



# Tree Protection News

Newsletter of the Tree Protection Co-operative Programme (TPCP) and DST/NRF Centre of Excellence in Tree Health Biotechnology (CTHB)

Volume 26

December 2013



## FROM THE DIRECTOR'S DESK

I am writing this introduction to the last issue of Tree Health News for 2013 as I make my way back to FABI after attending the first two days of the CAMCORE meeting, hosted in South Africa for the first time in many years. While I was really sorry not to be able to participate in a greater part of this meeting, it was a pleasure to hear presentations on many aspects of forestry in South Africa. The clear message for me was that despite very difficult financial times, some really outstanding forestry research is being done in this country. And that despite the many challenges, in no small part the growing numbers of pests and pathogens with which we must contend, there is also good cause for optimism.



The myrtle rust pathogen, *Puccinia psidii*, on developing guava fruit

The forestry pest and pathogen situation in South Africa continues to present us with some very serious challenges. For example, in our last issue of Tree Health News, we reported on the appearance of the myrtle rust (also known by some as Eucalyptus rust) pathogen, *Puccinia psidii* in South Africa. This very serious disease that threatens Eucalyptus forestry in this country was interestingly found in the garden of Marcel Verleur, tree health specialist of Sappi. Marcel

## INSIDE THIS ISSUE

From the Director's Desk	1
UP professors elected to ICPP	3
Contacting the CTHB and TPCP	3
Diagnostic Clinic news	4
Entomological society Congress	6
Visit of Prof Mario Rajchenberg	7
TPCP/CTHB Science education	8
Bronze bug biological control	10
IUFROLAT Costa Rica	11
Farewell to Lydia Twala	12
2014 TPCP, CTHB meetings	12
Symposium on gall forming insects	13
FABI SPOOF	14
Congratulations	15
Welcome to the TPCP/CTHB	15
<i>Sirex noctilio</i> news	16

**Contributions by:** Mike Wingfield, Darryl Herron, Osmond Mlonyeni, Bernard Slippers, Martin Coetzee, Seonju Marincowitz, Gudrun Dittrich-Schröder, Mischa Muller, Teboho Letsoalo, Amy Wooding, Jolanda Roux, Martie Meyer

**Layout and design:** Jolanda Roux



has been exposed to many presentations by members of the Tree Protection Co-operative Programme (TPCP) including those dealing with the threat of myrtle rust and this clearly prepared him to recognize the disease. As the 19<sup>th</sup> Century medical researcher Louis Pasteur is cited as saying "chance favours the prepared mind". What is really important is that the disease has apparently been discovered early and at pre-epidemic stage, and it is now possible to screen planting stock to ensure that damage is kept to an absolute minimum.

Another 'red flag' for the TPCP is the Red (excuse the pun!) Gum Lerp Psyllid, which has the rather beautiful name, *Glycaspis brimblecombei*. That said, the damage that this insect causes is anything but beautiful and it has begun to spread rapidly throughout South Africa. From a single known infestation in the Pretoria area, it has moved northwards at a shockingly rapid rate and is now commonly found in plantations throughout Limpopo, Mpumalanga and KwaZulu-Natal. Just in the last few weeks, we have had reports of very heavy infestations on hybrid clones in Limpopo and Mpumalanga and it seems likely that the damage by this pest will continue to grow. The TPCP Team began research on *G. brimblecombei* shortly after it was discovered in South Africa and we have already moved towards initiating a biological control programme for the pest.

Looking backwards, I realize that I have focused heavily on bad news stories, so let me include some very positive developments with you. Just a few weeks ago, in fact the week before the start of the CAMCORE meetings, the TPCP team released a biological control agent for the bronze bug *Thaumastocoris peregrinus*. This parasitoid, *Cleruchoides noackae*, known to some as the 'fairy fly', has been developed for biological control in the FABI Biological Control facility during the past four years. This has been very intensive and time-consuming work, including an amazing effort by a large number of researchers and technical staff members of the team. We were also in the very fortunate position of being able to gain permission

for the release of the parasitoid without undue delays. Here the support of senior members of the TPCP Board played a very important role. The monitoring process has begun and we can now hope that the populations of the pest will begin to fall. At present, we do not have other biological control options, but clearly other parasitoids must be sought to ensure long-term control of a very important pest.

While I am sharing good news stories, it is as well to mention the superb progress that has been made in reducing the impact of both the Sirex Wood Wasp and the Pine Pitch Canker fungus. While these very serious pest and disease problems are far from solved (realistically they will never be completely eliminated), the levels of loss due to their infestation/infection have been reduced. We will clearly continue to work actively on Sirex biological control and on methods to reduce the impact of pitch canker (in its various manifestations) for many years to come. But both these problems provide vivid evidence of outstanding teamwork and collaboration between TPCP researchers and Forest Industry members of the TPCP.

