Species of *Uromyces* (Pucciniales, Basidiomycota) on Loranthaceae. *Tropical Plant Pathology* 39(2): 141-153. [Two new species, *Uromyces bahiensis* from Brazil and *U. struthanthi* from Panama, described from unspecified Loranthaceae.]
- Sanchez, P.M., Villarreal, M.L., Herrera-Ruiz, M., Zamilpa, A., Jiménez-Ferrer, E. and Trejo-Tapia, G. 2013. *In vivo* anti-inflammatory and anti-ulcerogenic activities of extracts from wild growing and *in vitro* plants of *Castilleja tenuiflora* Benth. (*Orobanchaceae*). *Journal of Ethnopharmacology* 150(3): 1032-1037. [Verbascoside in extracts of *C. tenuiflora* provided significant gastric protection in an acute ulcer induction model and topical anti-inflammatory activity in a mouse ear edema model helping to explain the traditional use of *C. tenuiflora* in the treatment of anti-inflammatory and gastrointestinal disorders in Mexican traditional medicine. Also showing that active extracts could be produced in cultured *C. tenuiflora* plants (*in vitro*).]
- Sargin, S.A., Akçicek, E. and Selvi, S. 2013. An ethnobotanical study of medicinal plants used by the local people of Alaşehir (Manisa) in Turkey. *Journal of Ethnopharmacology* 150(3): 860-874. [*Viscum album* ssp. *austriacum* among the most used medicinal plants.]
- Saric´-Krsmanovic´, M., Božic´, D., Pavlovic´, D., Radivojevic´, L. and Vrbničanin, S. 2013. Temperature effects on *Cuscuta campestris* Yunk. seed germination. *Pesticidi i Fitomedicina* 28(3): 187-193. [Over 90% germination of acid-scarified seed of *C. campestris* was obtained at 25 and 30°C. Without scarification, germination was improved by stratification at 4°C for 30 days but did not exceed 40%.]
- Sárpataki, O., Sevastre, B., Stan, R.L., Olah, N.K., Hanganu, D., Bedecan, I., Ionescu, C. and Marcus, I. 2014. *Viscum album* L. influence on the antioxidant enzymes activity in ehrlich tumor cells *in vivo*. *Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca. Veterinary Medicine* 71(1): 198-203. [Confirming a significant, selective antitumor effect, without obvious harmful effect on mice.]
- *Satish Patel, Vikas Sharma, Chauhan, N.S. and Dixit, V.K.. 2014. A study on the extracts of *Cuscuta reflexa* Roxb. in treatment of cyclophosphamide induced alopecia. *Daru - Journal of Pharmaceutical Sciences* 22(7): (6 January 2014) (<http://www.ncbi.nlm.nih.gov/pubmed/21428736>) [Concluding that extracts of *C. reflexa* are capable of promoting follicular proliferation or preventing hair loss in cyclophosphamide-induced hair fall in rats.]
- Satou, T., Miyagawa, M., Seimiya, H., Yamada, H., Hasegawa, T. and Koike, K. 2014. Prolonged anxiolytic-like activity of sandalwood (*Santalum album* L.) oil in stress-loaded mice. *Flavour and Fragrance Journal* 29(1): 35-38.
- Semerci, A. 2013. Economic analysis of sunflower production in the view of orobanche resistance conditions. *Pakistan Journal of Agricultural Sciences* 50(3): 499-504. [In a detailed economic analysis, *O. cumana*-resistant sunflower gave

- higher yields and economic return than imidazolinone (IMI)-resistant or non-resistant sunflower in Thrace, Turkey. No indication of *Orobanche* control by IMI herbicide.]
- Shakeel, M., Trinitade, A., Geider, S. and Ah-See, K.W. 2014. The case for mistletoe in the treatment of laryngeal cancer. *Journal of Laryngology and Otolology* 128(3): 302-306. [Describing an individual case in which a patient with laryngeal cancer apparently benefitted greatly from treatment with a *Viscum album* extract.]
