



Newsletter of the Plant Protection Research Institute (PPRI), an institute in the Public Support Services Division of the Agricultural Research Council (ARC)

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New format for the Plant Protection News

The Plant Protection News has modernized itself into a fully electronic newsletter. This is in keeping with many current publications. It is designed to provide news faster to contributors and users. With the cost of printing and distributing information becoming increasingly prohibitive, more organiza-

tions are turning to the electronic medium. PPRI has adapted this more cost-effective publishing process and the Plant Protection News will in future be available in PDF (Portable Document Format). It can be downloaded from the ARC website at www.arc-ppri.agric.za.

The last issue, No. 63, appeared in Spring 2003. This issue covers news from January-June 2005 and will appear quarterly from now on. Persons interested to receive this newsletter electronically can contact us.

New Research and Technology Manager

Dr. Rami Kfir was appointed as the new R & T manager at ARC-PPRI in the beginning of 2005.

Rami was born in Israel and after completing his Matriculation examination and military service, he started studying for his BSc degree at the Faculty of Agriculture, the Hebrew University of Jerusalem.

In 1971 he obtained his MSc Agr in Entomology with Distinction and followed this with a PhD, also in entomology, in 1976.

After a two year postdoctoral fellowship at the University of California, Rami was appointed as Senior Agricultural Researcher at the Plant Protection Research Institute in Pretoria in 1978. His career developed as he progressed from Specialist Scientist to Assistant Director, then Senior Specialist Scientist and finally Manager of the Insect Ecology Division in 2001.

Rami also spent six months as Visiting Professor at the University of Illinois in 2000. He has written a total of 144 peer re-

viewed scientific publications including several chapters in books on population dynamics of parasitoids and biological control of insect pests. Rami is married with two children.



Dr. Rami Kfir

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## New Facility Manager

Tseliso Likate was appointed as PPRI's facility manager in the beginning of 2005. He was born in Bloemfontein where he also underwent his schooling.

In 1978 he obtained a certificate in Range Management at the Animal Health and Industry Training Institute, Kenya.

His BSc Agriculture in Range Management at the South Dakota State University, USA followed in 1983 and his Masters in Natural Resource Management at the University of New England in Australia in 1994.

His work experience started in 1978

as Agricultural Extension Assistant in the Lesotho Department of Agriculture and promotion to Head of the Grazing Management Section six years later.

In 1990 he joined the National University of Lesotho as Senior Lecturer. In 1999 he became an Assistant Director in the Department of Water Affairs and Forestry, Eastern Cape, moved to the Western Cape as Head: Community Services in 2000 and to Pretoria in 2001 as Deputy Director.

His current position as Facility Manager entails optimal asset utilisation and ensuring compliance with relevant legislation.



**Tseliso Likate**

## Helmuth Zimmermann retires



**Dr. Helmuth Zimmermann**

An era in the biological control of weeds ended when Dr. Helmuth Zimmermann took early retirement from his position as Division Manager of weeds research at this institute during mid-2004.

Helmuth was one of the pioneers in the biological and integrated control of invasive cactus species in South Africa – a task that took him and his family to Argentina from 1969 to

1974. Later in his career he initiated biological control projects against alien invasive plants such as mesquite (*Prosopis* spp.), silverleaf nightshade (*Solanum elaeagnifolium*), red sesbania (*Sesbania punicea*) and spear thistle (*Cirsium vulgare*).

He headed the Weeds Research Division for 16 years, starting in 1988, during a particularly successful era for weed biocontrol, but also managed to build on the division's reputation throughout the challenging years of adapting to wide-ranging changes in management and funding structures, research requirements and international relationships.

The high esteem in which weeds biocontrol is currently held by the Working

for Water (WfW) Programme of the Department of Water Affairs and Forestry reflects his untiring and dedicated attempts to provide WfW with safe and effective biocontrol agents while demonstrating to them how indispensable this control method is in the integrated management of alien invasive plants.

Helmuth's excellent international standing created many opportunities for him and the division to collaborate with foreign countries on scientific and other issues. His expertise is still being sought by several African countries that share weed problems with South Africa, and the benefits of his research on cacti extend as far as Mexico, where he plays a key role in a campaign to mitigate the impacts of the intro-

duced cactus moth, *Cactoblastis cactorum*.

It would not be like Helmuth to sit back and relax during his retirement. In fact, he seems even busier than before, chairing a small firm of environmentalists and ecologists known as HZA (Helmuth Zimmermann and Associates). One of their most challenging current assignments consists in coordinating the development of the Biodiversity Act Regulations on Alien and Invasive Species.

We wish Helmuth well in this venture, and hope to continue drawing on his expertise while collaborating with him in his new role.

## *New Manager for Weeds Division*

The Weeds Research Division seems to be undergoing a process of rejuvenation, judged by the appointment of its new manager, Arne Witt.

Boasting two Masters degrees – one in Entomology from the University of Stellenbosch and one in Conservation Biology from the University of Cape Town – Arne is well equipped for the changing demands in the field of biological and integrated control of alien invasive plants. His first experience with weed biocontrol was from 1994-1998 when he was employed in Cape Town as scientific officer for the Australian Commonwealth Scientific and Industrial Research Organization (CSIRO) Biological Control Unit.

He was responsible for finding and testing natural enemies of two South African plant species that had become invasive in Australia: bridal creeper (*Asparagus asparagoides*) and bietou bush (*Chrysanthemoides monolifera*). In 1999, the Queensland Department of Natural Resources & Mines decided to establish a field station in Pretoria to carry out research into the biological control of two more southern African and one Madagascan plant species that were problematic in Australia - *Acacia nilotica*, *Sporobolus* spp. and *Bryophyllum delagoense*; Arne was appointed as senior researcher. Together with a few staff members, he surveyed for natural enemies in South Africa, Kenya, Swaziland, Botswana and Madagascar. After the field station closed down in 2003, he was appointed by this institute as a senior researcher in the Weeds Research Division.

Since Arne's appointment as Division Manager in November 2004, his idealism, his passion for the environment and his excellent work ethics have been an inspiration to the division. We wish him a successful and

fulfilling term as manager and good luck with his PhD, and trust that weeds research at PPRI will burgeon under his leadership.



**Arne Witt**

## *Jonas Nkwana retires*

Jonas Nkwana, a research assistant at the Spider Research Centre, retired at the end of March 2005 after 33 years of service. Jonas provided valuable support to the centre. He was the keeper of all the live spiders and helped with the curation of the large wet alcohol collection.

He was also part of the Spider Educare team and involved in road shows and talks. Jonas was very good with the children and helped to answer questions as well as giving talks in Sotho. Jonas's friendly face and help are missed at Rietondale. We wish him and his family the best for the future.



**Jonas Nkwana and Ansie Dippenaar-Schoeman**

## Joint Congress at Potchefstroom

The joint congress of four scientific societies: Soil Science Society of South Africa; South African Society of Crop Production; Southern African Weed Science Society and Southern African Society for Horticultural Sciences was held from 10-13 January 2005 in Potchefstroom. The following three papers were presented.

GOSZCZYNSKA T., BOTHA W.J. & MOLOTO M., 2005. (PAPER). *Pantoea ananatis*, a seedborne pathogen of maize in South Africa.

GOSZCZYNSKA T., BOTHA W.J. & MOLOTO M., 2005. (PAPER). *Pantoea ananatis*, the causal agent of center rot of onion in South Africa.