Effectively dealing with pests and pathogens in the forest plantation environment has always been a team effort. While the researchers (now 12 Ph.D. level leaders and some 50 M.Sc. and Ph.D. students) linked to the TPCP provide various levels of support including field extension, disease and pest monitoring, diagnostic services as well as research towards reducing the impact of pests and pathogens, collaboration with field foresters, forestry managers and industry researchers in a diverse range of disciplines, is fundamentally important. Thus, as we rapidly move to the end of another hectic year (the 24<sup>th</sup> year of the existence of the TPCP), we thank all our colleagues linked to the TPCP for their support and friendship. It is this team effort that makes it possible for us to do our best to ensure that we continue our mission of "KEEPING TREES HEALTHY".

Mike Wingfield



## TWO UP PROFESSORS ELECTED TO INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY

At the recent International Society for Plant Pathology (ISPP) meeting in Beijing it was announced that two South Africans (both from the University of Pretoria's Faculty of Natural and Agricultural Sciences), Prof Brenda Wingfield and Prof Lise Korsten were elected to the ISPP Executive Committee. Their term of office is from 2013 until 2018.

Prof Wingfield was elected as the Secretary General while Prof Korsten as the Global Food Security Task Force Chair of the ISPP. The International Society for Plant Pathology promotes the world-wide development of plant pathology and the dissemination of knowledge about plant diseases and plant health management.

The Society also sponsors the International Congress of Plant Pathology (ICPP) at regular intervals and other international meetings on plant pathology and closely related subjects.



Prof. Lise Korsten and Prof. Brenda Wingfield

The Society establishes committees to consider and report on special fields or problems in plant pathology. The Society organises other activities including the publication of journals, newsletters and websites, as approved by the Executive Committee.



## CONTACTING THE TPCP AND CTHB RESEARCH TEAM AND DIAGNOSTIC CLINIC

Reception Tel.: 012 420 3938/9

Website: <http://www.fabinet.up.ac.za>

### Director

Prof. Mike Wingfield  
mike.wingfield@fabi.up.ac.za

### Extension Services

Prof. Jolanda Roux  
jolanda.roux@fabi.up.ac.za  
Cellular nr: 0829093202

### Extension Services

Ms. Izette Greyling  
izette.greyling@fabi.up.ac.za



t p c p



CTHB

### Diagnostic Clinic

Mr. Darryl Herron  
darryl.herron@fabi.up.ac.za

### Entomology & Biological Control

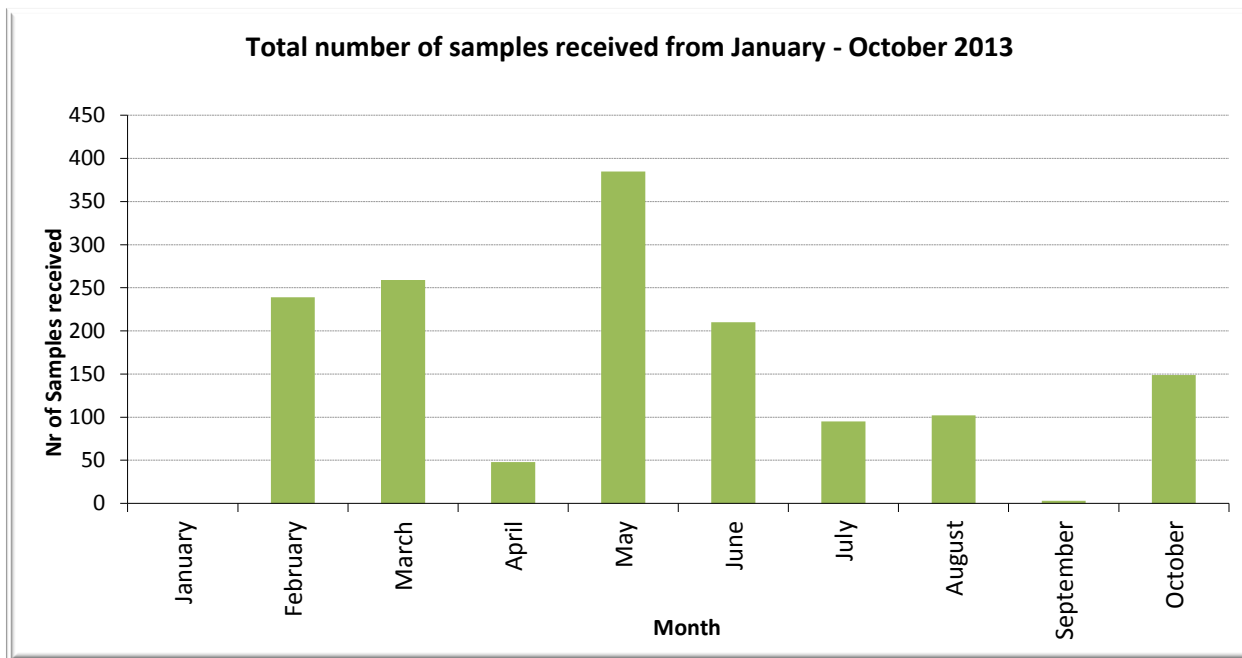
Dr. Brett Hurley  
brett.hurley@fabi.up.ac.za

