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**Newsletter of the International Parasitic Plant Society,
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End Note39

PRESIDENT'S MESSAGE

Dear IPPS members,

Hello all and I hope you are doing well. For those of you in the northern hemi-sphere, I hope you all had a good summer break and a good start of the new academic year. I am happy to present to you the 90th issue of *Haustorium*. A big congratulations to Chris Parker and co-editors, Thomas Spallek and Lytton Musselman, for reaching the milestone number of 90 issues! As I have the honor of starting this issue with a message, allow me to briefly report on some IPPS news items of the past months.

On June 4th we had an online IPPS General Assembly. For those of you who missed it, slides of the event can be found on our website (members-nly-area/society-documents). During the assembly we celebrated the 25th anniversary of the IPPS with the launch of an automated slide-show with pictures of 25 years of international parasitic plant meetings. This 'trip down memory lane' can be watched on our website (<https://www.parasiticplants.org/>). At the assembly, the appointments of Satoko Yoshida and Maurizio Vurro as the two new Advisory Board members, were approved by the members. They are replacing outgoing members Julie Scholes and Koichi Yoneyama, who were both thanked for their highly valuable service.

A highlight of the assembly was the announcement of two new Honorary Fellows of the IPPS: Mike Timko (University of Virginia) and Claude dePamphilis (Penn State University). Both have impressive track records in parasitic plant research, which we showcased during the meeting, and this was followed by moving speeches by both of them.

Last but not least we announced during the General Assembly that the next World Congress on Parasitic Plants will be held in

Mexico in 2027. We will soon be able to announce the exact venue and dates. The local organizers (chaired by Domancar Orona Tamayo) are working hard behind the scenes to launch the conference website, with more details and registration links, hopefully in October.

This month we also resumed the IPPS online-seminar series, chaired by the IPPS vice-president Airong Li. We started the new seminar season by talks from Yukihiro Sugimoto and Qia Wan and in October we will hear from Xiao-Jian Qu and Marco Bürger. More information on these and other future talks can be found on our website.

This new issue of *Haustorium* is filled with exciting news and reports from the parasitic plant research and outreach community. To name a few, an NGO is taking up the challenge of raising awareness and promoting integrated management of *Striga hermonthica* among smallholder farmers in Ghana and new lines of cowpea with stacked resistance genes against *Striga gesnerioides* are developed in Nigeria. From the parasitic plant conservation front two exciting and rare observations are reported: the blooming of the mycoheterotrophic (parasitizing fungi) bird's-nest orchid (*Neottia nidus-avis*) in Chernobyl, Ukraine, and that of the endangered Samar Rafflesia (*Rafflesia manillana*) in Samar Island National Park, the Philippines. I wish you all a very pleasant read!

Jonne Rodenburg
IPPS President

BROOMRAPE INFESTATIONS

First report of branched broomrape (*Phelipanche ramosa* (L.) Pomel) parasitizing processing tomato in Brazil.

Branched broomrape [*Phelipanche ramosa* (L.) Pomel (synonym *Orobancha ramosa*]

L.)] was found parasitizing tomato (*Solanum lycopersicum* L.) on a farm in the municipality of Itaberaí, Goiás, Brazil. It was recorded in two adjacent center-pivot-irrigated areas on the same farm, one covering 100 ha and the other covering 20 ha. The plants were in patches, positioned closer to roads. Less than 0.1% of the total area under the two center pivots was occupied by the parasitic plant, indicating a low infestation. The site was located at 16°00'13.0"S, 49°54'07.9"S, at an elevation of 739 m; these data were obtained from the largest patch in which the parasitic species occurred.

Tomato cultivar CBR861 was planted in the first week of May 2026, and the parasitic species was detected in the field approximately 90 days later, when its flowering shoots emerged above ground. The sites where *P. ramosa* was found were irrigated by center pivot and used for processing tomato production during the autumn-winter season (April-September) and for grain crops such as soybean and maize during the spring-summer season (October-March).



Figure 1: Plants of *Phelipanche ramosa* parasitizing tomato plants in Itaberaí, Goiás, Brazil.

Two hypotheses were considered regarding the introduction of the parasitic species into the area: tomato transplants contaminated with seeds of the parasitic plant or soil containing such seeds. In 2025, an experiment involving several tomato varieties was established in the 100 ha center-pivot-irrigated area; the tomato seeds used in the experiment were imported and could have been contaminated with *P. ramosa* seeds. The tomato seeds were sown in trays to produce transplants, which were subsequently taken to the field for planting. However, the same experiment was repeated on another farm in a different municipality, and, to date, the parasitic plant has not been recorded there.



Figure 2: One of the patches in which *Phelipanche ramosa* observed in a tomato field in Itaberaí, Brazil.

The second hypothesis is that soil residues containing seeds of the parasitic plant were transported on the soles of footwear worn by foreign visitors in the 100 ha center-pivot-irrigated area in 2025. The group consisted of agronomists and tomato growers from Chile, a country where *P. ramosa* has already been introduced and is highly problematic. No biosecurity measures were implemented to prevent the introduction of

the parasite into the area, such as cleaning or decontamination of footwear. All visitors walked throughout the area, including the site where the largest patch of *P. ramosa* was recorded in 2026.

Several containment measures have been adopted by both the grower and the company responsible for fruit harvesting and processing after the species was identified and the problem was confirmed:

1. Physical isolation and access control. The two affected center-pivot-irrigated areas were physically isolated immediately after the parasitic plant was detected. Disposable shoe covers are required during every authorized visit and must be discarded immediately afterward.
2. Dedicated harvesting fleet. A fleet of 40 trucks will be assigned exclusively to harvesting the affected areas. These trucks will not be used in other harvesting operations while assigned to these areas.
3. Harvest sequence according to infestation level. The harvest sequence will be based on field mapping, beginning in areas where the parasitic species was not detected and ending in the most heavily infested areas.
4. Truck sanitation. Truck sanitation will be conducted in two stages. In the first stage, the underside of each truck, including the wheels and chassis, will be rinsed with high-pressure water before the truck leaves the farm. Once harvesting in the two center-pivot-irrigated areas has been completed, the entire fleet will be sent to an approved wash facility for thorough cleaning.
5. Sanitation of machinery and harvesters. The harvesters will be thoroughly washed after harvesting has been completed in the affected areas and before being moved to any other field.
6. Monitoring and mapping of the affected areas. The affected center-pivot-irrigated areas will be monitored and mapped over the medium and long term to assess the spread and frequency of the parasitic plant, and management protocols will be developed to mitigate its harmful effects.

Due to the low infestation of *P. ramosa*, even in the patches where it occurs, no apparent damage from parasitism or reduction in fruit production was observed in tomato plants. In subsequent growing seasons, cultural practices, including crop succession and crop rotation with soybean and maize, will be adopted to suppress the parasitic species. If tomato production continues in the affected areas, cultural practices that favour tomato crop development will be adopted, including irrigation managed to avoid both water deficit or excess, and balanced fertilization, particularly nitrogen fertilization. These practices are intended to improve tomato crop growth and limit *P. ramosa* parasitism. Flowering shoots will also be manually removed and destroyed after emergence in the field to prevent the production and dispersal of new seeds within the area.

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The current status of sunflower broomrape in the US and the restrictions in place to control it.

In 2025, the first-ever North American detection of sunflower broomrape, *Orobancha cumana* was confirmed near Yakima, WA. This detection was especially concerning due to the aggressive nature of this parasitic weed and its potential to spread rapidly. Sunflower broomrape produces hundreds of thousands of small seeds which spread easily and remain viable in the soil for decades. It poses a serious threat to commercial sunflower production in Washington state and could cause significant impacts to growers, processors, exporters, and the agricultural economy if not swiftly contained. It was first seen on volunteer sunflowers in a blueberry plot and had presumably been some year or years before. There are a number farms growing

sunflowers in the district and the occurrence is potentially serious commercially.



Photo: Yakima, WA —

To control its spread, the Washington State Department of Agriculture (WSDA) put in place an emergency quarantine. The quarantine limits the movement of materials that could spread sunflower broomrape seeds, such as soil, plants, and equipment that is inside the quarantine area. The quarantine area spans the area within one-quarter mile of the detection site. Those that live or work within the quarantine area must follow specific requirements to stop the spread of sunflower broomrape. These requirements include not growing any potential host plants inside the quarantine area for at least three years after the last detection. Host plants include sunflowers, tomatoes, tobacco, coleus, and Canada thistle. In addition, products containing sunflower seeds, such as birdseed mixes, cannot be used or spread in the quarantine area as they could unintentionally spread the parasitic plant by providing host plants for it to grow on.

In addition to restrictions within the quarantine area, there are also requirements that must be followed when exiting the

quarantine area or transporting materials that could spread sunflower broomrape. Because the tiny, sticky seeds spread easily through soil and plant material, clothing and shoes used outdoors must be kept inside the quarantine area or cleaned before they are taken out of it. Any soil, yard debris, or plant material transported outside the quarantine area must be double-bagged in plastic bags and taken directly to a landfill for disposal.

WSDA offers compliance agreements to businesses working within the quarantine area. Compliance agreements outline requirements for workers and describe the conditions with which regulated articles may move outside of the quarantine area.

Work conducted inside the quarantine area that involves soil, including farming, landscaping, and construction, must adhere to additional requirements. Before leaving the quarantine area, any footwear, tires, tools, or equipment that came in contact with soil must have all dirt and debris removed. If work is being conducted within 50 feet of the detection site (known as the infestation zone), additional personal decontamination equipment is required, such as disposable boot covers.

In terms of treatment at the detection site, the soil was treated in multiple ways. First, a controlled burn using propane torches directly on the soil was conducted to kill the seed bank. Green plant material on site was also collected and disposed of in a burn trailer. After this, the Yakima County Noxious Weed Board applied Milestone herbicide. Wood chips were applied immediately after, covering the treatment site three to six inches deep. A clear plastic tarp was then put over the wood chips and secured using landscape staples. Lastly, a silt fence was installed around the perimeter of the tarp. This was done to minimize runoff and keep animals out of the treatment area. The tarp will stay over the treatment site throughout the summer, or until the

temperature under it reaches 150°F for 15 minutes. The temperature is being monitored using temperature probes placed within 50 feet of the detection site. If temperatures do not reach 150°F by the end of August, a soil steam treatment will be conducted to ensure that surface seeds are destroyed. As an ongoing control measure, the planting of a trap crop is being considered in the detection area. This would involve planting crops such as sorghum, foxtail millet, corn, and switchgrass. These crops stimulate seed germination in sunflower broomrape without providing a host to attach to, causing seed death. This would ultimately deplete the seed bank and limit the potential for future plant growth.