SEREDA B.L. & MEINHARDT H.R. 2005. (POSTER). Insecticide contamination of the water environment in malaria endemic areas of the KwaZulu-Natal.

## 17th Symposium of the Nematological Society of Southern Africa

The symposium was held at the Hans Merensky Estate near Phalaborwa, Limpopo from 22-25 May 2005. Sixty delegates from eight countries attended the congress. Topics such as nematode/crop associations, chemical control, alternative control measures and cytology, physiology and molecular biology were discussed.

VAN DEN BERG E., MEKETE, T. & TIEDT, L.R. 2005. (POSTER). Plant-parasitic nematodes in Ethiopia.

VAN DEN BERG E., KRISHNAPILLAI M., BUCKLEY N. H. & TIEDT L.R. (POSTER). 2005. *Radopholus similis* associated with the giant swamp taro on the island of Yap.

LESUFI M.M., SWART A. & TIEDT L.R. (POSTER). 2005. The introduction and spread of quarantine nematodes in South Africa with special reference to *Aphelenchoides arachidis*.

COYNE D.L., TOKO M., ANDRADE M., HANNA R., SITOLE A., KAGODA F., AL BANNA L. & M. MARAIS M. (POSTER). 2005. *Meloidogyne* spp. and associated galling and damage on cassava in Kenya and Mozambique.

### Nematode poster won first prize at symposium

Dr. Esther van den Berg of the Nematode Unit won first prize with her poster at the 17th Symposium of the Nematological Society of Southern Africa with her poster on the nematodes of Ethiopia. Elsa van Niekerk, graphic artist at PPRI, designed the poster.



Dr. Esther van den Berg

## 8th African Arachnological Colloquium

The 8th African Arachnological Colloquium was held at Maselspoort, Free State 30 January - 3 February 2005. A total of about 30 participants from seven countries from as far afield as Czech Republic, Belgium, Germany and the United Kingdom attended the colloquium. The following papers and posters were presented at the colloquium.

CUMMING M.S., RUSSELL-SMITH A., WESOLOWSKA W. & DIPPENAAR-SCHOEMAN A.S., 2005. (PAPER). Diversity of spiders (Araneae) in a one-hectare suburban study-site in Harare, Zimbabwe: preliminary results.

DIPPENAAR-SCHOEMAN A.S., 2005. (PAPER). Spider diversity in conserved areas in South Africa (Arachnida: Araneae).

DIPPENAAR-SCHOEMAN A.S., 2005. (PAPER). The South African National Survey (SANSa).

DIPPENAAR-SCHOEMAN A.S. & JOUQUÉ R., 2005. (PAPER). Spiders for Africa - The African Arachnida database (AFRAD): an online expert information system.

DIPPENAAR-SCHOEMAN A.S., SWAYNE J., WASSENAAR T. & HADDAD C.R., 2005. (PAPER). Spider diversity of the Forest Biome in South Africa (Arachnida: Araneae).

DIPPENAAR-SCHOEMAN A.S., VAN DEN BERG A. & FOORD S., 2005. (PAPER). Spiders of the Savanna Biome in South Africa (Arachnida: Araneae).

DIPPENAAR-SCHOEMAN A.S., VAN DEN BERG A.M. & STEPHENS P., 2005. (POSTER). Spiders in citrus orchards in South Africa (Arachnida: Araneae).

DIPPENAAR-SCHOEMAN A.S. & HADDAD C.R., 2005. (POSTER). Spider diversity of the Grassland Biome in South Africa (Arachnida: Araneae).

DIPPENAAR-SCHOEMAN A.S. & KASSIMATIS E.J., 2005. (POSTER). The baboon and trapdoor spiders database: a wealth of information (Arachnida: Araneae).

DIPPENAAR-SCHOEMAN A.S., HADDAD C.R., VAN DEN BERG A.M. & LOUW S.V.D.M., 2005. (POSTER). The spider communities on three orchard crops in South Africa (Arachnida: Araneae).

FOORD S.H. & DIPPENAAR-SCHOEMAN A.S., 2005. (PAPER). Towards a phylogeny for the family Hersiliidae (Arachnida: Araneae).

HADDAD C.R. & DIPPENAAR-SCHOEMAN A.S., 2005. (PAPER). The Arachnida of Lesotho - an AFRAD project.

HADDAD C.R., DIPPENAAR-SCHOEMAN A.S. & WESOLOWSKA W., 2005. (PAPER). A checklist and ecological notes of the spiders (Arachnida: Araneae) of the Ndumo Game Reserve.

HADDAD C.R., LOUW S.V.D.M. & DIPPENAAR-SCHOEMAN A.S., 2005. (PAPER) An assessment of the biological control potential of *Heliophanus pistaciae* (Araneae: Salticidae) on *Nysius natalensis* (Hemiptera: Lygaeidae) a pest of pistachio nuts.

HADDAD C.R. & DIPPENAAR-SCHOEMAN A. S., 2005. (PAPER). Spider diversity in conserved areas in the Western Cape Province.

HORN J.L., HAMER M.L., SLOTOW R. & DIPPENAAR-SCHOEMAN A.S., 2005. (PAPER). Diversity of spiders (Araneae) in the indigenous forests of Limpopo Province, South Africa.

KASSIMATIS E.J., 2005 (POSTER). Our present knowledge on the Araneidae (Arachnida: Araneae) of the Afrotropical Region.

KHOZA T.T., DIPPENAAR-SCHOEMAN S. & DIPPENAAR-SCHOEMAN A.S., 2005. (PAPER). Spiders of Marion Island.

MAFADZA M., FOORD S.H., VAN RENSBURG B.J. & DIPPENAAR-SCHOEMAN A.S., 2005. (POSTER). Heterogeneity of spider assemblages in the Soutpansberg, Limpopo.

MODIBA M.A., DIPPENAAR S. & DIPPENAAR-SCHOEMAN A. S., 2005. (PAPER). The spider diversity of Sovenga Hill.

MYBURG J.G., NELSON R.M., GREEFF J. & DIPPENAAR-SCHOEMAN A.S., 2005. (PAPER). Molecular phylogeny and re-appraisal of the conservation status of *Loxosceles speluncarum* in the Pretoria area.

## Joint Congress at Hartenbos

*The Joint Congress of the Southern African Society for Plant Pathology, African Mycological Association, and Medical Mycology in Africa was held from 23-26 January 2005. The following papers and posters were presented at the colloquium:*

JACOBS A., 2005. (POSTER). A new *Fusarium* species in the *Gibberella fujikuroi* complex from pineapple in South Africa.

SPIES C.F.G., HOLZ G. & LAMPRECHT S.C. 2005. (PAPER). Inoculum ecology of *Botrytis cinerea* in rooibos nurseries.

TEWOLDEMEDHIN Y.T., LAMPRECHT S. C. MAZZOLA M. & MCLOED A., 2005. (POSTER). Characterisation of *Rhizoctonia* associated with cereal, canola, pasture and grain legumes.

LAMPRECHT S.C., MARASAS W.F.O. & HARDY M.B., 2005. (POSTER). *Fusarium avenaceum* on wheat in rotation systems in the Western Cape Province.

SPIES C.F.J., HOLZ G. & LAMPRECHT S.C. 2005. (POSTER) Resistance in *Botrytis cinerea* to iprodione as an aid in monitoring inoculum dispersal.