### Address for clinic samples/courier

FABI, University of Pretoria,  
Cnr Lynwood & Roper Streets, Hillcrest,  
Pretoria, 0028, Gauteng

## NEWS FROM THE DIAGNOSTIC CLINIC

With more than 1500 samples received up until October 2013, the clinic team here at FABI has been kept busy. We investigated several reports of dying native trees and we have seen the arrival and spread of a new pest, the redgum lerp psyllid (*Glycaspis brimblecombei*) and pathogen, *Puccinia psidii*. Certainly their arrival has raised some concerns, but their rapid detection and identification means that research is already underway and we will be watching them very closely!



Although the clinic was not directly involved in the initial identification of these pests and pathogens on South African shores; the clinic, along with the information server, Treehealthnet, will keep the industry informed on their spread and provide information on what to look out for. In fact, all of the information is already available and is updated often for your convenience – just keep an eye out for updates from the FABI website, Treehealthnet, the clinic or your nearest FABIan.

The arrival of these two organisms reinforces the importance of research institutes like FABI, linked to industry, that provide a diagnostic service. Worldwide, plant clinics are crucially important in educating industry, people and policy makers about the threats both locally and abroad. They are essential to any industry concerned with protecting their plants and should be a part of any management strategy.



**Red gum lerp psyllid (*Glycaspis brimblecombei*) on a *Eucalyptus* leaf.**

In 2013, this was apparent as the TPCP/CTHB Diagnostic clinic was used for routine monitoring, screening, identification and in some cases in an advisory capacity. Samples received this year varied slightly from 2012. The clinic received less pine samples and non-forestry related samples than last year, with an increase in the amount of *Eucalyptus* samples processed. The other samples (water, seed and petri dishes) have remained the same in relation to one another. From January to October 2013, the Diagnostic Clinic received a total of 1490 samples. Pine samples comprised 68% of the total number of samples, down from 78% last year. More than 170 *Eucalyptus* samples were received, making up 11.5 % of the total samples, double the percentage last year (5.2%), while *Acacia mearnsii* (Black Wattle) remained at 0.7%. Soil samples received comprised 0.3 % of samples received for 2013, while seed lot and petri dish samples received for *Fusarium* screening comprised of 6.8% and 10%, respectively. Samples from non-forestry and indigenous trees as well as water samples, categorized as "other", comprised of 2.3 % of received samples.



The 2013 Diagnostic Clinic Team: Donghyeon, Katie, Mkhululi, Khumbuzile, Darryl

There is still some time before the end of the year and like pests and diseases we never stop! Have a great festive season from all of us at the TPCP/CTHB Diagnostic Clinic and all the best for 2014. We look forward to helping you in the New Year!

Darryl Herron  
 Manager: TPCP/CTHB Diagnostic Clinic



*Pinus greggii* tree with typical pitch canker symptoms caused by *Fusarium circinatum*. This pathogen is still causing significant losses in the nursery and increasingly in the field.

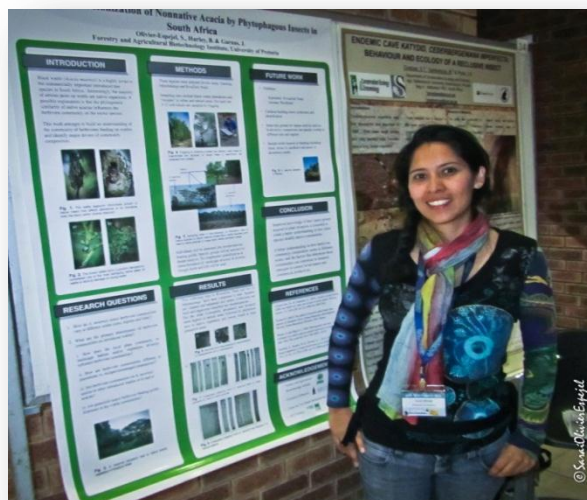


What seems to be the matter? Inside a baobab tree to investigate the cause of stem bleeding and canker.



## XVII CONGRESS OF THE ENTOMOLOGICAL SOCIETY OF SOUTHERN AFRICA

The XVIII Congress of the Entomological Society of Southern Africa (ESSA) took place at the North-West University at Potchefstroom from 30 June to 3 July 2013. More than 100 oral presentations and 40 posters were presented during the congress. The topics were diverse and presentations were given on insect behaviour and ecology, integrated pest management (IPM), agricultural entomology, biodiversity and conservation, biological control, insect-plant interactions and forensic entomology. The programme included three remarkable plenary sessions given by Professor Zeyaur R Khan on the Push-Pull technology, Dr Brian Barnes from the ARC on the Sterile Insect Technique, and weed researcher Dr Helmuth Zimmermann on biological control in South Africa.