Soon after sunflower broomrape was detected, WSDA and the Yakima County Noxious Weed Board began major outreach efforts in the area, going door-to-door and conducting inspections of all sunflowers at locations where contact was made. This was done over a 1–2-mile radius of the detection site, focusing on properties that were downhill and downwind. Outreach efforts for sunflower broomrape continue to take place, with the Yakima County Noxious Weed Board conducting additional door-to-door survey work, sending mailers to landowners, displaying information at local fairs, and presenting to public groups across the state. WSDA has also conducted paid social media outreach both locally and statewide to encourage reporting of sunflower broomrape. To date, no additional detections have been confirmed.

In October 2025, the Yakima County Noxious Weed Board and WSDA petitioned the Washington State Noxious Weed Board for emergency Class A weed listing for sunflower broomrape. This emergency listing allowed for approval from local authorities to conduct a surface burn and herbicide treatment of the detection site. The emergency listing was made permanent in March 2026. Having sunflower broomrape listed as a Class A weed mandates a rapid

response and eradication efforts statewide. Additionally, it gives the County more oversight and allows for county-level public outreach and land survey work. This is especially important, as county noxious weed boards have in-depth knowledge of the lands, landowners, and effective methods for interacting with them.

With continued surveys and outreach being conducted in the area, there have been no additional detections of sunflower broomrape in Yakima County or other parts of Washington State.

Amy Clow, WSDA Quarantine, Compost, & Rules Coordinator and Susan Bird, Yakima County Noxious Weed Control Board Program Coordinator, .August 2026.

(Further to the item in Haustorium 89, '*Orobanche cumana* in USA', we regret having included a misleading comment suggesting that 'Other members of the 1,620 genera in the Asteraceae family, which includes chrysanthemums, asters, coneflowers, and many other popular plants, are also susceptible as hosts' This is incorrect. A few other Asteraceae may occasionally be parasitised but sunflower is the only species to be widely attacked. Eds.)

2026 Broomrape (*Phelipanche ramosa*) compliance agreement and exhibits.

The Broomrape Control Program has finalized the compliance agreement and associated exhibits for growers, processors, and transporters of processing tomatoes for 2026. This year the **California Department of Food and Agriculture (CDFA)** will sign compliance agreements with the processors but will not be signing with the growers or transporters this year. Processors will include the compliance agreements and exhibits in their contracts between the processor and growers as well as in their

contracts between the processor and transporters.

Broomrape (*Phelipanche ramosa*) is an invasive weed that presents a clear and present danger to California's agricultural industry due to its harmful impact on crop yields and land values of commercial food crops including, but not limited to, lettuce, tomato, cauliflower, potato, hemp, eggplant, pomegranate, peppers, beans, peas, carrot, celery, mustard, spinach, sunflower, safflower, and fennel. Susceptible food crops, with an economic value at nearly six billion dollars (\$6,000,000,000), may experience up to 70 percent annual crop losses in areas infested with broomrape. Broomrape also impacts commercial seed production and can make agricultural land unusable for planting susceptible crops for decades.

Broomrape represents a clear and present danger to California's natural environment, with susceptible hosts comprising native California flora, including rare or endangered species, such as showy Indian clover (*Trifolium amoenum*), Buck's clover (*T. buckwestiorum*), and Monterey clover (*T. trichocalyx*). The potential long-term damage to California's native biodiversity and environment from this pest may be irreparable and action must be taken to ensure the maintenance, restoration, enhancement, or protection of the environment by developing and involving regulatory procedures for protection of the environment.

The state's agricultural economy and environment could be rapidly and seriously damaged if measures are not expanded to prevent the spread of broomrape, which can produce an estimated 10,000 to 100,000 seeds per infectious plant.

California Department of Food and Agriculture

SURVEY

A new online survey on occurrence and importance of parasitic weeds of (agro-forestry) trees in Africa.

Trees are hosts to a number of parasitic plant species. Two broad categories can be distinguished, based on where they attack the host: root and stem parasites. The main root parasite affecting trees and tree crops in Africa is *Thonningia sanguinea*. It is widely distributed across the region and is known to parasitize coffee, cacao, oil palm and rubber trees. Prominent stem parasitic weeds of trees in Africa are dodder, love vine and mistletoe. Dodders (*Cuscuta* spp.) are a large varied group, though not all species are known as important pests of trees. Species affecting trees and tree crops in Africa (mainly citrus, mango, tea and coffee) include *Cuscuta monogyna*, *C. campestris* and *C. kilimanjari*. Recently *C. reflexa* has been reported on trees in Kenya. Love vine (*Cassytha filiformis*) is easily confused with dodder (*Cuscuta* spp.) due to similar morphology and overlapping host species. It is widely distributed across Africa; economically important hosts include coconut, mango, cashew, avocado and citrus trees. Mistletoe (families Loranthaceae and Viscaceae) is the largest group of parasitic plant species in Africa. Key genera/species include *Viscum* spp., *Tapinanthus* spp., *Phragmanthera* spp. and *Erianthemum dregei*, which have a broad host range. Mistletoes affect numerous tree species of economic and cultural importance, such as shea (*Vitellaria paradoxa*) and cola (*Cola nitida*) in West Africa.

Through a newly launched online survey, we would like to learn and increase the awareness about the occurrence of parasitic plants in trees. We hope to get a better idea on the spread on these parasitic plants, which tree species are commonly affected and how do these plants impact tree (crop) production and rural livelihoods. In addition, we would

like to learn what control methods are used, and whether there are any benefits of these parasitic plants that may require conservation rather than control.

We invite all professionals working on African agro-forest trees, in particular those with recent knowledge on local situations on the ground, to participate in this survey. The general survey link can be found [here for English](#) and [here for French](#).

For respondents from (or with specific knowledge on) Uganda or Benin a dedicated country survey was developed, which can be accessed [here for Uganda](#) and [here for Benin](#).

Thank you very much in advance.

Natalia Cano Marimom and Shiroma Sathyapala - FAO
Samuel SSebulime, Ronald Kisekka and Kasifa Katono - NARO, Uganda
Christine Ajokè Ouinsavi and Fatiou Ibrahim - Université de Parakou, Benin
Debbie Muir - DEFF, South Africa
Jonne Rodenburg - Wageningen University

PROJECT REPORTS

NGO launches campaign to empower farmers to fight *Striga*.

The Forum for Natural Regeneration (FONAR), a non government organisation, has launched a *Striga* Control Awareness Campaign to empower smallholder farmers in the Nabdam District, Ghana, to combat the parasitic weed and improve crop productivity. The campaign, to be implemented in partnership with the Department of Agriculture, seeks to equip farmers with the knowledge and practical strategies to identify, prevent and control *Strig hermonthica* which has become a major threat to the production of staple

cereal crops including sorghum, millet and maize.

The campaign is being funded by Awaken Trees Association of Austria under the Farmer Managed Natural Regeneration for Women's Empowerment and Livelihoods Project (FMNR4WELIP).

S. hermonthica (witchweed) is a root plant parasite that attaches to the roots of its host plants, siphoning water, nutrients and photosynthates. In the Upper East Region, it predominantly attacks sorghum, late millet, maize and upland rice, and is prevalent in all 15 districts of the region. Mr Sumaila Seidu Saaka, the Executive Director of the FONAR, said the initiative was designed to address not only the immediate challenge posed by *Striga* but also the underlying soil degradation and declining fertility that contributed to its spread.

'*Striga* is not just a farming problem; it is a water, energy, food and land restoration problem,' Mr Saaka said, explaining that the loss of trees and declining soil fertility had contributed to the worsening situation. He said FONAR's approach was therefore based on Farmer Managed Natural.

Regeneration (FMNR) and climate-smart agroforestry, which focused on restoring degraded soils, improving water infiltration and bringing trees back onto farms. Mr Saaka said the campaign would promote an Integrated *Striga* Management approach, combining several practices rather than relying on a single method of control. He encouraged farmers to identify *Striga* early, uproot it before it produced seeds and dispose of the weed away from farms to prevent further infestation. He also urged farmers to practise crop rotation, particularly by rotating cereal crops with legumes such as groundnuts and cowpeas, and to apply compost and manure to improve soil fertility. He said farmers should also protect and prune naturally regenerated trees, particularly *Faidherbia*, which could

contribute to soil fertility and provide other benefits to farming communities. Mr Saaka said the campaign would use farmer education materials, radio awareness messages, community engagements and school-based educational materials to expand knowledge on *Striga* control and environmental restoration. He urged farmers who participated in the campaign to become ‘*Striga* control warriors’, adding that the initiative formed part of the wider Trans-Sahara WEFE Nexus Agroforestry Initiative being piloted in Tindongo to promote climate resilience and combat land degradation in the Sahel. Mr Saaka further appealed to District Assemblies to prioritise *Striga* control in their agricultural development plans, saying the parasitic weed threatened food security, rural incomes and local economic development.

Mr Adams Musah, Nabdam District Crop Officer, Department of Agriculture, said *Striga* had become a serious threat to crop production in the district, with several farmers suffering substantial losses. ‘*Striga* is a serious parasite that has affected crop yield in the Nabdam District and we are grateful for this partnership with FONAR for this campaign,’ he said.

Mr Musah John, Secretary to the Paramount Chief of Sekoti, described the training as impactful, particularly because many farmers in the area were struggling with poverty and low agricultural productivity. He said the improved farming practices shared during the training would help farmers increase yields and improve their livelihoods.

Mr Joel Nyenya, a lead farmer from Dasang, said the training had heightened his understanding of the devastating impact of *Striga* on farms. He said although farmers had seen the weed on their farms for years, many were unaware of the extent to which it contributed to declining crop yields. Mr Nyenya said the training had equipped participants with practical measures, including crop rotation, intercropping and

early removal of *Striga* from farms, to control its spread.

Ghana News Agency, August 2026.

Satellite trial puts focus on pest plant (*Cuscuta campestris*).

US Department of Conservation is using high-resolution satellite images to detect the pest plant *Cuscuta campestris* (commonly known as golden dodder) within the Whangamarino wetland and at Lake Whangape. Whangamarino is an internationally significant Ramsar wetland and faces a range of threats from invasive plants and animals.

DOC Technical Advisor Susan Emmitt says the trial project, undertaken by specialist contractor Fabian Döweler (Bushcraft Analytics), has used machine learning to develop a computer model able to recognise golden dodder within satellite images of the wetland. High-resolution satellite images provide detail finer than one square metre per pixel, meaning individual objects such as small patches of golden dodder can be seen from space and located precisely on the ground. All plants and animals reflect light in different ways. The satellite images in this study use part of the light spectrum not visible to the human eye, including near-infrared (NIR) wavelengths, which are particularly useful in identifying golden dodder from other wetland vegetation. Computers identify and classify the distinctive light reflection pattern of particular plant species (spectral signature) captured in an image.