- Shekarchi, M., Kondori, B.M., Hajimehdipoor, H., Abdi, L., Naseri, M., Pourfarzib, M. and Amin, G. 2014. Finger printing and quantitative analysis of *Cuscuta chinensis* flavonoid contents from different hosts by RP-HPLC. *Food and Nutrition Sciences* 5(10): 914-921. [Reporting significant differences in the content of the four major flavonoids assumed to be responsible for medicinal properties (hyperoside, rutin, isorhamnetin, kaempferol) in nine *C. chinensis* samples, some from different hosts but no detail of the latter in the abstract.]
- *Shen Hao, Xu ShuJun, Hong Lan, Wang ZhangMing and Ye WanHui. 2013. Growth but not photosynthesis response of a host plant to infection by a holoparasitic plant depends on nitrogen supply. *PLoS ONE* 8(10): e75555. [<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0075555>] [*Mikania micrantha* suffers more severe inhibition in growth from *Cuscuta campestris* at low than at high nitrate levels, attributed to a higher proportion of host resources transferred to the parasite rather than a greater parasite-induced reduction in host photosynthesis.]
- Shyaula, S.L., Choudhary, M.I. and Manandhar, M.D. 2013. Megastigmane, iridoid, benzyl alcohol and phenyl propanoid glycosides from the Nepalese sandalwood *Osyris wightiana* Wall. ex Wight. *Moscow University Chemistry Bulletin* 68(6): 293-297.
- Shyu ShinYi and Hu JerMing 2013. Comparison of six DNA extraction procedures and the application of plastid DNA enrichment methods in selected non-photosynthetic plants. *Taiwania* 58(4): 268-274. [All extraction methods effective for *Balanophora japonica* and *Mitrostemon kanehirai*. (Balanophorales).]
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- Simrandeep Singh, Mohanjit Kaur, Amarjeet Singh and Bimlesh Kumar. 2014. Pharmacological evaluation of anti-inflammatory and anti-ulcer potential of heartwood of *Santalum album* in rats. *Asian Journal of Biochemical and Pharmaceutical Research* 4(1): 140-153. [The reported results support and justify the traditional use of extract of heartwood of *S. album* for the treatment of inflammation and ulcer.]
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- Singh, S.P. and Devi, L.S. 2012. Management of root-knot nematode, *Meloidogyne incognita* on brinjal (*Solanum melongena* L.) with some plant extracts. *Current Nematology* 23(1/2): 65-72. [*Cuscuta reflexa* among extracts significantly reducing nematode infestation.]
- Sinha, N. 2014. Characterizing the parasitism process in the parasitic weed *Cuscuta*. Abstract in Proceedings, Annual Meeting of the Weed Science Society of America, 26 February 2014. [A study of RNAs to assemble and annotate the transcriptome of *C. pentagona*, shedding light on the changes that accompany parasitism. Host plant not specified.]
- Sipes, S.D., Hartz, K.E.H., Amin, H. Anterola, A. and Nickrent, D.L. 2014. Floral scent and pollinators of the holoparasite *Pilostyles thurberi* (Apodanthaceae). *Journal of Pollination Ecology* 12: 31-39. [*Augochloropsis metallica* bees (Halictidae) and eumenine potter wasps (Vespidae) identified as pollinators of *P. thurberi* on host *Dalea formosa*. They are attracted by a fragrance identified as a simple bouquet of raspberry ketone and several eugenols.]
- Smith, R.G. and Cox, D.A. 2014. Effects of soil amendments on the abundance of a parasitic weed, yellow rattle (*Rhinanthus minor*) in hay fields. *Weed Science* 62(1): 118-124. [Amending hay fields with wood ash or sawdust may be an effective strategy for managing *R. minor* infestations which are becoming increasingly problematic in fields in the northeastern United States.]