Sarai Olivier-Espejel during her poster session.



Organizers welcomed us with a light dinner, including "insect snacks" such as stinkbugs, caterpillars and termites.

A total of 12 FABI members attended the conference. Dr Brett Hurley, Hardus Hatting and the postgraduate students Katie Termer and Amy Wooding gave oral presentations on different aspects of the woodwasp, *Sirex noctilio*. Dr Jeff Garnas talked about barcoding and the importance of pseudogenes in studies focussing on the molecular diversity of insects. Dawit Degefu and Gudrun Dittrich Schroeder explained their current research on genetic diversity of *Coryphoderma tristis* and *Leptocybe invasa*, respectively. Finally, Eston Mutitu's oral presentation focused on the population growth of *Thaumastocoris peregrinus* in

Kenya. PhD students Kwabena Baffoe, Marc Bouwer, Daniela Pineda and Sarai Olivier-Espejel presented their work during the poster sessions, which included biological control, semiochemicals, cryptic species and patterns of insect colonization.

This Congress was a great opportunity to learn from other entomologists and students around South Africa. It also provided a platform to share our own research and meet outstanding scientists. We thank the CTHB and TPCP at FABI as well as the University of Pretoria for financial support, which enabled us to attend the conference.

## VISIT OF PROF MARIO RAJCHENBERG TO FABI

Prepared by Dr Martin Coetzee

I met Prof Mario Rajchenberg in 1997 during the Root and Butt Rot Conference in France. Little did I know that our paths would cross again many years later. This happened as a result of a bilateral agreement between South Africa and Argentina where funding was provided for work on a research project focussing on the forest tree pathogens that are important to both countries. As part of the agreement, researchers from Argentina visit South Africa and *vice versa* with the aim of collecting fungal samples from infected trees or to conduct work in our laboratories at FABI. This year Prof Rajchenberg together with his wife Viviana visited us from 1 June to 7 August for a short sabbatical during which he conducted research, mentored students and presented a course on wood-rotting fungi.



Prof Rajchenberg has a strong interest in wood rot fungi, foliar diseases in ornamental native Proteaceae, the use of root symbiotic fungi (mycorrhiza) in forest production, edible fungi of native and introduced native and plantation forests of the northern Patagonia, and the study of the 'blue spot' of the woods. He is well known for his work on the taxonomy and systematics of the polypores and wood rotting fungi. His interest has led to the publication of more than 100 scientific articles in high impact ISI rated journals, dealing mostly with the taxonomy of the polypores in Argentina and other countries. In recognition for his contribution to mycology, a new species in the genus *Hericium* was named after Prof Rajchenberg in a paper that appeared this year (2013) in *Mycological progress*. The particular species is referred to as *Hericium rajchenbergii*.



Mario, Martin and Sanparks staff looking at wood rot

Prof Rajchenberg is a principal investigator associated with the National Scientific and Technical Research Council (Consejo Nacional de Investigaciones Científicas y Técnicas - CONICET) in Argentina. He has established his research group in Esquel (Chubut, Patagonia) where he is a principal investigator in the Research and Extension Center for Andean Patagonian Forests (Centro de Investigación y Extensión Forestal Andino Patagónico - CIEFAP). He is also an extraordinary professor in forest pathology.



Basidiocarp of a typical *Ganoderma* sp.

As part of his visit, Prof Rajchenberg and his wife joined us for a field trip to the Garden Route. The objective of this trip was to familiarise him and a new CTHB PhD student, Michel Totchet, with some of our indigenous woody ecosystems and diseases that are affecting indigenous trees. In addition it provided an opportunity for Prof Rajchenberg to share his invaluable ideas and experience regarding wood rotting fungi with us. During the field trip he trained Michel in recognising wood rot on felled trees and isolating the fungi that cause wood rot.

During his visit, Prof Rajchenberg presented a short course on wood rotting fungi entitled "Systematics and Biology of Aphylophoroid Fungi". The Aphylophoroid fungi comprise a variable group of organisms that play major roles in nature, such as wood degradation and mycorrhizal associations, and are related to major wood-rotting diseases of standing trees worldwide. The aims of the workshop were to provide students and researchers with introductory knowledge regarding the biology, morphology and phylogeny of Aphylophorales, experience in working with and identifying these fungi and information pertaining to their biology and pathogenicity. The workshop was attended by seven students and researchers in the CTHB and three researchers from the ARC.

It was a great privilege to host Prof Rajchenberg and Viviana. His visit cemented future collaboration between his research group and the CTHB, and establishes new friendships between students and a great mentor. We are grateful to the NRF and the Argentinian government for funding this very exciting project.