‘This project is an example of remote sensing, allowing crucial conservation data to be gathered from a distance and at a large scale,’ Susan says. ‘DOC was able to request six specific satellite images of Whangamarino from various vendors to support the work.’ Part of Fabian’s brief was to determine how the use of these specific spectral signatures could identify golden

dodder, and the minimum image quality needed. ‘Using machine learning models for the analysis means golden dodder can be identified more rapidly and easily in satellite images particularly with the addition of more training data,’ Fabian says.

The success of the project suggests the use of the technology could be scaled up to identify golden dodder and other pest plants across wider landscapes, he says. Susan says the satellite imagery method gives DOC greater insight into whether its control method for golden dodder is effective or needs refinement or expansion. ‘This method also means we can identify new potential infestations of the pest plant,’ she says. Using satellite imagery removes the potential human error of manual identification and surveillance methods for pest plant work. Another advantage of the satellite imagery analysis is other people or organisations can use and build on the data gained.

Remotely sensed imagery has great potential to improve the efficiency and accuracy of pest plant identification and control. DOC can now look at ways to use this technology and methodology for other conservation work.

DOC: 24 August 2026.

Study proffers solution to cowpea destructive parasite.

A new study, led by researchers from the Foundation for Sustainable Smallholder Solutions (FSSS), has achieved a significant breakthrough in the fight against *Striga gesnerioides*, one of the most devastating constraints to cowpea production in sub-Saharan Africa. According to the Foundation, the new gene-pyramided cowpea lines show strong resistance across multiple *Striga* strains without compromising yield, offering a scalable solution for smallholder farmers. The study was led by a seed system expert, Dr. Isaiah

Gabriel alongside Professor Lucky Omoigui, a seed systems specialist.

The findings identified a subset of cowpea lines that exhibit both low *Striga* infestation and strong yield performance, demonstrating clearly that resistance does not have to come at the expense of productivity. ‘The study also confirms that *Striga* resistance in these lines is governed by two dominant genes, so the issues of gene breakdown have been handled through gene pyrimidine, making it easier to predict and accelerate breeding outcomes. Additionally, the high heritability of both resistance and yield traits suggests that these improvements can be reliably passed on to future generations,’ the Foundation said.

Researchers further observed a strong negative relationship between *Striga* infestation and yield performance, reinforcing the urgent need for resistant varieties as a pathway to improving farmer productivity and strengthening food security.

According to Dr Gabriel, who is also the Lead Researcher and Executive Director of FSSS, ‘This work shows that we can move beyond temporary solutions and develop cowpea varieties that are resilient across different *S. gesnerioides* bio-types in Nigeria. It represents a critical step towards securing the livelihoods of millions of smallholder farmers who depend on this crop. ‘With cowpea serving as a major source of protein (26 per cent) and income across West Africa and Nigeria recognised as the world’s largest produce, the implications of this research are far-reaching. The newly developed lines are now positioned for further field validation and eventual release to farmers in *Striga*-endemic regions.

‘The study is published in Discover Agriculture and is available on our Knowledge Repository for further review,’ he said.

Using advanced marker-assisted breeding techniques, ‘the study successfully combined resistance genes from multiple donor lines into farmers friendly cowpea variety. Unlike conventional approaches that rely on single resistance genes, which often break down over time, this method delivers more durable and broad-spectrum resistance. ‘To ensure real-world relevance, the researchers introduced a novel screening approach by testing the new lines against a composite *Striga* population collected from multiple regions in northern Nigeria. This approach enabled the simulation of diverse field conditions within a controlled environment, increasing confidence in the stability and applicability of the results,’ the Foundation said.

Rauf Oyewole, 15 May 2026.

Huck Institutes announces recipients of nine interdisciplinary seed grants.

UNIVERSITY PARK, Pa. — Penn State’s Huck Institutes of the Life Sciences has awarded nine research teams seed funding for 2026-27. These grants support high-impact, innovative research projects that align with the Huck’s strategic research priorities and have the potential to drive scientific breakthroughs and generate significant return on investment.

The 2026 awarded projects and researchers include: ‘Dissecting and engineering cereal crop resistance against *Striga*, a pernicious parasitic plant, to improve food security’. Principal investigator: Jesse Lasky, professor of biology; with collaborators Charles Anderson, professor of biology and Surinder Chopra, professor of maize genetics.

The Lasky lab recently discovered a strain of sorghum, a cereal grain, that is resistant to *Striga hermonthica*, a parasitic plant also known as witchweed that devastates cereal crops across sub-Saharan Africa. This project will investigate how sorghum

naturally resists *Striga*. By identifying the genes and biological mechanisms underlying this resistance, the team aims to help develop cereal crops that are more resistant to the parasite while also improving nutritional value and resilience to environmental stress.

Keith Hickey, July 28, 202

PRESS REPORTS

Rare parasitic plant blooms in Chernobyl Exclusion Zone.



Bird's-nest orchid flowers spotted in the Chernobyl reserve.

A rare flowering event has been documented in the Chernobyl Radiation and Ecological Biosphere Reserve: the bird's-nest orchid (*Neottia nidus-avis*) has bloomed. Listed in Ukraine's Red Book of endangered species, this plant possesses extraordinary biological traits. It has completely lost its chlorophyll and therefore cannot perform photosynthesis. Instead, it survives through mycoheterotrophy-essentially parasitizing fungi for nutrients. Remarkably, this orchid can remain underground for up to a decade, only sending up a flowering stalk around its tenth year of life. Once it blooms, the flowers can last for as long as two months.

The blooming of the bird's-nest orchid in the Chernobyl reserve and the expansion of green zones in Kyiv underscore Ukraine's environmental conservation efforts.

These examples demonstrate the importance of protecting rare plant species and actively implementing green policies in cities-actions that can positively impact the country's ecological health. Such changes also help raise public awareness about the need to safeguard natural resources and biodiversity.

Anna Tkach.

Rare Samar *Rafflesia* rediscovered in protected forest after 15 years.



The endangered Samar Rafflesia (*Rafflesia manillana*), one of the Philippines' rarest flowering plants, blooms inside the protected forests of Samar Island Natural Park. (Photo courtesy of DENR–Samar Island Natural Park)

TACLOBAN CITY – One of the country's rarest flowering plants, the endangered Samar Rafflesia (*Rafflesia manillana*), has been documented once again inside the protected forests of Samar Island, marking its first confirmed sighting in 15 years and underscoring the island's status as one of the Philippines' most important biodiversity hotspots. The rare parasitic plant was recorded during an exploratory survey conducted by the Samar Island Natural Park

(SINP) Protected Area Management Office, which wanted to determine the current distribution and condition of these species within the country's largest terrestrial protected area.

The Samar *Rafflesia* was last documented in March 2011. Its recent rediscovery provides conservationists with renewed hope that viable populations of the endangered species are surviving despite increasing threats to forest ecosystems. The identity of the plant was confirmed by botanists Dr. Pastor Malabrigo Jr. and Dr. Julie Barcelona, both recognized experts in Philippine plant biodiversity. The survey aimed to locate and map existing populations of *Rafflesia manillana* and gather field data would guide future conservation strategies, habitat management, and long-term monitoring of the species.

Under Department of Environment and Natural Resources (DENR) Department Administrative Order No. 2026-20, *R. manillana*, locally known as the Samar Rafflesia, is classified as an endangered species due to its extremely limited distribution and vulnerability to habitat destruction. Unlike ordinary flowering plants, *Rafflesia* is a holoparasitic species that survives entirely by attaching itself to the roots and stems of vines belonging to the genus *Tetrastigma*. It has no leaves, stems, or roots of its own and spends most of its life hidden inside its host before producing a massive flower that blooms for only a few days. Its distinctive odor, often compared to decaying flesh, attracts flies that serve as its pollinators.

The Samar Island Natural Park, spanning the provinces of Samar, Northern Samar, and Eastern Samar, covers more than 333,000 hectares, making it the largest terrestrial protected area in the Philippines under the National Integrated Protected Areas System (NIPAS). The park preserves one of the country's last remaining expanses of old-growth tropical rainforest and serves as a

critical watershed supplying water to hundreds of communities across the island.

Apart from the Samar Rafflesia, SINP is home to numerous endemic and threatened wildlife species, including the Philippine eagle, Philippine tarsier, Philippine warty pig, Philippine spotted deer, Philippine flying lemur, the Samar hornbill, and several species of rare amphibians, reptiles, orchids, and forest trees found only on Samar Island. Environmental officials said the rediscovery demonstrates the continuing ecological importance of the protected area and reinforces the need to strengthen biodiversity monitoring and forest protection efforts against illegal logging, land conversion, poaching, and other human activities that threaten fragile ecosystems.

The Protected Area Management Office said it remains committed to expanding scientific research and conservation initiatives to safeguard the Samar Rafflesia and other rare species inhabiting the park.

Joey A. Gabieta, June 30, 2026

The mistletoe that doesn't need Christmas to creep up.

It looks like an alien hand or foot and the pretty white fruit you'd expect are missing ... but this version is not all bad.

At a recent bush regeneration session, I and other local volunteers came across a most unusual parasitic plant – jointed mistletoe (*Korthalsella rubra*), also known as ruddy mistletoe or ribbon-stemmed mistletoe. This mistletoe looks absolutely nothing like the northern hemisphere species featured in so many Christmas stories, with its pretty white fruit. Jointed mistletoe is notable for its broad, flattened leaf-like stems, punctuated at intervals by joint-like nodes. Overall, it looks like an alien hand or foot!



Some of the peculiar features of jointed mistletoe include these funny bubbly structures at the stem joints, which are the plant's fruits. Photo: Keith Horton

Mistletoes are parasitic plants, growing on a range of other plant species, usually without being fatal to their hosts. Hosts for jointed mistletoe include a range of rainforest trees; David Watson's 'Mistletoes of Southern Australia' lists 22 different host species. In the Illawarra region, most reports of jointed mistletoe are on sassafras (*Doryphora sassafras*), a common

and widespread tree across the region. One surprising thing with this particular jointed mistletoe was that it was growing on a weed, the jerusalem cherry (*Solanum pseudocapsicum*), which is one of the most widespread weeds in the area we were working – at the Illawarra Rhododendron and Rainforest Gardens.

We had only just been talking about the benefits of working slowly, rather than gung-ho hack and slash, when we spotted the mistletoe. Creepy or not, jointed mistletoe is one of many interesting things you might see if you slow down and spend some time in local bushland. And, contrary to common belief, mistletoes have major biodiversity benefits. They attract additional birds and insects to the trees where they grow, giving a pollination and fertiliser boost as they do so. Watch out for mistletoes in trees near you; in urban Wollongong, you can often see erect mistletoe (*Amyema congener*) growing on the bottlebrushes (*Callistemon* sp.) widely planted on verges.

Emma Rooksby, June, 2026.