- *Soheil Zorofchian Moghadamtousi, Maryam Hajrezaei, Habsah Abdul Kadir and Keivan Zandi 2013. *Loranthus micranthus* Linn.: biological activities and phytochemistry. *Evidence-based Complementary and Alternative Medicine* 2013: Article ID 273712. [<http://www.hindawi.com/journals/ecam/2013/2>]

- 73712/) [A review of the pharmacological properties, toxicity, and chemical constituents of *Loranthus micranthus* (= *Ileostylus micranthus*).]
- Soheil Zorofchian Moghadamtousi, Muhamad Noor, A.K., Chan ChimKei, Goh BeyHing and Habsah Abdul Kadir. 2014. Phytochemistry and biology of *Loranthus parasiticus* Merr, a commonly used herbal medicine. American Journal of Chinese Medicine 42(1): 23-35. [Listing the components of *L. parasiticus* (= *Scurrula parasitica* var. *parasitica*) which may contribute to the wide range of traditional medicinal uses of this plant in China.]
- Solat Perveen, Bukhari, I.H., Qurat-Ul-Ain, Shazia Kousar and Jeveria Rehman. 2013. Antimicrobial, antioxidant and minerals evaluation of *Cuscuta europea* and *Cuscuta reflexa* collected from different hosts and exploring their role as functional attribute. International Research Journal of Pharmaceutical and Applied Sciences 3(5): 43-49. [Work conducted in Pakistan.]
- Soudzilovskaia, N.A., Elumeeva, T.G., Onipchenko, V.G., Shidakov, I.I., Salpagarova, F.S., Khubiev, A.B., Tekeev, D.K. and Cornelissen, J.H.C. 2013. Functional traits predict relationship between plant abundance dynamic and long-term climate warming. Proceedings of the National Academy of Sciences of the United States of America 110(45): 18180-18184. [*Pedicularis comosa* and *P. caucasica* among species studied from which it is concluded that In this mountain belt, traits that promote conservative leaf water economy (higher leaf mass per area, thicker leaves) and large investments in belowground reserves to support next year's shoot buds (root carbon content) were the best predictors of the species increase in abundance along with temperature increase.]
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- Stöckel, M., Těšitelová, T., Jersáková, J., Bidartondo, M.I. and Gebauer, G. 2014. Carbon and nitrogen gain during the growth of orchid seedlings in nature. New Phytologist 202(2): 606-615. [Concluding that partial mycoheterotrophy among saprotroph-associated orchids cannot be identified unequivocally based on C and N isotope compositions alone.]
- Thus, partial mycoheterotrophy may be much more widely distributed among orchids than hitherto assumed.]
- Subasinghe, S.M.C.U.P. 2013. Sandalwood research: a global perspective. Journal of Tropical Forestry and Environment, 3(1): 1-8. [A general review on ecology, management and uses of *Santalum* spp.]
- Suetsugu, K., Kawakita, A. and Kato, M. 2014. Evidence for specificity to *Glomus* group Ab in two Asian mycoheterotrophic *Burmanna* species. Plant Species Biology 29(1): 57-64. [Confirming that *B. championii* and *B. cryptopetala* species are associated with several distinct lineages of *Glomus* group Ab.]
- Sui XiaoLin, Li AiRong, Chen Yan, Guan KaiYun, Zhuo Lu and Liu YanYan. 2014. Arbuscular mycorrhizal fungi: potential biocontrol agents against the damaging root hemiparasite *Pedicularis kansuensis*? Mycorrhiza 24(3): 187-195. [Showing that *P. kansuensis* which causes loss of herbage yield in China, can be suppressed by the AM fungus *Glomus mosseae* with significant benefit to the host *Elymus nutans*.]
- Sulborska, A., Konarska, A. and Chmielewski, P. 2014. Morphology and histochemistry of glandular trichomes of *Orobancha alba* Stephan ex Willd. Modern Phytomorphology 6 21. [Hosts of *O. alba* in Poland include *Tymus polytrichus*, *Clinopodium vulgare* and *Origanum vulgare*. The peltate glandular trichomes were composed of one basal epidermal cell, 1-3 hyaline stalk cell, a neck cell and a globose head formed of 8-18 secretory cells in a circle.]