Mario assisting students with basidiocarp identification



**TPCP & CTHB SCIENCE EDUCATION PROJECTS – "GETTING THE MESSAGE TO THE PUBLIC"**

Students and staff of the TPCP and CTHB research teams annually participate in several initiatives to bring the world of science to school learners and the public. In 2013 the teams were involved in the UPwithScience project of the University of Pretoria, National Science Week (NSW) and the ACCESS HPW schools workshop in Limpopo. This year these initiatives were coordinated by Markus Wilken, Osmond Mlonyeni, Mmatshapho Phasha, Teboho Letsoalo and Amy Wooding.



Shalona (left), Dhivyaa, Morné, Mathew and Kirsten (right) delve into the nitty gritty of lab work; tip packing, during their UPwithScience experience at FABI.





**Two Grade 11 learners, Kirsten (front) and Shalona collecting samples from the UP botanical gardens**

The inspiration for this year's UPwithScience project came from the ever-increasing number of antibacterial products being advertised. The aim was to explore the idea created by these products that bacteria are everywhere and out to get you! The five Grade 11 learners involved in the project this year did this by testing whether all bacteria can survive in every environment; will bacteria isolated from the UP Botanical Gardens survive in motorbike oil? The project allowed the Grade 11 learners to delve into the fascinating world of bacteria, and find out just how resilient (or not) these amazing microorganisms are.



**Markus Wilken enjoying a learner's excitement at doing her own experiment during the National Science Week in Piet Retief**

The National Science Week (NSW) is an outreach flagship programme of the Department of Science and Technology, which aims to popularize science to the broader South African society. As an active, enthusiastic and committed participant, the CTHB and TPCP team was once again in Piet Retief to contribute towards the NSW objective of *"making science appealing (and fun) to learners such that they consider Science, Engineering and Technology (SET) as a preferable career option"*.



**Teboho Letsoalo and Amy Wooding being interviewed by Sekgosese FM in Limpopo.**

The CTHB outreach group had the privilege of being invited to take part in the ACCESS Habitable Planet Workshop (HPW) schools workshop. The event was co-ordinated by Mr M. C. Moshobane, an MSc student in the Department of Zoology at the University of Pretoria. This workshop was aimed at teaching grade 10 - 12 learners about different fields in science, mainly biological sciences, and encouraging them to study science at a university level. The workshop was held at the Soetfontein Rural Development The Look Community Hall in Sekgosese, about 100km north of Polokwane. The hall is part of a community centre which is a hub of interaction in the Sekgosese community. The team was also invited to be guests on the local community radio station, Sekgosese (100.3) FM.

## Biological control agent for the Bronze bug released in South Africa

The 11<sup>th</sup> of October 2013 represents an important and historic milestone for Forestry in South Africa. It was on this day that research team members of the Tree Protection Co-operative Programme (TPCP) at FABI released the first individuals of *Cleruchoides noackae*, a biological control agent for the *Eucalyptus* bronze bug, *Thaumastocoris peregrinus*. This parasitic wasp was released simultaneously in Limpopo, around the Tzaneen area, and in the Kwazulu-Natal Midlands, around Pietermaritzburg and Richmond.

*Thaumastocoris peregrinus* remains one of the most serious pests threatening the sustainability of *Eucalyptus* forestry in South Africa, and in many other parts of the world. What makes this insect particularly severe is that most, if not all *Eucalyptus* species and hybrids are affected by it. This leaves very little opportunity for deployment of resistant clones or species.



FABIans Marlene Harney and Eston Mutitu (front) with Hans Merensky's Sonia du Buisson and Hannes Enslin with one of the first release bags containing *C. noackae* placed in the Tzaneen area.

Biological control is currently the main option for control of the bronze bug. The development of biological control is, however, a complex process. This work has required identifying and importing the minute mymarid parasitoid, *C. noackae*, from its native range into specialized facilities at the FABI Biocontrol Centre. Here, rearing and handling techniques



were developed, and intricate studies to characterize the biology and specificity of this wasp were undertaken. This work began in 2008 and culminated in receiving formal permission to release *C. noackae* in August 2013.

Reaching a point where *C. noackae* could be released in South Africa owes much to the dedicated team of experts involved in the TPCP biological control programme including Samantha Bush, Marlene Harney, Stephan Neser, Ryan Nadel, Eston Mutitu, Brett Hurley, Bernard Slippers and Mike Wingfield as well as international collaborator Dr Annie Noack from Australia who provided regular supplies of *C. noackae*. The facilities of the FABI Biocontrol Centre were crucially important and the work would also not have been possible without the consistent support from TPCP industry members who provided material and assistance with field work. A special word of thanks is due to the Department of Agriculture, Forestry and Fisheries. A committee on biological control was established early in 2013 and has been functioning efficiently, considerably improving the process to evaluate biocontrol applications. In this regard Dr Ronald Heath, Dr Alice Baxter and Ms Rorisang Mahlakoana have played pivotal roles. Overall, the development and release of the biological control for *T. peregrinus*, the second such release of a biocontrol agent for a *Eucalyptus* pest in a single year, is tribute to the Exceptional University-Forest-Industry-Government partnership facilitated through the TPCP.