Seeking the benefits of a parasite, often considered purely detrimental



Woolly lousewort blooms tower over shorter tundra plants in the northern foothills of the Brooks Range in Arctic Alaska.
(Photo by Jonathan Carcache)

This time of year, when berries fill my thoughts, the early summer blooms that begot them are hazy in my mind. As I pick, I try to remember that my belly and bucket are full thanks to these flowers and their pollinators. And to my surprise, as I learned this summer, perhaps a parasitic plant is also to thank. Enter woolly lousewort, or *Pedicularis lanata*. It's one of Alaska's dozen or so native parasitic plants. It reappears from its taproot in the tundra every spring with hairy leaves that huddle together to form a silvery, fluffy cone.

Despite lousewort's humble emergence, its ecology could prompt scientists to reconsider the role of plant parasites as solely detrimental. The species is considered a hemiparasite. A true parasitic plant cannot photosynthesize effectively enough to obtain all the nutrients it needs, so it steals food (sugars) from host plants. In contrast, a hemiparasite can photosynthesize to make its own sugars, but does steal water and other nutrients from its host.

As spring moves to summer, louseworts unfurl to reveal finely dissected leaves with wine-colored tips. A tall column of deep pink flowers extends to the sky. Lousewort's towering blooms could help produce more berries in the Arctic tundra, according to visiting graduate student Jonathan Carcache. Many tundra plants have small, unassuming flowers. The delicate pink bells of tundra blueberry bushes hide under larger and more plentiful leaves. Bearberry's faint yellow blooms blend into the tundra's early summer palette. Clusters of white lingonberry flowers hug close to the ground.

After spending a couple of summers observing pollinators in Alaska's Arctic, Carcache, now a Ph.D. student at Florida Atlantic University, suspected that lousewort's pillar of vibrant magenta flowers acts as a magnet. It draws in pollinators to both its flowers and those of surrounding plants. As pollination increases,

Carcache proposes, so will the number of fruits and seeds. This would offset the cost of lousewort's parasitism.

Graduate student Jonathan Carcache takes a break next to woolly lousewort and arctic mountain heather while visiting one of his research plots near Toolik Field Station in Arctic Alaska. 'You hear 'parasite' and you think, 'This is bad.' But it could be offering other resources that we're not yet envisioning,' Carcache said.

Carcache spent this summer at the University of Alaska Fairbanks' Toolik Field Station as an early-career Tundra awardee with support from the Organization of Biological Field Stations and the Maxwell/Hanrahan Foundation. He sought out lousewort in the foothills of the Brooks Range to test whether the parasite benefits the neighboring plants it targets. Carcache needed to answer two questions. Did plants near louseworts receive more pollen because they attracted more pollinators? And did that result in more successful fruits and seeds? For this past summer, he focused on *Cassiope tetragona*, or arctic white heather, a widespread tundra plant. But he hopes to expand to other plants in future work.

Alaska Native News , 24th September, 2026.

Cambodia and nature: *Sapria poilanei*, the ghost flower of the Cardamoms.

In December 2010, wildlife photographer Jeremy Holden, on assignment for the conservation group Fauna & Flora International (FFI), pushed into the wet forest of Phnom Samkos, the highest peak in southwestern Cambodia. On a climbing vine, he found around twenty fleshy buds, one of them freshly open: a thick, waxy corolla mottled red, white and yellow, with a texture that looks almost animal. It wasn't an orchid, or a fungus. It was *Sapria poilanei*, a

parasitic plant that science had barely seen since the 1930s.



Sapria poilanei flower.

Sapria poilanei belongs to the Rafflesiaceae, the family made famous by *Rafflesia arnoldii*, the largest flower on Earth, found in Indonesia. Like its giant cousin, *S. poilanei* is holoparasitic: over the course of its evolution it lost the ability to photosynthesize entirely. No leaf, stem or root betrays its presence between flowerings. The whole plant lives inside the roots and stems of a host vine of the genus *Tetrastigma*, siphoning off water and nutrients much as a fungus would from a tree. The only outward sign of its existence is a bud, which takes months to form before opening into a fleshy flower 6 to 12 centimetres across, streaked white on dark red. The bloom lasts only a few days. Once it fades, the plant withdraws back into invisibility, hidden inside its host's tissue until the next cycle.

The story of *Sapria poilanei* is one of rediscovery. First described by French botanist François Gagnepain in the late 1930s, based on specimens collected in the Cardamoms, the species then disappeared from scientific records for decades — a casualty of the upheavals Cambodia went through and the remoteness of its last untouched forests. It was not until 2000 that a team relocated it on Phnom Samkos, confirming the plant had not gone extinct, only escaped observation. The genus *Sapria* has only four known species worldwide, all native to the

mountain forests of Southeast Asia: *S. himalayana*, widespread from northeastern India to Vietnam (**see item in *Haustorium* 89**); *S. ram*, found only in Thailand; *S. myanmarensis*, described in Myanmar in 2019; and *S. poilanei*, whose confirmed range is limited to Cambodia's Cardamom Mountains. It remains, to date, the only member of the Rafflesiaceae family recorded in Cambodia.

The International Union for Conservation of Nature (IUCN) lists *S. poilanei* as Endangered. Its biology makes it doubly vulnerable: with no leaves or roots of its own, it cannot survive without the *Tetrastigma* vine that hosts it, which in turn depends on intact primary forest. Any logging or clearing that removes the host condemns the parasitic plant along with it — a plant that is, by nature, invisible except during its brief bloom, and therefore hard to survey, protect, or even anticipate on the ground. The Cardamoms, where it was found, form one of the last stretches of largely intact tropical forest left in Southeast Asia: more than 4 million hectares straddling Cambodia, Thailand and Vietnam, nearly half of it now under some form of protection. *S. poilanei* is just one resident among many, but its ghostly, almost unreachable existence sums up what makes this massif so valuable: species that science discovers, loses, and rediscovers, entirely at the mercy of how much intact forest remains to shelter them.

CambodgeMag Editorial team, 24 July, 2026.

ZOOMINARS

September 2nd, 2026.

Yukihiro Sugimoto, Kobe University, Japan
‘Tandem gene duplication drives the molecular evolution of orobanchol in cowpea.’

Qia Wang, Kunming Institute of Botany, Chinese Academy of Sciences, China
‘Origins and evolution of strigolactone signalling systems driven by horizontal gene transfer.’

CONGRATULATIONS

Torrey Monograph Award

Recipient - Dr. Daniel L.

Nickrent - in recognition of Daniel L.

Nickrent and Azam Baharlouei. 2026.

New York aquatic plants: imaging the diaspore collection of Walter C.

Muenschner. The Journal of the Torrey Botanical Society, 153(3), 221-335L

<https://doi.org/10.3159/TORREY-D-25-00022.1>

A response:



‘Who could have predicted that a child, born and raised in Central Illinois where the landscape is dominated by *Zea* and *Glycine*, would end up traveling the world studying plants. My long journey was punctuated by several pivotal experiences that shaped my interest in botany and helped me discover my talents within that field. More precisely, those catalysts were people who took an interest in me and helped my development

through thoughtful mentoring. My curiosity about nature grew from early experiences hunting and fishing with my father to observing birds and insects. But as a freshman at Illinois State University (ISU), my animal bent changed when I was accepted into an NSF Undergraduate Research Participation program at Old Dominion University (ODU) in Norfolk, Virginia. I joined an ongoing effort to document the flora of the Great Dismal Swamp in Virginia and North Carolina (despite at the time only knowing the scientific names of two plants: *Daucus carota* and *Acer rubrum*!). The lead investigator on this project was Dr. Lytton Musselman, who gave me the following instructions: 'That way is the Dismal Swamp and that way is the herbarium – learn the plants!' And so, I did just that. By the end of that summer, I knew the scientific names of over 600 plants.

In 1975 I switched from ISU to Southern Illinois University Carbondale (SIUC) to continue my formal botanical education. I recall taking a particularly valuable class that was taught by Dr. Robert Mohlenbrock called the Taxonomy of Cultivated Plants. This ended up being useful because, when hearing I was a botany major, the most common question people asked me was, 'I have this houseplant, I don't know its name, but it's sick, and . . .'. After graduating from SIUC, I returned to ODU and entered their master's program. The pteridologist Warren 'Herb' Wagner had gotten Dr. Musselman excited about log ferns (*Dryopteris*) in the Great Dismal Swamp, so this was my initial project. Dr. Musselman was also an expert on parasitic flowering plants, and he made me aware of a summer research position working with the USDA on witchweed (*Striga*). I jumped at this opportunity, and the resulting research on haustorial development and floral biology of *Striga* constituted my master's thesis. Mention should be made of a course entitled Aquatic and Wetland Plants, taught by Dr.

Musselman, that primed my interest and training for the topic of this monograph.

My Ph.D. dissertation research took place at Miami University (MU) in Oxford, Ohio. Although my advisor, Dr. W. Hardy Eshbaugh, worked on chili peppers (*Capsicum*), he supported my focus on parasitic plants. My switch from working on a root parasite to dwarf mistletoes (*Arceuthobium*) was influenced by discussions with fellow graduate student Dr. Charles Werth, who suggested isozyme electrophoresis could be used to address taxonomic issues in this nettlesome group. With funding from an NSF doctoral dissertation improvement grant, I studied the populations of these mistletoes in the western U.S., made extensive collections, conducted laboratory work, and finished my dissertation in 1984. While at MU, I joined a field studies class on Andros Island, Bahamas, offered by Dr. Eshbaugh and Dr. Thomas K. Wilson. During this period, I purchased my first 35-mm camera, thus marking the beginning of my lifelong interest in botanical documentation through photography.

After graduation I accepted a position as Assistant Professor at the University of Illinois Urbana-Champaign. There, a new lab established by Dr. Carl Woese and other College of Science faculty, which focused on sequencing ribosomal RNA, allowed me to apply this methodology to parasitic plants. My work centered on the sandalwood order (Santalales), research that helped me obtain NSF funding. As an Affiliate Scientist with the Illinois Natural History Survey, I was fortunate to work with Dr. Kenneth Robertson. Together we photographically documented hundreds of plants that later were incorporated into several websites (see below).

In 1990 I joined SIUC as an Assistant Professor in Plant Biology and director of the herbarium, and in 1994 was promoted to Associate Professor. With the help of

another NSF grant entitled Molecular Phylogenetic Studies of Parasitic Plants, my research program expanded to include holoparasites that lack photosynthesis. This period was also marked by much international travel and collaborations. In 2008 work on in the Philippines was supported by a grant from the National Geographic Society, a collaborative effort with Drs. Julie Barcelona and Pieter Pelser. In 2010 we launched *Co's Digital Flora of the Philippines*, which is the only complete and continually updated listing of the plants from this biodiversity hotspot. The photos on that website were, at the time, hosted at SIUC, but are currently made available on CUBIC (Cornell University Botanical Image Collection).