OBRIEN O.M., JACOBS A., RONG I.H. & VAN DER LINDE E.J., 2005. (POSTER). A survey of composting fungi in the mopani landscape of the Kruger National Park: preliminary results.

RONG I.H., 2005. (PAPER). The PREM Collection of Fungi 1905 to 2005: A centenary celebration.

RONG I.H. & THORPE J.C.I., 2005. (POSTER). Fungal species occurring in soils of melon fields under different agricultural practices, and the adjacent virgin Mopani Veld.

RONG I.H., BOTHA W.J. & JACOBS A., 2005. (POSTER). Molecular re-evaluation of some species of *Bipolaris* and *Curvularia*.

VAN DER LINDE E.J., 2005. (PAPER). Conclusion following the study of *Claviceps cyperi*.

## Report back of the Joint Congress at Hartenbos

The joint Congress of the Southern African Society for Plant Pathology (SASPP), African Mycological Association (AMA), and Medical Mycology in Africa (MMA) took place from 23 to 26 January 2005 at Hartenbos near Mosselbay. The Plant Pathology section of the PPRI Weeds Division at Stellenbosch and the Department of Plant Pathology at the University of Stellenbosch were the hosts. In addition to the congress, the International Grapevine Trunk Diseases meeting preceded the SASPP meeting, whereas the AMA and MMA congresses were held parallel with the SASPP sessions.

Dr. Cheryl Lennox, the chairperson of the organizing committee, welcomed the delegates and Prof. Pedro Crous of the Centraal Bureau voor Schimmel Cultures (CBS) in The Netherlands, presented his keynote address entitled '*Mycosphaerella: morphologically unified but phylogenetically diverse*'. His address was followed by the JE Vanderplank memorial address, which was presented by Prof Gustav Holz of the University of Stellenbosch and entitled '*The ecology of Botrytis on plant surfaces*'. Research results on 'disease control and management', 'disease detection and losses', 'host-pathogen interaction', 'pathogen identification' and 'characterization and disease resistance' were presented.

The AMA meeting was attended by delegates from Belgium, Bénin, Ghana, Iran, South Africa, Sweden, Tanzania, The Netherlands, United Kingdom, Uganda and Zimbabwe. With the assistance of the interim AMA committee elected during the International Mycological Congress held in Oslo in 2002, the International Mycological Association and the SASPP, the 6<sup>th</sup> AMA ended a five-year period of inactivity. No particular theme was followed and presentations focused on aspects of the history and activities of the PREM mycological herbarium's centenary celebration, various plant pathological studies, fermentation studies, ectomycorrhizal fungi, and the use of geographic information systems (GIS) and remote sensing (RS) in pest management. During a general AMA meeting a committee of eight members was elected, with Dr. Isabel Rong as President.

The third event, the MMA meeting, further reflected the desire of African scientists to interact with their peers. The newly founded Africa Fund for Fungal Biodiversity and Mycotic Infections took the initiative to organize this symposium. The meeting focused on medical mycological problems that are endemic to Africa and included themes where African scientists have achieved major breakthroughs. Under the leadership of Dr. Hester Vismer of the Medical Research Council, South Africa, and Prof. Sybren de Hoog of the CBS, a new organization entitled 'Medical Mycology in Africa' came into existence. They received support from the CBS, the International Society of Human and Animal Mycology (ISHAM) and the European Confederation of Medical Mycology (ECMM). Speakers were drawn from Sudan, Egypt, South Africa, Saudi Arabia, Libya, Nigeria and Gabon.

For more information visit the web pages of AMA at <http://194.203.77.69/AfricanMycologicalAssociation/html/introduction.htm> SASPP at <http://www33a.your-server.co.za/sasppa/> MMA at <http://www.cbs.knaw.nl/Africafund/index.htm>

## New publications

### Refereed Papers

CHARLESTON D.S., KFIR R., DICKE M. & VET L.E.M., 2005. Impact of botanical pesticides derived from *Melia azedarach* and *Azadirachta indica* on the biology of two parasitoid species of the diamondback moth. *Biological Control* 33: 131-142.

DIPPENAAR-SCHOEMAN A.S., VAN DER WALT A.E., DE JAGER M., LE ROUX E. & VAN DEN BERG A., 2005. The spiders of the Swartberg Nature Reserve in South Africa (Arachnida: Araneae). *Koedoe* 48: 77-86.

EARDLEY, C.D. 2005. Afrotropical stingless bees (Hymenoptera: Apidae). *African Plant Protection* 10: 63-96.

HADDAD C.R., LOUW S.V.D.M. & DIPPENAAR-SCHOEMAN A.S., 2005. Spiders (Araneae) in ground covers of pistachio orchards in South Africa. *African Plant Protection* 10: 97-107.

HEYSTEK, F. & BAARS, J.-R. 2005. Biology and host range of *Aconophora compressa*, a candidate considered as a biological agent of *Lantana camara* in Africa. *BioControl* 50: 359-373.

JOOSTE A.E.C. & GOSZCZYNSKI D.E., 2005. Single-strand conformation polymorphism (SSCP), cloning and sequencing reveals two major groups of divergent molecular variants of grapevine leafroll-associated virus 3 (GLRaV-3). *VITIS* 44:39-43.

LAMPRECHT S.C., LESLIE J.F., MARASAS W.F.O., RHEEDER J.P. & ZELLER K.A., 2005. Toxicity, pathogenicity, and genetic differentiation of five species of *Fusarium* from sorghum and millet. *Phytopathology* 95: 275-283.

MILLAR I.M., 2005. Book review. A Systematic Catalogue of the Diaspididae (Armoured Scale Insects) of the World, Subfamilies Aspidiotinae, Comstockiellinae and Odonaspidinae by Y. Ben-Dov & V. German. *African Entomology* 13: 191-192.

NAUDE T.W., BOTHA C.J., VORSTER J.H., ROUX C., VAN DER LINDE E.J., VAN DER WALT S.I., ROTTINGHAUS G.E., VAN JAARVELD L. & LAWRENCE A.N. 2005. *Claviceps cyperi*, a new cause of severe ergotism in dairy cattle consuming maize silage and teff hay contaminated with ergotised *Cyperus esculentus* (nut sedge) on the Highveld of South Africa. *Onderstepoort Journal of Veterinary Research* 72: 23-37.

NOFEMELA R.S. & KFIR A.R., 2005. The role of parasitoids in suppressing diamondback moth, *Plutella xylostella* (L.) (Lepidoptera: Plutellidae), populations on unsprayed cabbage in the North West Province of South Africa. *African Entomology* 13: 71-83.

ROFF J. & DIPPENAAR-SCHOEMAN A.S., 2005. Description of a new species of *Cladomelea* bolas-spider from South Africa, with notes on its behaviour (Araneae: Araneidae). *African Invertebrates* 45: 1-6.

SIMELANE D.O., 2005. Biological control of *Lantana camara* in South Africa: tagging a different niche with a root-feeding agent, *Longitarsus* sp. *Biocontrol* 50: 375-387.

SIMELANE D.O. & PHENYE M.S., 2005. Suppression of growth and reproductive capacity of the weed *Lantana camara* (Verbenaceae) by *Ophiomyia camarae* (Diptera: Agromyzidae) and *Teleonemia scrupulosa* (Heteroptera: Tingid. *Biocontrol Science and Technology* 15: 153-163.