**FABIANS ATTEND IUFROLAT FORESTRY CONFERENCE IN COSTA RICA**

The third IUFRO Latin American conference was held in San José, Costa Rica from 12-15 June 2013. Jolanda Roux, Mike Wingfield and Bernard Slippers attended the meeting on behalf of FABI and in their official capacities as IUFRO office-holders. Jolanda is the coordinator for division 7.02 (Forest Pathology), which is a main part of division 7 that deals with Forest Health. Mike was elected during this meeting as the next president of IUFRO. He will officially take over the leadership of the organization at the IUFRO world congress in October 2014. This is of major significance for the CTHB, FABI, the University of Pretoria and South African research as IUFRO is one of the oldest and largest research organizations in the world, representing over 15000 researchers from 110 countries around the world.

The meeting was attended by around 600 representatives of research organizations, governments and policymakers, forestry industries and community organizations, mostly from South America, but a fair number representing all other parts of the world. The *lingua franca* of much of the meeting was Spanish, but all sessions included translation to English.



**Prof Mike Wingfield (Vice President, IUFRO Arauco), Dr Lee Su See (Vice President) and Prof Don Koo Lee (IUFRO Past President).**

The threat of human impact and rapid global changes, with a special focus on climate change, was a general theme running through many of the sessions at the meeting. It is clear that multi- and trans-disciplinary research approaches are needed to address these complex, natural and societal, cross boundary problems. A need for more effective and active interaction with communities and with policymakers was highlighted, both to guide research directions, but also to translate research findings into tangible actions needed to ensure a sustainable future for forests and humanity.

Of particular interest to FABIans was the special session on Threats to Forest Health. A central observation from the session was that the threats of pests and pathogens are increasing around the world, especially given increased human assisted spread to non-native environments and pressure of climate change on ecosystems. As with other threats facing forests, it is clear that a multi-faceted approach, based on solid scientific evidence, is needed to reduce the rate of spread and impact of pests and pathogens globally.



**Division 7 Research Group and Divisional Leaders, Jolanda Roux, Andrzej Bytnerowicz, Eckehard Brokerhoff, Tod Ramsfield and Andrew Liebhold with Mike Wingfield (IUFRO Vice-President).**

## FAREWELL TO LYDIA TWALA



Lydia Twala (front centre) with the culture collection team

Lydia Twala was born and brought up in QwaQwa but moved to Pretoria where her husband, Ismael, started a new job. When she joined FABI/TPCP in 2003, she was initially appointed as a receptionist, but very soon she became interested in the laboratory work. This has led to her becoming involved in the Fusarium screening program under the supervision of Prof Teresa Coutinho. She learned the basic laboratory skills and obtained her knowledge of microbial organisms, especially fungi. She then joined the culture collection (CMW) where more than 2500 cultures are deposited and withdrawn annually. Her major responsibility was to prepare freshly isolated

fungi cultures for long-term preservation and to supply researchers and students with the cultures for their ongoing projects. She was always a very cheerful and passionate "teacher" of simple laboratory procedures as well as of "life's complicated lessons" to both students and visitors. She was able to utilize these skills because she is a qualified teacher

We were very sad to say goodbye to Lydia as she had to leave FABI to follow her husband who was commissioned to serve at the South African Embassy in Tehran, Iran. She and her youngest daughter, Diana, who was in the 10<sup>th</sup> grade at school in Pretoria, have now relocated and found a home in Tehran where the family will live for the next two years. Lydia has two grown-up daughters who remained behind in Pretoria.

Our most recent news of Lydia, is that she was appointed as the vice-Secretary of the diplomatic ladies society in Iran, representing South Africa. It is not surprising to hear that she has been chosen to fulfil this role, as her ability to motivate people and her lively, optimistic and industrious personality are characteristics of Lydia that have been recognised. Her motto is: "we are not called to be thermometers but we are called to be thermostats in people's lives at the end of the day". We are missing Lydia, but we wish her and her family well in their new life in Iran.

## TPCP AND CTHB ANNUAL STAKEHOLDERS MEETING 2014

The dates for the 2014 annual TPCP and CTHB stakeholders meetings have been set. If you are interested in joining us for these meetings, please contact your TPCP/CTHB board member or the Director: Fabi, for more information.

2014 will be an extra special meeting since it is also the **25<sup>th</sup> year of existence** for the Tree Protection Co-operative Programme (TPCP)!