I officially retired from SIUC in 2014, but have continued working on a number of research projects. In 2018 I joined Drs. Peter Fritsch and Darin Penneys as co-principal investigator on an NSF-funded project documenting the flora of the Southern Philippines. This work has led to the description of new species and produced thousands of high-quality photos documenting this rich tropical flora. In 2021 I relocated to Ithaca, New York, as Adjunct Professor in Plant Biology. Working in the L. H. Bailey Hortorium Herbarium presented the opportunity to examine the historical aquatic plant seed collection made by Walter Muenscher.

The field of systematics and evolutionary biology is advancing rapidly, fueled by NextGen DNA sequencing, cell phone cameras, artificial intelligence, and vast online databases. These advances broaden our knowledge while revealing many new questions to explore. While my research has embraced molecular approaches, I remain connected to the organisms themselves. It is indeed a thrilling time to be a scientist and a lifelong learner, with each new tool offering another doorway to understanding the natural world.'

About the Torrey Monograph Award:

The editors of The Journal of the Torrey Botanical Society periodically identify a prominent botanist or ecologist to receive the Torrey Monograph Award. This individual is awarded \$500 and a one-year membership in the Torrey Botanical Society. In addition, the awardee is invited to author a peer-reviewed monograph or taxonomic review to be published in the Journal, and to present his or her research as a part of the Torrey Botanical Society's Seminar Series.

Editors' note: Dan Nickrent is a valued contributor to *Haustorium* and is responsible for the 'Parasitic Plant Collection' website providing a wealth of information on the full range of parasitic plants.

EDITOR's DELIGHT



One of several patches of *Orobanchae hederaceae* on Atlantic ivy, *Hedera hibernica*, the commoner form of ivy in western UK – virtually on my doorstep at St Monica's Retirement Village in Bristol. No - I did not sow it! We also have some *O. minor* on *Delphinium* and *Rumex sanguineus*. But sadly no mistletoe or dodder.

Chris Parker.

MEETING REPORT

ORO-STRESS 2026 - 6th International symposium on broomrape in sunflower & 1st meeting on sunflower biotic and abiotic stress, held in Novi Sad, Serbia, at the Sheraton Hotel, from 15–18 June 2026.

Relevant papers presented (P = poster):

- Broomrape severity: virulence and environmental factors. - Boško *et al.*
 Assessing disease stability. - Mirleau-Thebaud, V. and Alberto, M-S..
 Spread of sunflower broomrape into new areas: measures to prevent its introduction into Argentina. - Nedilskyj, M. *et al.*
 Global virulence, genetic diversity and population structure in sunflower broomrape. - Velasco, L. *et al.*
 Genetic diversity among geographically distinct samples of *Orobanche cumana* revealed by SSR fragment analysis. - Belova, M. *et al.*
 (P) Genetic diversity and population structure of sunflower broomrape from republic of Moldova. - Del Moral, L. *et al.*
 (P) Comparative genomics of Spanish *Orobanche cumana* populations representing races FGV and F+CU using short- and long-read sequencing. Macías-Zabala, C. *et al.*
 Genetic insights into the sunflower-broomrape parasitic interaction. - Pérez-Vich, B. and Velasco, L.
 Genetic resistance to sunflower broomrape: breaking the myth of cumulative resistance. - Martín-Sanz, A. *et al.*
 CRISPR/Cas-based modulation of sesquiterpene lactone biosynthesis confers enhanced broomrape resistance in sunflower (*Helianthus annuus* L.). – Kubilay, Y. *et al.*
 A TKP candidate underlying OrDeb2-mediated resistance to *Orobanche cumana* in sunflower. Fernández-Melero, B. *et al.*

- Population structure at the HaOr7 gene reveals the key role of marker-assisted selection in breeding broomrape-resistant open-pollinated sunflower varieties. - Savichenko, D. *et al.*
 (P) Generalist vs. specialist: tailoring genetic resistance in oilseed crops to combat broomrape. - Marjanović Jeromela, A. *et al.*
 (P) Greenhouse screening of Jerusalem artichoke against sunflower broomrape race G from Serbia. – Jocković, J. *et al.*
 (P) Transcriptional responses of sunflower (*Helianthus annuus* L.) to *Orobanche cumana* Wallr. in early host-parasite interactions. – Duca, M. *et al.*
 (P) Wild *Helianthus* species as sources of resistance to *Orobanche cumana*. - Anton Florin, G. *et al.*
 (P) Combined field and greenhouse assessment of broomrape (*Orobanche cumana*) resistance in sunflower genotypes. – Nemanja, C. *et al.*
 (P) Study of important biochemical indicators and disease resistance of sunflower hybrids under stress conditions. – Nenova, N. *et al.*
 Novel sources of resistance from crop wild relatives to *Orobanche cumana* infestations in sunflower (*Helianthus annuus*. Gielen, J. *et al.*
 (P) New sources for broomrape race G found in wild *Helianthus* species. – Jocković, M.
 (P) Towards gene editing strategy to broomrape resistance. – Jocković, M.
 (P) New sunflower restorer lines originated from wild *Helianthus* species. – Valkova, D. *et al.*
 Evaluating for broomrape parasite tolerance of some interspecific and intergeneric sunflower hybrids. – Bayraktaroglu, N.-G. *et al.*
 (P) Genomic characterisation of sunflower resistance to *Orobanche cumana* race g: pool-seq and k-mer analysis reveal a shared origin with spanish resistance donors. – Grigoryan, M. *et al.*
 When environment meets genetics: stability and molecular signals of broomrape

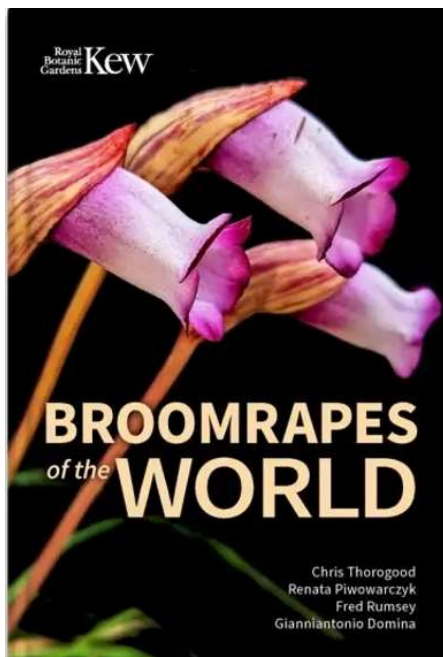
- resistance in sunflower. - Vukosavljev, M. *et al*
- When parasitic weeds fight back: understanding resistance to herbicides in *Orobanche cumana* Wall. - Martín-Sanz, A. *et al*.
- Potential of biofumigation with Brassicaceae cover crops for the management of sunflower broomrape – Roudaire, T. *et al*.
- Compost amendments: their effect on *Orobanche cumana* in a field experiment and on the development of cover crops and sunflower in a pot experiment. - Domínguez Carmona, A. *et al*.
- (P) The use of sequence pre-emergent herbicide and imazapir for boomrape control in Bolivia. – Franco, P.

Abstracts available at:

file:///C:/Users/chris/Downloads/bitstream_15866.pdf

BOOK

Broomrapes of the world. Thorogood, C., Piwowarczyk, R., Rumsey, F., Domina, G. 2026. Kew Publishing Royal Botanic Gardens, Kew 624 pp. £60.00.



This magnificent volume covers not only those genera we refer to as ‘broomrapes’ but also the full range of holoparasites in the family Orobanchaceae, including *Cistanche*, *Hyobanche*, *Lathraea*, etc, etc. The authors estimate the existence of 320 such species, 221 of which are lavishly illustrated, each with at least one full-page photograph from a wide range of contributors. In addition, Chris Thorogood’s fine artistic talent is evident in a colourful frontispiece, occasional supplementary illustrations and in numerous line drawings of *Orobanche* and *Phelipanche* species, together with detail of individual flowers. There are introductory chapters on Life Cycle and Biology, Morphology, Reproduction, Habitats, Ecology and Distribution, Traditional Uses and Conservation.

The main section – ‘Species’ is arranged alphabetically by accepted Latin name, following customary separation of *Orobanche* and *Phelipanche*. Rather notably there are no keys.

Treatment of individual species includes habit, details of morphology, host range, ecology and distribution, with all-important ‘key diagnostics’ and ‘similar species’.

End sections include a comprehensive Glossary, Selected References and Further Reading, Index of Broomrapes, and Index of Host Plants.

Not a pocket book to carry in the field - 1.8 kg - but a superb addition to the shelves of any serious student of parasitic plants.

The Editors.

THESES

NB. The following abstracts have been reduced with the help of AI – our ONLY use of AI in the preparation of this newsletter.

Thixton-Nolan, Hana, 2026. Phylogeography, fungal host specificity, and fitness in the *Corallorhiza maculata* species complex (2026). PhD. West Virginia University. Supervisors Craig F. Barrett and Edward Brzostek

Abstract:

This thesis investigates genomic variation, fungal host specificity, and germination in the mycoheterotrophic *Corallorhiza maculata* species complex across North America. Plastid genome analyses revealed varying degrees of degradation and structural variation, including unprecedented structural heteroplasmy in one individual. Combined genetic, morphological, and fungal metabarcoding analyses supported a lack of differentiation between the northern varieties *maculata* and *occidentalis*. Fungal associations appeared broader than previously recognized, with plant genotypes potentially influencing host selection. Although field germination assays yielded no recoverable seeds, *in vitro* assays achieved what the author reports as the first documented asymbiotic germination of a mycoheterotrophic species. These findings highlight the importance of sampling below the species level and open new possibilities for research and conservation.

Nien, Ya Chi. 2025. Trans-species microRNA biogenesis, export, and host ARGONAUTE loading in the parasitic plant *Cuscuta campestris*. PhD. Penn State University. Supervisors Charles Anderson and Michael Axtell.

Abstract:

This thesis investigates the biogenesis, movement, and function of trans-species microRNAs (miRNAs) delivered by the parasitic plant *Cuscuta campestris* to silence

host genes. The findings show that these miRNAs are produced and processed within the parasite before moving into host tissues. Their accumulation depends on parasite DICER-LIKE 1, rather than the corresponding host enzyme. Within the parasite, trans-species miRNAs predominantly accumulate as miRNA/miRNA* duplexes, avoiding loading onto parasite ARGONAUTE (AGO) proteins. Following delivery, they are selectively loaded into host AGO1. These results support a model in which AGO-free duplexes enable transport and host-specific activation while limiting self-targeting. The thesis provides a framework for understanding how parasitic plants manipulate host gene expression, although the mechanism directing selective AGO loading remains unresolved.