TRIBE G.D., 2005. The present status of *Anaphes nitens* (Hymenoptera: Mymaridae) an egg parasitoid of the *Eucalyptus* snout beetle *Gonipterus scutellatus*, in the Western Cape Province of South Africa. *Southern African Forestry Journal* 203: 49-54.

VAN DEN BERG E., QUENEHERVE P. & TIEDT L.R., 2005. Six known plant-feeding nematodes from Guadeloupe, Martinique and French Guiana (Nemata: Tylenchina). *Journal of Nematode Morphology and Systematics* 7: 109-129.

WOOD A.R. & CROUS P.W., 2005. Morphological and molecular characterization of *Endophyllum* species on perennial asteraceous plants in South Africa. *Mycological Research* 109: 387-400.

WOOD A.R. & CROUS P.W., 2005. Epidemic increase of *Endophyllum osteospermi* (Uredinales, Pucciniaceae) on *Chrysanthemoides monilifera*. *Biocontrol Science and Technology* 15: 117-125.

### Other publications

ALLSOPP M.H. & CHERRY M., 2005. An assessment of the impact on the Bee and Agricultural industries in the Western Cape of the clearing of certain Eucalyptus species using questionnaire survey data. *South African Bee Journal* 77: 5-12.

DIPPENAAR-SCHOEMAN A.S., 2005. Wonderful spiders. *Quest* 1 (4): 24-29.

DIPPENAAR-SCHOEMAN A.S., 2005. The button spiders of southern Africa. *Science in Africa* April: 1-6.

VON MALTITZ E.F., KIRSTEN J.F. & MALEBANA P.S., 2005. Developing sustainable rodent management strategies in rural South Africa. *Rodent Research Newsletter* 19: 6-7.

## NEWS FROM THE DIVISIONS

### Biosystematics Division

#### *Acarologist visits the States*

Dr. Eddie Ueckermann visited Prof. Childers at the Citrus and Education Centre in Florida, USA, from 21 January-18 February 2005. The aim of this visit was to study the beneficial mite complex of citrus mite pests. A highly successful interactive project started in 2001 between ARC and the Citrus and Education Centre in Florida. Prof. Childers invited Eddie to continue with this research, which will result in the joint publication of four scientific papers dealing with various predatory mite groups involved in suppression of citrus pests worldwide. Eddie also had the fantastic opportunity to examine the reference collections of the USDA, University of California Davis and the Division of Plant Industry, Gainesville, Florida.

#### *Acarologist from Israel visits PPRI*

Dr. Eric Palevsky of the Department of Entomology, Neve-Ya'ar Research Center, Agricultural Research Organization, Ministry of Agriculture, Ramat Yishay", Israel, visited the Mite Unit from 28 February to 18 March. He worked with Eddie Ueckermann on the predatory mite family Phytoseiidae found on date palms and Bermuda grass in orchards. A total of 14 species were recorded of which two are new. Several future projects were discussed.

#### *Australian scientist visits PPRI*

Tom Morley, a weed scientist of the Department of Primary Industries, Frankston, Australia, visited Charnie Craemer, an acarologist of the PPRI-Mite Expert Centre, for three days during March 2005. Ms. Craemer is responsible for biosystematic research on plant feeding mites. The visit concerned a collaborative project on the taxonomy of a plant feeding eriophyid mite species that is being investigated as a potential biological control agent of boneseed (*Chrysanthemoides monilifera*) in Australia. Ms. Craemer also trained Mr. Morley in general techniques to handle the minute eriophyid mites.

*Chrysanthemoides monilifera* is indigenous to South Africa, but it became a serious invasive weed in Australia after its introduction to this country. The boneseed leaf buckle mite (*Aceria* sp. cf. *Aceria neseri* Meyer, 1981) occurs on *C. monilifera* in South Africa. The feeding of this mite species causes abnormal hair growth on the leaves and young growth of *C. monilifera*, appearing as dense felt-like patches, distorting and stunting growth of the plant. Ms. Craemer undertakes the identification and taxonomy of the mite, and provided vital taxonomic information for the application for approval to release this mite in Australia for further studies. The release has been approved, pending further taxonomic studies on the mite. The original description of *A. neseri* doesn't correspond with the *Aceria* sp. collected in this project, and it seems possible that the species need to be redescribed. Ms. Craemer now proceeds to study the remnants available of the type material of *A. neseri*, as well as comprehensive collections of the mites used in the host specificity studies done by Mr. Morley.

#### *Arachnologist from Belgium visits PPRI*

Dr. Rudy Jocqué of the Koninklijk Museum voor Midden-Afrika, Tervuren, Belgium visited the Spider Research Centre during 30 January until 14 February 2005. With Ansie Dippenaar-Schoeman he visited Tswalu Game Reserve in the Northern Cape to collect Arachnida. They also worked on a new book on the spiders of the world to be released later this year.

#### *Scorpion specialist helps out at the Arachnology Unit*

Welcome to Ian Engelbrecht who was appointed for a six-month period (July-December 2005) to work in the Arachnology Unit to assist with the upgrading of the scorpion and solifugid collection. He will also be involved in the development of the scorpion and solifugid part of the African Arachnida Database as well as the South African National Survey of Arachnida. Ian did his MSc on Conservation planning at WITS and has offered to present a workshop on practical species habitat modeling for conservation planning later this year. Interested persons can contact Ansie Dippenaar-Schoeman at 3569824 or email: DippenaarA@arc.agric.za.

#### *Bee scientist visits Italy*

In May 2005 Dr. Connal Eardley visited the United Nations Food and Agriculture Organization (FAO), Rome, to contribute to the development of the International Pollinator Initiative's (IPI) Global Environment Facility (GEF) pollinator biodiversity project. The proposal will be completed and submitted to GEF in a few months time. PPRI was responsible for initiating the project but the South African National Biodiversity Institute (SANBI) has now taken the leading role for South Africa in this project with its over 1 million US\$ budget.

The trip was combined with a visit to the BioNET-International's Technical Secretariat, London, to discuss the involvement of SAFRINET (Southern African Network of BioNET-International) in the Consortium for the Barcode of Life (CBOL). SAFRINET is looking for suitable technology that will improve plant quarantine inspectors' skills to identify pests, disease and invasive species that enter SADC with imported goods. CBOL is concerned with the use of a gene for the identification of all species, and appears to be the best solution for SAFRINET at present. If anyone is interested in SAFRINET and its collaboration with CBOL please contact Connal Eardley at EardleyC@arc.agric.za.

#### *Spider scientist promoter of PhD*

Dr. Ansie Dippenaar-Schoeman acted as promoter of the PhD degree of Stefan Foord. He received the degree in April at the University of Pretoria. The study dealt with a revision of the spider family Hersiliidae in the Afrotropical Region.

## *Biosystematics (continued)*

### *Researcher on radio panel*

Dr. Ansie Dippenaar-Schoeman is a member of the *Radio Sonder Grense* (RSG) panel for the Afrikaans programme on nature "Hoe verklaar jy dit". Questions of listeners are answered and the following topics were discussed during programmes broadcast from Jan-Jun 2005: Solifugae or sunspiders; spider bites; mimicry in spiders and the South African National Survey of Arachnida.