- Sulborska, A., Konarska, A. and Chmielewski, P. 2014. Micromorphology of flowers and the structure of floral nectaries in *Orobancha alsatica* Kirschl. Modern Phytomorphology 6: 23. [Hosts of *O. alsatica* in Poland are members of Apiaceae.]
- Sun SiSheng, Chen XiaoMei and Guo ShunXing. 2014. Analysis of endophytic fungi in roots of *Santalum album* Linn. and its host plant *Kuhnia rosmarinifolia* Vent. Journal of Zhejiang University (Science B) 15(2): 109-115. [Surveying the wide, but different, ranges of endophytic fungi found in *S. album* and *K. rosmarinifolia*.]
- Sweta Bhan, Shrankhla, Lalit Mohan and Srivastava, C.N. 2013. Combinatorial potentiality of *Aspergillus flavus* and *Cuscuta reflexa* against mosquito vectors. Advances in Bio Research 4(4): 99-105. [*A. flavus* combined with petroleum ether extract of *C. reflexa* was active against *Anopheles stephensi* and *Culex quinquefasciatus* larvae.]

- Taira, T.L., Abot, A.R., Nicácio, J., Uchôa, M.A., Rodrigues, S.R. and Guimarães, J.A. 2013. Fruit flies (Diptera, Tephritidae) and their parasitoids on cultivated and wild hosts in the Cerrado-Pantanal ecotone in Mato Grosso do Sul, Brazil. *Revista Brasileira de Entomologia* 57(3): 300-308. [Records for *Anastrepha castanea* and *A. daciiformes* on a *Schoepfia* sp. (Olacaceae).]
- Tájek, P.; 2012. (Serpentine fens: flora and vegetation of Mokřady pod Vlčkem wetlands Nature Reserve.) (in Czech) *Erica* (Plzeň) 19: 35-86. [*Pedicularis palustris* noted among rare endangered species.]
- Takem, L.P., Lawal, B.A.S. and Lennox, J.A., 2014. Anti-diarrhoeogenic properties of aqueous extract of *Phragmanthera capitata* S. Balle in albino rats. *European Journal of Medicinal Plants* 4(6): 743-752. [Confirmation of same.]
- Talve, T., McGlaughlin, M.E., Helenurm, K., Wallace, L.E. and Oja, T. 2014. Population genetic diversity and species relationships in the genus *Rhinanthus* L. based on microsatellite markers. *Plant Biology* 16(2): 495-502. [Microsatellite primers used to show that *R. javorkae* and *R. minor* were genetically most differentiated. Section *Cleistolemus* is weakly structured genetically, indicating close affinity between *R. osiliensis*, *R. rumelicus*, *R. wagneri* and *R. angustifolius*.]
- Tambalo, D.D., Vanderlinde, E.M., Robinson, S., Halmillawewa, A., Hynes, M.F. and Yost, C.K. 2014. Legume seed exudates and *Physcomitrella patens* extracts influence swarming behavior in *Rhizobium leguminosarum*. *Canadian Journal of Microbiology* 60(1): 15-24. [Results suggest that strigolactone may be a signalling molecule activating swarming motility in *R. leguminosarum*.]
- Teklay Abebe, Hadas Beyene and Yemane Nega 2013. Distribution and economic importance of broomrape (*Orobanche crenata*) in food legumes production of south Tigray, Ethiopia. eSci Journal of Crop Production 2(3): 101-106. [An alarming description of the increasing threat from *O. crenata* in Tigray, Ethiopia, where a random survey indicated 30-80% of faba bean crops infested. Farmers are having to give up growing legumes with detriment to the crop rotation and local diets. It is believed the original introduction was via contaminated food aid, while local spread occurs via contaminated seed in markets, and via farm machinery.]**
- Teklay Abebe, Kiros Meles, Yemane Nega, Hadas Beyene and Abrha Kebede. 2013. Interatcion between broomrape (*Orobanche crenata*) and resistance faba bean genotypes (*Vicia faba* L.) in Tigray region of Ethiopia. *Canadian Journal of Plant Protection* 1(3): 104-109. [A range of 14 'resistant' faba bean varieties tested in 2 field trials. None fully resistant but ILB4358 best, yielding 3 times susceptible check. Several others showed delayed emergence of *O. crenata* and doubled yields.]