FUTURE MEETINGS

4th International Congress on Strigolactones (ICS2026). Paris, 5-8 October 2026. Please see:
<https://ics2026.sciencesconf.org/>

GENERAL WEBSITES

- For information on the International Parasitic Plant Society, past issues of *Haustorium*, etc. see:
<http://www.parasiticplants.org/>
- For a description of the PROMISE project (Promoting Root Microbes for Integrated *Striga* Eradication), see:
<https://promise.nioo.knaw.nl/en>
- For PARASITE - Preparing African Rice Farmers Against Parasitic Weeds in a Changing Environment: see
<http://www.parasite-project.org/>
- For the Toothpick Project – see
<https://www.toothpickproject.org/>
- For the Annotated Checklist of Host Plants of Orobanchaceae, see:
<http://www.farmalierganes.com/Flora/An>

[giospermae/Orobanchaceae/Host_Orobanchaceae_Checklist.htm](https://www.push-pull.net/giospermae/Orobanchaceae/Host_Orobanchaceae_Checklist.htm)

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 information on future Mistel in derTumorthérapie 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/literatur_suche (in German but can be searched by inserting author name).

For an excellent publication by the Universidade Federal do Rio Grande do Sul on Southern Brazilian Mistletoes (Dettke, G.A. and Waechter, J.L. 2013) see: science.fieldmuseum.org/fieldguides/search?search=mistletoe

LITERATURE

Abdelkader, M., Elkordy, A., Abdelaal, K. Said, A.A. and Ridwan, A.R.M. 2026. Elucidating the tolerance mechanisms of faba bean (*Vicia faba* L.) to bean broomrape (*Orobanche crenata* Forssk.) infested soil. Scientific Reports 16: (<https://doi.org/10.1038/s41598-026-59757-4>) [In a comparison of a range of available varieties, Giza 429 had least infestation by *O. crenata* and yielded highest.]

Abebe, M., Woldu, Z., Asfaw, Z. and Warkineh, B. 2026. Projecting the spatio-

temporal habitat suitability of *Striga hermonthica* under climate change scenarios in Ethiopia using ensemble modelling. Scientific Reports: (<https://doi.org/10.1038/s41598-026-58168-9>) [Under current climate conditions, approximately 250,000 km² were found suitable for *S. hermonthica*. Projections indicate a likely expansion of its range. Northern, northwestern, western, and eastern lowlands of Ethiopia are identified as risk areas.]

Acar, P., Kim, W., Jost, M. and Wanke, S. 2026. Blind spots in KMGBF implementation: threatened parasitic plants missing from DSI evidence. World Biodiversity Forum 2026, Davos, Switzerland, 14–19 Jun 2026. (<https://doi.org/10.5194/wbf2026-849>) [Noting the inclusion of *Cytinus hypocistis*, *Orobanche pancicii*, *Sapria himalayana*, *Hydnora triceps*, *Rafflesia philippensis* and *Pilosyles thurberi* in the KMGBF Framework but regretting the absence of many other relatively endangered parasitic plants.]

Adnan, B.A., Purnomo, P. and Hadisusanto, S. 2026. The status of the endangered *Rafflesia* and conservation efforts in Java Island, Indonesia. Jurnal Penelitian Kehutanan Wallacea, 15(1): 49-58. (<https://doi.org/10.65844/2407-7860.1198>) [Describing the status of *R. patma*, *R. rochussenii*, and *R. zollingeriana* in Java, all threatened with extinction due to human activities that cause habitat loss and fragmentation, arguing for reinforcement of laws and acts to conserve and protect this genus.]

Affholder, J. and 12 others. 2026. Strigolactones and sesquiterpene lactones induce *Orobanche cumana* germination via KAI2d receptors through distinct processes. The Plant Journal 126: (<https://doi.org/10.1111/tpj.70852>) [Demonstrating that at least four OcuKAI2d proteins function as receptors for both canonical and non-canonical SLs. which interact with the sunflower-derived SqTL, (-)-DCL by forming a

- covalent adduct on a histidine residue within the binding pocket, adjacent to the serine of the catalytic triad.]
- Akbarihajat, H., Nosratti, I. and Diyanat, M. 2026. Evaluation of the use of allelopathic potential of different vetch species for control of broomrape (*Orobanche aegyptiaca*) in sunflower (*Helianthus annuus* L.). Journal of Agricultural Science and Sustainable Production 36(2) 239-254. ([10.22034/saps.2025.61816.3227](https://doi.org/10.22034/saps.2025.61816.3227))
- [‘Living mulch’ (interplanting?) of *Vicia villosa* was superior to *V. pannonica* and *V. villosa* subsp. *varia* in causing the greatest reduction in *P. aegyptiaca* and the least (5%) reduction in sunflower yield.]
- Alanagh, H.R. and 9 others. 2026. Mistletoe- and mussel-inspired fabrication of hierarchically structured protein-cellulose scaffolds from biomolecular condensates. Advanced Materials 38(13): (<https://doi.org/10.1002/adma.202520827>)
- Alburo, H.M., Alburo, R.P., Reintar, A.R.T. and Quinones, G., 2026. Birds feeding on Cebu mistletoe *Lepeostegeres cebuensis* (Loranthaceae) in Nug-as Forest, Alcoy, Cebu, Central Philippines. ASEAN Journal of Scientific and Technological Reports 29(8): (11 species in 7 families of birds were recorded. *Aethopyga bella*, *A. magnifica*, *Dicaeum pygmaeum*, *Zosterops everetti*, and *Parus elegans* fed only on nectar, while *Cinnyris jugularis* and *D. australe* fed on both nectar and fruits. *D. australe* was observed as the main agent of dispersal.]
- Aliverdi, A. and Salehi, F. 2026. Co-application of potassium silicate and silicate-solubilizing bacteria mitigates yield loss in niger (*Guizotia abyssinica*) infested by dodder (*Cuscuta campestris*). Journal of Plant Nutrition 49(10): 1736–1745. (<https://doi.org/10.1080/01904167.2026.2667890>) [Soil application of K_2SiO_3 2 kg ha⁻¹ and silicate-solubilizing bacteria 600 ml ha⁻¹ improved the seed yield of dodder-parasitized niger by 126.1%, whereas these treatments were ineffective when applied individually.]
- Alwan, S.H., Al-Khesragi, T.O. and Al-Samarrai, G. 2026. Host range, host preference and geographical distribution of five *Cuscuta* species growing in Salah-Adin Governorate - North-Central Iraq. Samarra Journal of Pure and Applied Science 8(2): 165–185. [Five *Cuscuta* spp. were identified, namely *C. approximata* (on 5 wild herbaceous species), *C. australis* (on 20 wild host species including 2 monocots), *C. campestris* (on 18 wild species), *C. monogyna* (on *Populus euphratica* in Tikrit district only) and *C. pedicellata* (on 6 wild herbaceous species.)]
- Anyszka, Z., Golian, J. and Borkowski, J. 2026. The studies on the parasitism of branched broomrape (*Phelipanche ramosa* L.) on some root vegetables from the Apiaceae family. Agronomy Science 81(1): (<https://doi.org/10.24326/as.2026.5600>) [Confirming *P. ramosa* can attack carrot, parsley and celeriac.]
- Babayola, M., Ahmed, M. and Oaya, C.S. 2026. Effects of *Striga* (*Striga gesnerioides* Wild Vatke) on the growth and yield of some cowpea [*Vigna unguiculata* (L.) Walp.] varieties in Mubi, Adamawa State Nigeria. ADSU Global Journal of Geography and Environmental Sciences 5(2): [Confirming SAMPEA-14 as the best of 4 improved varieties with highest yield and complete resistance to *S. gesnerioides*.]
- Bai, F.H., Nie, X.Y., Lu, G., Cheng, G.Q., Liu, X.Y. and Xu, T.L. 2026. *et al.* Effects of differential salt stress on seed germination and seedling physiological-biochemical characteristics in *Pedicularis kansuensis*. Russian Journal of Plant Physiology 73: (<https://doi.org/10.1134/S1021443725606512>) [Concluding that *P. kansuensis* can tolerate mild to moderate salt stress (up to ~60 mmol L⁻¹) but is unsuitable for

- highly saline environments, providing insights into its potential use in revegetation of moderately salinized grasslands.]
- Balios, V.A., Ortega, S., Heia, K., Avetisyan, A. and Krause, K. 2026. Assisting species differentiation and taxonomic classification by hyperspectral imaging: an example from the parasitic plant realm. *Plant Methods* 22(14): (<https://doi.org/10.1186/s13007-025-01498-y>) [A highly detailed, careful study demonstrating the effectiveness of hyperspectral imaging combined with machine learning to detect, identify and classify 4 different *Cuscuta* species.]
- Barea, L., Angra, D., O'Sullivan, D.M., Ávila, C.M., Bouhadida, M., Torres, A.M. and Gutierrez, N. 2026. Combining two high-density QTL maps with a reference genome to identify candidate genes for morphology, yield, and biotic resistance in faba bean (*Vicia faba* L.). *Frontiers in Plant Science* 17: (<https://doi.org/10.3389/fpls.2026.1832555>)
- Barutwanayo, J.P., Oluyinka, I., Maazou, A.R.S., Muui, C.W. and Gitari, H.I. 2025. *Striga* infestation responses, heterotic alignment, and genetic diversity of inbred maize lines. *International Journal of Agriculture, Environment and Biotechnology* 18(04): 297-312. [Identifying maize lines with resistance to *S. hermonthica* which could be utilized in maize breeding programmes to enhance production in Sub-Saharan Africa.]
- Bawin, T., Evenstad, A., Didriksen, A., Martinez, G. and Krause, K. 2026. Phytochrome-mediated light perception in dodders drives haustorium development through epigenetic mechanisms. *Plant and Cell Physiology* 67(4): 685–699. (<https://doi.org/10.1093/pcp/pcag043>) [Demonstrating that far-red light perception in *Cuscuta campestris* engages both transcriptional and epigenetic regulation to drive haustorium development, reflecting adaptations in light signalling cascades that underpin its parasitic lifestyle.]
- Bhat, R.M., Yadav, S.R. and Shimpale, V.B. 2026. Inverted meiosis and holocentric chromosome behaviour in *Cuscuta janarthanamii* (Convolvulaceae), an endemic dodder species of the Western Ghats, India. *Nucleus* (2026). (<https://doi.org/10.1007/s13237-026-00679-x>)
- Bivins, C. P., and Mujic, A.B. 2026. Ectomycorrhizal fungal composition shows structured spatial variation around *Sarcodes sanguinea* and *Corallorhiza striata*. *American Journal of Botany* 113(4): (<https://doi.org/10.1002/ajb2.70183>)
- Bürger, M. and Schneider, A.C. 2026. Genomes of *Conopholis americana* and *Epifagus virginiana*: two holoparasitic plants (Orobanchaceae). *G3 Genes|Genomes|Genetics*, (<https://doi.org/10.1093/g3journal/jkag169>) [PacBio HiFi was used; the *C. americana* assembly totals 1.82 Gb and *E. virginiana* totals 440 Mb, a 4-fold difference in genome size. Respectively 33,889 and 21,031 genes for these sister taxa were identified, where LTR retrotransposons account for 78% of the genome size difference.]
- Cerdeña, J., Farfán, J., Bustos, E.N. and Vargas, H.A., 2026. On the natural history of the Andean buckeye *Junonia vestina livia* (Nymphalidae) in the arid environments of the western slope of the Central Andes. *The Journal of the Lepidopterists' Society*, 80(1): 57-61. (<https://doi.org/10.18473/lepi.80i1.a8>) [Confirming *Neobartsia peruviana* as a major host of *J. vestina livia*.]
- Cerioti, L. F. and 12 others. 2026. **Reshaping organellar translation and tRNA metabolism: the consequences of photosynthesis loss and massive horizontal gene transfer.** *Molecular Biology and Evolution* 43(4): (<https://doi.org/10.1093/molbev/msag077>) [Identifying a rare evolutionary