### *Entomologist visits European Museums*

During May and June, Ros Urban visited three European Museums to study their collections of African bees. The trip was funded by the Global Biodiversity Information Facility (GBIF). This organization is providing financial assistance towards the completion of a catalogue on the bees of the Afrotropical region, which Ros is compiling jointly with Connal Eardley. Most of her time was spent in Berlin at the Museum of Natural History, checking label information on the bee type specimens deposited in the Museum during the great European collecting era from the early 1900's to 1945. Over a thousand specimens were examined and much useful information was gathered for the bee catalogue. The last week of Ros's stay in Europe was spent at the Africa Museum, at Tervuren outside Brussels, which houses a large collection of bees, mainly from Central Africa. About 300 type specimen labels were checked. A day was also spent at the Natural History Museum in London, where most of the type specimens are now data-based in computerized form. Ros also attended a very useful two-day workshop in London on Collection Management, along with a number of international curators from a wide range of Natural History Museums. It was encouraging to see that the collection curation methods used at the Biosystematics Division here compare well with international standards.

### *Scientists from Russia and Poland visit PPRI*

Two scientists spent over a week at the Hemiptera collection at Vredehuis visiting Michael Stiller in February this year. Jacek Swedo, from Poland, is a specialist on bugs in fossilized amber. He identified and curated various leafhopper and planthopper groups in the collection, and participated in a field trip to Waterval Boven and Suikerbosrand. The other visitor was Dr. Alexandre Emeljanov, from St. Petersburg in Russia. He also worked on material in the planthopper collection, mainly on the genus *Rissius*. This genus is endemic to Southern Africa. The species are wingless, usually ground-dwelling, and more common in desert areas where they exhibit unusual survival adaptations. Dr. Emeljanov also took part in a field trip to the Northern Cape.

### *New stamp series*

A new standard stamp series on spiders was recently released. The information accompanying the stamps was compiled by the Spider Research Centre at PPRI.

### *Potato aphid course*

During March and April, Ian Millar presented two introductory courses on aphid identification methods. These training sessions were requested by the organization Potatoes South Africa, and were attended by 11 technicians from various potato growing areas in South Africa. The technicians learnt how to identify 12 aphid species that feed on potatoes. They will use this knowledge to monitor aphids, which infect potato crops with plant virus diseases. Aphid population trends in potato fields need to be surveyed as part of a pest management programme.

### *New face at Mycology Unit*

Ms. Rosina Maboya has been appointed by the National Research Foundation under the Department of Science and Technology Internship Programme to the Mycology Unit for one year. She will assist with data capture of PREM database but mentorship will focus on alignment of theoretical knowledge with practical work experience, improvement of skills, and exposure to a range of activities to eventually function independently.

### *Pathogens associated with citrus and avocado industry*

Identification and genetic characterisation of important root rot fungal pathogens associated with the citrus and avocado industries have been made. In collaboration with Citrus Research International and avocado producers strains have been identified, sequenced and submitted to the live mycological collection at PPRI. Sequence data has been submitted to a central database for comparison and identification of new strains. Genetic diversity and new clonal lineages of local strains will be determined to assist plant pathologists in developing new control strategies.

### *Spider important evidence in murder trial*

A grass funnelweb spider, (Agelenidae, *Agelena* sp.), found on the body of the murdered Leigh Matthews, provided important evidence to show that the body had only been present on the murder scene for a short period. Dr. Ansie Dippenaar-Schoeman, Specialist Scientist and manager of the ARC-Spider Research Centre told the court that the spider was found in a flimsy retreat on the body, compared to the strong funnelwebs that they normally spin to catch prey. The funnelweb spiders are very common in grassland and they live in a funnel at one side of the web. This was the first time that a spider was used in a court in South Africa to help unravel what really happened.



## *Insect Ecology Division*

### *Workshop and meeting in Kenya*

Dr. Rami Kfir attended a workshop and meeting held at the International Centre of Insect Physiology and Ecology (ICIPE), Kenya, in June to discuss the development of biological control based IPM for diamondback moth, *Plutella xylostella*, in eastern and southern Africa. At the meeting the results of the project were evaluated and the current situation and future activities discussed. The project is funded by GTZ. A presentation titled "Research on the diamondback moth, *Plutella xylostella*, in South Africa" was given at the workshop. Collaborating institutions attending the meeting were from Ethiopia, Kenya, Tanzania, Uganda, Zimbabwe and South Africa as well as Germany, Taiwan and Romania.

### *Training course in Philippines*

The ARC was invited by AFRICA Trade to submit applications to the Department of Foreign Affairs of the Philippines to attend a training course in Non-Timber Forest Products and Enterprises. Since beekeeping and mushroom production is closely related to forestry, Elize Lundall-Magnuson, Sidwell Banne and Vuyo Ntiyantiya attended this course in the Philippines in April 2005.

### *Visit to the South African Pilot Learning Site*

At the end of June, Elize Lundall-Magnuson, as ARC team leader of a consortium which is participating in the FARA Sub-Saharan African Challenge Programme, also visited the South African Pilot Learning Site – Zimbabwe/Malawi/Mozambique Corridor, regarding Facilitating and Mentoring services to Pilot learning teams.

### *Crop Pests database*

An agreement has been reached with the Department of Agriculture, Agricultural Production, to develop a database containing information on major crop pests with information about their distribution, description and damage. This will form part of AGIS (Geographic Information System for Agriculture).

### *Insectary*

The Insectary has been reorganised recently. The susceptible laboratory culture of the African bollworm, *Helicoverpa armigera*, which is more than thirty years old, has been expanded to provide in the demand. New equipment has also been installed to comply with health regulations and reduce allergens. Satch Mosiane is now in charge of the Insectary.

### *Visit to Kenya*

Margaret Kieser, as the coordinator of the regional network ICOSAMP (Information Core for Southern African Migrant Pests), was invited to give a talk on this network to migrant pest control officers from several countries in East Africa who were attending a workshop entitled "Quelea Management in East Africa". While there she also participated in a Training Course on Environmental Impact Assessment of Quelea Bird Control. The presentation focused on the main functions of ICOSAMP and how the major migrant pests in SADC are monitored, recorded, and the information analysed and disseminated. The structure of the newly installed "country systems" was also explained. All the delegates recognised the value of the ICOSAMP system for southern Africa and were keen to see such a system developed and devoted to East Africa, or one that encompasses both regions simultaneously, thus promoting southern-eastern linkages. The Workshop delegates also endorsed draft standardised protocols for EIA procedures for Quelea control in East Africa.



**Delegates at Workshop on Quelea management in East Africa**

### *Recognition of ARC project in DFID publication*

The Natural Resources International Limited (NRIL) in the UK produced a publication in June 2005 (Siderman-Wolter, B. 2005), which provides an insight into the work of 17 of the more than 200 projects they have managed on behalf of donors such as the UK Department for International Development (DFID). A PPRI initiated project – ICOSAMP – under the coordination of Margaret Kieser, is one of these highlighted projects.

The ICOSAMP network (Information Core for Southern African Migrant Pests), a collaborative project between the ARC, the Natural Resources Institute (NRI) in the UK, and migrant pest officers in southern Africa, was initiated in 2001 with funding from DFID. This network assists decision makers in 13 member countries of SADC (Southern African Development Community) with essential tools to improve cross-border communication with respect to migrant pest forecasting and implementation of timely control strategies, thereby improving the food security of each country and the SADC region as a whole.