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- Thorogood, C.J. and Hiscock, S.J. 2014. *Field Guide to the Wild Flowers of the Algarve*. Royal Botanic Gardens, Kew. 280 pp. [A comprehensive identification guide to over 1000 species of the Algarve region of southern Portugal. There are no keys but it is richly illustrated with photographs and hundreds of superb additional line drawings to emphasise differences between species. Including a wide range of parasitic speceis (see text item above). Highly recommended.]
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- Tokasi, S., Aval, M.B., Mashhadi, H.R. and Ghanbari, A. 2014. Screening of resistance to Egyptian broomrape infection in tomato varieties. *Planta Daninha* 32(1): 109-116. [Finding moderate resistance to *Orobanche aegyptiaca* in varieties Viva, Caligen 86, Hyb. PS 6515, Hyb.Firenze (PS 8094) and Cal-jN3.]

- Torres-Vera, R., García, J.M., Pozo, M.J. and López-Ráez, J.A. 2014. Do strigolactones contribute to plant defence? *Molecular Plant Pathology* 15(2): 211-216. [A strigolactone-deficient tomato line was more susceptible to *Botrytis cinerea* and *Alternaria alternata*, apparently due to interaction with the jasmonic acid signaling pathway.]
- Treštic', T., Mujezinovic', O., Čabaravdic', A. and Muratagic', I. 2013. (Impact of micro-locality factors to the intensity of infestation of silver fir trees with white mistletoe.) (in Croatian) *Šumarski List* 137(11/12): 575-582. [Finding that the level of shading is the main factor modifying intensity of *Viscum album* in silver fir in Croatia.]
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- Türkseven, S., Molaei, P., Nemli, Y., Keçecioglu, O. and Aksan, E. 2013. (The effect of solarization and some fumigants on broomrape (*Phelipanche ramosa* (L.) Pomel/*P. aegyptiaca* (Pers.) Pomel) in tomatoes greenhouses.) (in Turkish) *Ege Üniversitesi Ziraat Fakültesi Dergisi* 50(3): 285-289. [Iodomethane and methamsodium reduced *P. ramosa* by over 90%. Solarization was 77% effective alone, and slightly increased effects of fumigant.]
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- van Raab-Straube, E. and Raus, T. 2013. Euro+Med-Checklist Notulae, 2. *Willdenowia* 43(2): 239-249. [Including an item on Orobanchaceae but no detail in abstract.]
- van Welzen, P.C., Esser, H.J., Nooteboom, H.P. and van Welzen, P.C. 2013. Peraceae (formerly Euphorbiaceae s.l. subfam. Acalyphoideae tribes Clutieae, Pogonophoreae, Chaetocarpeae and Pereaee). *Flora Malesiana. Series I, Seed plants. Volume 21: Lecythidaceae; Peraceae*, 119-138. [The early branching clades of Euphorbiaceae s.l. are here recognized as two monophyletic families: Peraceae and Rafflesiaceae.]
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- Vivek Sharma, Gupta, R.C., Santosh Bala and Bikram Singh. 2013. New chromosome number reports in some medicinally important angiosperms of North India. *Cytologia* 78(3): 285-296. [Reporting chromosome numbers for *Euphrasia himalaica* ($2n=22$) and *Pedicularis longiflora* ($2n=14$),]
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- Wróblewska, A. 2013. High genetic diversity within island-like peripheral populations of *Pedicularis sceptrum-carolinum*, a species with a northern geographic distribution. *Annales Botanici Fennici* 50(5): 289-299.