- 12 May 2014 – CTHB Research Member Team Building and Information Day; CTHB Board Meeting
- 13,14 May – TPCP/CTHB Stake holder meetings and presentations by researchers and students
- 13 May – Annual "hands-free beer slug" challenge and Tuscan BBQ dinner
- 14 May – TPCP Board meeting

## INTERNATIONAL SYMPOSIUM ON THE BIOLOGY AND ECOLOGY OF GALL INDUCING ARTHROPODS AND RELATED ENDOPHYTES



Delegates of the 6<sup>th</sup> International Symposium on the biology and ecology of gall inducing arthropods and related endophytes

The 6<sup>th</sup> International Symposium on the biology and ecology of gall inducing arthropods and related endophytes was held at O'Reilley's Rainforest Retreat and Conference Venue from 4-8 August 2013. This venue, located south west of Brisbane, Queensland, Australia, was ideal for biologists with the ancient rainforests and upland forests exhibiting extraordinary flora and fauna. Approximately 60 participants, from more than 12 countries, attended the meeting. The symposium was filled to the brim with interesting talks and opportunities for engaging with the speakers and authors of posters.

Talks presented during the symposium covered topics including taxonomy, diversity and distribution of gall-formers, chemical defences of galls, gall evolution theories, diversity studies, molecular studies and biological control. Fabi's Gudrun Dittrich-Schröder presented two talks from her PhD research. The one talk was entitled 'Route of invasion and diversity of global *Leptocybe invasa* populations' and the other, 'Biology and observed host preference of *Selitrichodes neseri*: a potential biological control agent of the Eucalyptus gall wasp, *Leptocybe invasa*'.

From a forestry perspective, the work of two research groups was of particular interest. A recent outbreak of *Ophelimus maskelli* in the French Riviera led to field surveys, conducted by the French

National Institute for Agricultural Research (INRA), which indicated the presence of *Closterocerus chamaeleon*, the parasitoid of *O. masekelli*, as well as another *Ophelimus* sp. The *Ophelimus* species can be distinguished based on molecular, morphological and bio-ecological data. *Ophelimus maskelli* is a gall-former on *Eucalyptus camaldulensis* whereas the other *Ophelimus* sp. is a gall-former on *E. cinerea*, *E. globulus*, *E. gunnii* and *E. parvula*. The gall morphology and morphological characteristics of the insects, relating to the number of submarginal setae, are different. No parasitoids were recorded from the newly discovered *Ophelimus* sp. Use of molecular sequence data generated from the cytochrome oxidase 1 region of the mtDNA has placed these specimens in two distinct groups. Further work, including a species description and global survey of their distribution, is currently being conducted.

Apart from the stimulating discussions amongst researchers, conference delegates were treated to, amongst other things, canapes at Moonlight crag, a wildlife encounter, didgeridoo demonstration, a guided walk in the rainforest and a superb conference dinner.

After the symposium a collaborative research visit to the Department of Agriculture, Fisheries and Forestry, which is based at the Ecosciences Precinct in Brisbane, allowed discussion on *Leptocybe invasa* research in Australia and South Africa.



Gudrun having discussions on global insect pests with DAFF staff in Brisbane. (F.l.t.r) Simon Lawson, Menon Griffeths, Nicolas Borowiec

**FABI SPOOF 2013: "FRIDAY THE 13<sup>TH</sup>"**

This year it was the privilege of FABI to welcome our honoured guest Prof George Hudler, founder of the Society for the Presentation of Outrageous Findings (SPOOF) Epsilon chapter, to the 'Friday the 13<sup>th</sup>' FABI SPOOF. SPOOF is an event that challenges our creative minds in presenting something entertaining and bizarre, research related, but fictitious. Each research group was challenged to write an abstract which captivates, fascinates and inspires. A prize is awarded for the best abstract.

The FABI Social Club was instrumental in co-ordinating and 'kitting out' the venue according to the Friday the 13<sup>th</sup> theme.



Cold shivers went down the spines of FABIANS as they entered through butcher door strips to the Plant Science Roof. Eyes widened in panic on seeing spiders spinning webs to open umbrellas to ghosts flying in the wind, with flashing bloody body-part centrepieces to animated Willow Creek crime-scenes. This was a scene set to amaze and enthrall whilst dinner was served.

The FABI SPOOF awards followed after dinner. Awards for Best Abstract and Best Presentation were awarded to the Cereal Foliar Pathogen Research Group, a new research group under the management of Dr Bridget Crampton. Dreading World War Z, Best Dressed Male was awarded to Lucas Shuttleworth and Best Dressed Female was awarded to Prof Jolanda Roux.



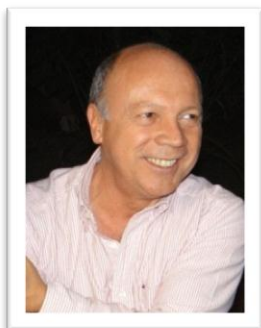
On entry, everyone embarked on a creepy and daunting outlook with fortunes revealed by Gypsy fortune teller, Amy Visser. This was followed by all being tempted with un-fortunate cookie snacks. FABIANS were frightened by the appearance of Leather face (Hardus Hatting) and the re-awakening of Frankenstein's monster (Robert Baker) by our Master of Ceremonies, Dr Frankenstein (Barend van Vuuren).