**Siderman-Wolter, B. (Editor). 2005.** "Did You Know ...?" A focus on 17 natural resources projects across the developing world, managed by NR International. NR International. ISBN 0-9546452-1-9

## *Insect Ecology Division (continued)*

### *Southern African ICOSAMP Collaborators trained on 'country-specific' systems*



**ICOSAMP collaborators for Mozambique and Angola**

The ICOSAMP (Information Core for Southern African Migrant Pests) project, initiated by PPRI in 2001, has contributed to the building of national capacity and pest management strategies in SADC member countries, and built up a valuable database of migrant pest distribution information in SADC.

During 2004 and early 2005, each country was provided with computer hardware, software, and a country-specific ICOSAMP system, thereby providing each collaborator with the ability to produce a GIS map and Bulletin specific to his/her country.

Data input was streamlined, and routines developed for the import and export of data between all the systems. Training was provided to each collaborator on his/her country system, and was divided into three sessions viz. 'How to set up the ICOSAMP computer', 'How to use the ICOSAMP system', and 'The role of a Coordinator', each with its own Users Manual.

From January – May 2005, the countries of Swaziland, Tanzania, Angola and Mozambique (Portuguese systems), the Democratic Republic of the Congo (French system), and the regional control organisation IRLCO-CSA (International Red Locust Control Organisation of Central and Southern Africa) received their training at the Rietondale Research Station.

## *Pesticide Science Division*

### *Meeting and workshop in Netherlands*

Frikkie Kirsten attended a meeting and workshop held at the Royal Tropical Institute in Amsterdam in April to discuss the activities and the way forward of the EC funded Ratzooman project. The project aims to help SADC countries to develop strategies for the prevention of sanitary risks linked to the proximity of humans to animals, with the emphasis on rodents and rodent-borne diseases. The Stored Grain and Oil Seed Unit is responsible for data collection on rodent ecology and taxonomy.

### *Rodent specialists visit PPRI*

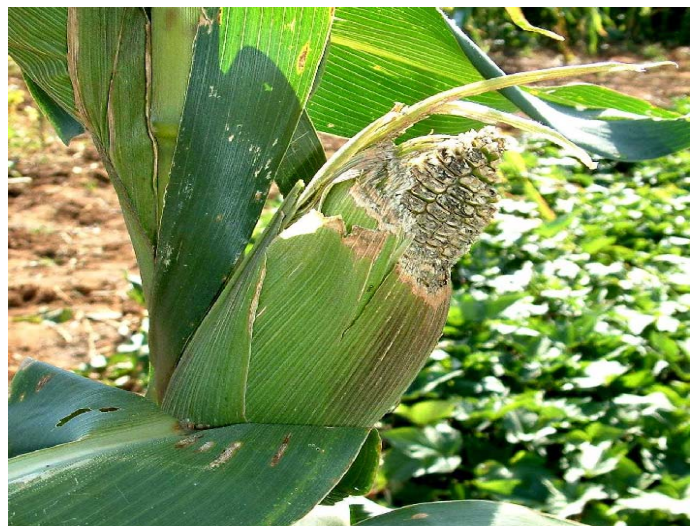
Dr. Steve Belmain from the Natural Resources Institute (NRI) and Mr. Adrian Meyer, a NRI associate and private rodent pest control consultant, visited South Africa in February. Mr. Meyer returned again during June. At both instances the visitors presented rodent pest control training courses, hosted by PPRI, to agricultural extension, environmental health and pest control operators.

### *New record of rodent species in South Africa*

In collaboration with the University of Pretoria and Danish Pest Infestation Laboratory, the Asian rodent *Rattus tanezumi*, first record in Africa, and *Pelomys fallax*, first record in South Africa, were identified from rodent specimens collected in the Limpopo province.

### *New technology*

A new method has been developed to use a pulse microwave generator for the control of stored grain insect pests. Excellent results were achieved with the stored product pests tested. Ms. Tanja Saayman presented the following paper on this method at a workshop at CSIR in March 2005: "Microwave processing and the eradication of cereal insect pests and their eggs".



**Rodent damage to maize**

## Plant Pathology and Microbiology Division

### *A new bacterial disease of maize*

A new destructive bacterial disease of maize, brown stalk rot caused by *Pantoea ananatis*, was reported by Theresa Goszczynska. During the 2003/2004 growing season, the new disease was observed on commercial fields of maize. The initial symptom was discoloration of the leaf sheath and stalk at a node. Disease then developed in the stalk and spread up the stalk and into the leaves. Foul odor could be detected.

Splitting the stalk revealed internal discoloration and slimy rot mostly initiated at the nodes. Diseased plants were found scattered throughout the field and on some fields up to 80% of plants were affected. Yellow, gram negative, facultatively anaerobic bacteria were frequently isolated from diseased tissues. Biochemical tests using API 20E and API 50CHE systems identified two representative isolates as *Pantoea* species.

Subsequent sequencing of the 16S rRNA gene revealed a final identity as *Pantoea ananatis*. In spray inoculations, all strains caused chlorotic, slightly rotten lesions on maize leaves. When bacterial suspension was injected into the second node of stem, discoloration of the stalk at the node was observed 3-4 weeks after inoculation. The rot spread upwards, causing browning of vascular tissues and rot of the leaf sheaths. Inoculated plants produced seed from which *P. ananatis* was isolated on a semi-selective medium PA 20. This is the first report worldwide of bacterial stalk rot of maize caused by *P. ananatis*, and transmission of this pathogen in maize seed.

### *Top scientist from Belgium visits PPRI*

Prof. Jean Swings, the President of the World Federation of Culture Collections visited the Plant Pathogenic and Plant Bacteria culture collection at the Bacterial Diseases Unit on 3 February 2005. Future co-operation was discussed.

### *Scientist acts as promoter of two MSc degrees*

Dr. Sandra Lamprecht was the promoter for the MSc. Agric degree of Y.T. Tewoldemedhin, who graduated in April 2005 at the University of Stellenbosch. The research was on characterisation of *Rhizoctonia* in cropping systems in the Western Cape Province. At the same university she was the co-promoter for the MSc. Agric degree of C.F.G. Spies who graduated in April 2005 and studied the inoculum ecology of *Botrytis cinerea* in rooibos nurseries.

### *Nutritional value of food*

A study has been launched to examine the nutritional value of food consumed by rural communities in the Limpopo and Eastern Cape Provinces. Current emphasis by PPRI researchers is on the production of mycotoxins by *Fusarium* spp. and on developing improved control measures against these soil-borne plant diseases.

### *Participation between PPRI and KZN Department of Agriculture*

PPRI researchers were invited by the KwaZulu-Natal Department of Agriculture to further discussions of their Sustainable Rural Livelihoods (SRL) work in the province. A build-up of soil-borne plant diseases was identified as the cause of diminishing yields in several crops grown under no-till cultivation practices. This was due to poor rotation practices and further studies will be undertaken to improve the rotation practices in no-till production systems. The problem was identified as bad rotation system leading to the build-up of soil-borne pathogens explaining why the increased use of foliar pesticide sprays did not affect the yields. Some doubt was expressed by farmers that this was the real cause and it was proposed that a soil sterilization experiment be performed to quantify and demonstrate losses caused by root pathogens.