- event: the putative intracellular transfer of the plastid initiator tRNA (tRNA-iMet) to the nucleus, which compensates for its loss from the plastid genome. Also demonstrating that the unusual UAG-to-Trp reassignment in the *Balanophora* plastid genetic code is driven by the loss of release factor pRF1 and the recruitment of a mutated nuclear tRNA-Trp. Other findings suggest some of the most extreme changes ever identified in the anciently conserved machinery of plant organellar translation.]**
- Chen, H., Bai, L. and Cao, Y. 2026. Joint transcriptomic and metabolomic analyses of the mechanisms of *Juniperus tibetica* in response to *Arceuthobium oxycedri*. AoB PLANTS 18(3): (<https://doi.org/10.1093/aobpla/plag022>) [In the Sanjiangyuan region of China, *Juniperus tibetica* faces severe threats from *Arceuthobium oxycedri*. This study suggests that, under *A. oxycedri* infection, *J. tibetica* resists the infection by scavenging reactive oxygen species, increasing lignin content and enhancing drought-related physiological indicators.]
- Chimitov, D.G., Borisova, N.G. and Starkov, A.I. 2026. New and rare species of plants—invaders in the Republic of Buryatia. Russian Journal of Biological Invasions 17: 269–282. (<https://doi.org/10.1134/S207511172560048X>) [The results indicate a high invasive potential of *Cuscuta chinensis* (in eastern Siberia) demanding increased attention from conservation authorities.]
- Cignitas, E., Basbagci, G., Sulu, G. and Kitis Y.G. 2026. Effects of *Fusarium oxysporum* as a biocontrol of the parasitic weed *Phelipanche aegyptiaca*. Journal of Plant Pathology: (<https://doi.org/10.1007/s42161-026-02192-1>) [17 isolates of *F. oxysporum* identified with moderate toxicity to *P. aegyptiaca* and reasonable tolerance on tomato, eggplant, cucumber and melon.]
- Cohen, R.O., Chomentowska, A., Cai, L. and Eaton, D.A.R. 2026. A reference genome and transcriptome of haustorial development in *Pedicularis groenlandica* reveal diverse trajectories of haustoria-associated gene evolution in parasitic plants. Annals of Botany 138(2):505-521. (<https://doi.org/10.1093/aob/mcag089>) [5635 haustoria-associated genes were identified, 67% of which were associated with pollen tubes and 33% with roots, thus supporting pleiotropy and neofunctionalization as genetic pathways co-opted for haustorium function.]
- Cvejić, S. 2026. Book of Abstracts, 6th International Symposium on Broomrape in Sunflower & 1st Meeting on Sunflower Biotic and Abiotic Stress (ORO-STRESS 2026), 15-18 June 2026, Novi Sad, Serbia. (<https://hdl.handle.net/21.15107/rcub-fiver-6122>) [See list of abstracts above.]
- da Silva, D. F. and 7 others. 2026. Taxonomic updates of *Thismia pseudomelanomitra* (Thismiaceae) reveal an old acquaintance from the Ecuadorian Amazon. Feddes Repertorium 137(2): (<https://doi.org/10.1002/fedr.70080>) [Providing morphological description of fruits and seeds of *T. pseudomelanomitra* a distribution map, and an identification key for Ecuadorian species. Morphological comparisons reveal significant differences from related taxa, particularly *T. melanomitra* and specimens previously assigned to *T. singeri*.]
- Dančák, M. and 8 others. 2026. Rediscovery and revised description of *Thismia bifida* (Dioscoreales, Thismiaceae). Phytotaxa 763(3): 235–249. (<https://doi.org/10.11646/phytotaxa.763.3.3>) [Reporting the rediscovery of *T. bifida* at its type locality and documenting several additional populations across Sarawak and Brunei Darussalam.]
- Darujowa, T.W., Indriyanto, Surnayanti and Asmarahman, C. 2026. The host tree species of mistletoe at the Sumber Agung

- DS plant collection block in the Wan Abdul Rachman Grand Forest Park, Indonesia. *Journal of Research in Agriculture and Animal Science* 13(2): 5-13. [Recording *Macrosolen cochinchinensis*, *Scurrula philippensis*, *Dendrophthoe falcata* and *Dendrophthoe pentandra* variously on avocado, rubber, kapok tree, jackfruit, cocoa, and langsat.]
- Dayan, C., Ziadne, H., Eizenberg, H. and Mishael, Y.G. 2026. Environmentally friendly weed control in tomato using amine-grafted silica microparticles for strigolactone adsorption. *Journal of Agriculture and Food Research* 29: (<https://doi.org/10.1016/j.jafr.2026.103135>) [Describing the use of silica particles grafted with 3-aminopropyltriethoxysilane to adsorb strigolactones in the rhizosphere, reducing *Phelipanche aegyptiaca* germination, while showing no detectable negative effect on tomato growth at a dose estimated at equivalent to 8g/kg soil. Practical?]
- Deng, Y.; Zhao, H., Wang, Y., Tian, T., Fan, Z., Luo, F. and You, P. 2026. Characterization of the complete mitochondrial genome of *Pedicularis henryi* and its phylogenetic implications in Lamiales. *Biology* 15(7): 586. (<https://doi.org/10.3390/biology15070586>)
- Ding, Y., Metherell, C., Ennos, R.A., Tree of Life Consortium, D., Hollingsworth, P.M. and Twyford, A.D. 2025. The postglacial history of *Euphrasia micrantha* in Scotland: evidence from genome skimming. *Plant Ecology & Diversity* 18(3-4): 159–170. (<https://doi.org/10.1080/17550874.2025.2519256>) [The genetic distinctiveness of northern Scottish *E. micrantha* suggests a cryptic lineage.]
- Dominguez-Amaya, M.E., Vega-Nieva, D.J., Corra-Rivas, J.J. and Tinoco-Orozco, D.A. 2026. Evaluación de la infestación de *Phoradendron bolleanum* (Seem.) Eichler en *Quercus convallata* Trel. y *Quercus edwardii* Trel. en Durango, México. *POLIBOTÁNICA* 1(62): (<https://doi.org/10.18387/polibotanica.62.5>) [Relating the distribution of *P. bolleanum* to temperature and rainfall, but concluding that it did not seriously affect the growth of the host trees.]
- Dompieri, M.H.G. et al. 2026. Strategic mapping of potential risk routes of the *Striga* spp. pest in Brazil. Infoteca: (<http://www.infoteca.cnptia.embrapa.br/infoteca/handle/doc/1184268>) [Noting the risk of *Striga* spp. being introduced to Brazil and assessing the relative risks for different regions of the country. Extensive areas of the Midwest, Northeast and Southeast have favourable climatic conditions for the parasite.]
- Egger, J.M. and O'Dell, R.E. 2026. *Castilleja benitoensis* (Orobanchaceae), a new serpentine endemic from San Benito Mountain, California. *Phytoneuron* 12: 1-75. [Describing how *C. benitoensis* differs from *C. miniata* in a range of morphological characters.]
- Elhag, A.H.E., Abdelghani, M.E., Mudwari, H.I. and Babiker, A.G. 2026. Integrated management of *Striga hermonthica* in sorghum using *Glomus mosseae*, *Bacillus megaterium*, and phosphorus. *Plant-Environment Interactions* 7(1): (<https://doi.org/10.1002/pei3.70112>) [Pot experiments showed the benefits from additions of AM fungus *G. mosseae* and the P-solubilising bacterium *B. megaterium* in suppressing *S. hermonthica* infection of sorghum, and their interactions. Not clear if the doses would be practical on a field scale.]
- Fahs, N., Franc, M. and Těšitel, J. 2026. Differential response of grasses and legumes to *Rhinanthus* parasitism: Implications for sward composition and forage quality. *Agriculture, Ecosystems & Environment* 411: (<https://doi.org/10.1016/j.agee.2026.110589>) [Confirming that legumes *Lotus corniculatus*, *Trifolium pratense* and *Lathyrus pratensis* are damaged less than grasses *R. minor* and *R. alectorolophus* and, unlike grasses, recover fully from