SPOOF presentations started with the "Friday the 13<sup>th</sup> thesis thriller" presented by the FABI Social Club, setting the scene for unravelling truths by Prof George Hudler's presentation entitled "Unveiling Corporate Conspiracies: SPOOF AND THE YOGURT AFFAIR". Each FABI research group had outdone themselves - their presentations were both captivating and highly amusing.



## CONGRATULATIONS

Congratulations to the following CTHB and TPCP students who received their PhD degrees during the University's Spring Graduation!



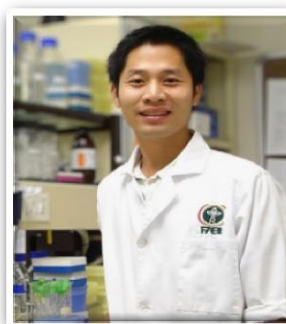
**Carlos Rodas – PhD**  
 Important pests and diseases of plantation grown Pines and *Eucalyptus* in Colombia, and their control



**Marelize van Wyk – PhD**  
 Phylogenetic relationships and taxonomy of species in *Ceratocystis sensu lato*



**Kershney Naidoo - PhD**  
 Mitochondrial Genomes and Concerted Evolution in *Ceratocystis*



**Tuan duong – PhD**  
 Taxonomy, mating type distribution and population biology in species of *Leptographium* and *Grosmannia*



## WELCOME TO THE CTHB AND TPCP TEAMS



**Tanay Bose** will be working on *Phytophthora* species of *Eucalyptus* and *Acacia mearnsii* in South Africa for his PhD. He holds a MSc from the University of British Columbia in Canada and is from India.



**Minkuan Doilom** is a visiting PhD student from the Mae Fah Luang University in Chiang Rai, Thailand, working on *Tectona grandis*. She will be with the TPCP for 6 months.



**Joseph Machua** joined the TPCP team for his PhD. He is from Kenya and works at the Kenyan Forestry Research Institute (KEFRI). Joseph will be working on pathogens of *Eucalyptus* species in Kenya.



**Aquillah Kanzi** is from Kenya and holds a Masters degree in Bioinformatics from Rhodes University. For his PhD he will be working on the comparative and functional analyses of the mating type genes of *Chrysosporthe* species

## Sirex: The control of South Africa's biggest pest threat to *Pinus* plantations



The Sirex woodwasp has now spread throughout the country. In Mpumalanga and Limpopo it is, however, not yet present in all *Pinus* plantations. It is thus still in an expanding population phase and spreading across the landscape. The FABl research team was vividly reminded of its presence in this region during a recent visit to a pine plantation being harvested in Mpumalanga. Wasps could be seen in swarms hovering around piles of harvested logs.

The nematode, *Deladenus siricidicola*, remains the main biological control agent for Sirex. Every year, thousands of trees are inoculated with the nematode. The research team at FABl annually selects strains of the nematode, based on virulence, from infected wasps and then mass produce them for release. To date, approximately 13 billion of these nematodes have been produced by the team for inoculation into plantations in South Africa.

As usual with spreading *Sirex* populations, nematode infections are still at low levels in some regions. It is thus essential to locate new and developing infestations and inoculate these areas thoroughly with the nematode. It is also essential to not lose sight of areas where the nematode is already established, but where for various biological or environmental reasons, control might be failing. This mistake has led to major losses in other countries where Sirex was deemed to be under control, and where vigilant efforts to monitor the control program was deemed unnecessary; for example, the Green Triangle outbreak in Australia where millions of trees were killed in an area where Sirex was supposed to have been under control.

A key part of the annual program for the Sirex

Control Programme in South Africa is the assessment of the success of the inoculation program and nematode parasitism levels. These results are also essential for planning the inoculation program for 2014. This is a huge undertaking every year for Philip Croft and his team collecting thousands of wasps from sampled logs. These wasps are shipped weekly to FABl, where a team of up to 15 staff and students, dissect the wasps and study their eggs or sperm sacks for the presence of nematodes. At the time of writing the team has broken the record, by dissecting and inspecting around 18500 wasps (with more to come in the coming months). While too early to say for certain, early trends suggest good levels of nematode infestation in some areas, but still low levels in others.

The management and assessment of the Sirex Control Programme requires a very close link between industry and research done at FABl. This work is overseen by a Steering Committee, with representatives of FABl, ICFR, FSA, DAFF and all the major forestry companies. This major operation remains one of the most extensive, most important and most successful examples of a control program of a serious pest in South African plantations. It is also producing world class knowledge in the process and contributing to major capacity building in forest entomology and biological control.



Dissection teams pinning, dissecting, inspecting and recording levels of nematode infestation from thousands of Sirex woodwasps.