Bacterial stalk rot of maize

## Weeds Research Division

### News from the Cedara Weeds Laboratory in KZN

The main focus of the Cedara laboratory over the past few years has shifted from chemical and integrated control of invasive alien plants to their biological control. Biocontrol of *Chromolaena odorata* (Asteraceae) remains the largest project, while two new projects focusing on biocontrol of the emerging asteraceous weeds, *Parthenium hysterophorus* and *Campuloclinium macrocephalum* (pompom weed), began late in 2003. These projects replaced that on bugweed (*Solanum mauritanium* – Solanaceae).

Non-biocontrol projects at Cedara include work on the ecology, invasiveness and control of pompom weed as well as technology transfer in the form of development of a correspondence course at the Tshwane University of Technology on invasive alien plant management. The Cedara unit remains relatively small, with four researchers, a research technician, and three full-time support staff.

#### Biocontrol of triffid weed (*Chromolaena odorata*)

Two insect agents are now confirmed to be established on triffid weed in South Africa, both at sites near the coast south of Durban. These are the moth *Pareuchaetes insulata* (Lepidoptera: Arctiidae), the larvae of which defoliate the plant; and the fly *Calycomyza eupatorivora* (Diptera: Agromyzidae), the larvae of which create blotch mines on the leaves. The moth larvae are causing substantial damage to plants for up to 1km from the release site.

Permission is currently being sought from the relevant South African authorities for the release of a third agent, the weevil *Lixus aemulus* (Coleoptera: Curculionidae), which has a stem-boring larval stage.

Although *C. odorata* as a species has a wide native distribution in the neotropics, the plants invading southern Africa are morphologically distinct, so that agents collected off other forms in the Americas have sometimes not developed well on southern African plants in quarantine. The origin of this southern African biotype has recently been shown to be almost certainly one of the islands in the northern Caribbean, particularly Jamaica, Cuba or Puerto Rico.

Several promising agents from these islands are currently being worked on, including the stem-galling moth *Mescinia* n.sp. (Lepidoptera: Pyralidae). If this proves to be the same species studied by Cruttwell (1977) in Trinidad, permission to release it should be quick to obtain, as Cruttwell showed it to be highly host specific, and the rearing problems that previously prevented its use have been largely overcome.

However, work is also continuing in South America on other insect species for biocontrol of triffid weed, because the diversity of phytophagous insects on the plant in Cuba and Jamaica is low, and also because insects which are likely to be adapted to the seasonally drier regions of triffid weed's invasive range have not been found on the northern Caribbean islands. For these species, biotype compatibility is assessed by comparing their

performance on the southern African triffid weed biotype with performance on the biotype they were collected from.

In Venezuela, three insect species are being studied, two under a contract between PPRI and the Universidad Central de Venezuela. These are *Conotrachelus reticulatus* (Coleoptera: Curculionidae), a stem-galling weevil which diapauses as a pupa in the ground; and *Carmenta* n.sp. (Lepidoptera: Sesiiidae), a shoot tip-killing moth which diapauses in the stems. *Longitarsus horni* (Coleoptera: Chrysomelidae), a root-boring flea beetle, is the third Venezuelan species under investigation. In Argentina, the highly damaging stem-borer *Recchia parvula* (Coleoptera: Cerambycidae) has recently been collected, and preliminary tests in quarantine indicate that it is host-specific.

#### Biocontrol of bugweed (*Solanum mauritanium*)

Bugweed now has one agent established on it in South Africa, viz. the sap-sucking bug *Gargaphia decoris* (Heteroptera: Tingidae). However, numbers in the field have generally remained low, possibly because of predation pressures. A second agent, the flower-feeding weevil *Anthonomus santacruzii* (Coleoptera: Curculionidae), is awaiting permission for release from the South African authorities. This may prove a highly effective agent through reduction of the high seed production that contributes towards the invasiveness of this tree.

#### Biocontrol of parthenium (*Parthenium hysterophorus*)

The biocontrol project on parthenium is based on the successful biocontrol programme on this weed in Australia. Complementary host-specificity testing is currently under way on the destructive stem-boring weevil *Listronotus setosipennis* (Coleoptera: Curculionidae), while the defoliator *Zygogramma bicolorata* (Coleoptera: Chrysomelidae) is in culture.

#### Biocontrol of pompom weed (*Campuloclinium macrocephalum*)

Several promising agents were imported from Argentina early in 2005 for biocontrol of pompom weed, one of which – an unidentified stem-galling thrips – is being cultured at the Cedara laboratory.



Pompom weed in the Swartspruit Valley

## Weeds Research Division (continued)

### New facilities and personnel at Cedara

Biocontrol research on invasive alien plants has been well funded over the past eight years by the Working for Water Programme. This recognition of the importance of biocontrol as a long-term control strategy has recently been taken a step forward with the involvement of the KwaZulu-Natal Department of Agriculture and Environmental Affairs, who are funding the erection of a new, high-security quarantine facility at Cedara as well as the employment of additional research personnel. This will substantially increase both productivity and safety of biocontrol research at the Cedara laboratory.

### News from the Rietondale Weeds Laboratory, Pretoria

#### At last – a good biocontrol agent against lantana!

Biocontrollers who had been battling for decades to make progress with the biocontrol of lantana (*Lantana camara*), one of the most persistent invasive plant species in the country, are carefully optimistic about the prospects of an agent released during March 2002. The herringbone leaf-mining fly (*Ophiomyia camarae*) became established at three release sites along the south coast, from where it has spread throughout most parts of the KZN coast up to elevations of 900 m. The fly has also dispersed into Mozambique and Swaziland. So far, it has managed to escape parasitism by indigenous parasitoids. The herringbone miner damages the transport system of the leaves, causing them to drop prematurely. David Simelane is currently investigating the effects of this damage to lantana populations in the field.

#### Water hyacinth meets its match

The invasive aquatic plant, water hyacinth (*Eichhornia crassipes*), has been invading South African waters since the late 1950s. Due to numerous factors, effective control has been eluding us, despite the release of more biocontrol agent species against the weed than anywhere else in the world. However, the tide has now turned as Hardi Oberholzer from the Weeds Research Division has teamed up with the universities of the Witwatersrand, Pretoria and Rhodes in a huge collaborative project funded by the Water Research Commission.

“Team Water Hyacinth” (as they like to refer to themselves) do not consider eradication of the weed as feasible, but think the infestation levels could be managed at a population level of between 10 and 20% of the present level on a sustainable basis. At this population level, the impact of water hyacinth on water resources and the environment is thought to be acceptable.

The main aims of the project are to determine the factors that cause the plant to grow so excessively in certain conditions, and the effect of these factors on the effectiveness of the available biocontrol agents. In addition, the feasibility of applying a sub-lethal dosage of herbicides, in order to set back the water hyacinth plants while minimising harm to the biological control agents will be investigated.

Fifteen sites, in three different climatic areas, are being monitored on a monthly basis for the various biocontrol agent species, micro-climate and water quality. The information from each of these sites will serve as baseline information for compiling site-specific management plans. The integrated management of water hyacinth will be based primarily on biological control, and supplemented by chemical and mechanical control measures. This five-year project is currently in its second year.