- the suppression by *Rhinanthus* during the aftermath growth. This differential suppression increases the legume-to-grass ratio.]
- Fateryga, A.V. and Fateryga, V.V. 2026. *Orobanche alsatica* (Orobanchaceae), an overlooked species in the flora of Crimea. *Turczaninowia* 29(1) 101-109. [Identifying *O. alsatica* based on a glandularly pubescent style, as well as the host *Peucedanum alsaticum* typical for this species. Noting possible synonyms *O. buekii* and *O. lutea*.]
- Fatino, M., and Hanson, B. D. 2026. Evaluating potential for integrated broomrape management: variations in commercial cultivar sensitivity to broomrape parasitism. *HortTechnology* 36(3): 395-400. (<https://doi.org/10.21273/HORTTECH05830-25>) [Evaluation of 25 tomato cultivars over several years suggested no variation in susceptibility to *Phelipanche ramosa*.]
- Feng, Y. and Wicke, S. 2026. Systemic organellar genome reconfiguration along the parasitic continuum in the broomrape family (Orobanchaceae). *Plant & Cell Physiology* 67(4):577-591. (<https://doi.org/10.1093/pcp/pcaf131>) [In Orobanchaceae, plastid genome reduction is correlated with mitogenomic expansion, suggesting that parasitism initiates a systemic genomic feedback loop in which relaxed selection and disrupted maintenance mechanisms affect even distant genomic compartments.]
- Fetterly, E., Braum, E.S., Kim, C., Wenzell, K.E., Ashley, M.V., Steger, L. and Fant, J.B. 2026. Selection maintains floral color polymorphism in scarlet paintbrush, *Castilleja coccinea*, reflecting combined ecological factors. *American Journal of Botany* 113(1): (<https://doi.org/10.1002/ajb2.70094>)
- Flores-Villegas, M.Y. and Maldonado, M.B.G. 2006. Potential distribution and bioclimatic profile of mistletoes in *Quercus* L. forests in Durango. *Revista Mexicana de Ciencias Forestales* 17(94): (<https://doi.org/10.29298/rmcf.v17i94.1598>) [Reviewing the distribution of *Phoradendron villosum*, *P. bolleanum*, *Arceuthobium nigrum* and *A. rubrum* in Durango Province, Mexico, noting that *Quercus* spp. may be affected by *Phoradendron* spp. over 48,000 ha. and linking it to winter temperatures and rainfall.]
- Gebauer, R. 2026. **International Biological Flora: *Loranthus europaeus*. Journal of Ecology 114(4): (<https://doi.org/10.1111/1365-2745.70311>)** [A comprehensive, detailed description of *L. europaeus*, including distribution, habitat, communities, responses to biotic factors, responses to environment, structure and physiology, phenology, floral and seed characters, herbivores and disease, history and conservation. Occurring mainly on *Quercus* spp. plus some other deciduous spp., posing some threat to forest health; mainly in SE Europe; dioecious; distributed by birds.)
- Gibson, J.K., Sichamba, M. and Darbyshire, I. 2026. *Buchnera hirsutorepens*, a new species of prostrate Orobanchaceae from Zambia and the Democratic Republic of the Congo, along with a revised description of *Buchnera prorepens*. *Kew Bulletin*: (<https://doi.org/10.1007/s12225-025-10349-x>) [*B. hirsutorepens* is separated from *B. plurorepens* by differences in indumentum of the inflorescence and leaves, bract shape, pedicel length and relative length of the corolla tube to the calyx. A distribution map of georeferenced specimen localities of the two species is provided, along with information on their habitat and ecology.]
- Gil-Rios, M-A., Escalante-Garcia, N., Valdiviezo-Navarro, J.C., Mejia-Zuluaga, P.A., Dozal, L. and Cruz-Aceves, I. 2026. Hybrid multi-objective neural architecture search for lightweight patch-based mistletoe classification in UAV imagery. *Journal of Imaging*, 12(7): (<https://doi.org/10.3390/jimaging120702>)

- 81) [Reporting a satisfactory system for detecting *Phoradendron velutinum* infestations in *Abies*, *Pinus* and *Quercus* spp.]
- Glogov, P., Georgieva, M., Bogdanov, S. and Georgieva, L. 2025. Peculiarities of European mistletoe (*Viscum album*) infestation in the territory of Nessebar dunes (southern Black Sea coast), Bulgaria. Forest Science 2: [The percentage of infested trees (*Robinia pseudoacacia*, *Populus nigra*, *P. × canadensis* and *P. deltoides*) in a plantation was inversely related to both distance from the seashore and plantation density.]
- González, F., Elejalde-Baena, E., Quintero-García, S., Díaz-González, M.C. and Pabón-Mora, N. 2026. Reproductive morphoanatomy of *Tripodanthus belmirensis* (Loranthaceae), a key nectar and fruit source for native birds in Colombia's Central Cordillera. Flora 339: (<https://doi.org/10.1016/j.flora.2026.152973>) [*T. belmirensis* is pollinated by hummingbirds, and its fruits are consumed by parrots. Providing further detail of floral anatomy and development.]
- Guzmán-Guzmán, S., Sierra-Giraldo, J.A. and Orozco-A, J.A., 2026. 135 years in the shadows: rediscovery of *Lophophytum weddellii* Hook. f. (Santalales, Balanophoraceae) in Colombia. Check List 22(2): 316-327. [Rediscovering *L. weddellii* parasitising *Inga umbellifera* (Fabaceae).]
- Hailegiorgis, T. and 6 others. 2026. Farmers' knowledge and perceptions of traditional mixed cropping of faba bean (*Vicia faba*) and field pea (*Pisum sativum*) in highland Ethiopia. Ethnobotany and Economic Botany: (<https://doi.org/10.1007/s12231-026-09687-z>) [Farmers reported a decrease in the production of mixtures of the two crops (as well as the two components grown separately) due to the introduced parasitic weed *Orobancha crenata* (47%), the browsing of field pea by the common duiker (*Sylvicapra grimmia*, 17%), and the lodging of faba bean (11%).]
- Hamadou, S., Jean-Baptiste, S.A., Brahime, T., Daouda, O., Fabrice, O.W.C. and Mahamadou, S. 2026. Identification of novel resistance sources to *Striga gesnerioides* in local cowpea varieties through agronomic and molecular approaches. Journal of Applied Biosciences 221: 24523-24532. (<https://doi.org/10.35759/JABs.221.1>) [This study identified new sources of resistance to races 1 and KP of *S. gesnerioides* in local cowpea varieties with the presence of 150 base pairs using the SSR1 marker. Varieties V3, V5, and V7 combined resistance markers, high yield potential, and early maturity.]
- Hartenstein, M. and 10 others. 2026. Dodder seedlings benefit from apoplastic nutrition by inducing SWEET15-mediated unloading of sucrose from the host's phloem. New Phytologist: (<https://doi.org/10.1111/nph.71270>)
- Hassan, M.M. and 9 others. 2026. Integrated control package for *Orobancha crenata* in faba beans. African Journal of Agricultural Research 2(5): 256-263. (<http://www.academicjournals.org/AJAR>) [Treating faba bean with a combination of *Bacillus megatherium* var. *phosphaticum* (BMP) and *Rhizobium leguminosarum* strain (TAL1399) with imazethapyr suppressed *O. crenata* and boosted yields.]
- Hazinia, S. and 8 others. 2026. Integrated metabolomics, Transcriptomics, and ultrastructural assessment of the myco-heterotrophic plant, *Monotropa uniflora*. Plant Direct 10(4): (<https://doi.org/10.1002/pld3.70165>.)
- He, W. and 7 others. 2026. Synergistic effects of amino acids and *Bacillus velezensis* N35 on suppressing *Phelipanche aegyptiaca* parasitism and modulating tomato growth: insights from transcriptomic profiling. Plants 15(9): (<https://doi.org/10.3390/plants15091327>)

- [Reporting synergism between *B. velezensis* strain N35 and amino acids methionine and isoleucine in their activity against *P. aegyptiaca*.]
- Hernández-González, M., Cerbone, H. and Thorogood, C. J. 2026. An account of the ecology of the parasitic plant *Cistanche phelypaea* (L.) Cout. (Orobanchaceae) in the Canary Islands and implications for its conservation. *Ecologies* 7(2): 37. (<https://doi.org/10.3390/ecologies7020037>) [Hosts were monitored over 7 years in 10 subpopulations showing that four species of shrubby Amaranthaceae were parasitized.]
- Hussen, M., Asefa, Z., Molla, A., Fekadu, E. and Tadesse, M. 2026. Investigating the impact of intercropping time of soybean (*Glycine max*) and haricot bean (*Phaseolus vulgaris* L.) with sorghum on *Striga* (*Striga hermonthica*) control and crop productivity in Kobo, North Wollo Zone, Ethiopia. *International Journal of Agronomy*: (<https://doi.org/10.1155/ijoa/4042310>) [Intercropping sorghum with soybean or haricot bean, especially when legumes are sown 2 weeks prior to sorghum, can enhance yield and control *Striga* in North Wollo and similar areas.]
- Izhge, A.U. and Balami, G.S. 2026. Assessment of genetic variability among pearl millet (*Pennisetum glaucum* [L.] R. Br.) genotypes under *Striga* infested field condition. *IRE Journals* 9(10): (<https://doi.org/10.64388/IREV9I10-1716800>) [Identifying a number of pearl millet lines with apparently high tolerance of attack from *S. hermonthica*]
- Jamil, M. and 14 others. 2026. Application of 1-aminocyclopropane-1-carboxylic acid (ACC) as an efficient suicidal germination agent for controlling *Striga hermonthica*. *Journal of Agriculture and Food Research* 30: (<https://doi.org/10.1016/j.jafr.2026.103160>) [The ethylene precursor 1-aminocyclopropane-1-carboxylic acid (ACC) enhanced germination of *S. hermonthica* even in unconditioned seeds. A combination ACC with MP3 or Nijmegen-1 stimulated over 90% germination and applications to soil before planting in pot and field experiments reduced *S. hermonthica* emergence by up to 80%. 'This approach provides an effective strategy for managing *Striga* and enhancing cereal yields in affected regions' – **when?**]
- Jat, R.S. and 6 others. 2026. Smart delivery of herbicide for safe and effective control of Egyptian broomrape parasitizing Indian mustard. *Scientific Reports* 16: (<https://doi.org/10.1038/s41598-026-44367-x>) [Reporting safe and effective reduction of *Phelipanche aegyptiaca* in tomato with pre-emergence applications of various formulations of metsulfuron methyl.]
- Kamel, E., Sharshar, A., Elian, H. 2026. Effect of heating sources on *Cuscuta* control in clover under different density of *Cuscuta* infestation. *Egyptian Journal of Agronomy* 48(2): 923-937. ([10.21608/agro.2026.337386.1565](https://doi.org/10.21608/agro.2026.337386.1565)) [Claiming that seeds of *Cuscuta campestris* can be devitalised by using a microwave oven at 50% power for less than 15 minutes without harm to seeds of clover (*Trifolium alexandrinum*). *C. campestris* could also be reduced by solarisation under plastic sheeting.]
- Koch, A., Gafni-Amsalem, C., Mann, V., Zamir, D. and Hirschberg, J. 2026. Breeding tomato hybrids rich in the colorless carotenoids phytoene and phytofluene with resistance to broomrape. *Horticulture Research*: 9 (<https://doi.org/10.1093/hr/uhag312>) [Two recessive alleles of the ζ -carotene isomerase gene (*Z-iso*), designated *ZETA* (*z*), were identified in the tomato cultivar M82. Loss of Z-ISO activity blocked downstream carotenoid synthesis, leading to massive accumulation of phytoene, phytofluene, and ζ -carotene in fruits and flowers. These roots produce lower levels of strigolactone, conferring partial resistance to *Phelipanche aegyptiaca*. Complete resistance was achieved by

- grafting *z/hp1* scions onto *SHOOT-BRANCHING1 (sb1)* rootstock.]
- Krasylenko, Y. Atamas, N., Dupak, V. and Telizhenko, V. 2025. Mistletoe as nesting habitat: exploring avian-mistletoe interactions in European ecosystems. *Acta Ornithologica* 60(2): 187-204. (<https://doi.org/10.3161/00016454AO2025.60.2.004>) [Recording 41 species of European breeding birds nesting in mistletoe, with *Viscum album* supporting 39 species and *Loranthus europaeus* hosting 7. Including woodpigeon, fieldfare, collared dove, hooded crow and Eurasian magpie.]
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