- Wu Zhi, Guo Qiang, Li MingGuang, Jiang Lu, Li FengLan, Zan QiJie and Zheng Jie. 2013. Factors restraining parasitism of the invasive vine *Mikania micrantha* by the holoparasitic plant *Cuscuta campestris*. *Biological Invasions* 15(12): 2755-2762. [For maximum effectiveness as a biological agent for *M. micrantha* (a severe problem in S. China) *C. campestris* must be within 4 cm of *M. micrantha* stems no more than 3 mm in diameter.]
- Xing YaChao, Liao Jing, Tang YingZhan, Zhang Peng, Tan ChengYu, Ni Hui, Wu XueQin, Li Ning and Jia XiaoGuang. 2014. ACE and platelet aggregation inhibitors from *Tamarix hohenackeri* Bunge (host plant of Herba Cistanches) growing in Xinjiang. *Pharmacognosy Magazine* 10(38): 111-117. [Studying the active flavonoid components in *T. hohenackeri* but not clear what relevance this has as the host of *Cistanche* spp.]
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- and dyslipidemia in diabetic mice, without, however significantly affecting serum insulin levels or hepatic and muscle glycogen levels.]
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- Yıldırım, S. and Tepe, I. 2014. (Distribution and density of alfalfa dodder (*Cuscuta approximata* Bab.) in alfalfa in Van province, Turkey.) (in Turkish) *Yüzüncü Yıl Üniversitesi Journal of Agricultural Sciences* 24(1): 42-50. [A survey confirming very high infestations of *C. approximata* in the province.]
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- Zafeer Saqib, Adeel Mahmood, Malik, R.N., Aqeel Mahmood, Syed, J.H. and Tahira Ahmad. 2014. Indigenous knowledge of medicinal plants in Kotli Sattian, Rawalpindi district, Pakistan. *Journal of Ethnopharmacology* 151(2): 820-828. [*Cuscuta reflexa* among plants commonly used.]
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- *Zhang DaLe and 12 others. 2014. Root parasitic plant *Orobanche aegyptiaca* and shoot parasitic plant *Cuscuta australis* obtained Brassicaceae-specific *strictosidine synthase-like* genes by horizontal gene transfer. *BMC Plant Biology* 14(19): 14 pp. (<http://www.biomedcentral.com/content/pdf/1471-2229-14-19.pdf>) [Transcriptome screening revealed that a *strictosidine synthase-like* (SSL) gene in the root parasitic plant *O. aegyptiaca* and the shoot parasitic plant *C. australis* showed much higher sequence similarities with those in Brassicaceae than with those in their close relatives, suggesting independent gene horizontal transfer events from Brassicaceae to these parasites. Also, the foreign genes may still retain certain functions in the recipient species.]
- Zhang XieJun, Su BenWei, Li Jing, Li YongHua, Lu Dong, Zhu KaiXin, Pei HeHuan and Zhao MingHui. 2014. Analysis by RP-HPLC of mangiferin component correlation between medicinal loranthus and their mango host trees. *Journal of Chromatographic Science* 52(1): 1-4. [Showing that mangiferin was present in an unspecified Loranthaceae when parasitising mango but not on other host trees indicating that host trees could affect the quality of medicinal extracts from the parasite.]
- Zhao Wei, Wu Qing, Ruan HongShi, Liu JunFeng, Mo XiuMei and Chen DaCan. 2014. (Professor CHEN Da-can's experience in treating skin diseases by using herbs from Lingnan region in China.) (in Chinese) *China Journal of Traditional Chinese Medicine and Pharmacy* 29(5): 1308-1311. [The Professor's remedies include the use of *Striga asiatica* to 'promote digestion and remove food stagnation'.]
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Engineering and Applied Sciences 3(24): 3502-3505. [Concluding from an experiment in Iran that 'taking into account the environmental negative effects of propyzamide and low environmental impact of ethofumesate herbicide is recommended for control dodder in the beet fields.' Meaning?]

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