“Team Water Hyacinth”

#### Finding safe and effective natural enemies for Pompom weed

Pompom weed (*Campuloclinium macrocephalum*), originally from South America, is replacing grasslands in large parts of the country. This picturesque plant has the potential to spread rapidly and become dense over most of the grassland biome, and in wetlands elsewhere. It is one of the “emerging weeds” targeted for biological control in the contract with Working for Water. The first surveys were recently undertaken in Argentina. Some of the most promising candidates are currently being cultured in quarantine in South Africa (Cedara, Pretoria and Stellenbosch) with a view to further studies. Species found include:

- *Puccinia* sp., a leaf- and stem-affecting rust fungus;
- Three different stem and crown borers ( Cerambycidae: *Adesmus* sp.; Curculionidae: *Lixus* sp., and Sesiiidae: *Carmentia* sp., to be described);
- A twig and stemborer (Mordellidae);
- A species of thrips (Thysanoptera) deforming and stunting shoots and inflorescences, and also occurring below ground level (unidentifiable so far);
- Different species of small moths, flies and beetles developing in the flower heads (Pterophoridae, possibly Gelechiidae, Tephritidae, Curculionidae).

#### New Eucalyptus pests discovered

This division, contracted by Working for Water, initiated research on finding host-specific natural enemies that may curb seeding of two of the most invasive *Eucalyptus* species, *E. camaldulensis* and *E. lehmannii*. The aim is not to affect flowering (as this is important in the beekeeping industry) nor the trees themselves. The first (opportunistic) survey in Western Australia indicated that the plant that is invasive in the Western and Eastern Cape and used to be

## Weeds Research Division (continued)

known as *E. lehmannii*, is probably not *E. lehmannii*, but the recently described *E. conferruminata*. Also, the most promising natural enemies in Western Australia affecting seeding may be affecting flowering too. Therefore, due to possible conflict of interest, biocontrol seems not be the best option to control this plant.

It was known that a Torymid wasp - an undescribed species of *Megastigmus* - developed in seed capsules of *E. camaldulensis* in South Africa, and it was necessary to first determine its effect on seed production. The fieldwork revealed that another species of wasp of Australian origin, the eulophid *Quadrastichodella nova*, also emerged from the capsules, as well as another eulophid species in an undescribed genus (subsequently also found to have been collected earlier in Australia). The real roles of these insects and their possible interactions are now being studied by Hildegard Klein.

The local fieldwork also led to the discovery of the seed-galling eulophid, *Moona spermophaga*, in seeds of *E. citriodora*, and yet another Australian eulophid, again in an as yet undescribed genus, forming minute galls under twigs and capsules of *E. citriodora* and *E. maculata* and possibly other species. Local surveys on eucalypts also led to the realization that the leaf-sucking bug, *Thaumastocoris australicus*, had recently arrived in South Africa. It is a very damaging pest of some *Eucalyptus* species, especially *E. camaldulensis*.



Minute galls on twig and capsule

## Working for Water Capacity Building Programme

The Working for Water Programme has made funding available to train students and young researchers to become weed biocontrol researchers. PPRI researchers play a key role in the Working for Water Capacity Building Programme. At the moment three undergraduate students are working at the laboratories in Cedara and two at Rietondale Research Station. Although they are only based at these stations during university vacations there is ongoing interaction between mentors and students throughout the year with ongoing research projects. Three additional University of Fort Hare students are currently being mentored by the Stellenbosch Weeds Laboratory.



Arne Witt and Hildegard Klein with students

## Developing regulations in terms of the Biodiversity Act

Four PPRI staff members – Dr. Gerhard Prinsloo, Arne Witt, Lesley Henderson and Hildegard Klein – were seconded to serve on a task team that is developing regulations in terms of Chapter 5 of the National Environmental Management: Biodiversity Act, No. 10, of 2004. Chapter 5 of this act deals with the prevention and control of alien and invasive species which pose a threat to the country's biodiversity. Various state and provincial departments are already dealing with certain aspects of what this chapter aims at, although not always effectively and not in a consistent way throughout the country. Some very important aspects are, however, not yet being addressed at all, e.g. the unintentional introduction of invasive alien organisms through containers, packaging material and other commodities. The task team, chaired by Dr Guy Preston, National Programme Leader of the Working for Water Programme, is attempting to find a way in which these functions can be carried out effectively, without duplication or contradiction, and by making the best possible use of both the resources available in the state and provincial departments and the country's available expertise in the field of invasion biology and invasive vertebrates, invertebrates, aquatic organisms, microbes and higher plants. The task team's proposals will go through the obligatory process of public participation before they are submitted to parliament later this year.

## Comrades runner

Oupa Mogolane from the Weeds Division, took part in the 80<sup>th</sup> Comrades marathon on June 16, 2005. He managed to finish in the 1122<sup>th</sup> place of 11724 finishers. His time was 8 hours, 1 minute and 3 seconds, earning him a Bill Rowan medal. This is exceptional when one considers that there were 13900 starters, thus 2176 non-finishers, on the day. To add to his achievement, this was his first time to take part in this gruelling race. Oupa's participation was partially funded by staff at the Rietondale campus of PPRI.



Oupa Mogolane

## Other News Flashes

### Launch of South African Biological Information Facility

South African Biological Information Facility (SABIF), which is the South African node of Global Biological Information Facility (GBIF), was launched on 7 June 2005 at the Innovation Hub, Pretoria. The Deputy Minister of Science and Technology, Derek Hanekom, opened the SABIF portal with five organizations making their databases live on the Internet. Five staff members of PPRI-Biosystematics were invited: Ansie Dippenaar-Schoeman, Marietta Marais, Esther van den Berg, Isabel Rong and Connal Eardley. SABIF intends to create an enabling platform for end users to discover and put to use vast quantities of global biodiversity data. The Biosystematics Division presently has two projects funded by GBIF and SABIF. For more information see SABIF's website is at [www.sabif.ac.za](http://www.sabif.ac.za)

### Launch of ESASTAP

The European-South African Science and Technology Advancement Programme (ESASTAP), which is an European Union/ South Africa joint venture, was launched on 28 June 2005 at the Innovation Hub, Pretoria. It was opened jointly by Drs Rob Adams, of the Department of ST, and Klaus Schmidt, of the EU. ESASTAP's objective is for South African and European scientists and technologists to work together, and both the EU and DST are investing large sums of money into this Venture. The opening of ESASTAP was followed by a breakfast. Both Ansie Dippenaar-Schoeman and Connal Eardley attended. For more information visit ESASTAP's website is at [www.esastap.org.za](http://www.esastap.org.za)

### Long service awards

On Tuesday 21st June 2005, the President and CEO of the ARC honoured employees with 30 and 40 years of uninterrupted service. Each employee received a certificate and a memorable gift from the ARC President and CEO. Congratulations to each and every employee for this great achievement. The following persons from PPRI received awards: H. van Tonder, B. Moropane, B.D. Viljoen, E. van der Berg, J.L. Staphorst, S. Naser, W. Lebepe, A.S. Dippenaar-Schoeman, C. Fransman, D.H. Ochse, G.D. Tribe, J. Coetzer and J.A. Gordon. This function will in future be held annually. The function coincided with the launch of the DST funded Capacity Building Program. The primary objective of the DST Capacity Building Program is to develop capacity within the category of young scientists through exposure to various research methodologies and practical application in an agricultural environment. The young scientists accompanied by their mentors were officially introduced and welcomed in the ARC by the respective Group Executives. Two of the young scientists will be mentored by Dr. Staphorst.

### Obituary

Dr. Richard Watmough passed away on 23 February 2005 at the age of 67. Richard, who received his PhD in entomology from the prestigious Silwood Park College (University of London), was employed at this institute from 1967 until his retirement in 1997. He worked and published on the biology of carpenter bees, and the biological control of potato tuber moth and bollworm.

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