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Today's Forestry Professional

By Wayne Jones

How has our wonderful profession evolved? Traditionally, foresters were those men dressed in green or khaki uniforms who worked on remote plantations and where timber production was their main concern. They enjoyed the freedom of setting their own daily agenda, whether it included checking new plantings or weedings, progress on the road grading or picking mushrooms! How times have changed.

The forester of today has evolved into a completely different species, driven by a multitude of information systems and tools to manage plantations in a dynamic, new environment. This requires the integration of several new disciplines into the traditional forestry arena. While increasing or maintaining productivity remains key, this comes with several new challenges. There is increased legal, safety and environmental compliance, a shift towards greater mechanisation and increased remote management.

The increased complexity of managing plantations in today and future environments requires the development of forestry professionals from a diverse set of disciplines. This includes tree improvement specialists, molecular breeders, fibre scientists with strong links to pathologists and entomologists. This needs to be supplemented with expertise in land management and sustainability. We require expertise and appropriate tools for rapid, non-destructive, continuous phenotyping to adjust management strategies during rotations. Logistic professionals are required to maximise outputs from the harvesting to mill supply chains. All these integrated processes generate vast amounts of data that require a new type of forester – a data analyst – to interpret and predict trends.

Within South Africa, development of the "Future Forester", is already well in-hand judging by the calibre and diversity of students and post-graduates emerging from various institutions and universities, who have identified the need for specialised expertise. In addition, industry, government and contractors have contributed to moulding the future forester through training and funding initiatives. Locally and worldwide, South African foresters continue to excel due to their expertise, innovation and resilience.

Inside This Issue

Today's Forestry Professional	1
2019 KZN SAIF Regional AGM	1
30th Meeting of the TPCP	2
Early Forest Men: Part 1	3
The Secret of Forestry Revealed	4
The Eucalyptus Leaf Roller	5
The Secret of Forestry Revealed cont.	5
Upcoming events	5
SAIF contact details	6
June 2019 birthdays	6

The strategy for the SAIF going forward is to ensure alignment and service to this evolving group of professional foresters, remain relevant and create opportunities for interaction.

2019 KZN SAIF Regional AGM

Date: Wednesday, 19 June 2019

Time: 16h45 for 17h00 to 19h00

Venue: ICFR

RSVP: 14 June 2019

All KZN SAIF members, please attend the Southern African Institute of Forestry KwaZulu-Natal Regional Branch AGM. Awards and a guest speaker will follow the AGM as well as the annual Quiz Evening. Light snacks and non-alcoholic drinks will be served.

Speaker: Dr. Marius DuPlessis (Mondi)

"The Indonesian Forestry Experience: benchmarking South Africa"

The Annual SAIF Quiz Evening 2019

All are welcome. Teams of 4-6 members. General knowledge with a few forestry-related questions. First place and spot prizes!

To enter send an email with team name and captain to mmoledi.mphahlele@mondigroup.com by 14 June.

30th Meeting of the Tree Protection Cooperative Programme

By Samantha Bush

This year the Tree Protection Cooperative Programme (TPCP) celebrated its 30th annual meeting! The TPCP has provided research support to the forestry industry over the last 30 years and has developed into the largest programme working on pest and diseases of forest trees in the world.

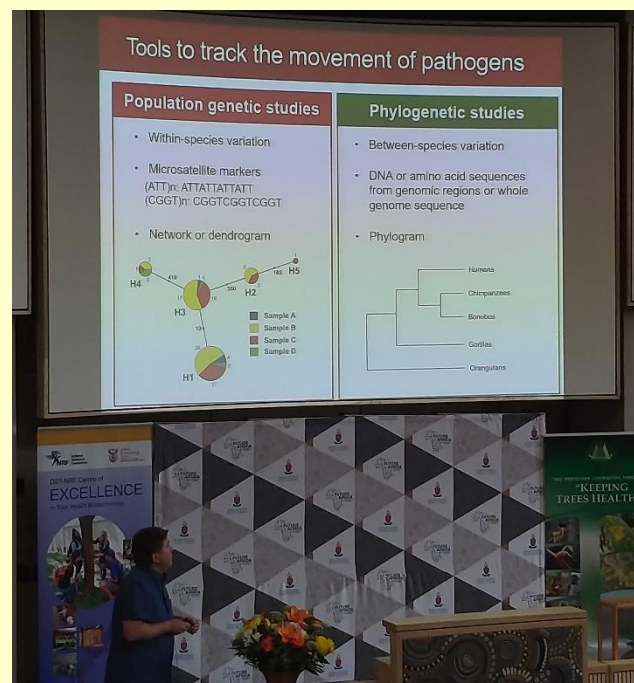
The meeting was held at Future Africa, a new development of the University of Pretoria that aims to provide a space for African and global researchers to meet and address global challenges. One of these challenges is, of course, tree health, which is the focus of the TPCP.

As with previous years, this year saw presentations from both local as well as global research leaders.

Presentations from TPCP staff and students covered a broad range of topics, including stem and leaf pathogens, *Fusarium*, *Sirex*, biological and chemical control, the use of various new approaches to better understand and manage pest and disease threats to forestry, and the recent introduction of the Polyphagous Shot Hole Borer.

Other presentations included the use of drone technology to monitor for pathogens by Dr Rene Heim (University of Florida, USA), the biosecurity surveillance strategy used in Australia by Dr Simon Lawson (University of Sunshine Coast, Australia) and a presentation on the facilities and protocols of the world-class insect rearing facility of Natural Resources Canada, by Mr John Dedes. Local presentations included one from the Acting Deputy Director of Forestry and Natural Resources, Ms Sebueng Chipeta, on the current relationship between government, industry and universities, where she envisaged these relationships could be strengthened. Dr Illaria Germishuizen of the Institute for Commercial Forestry Research (ICFR) presented on the use of GIS to map forest health problems.

During the meeting Prof. Bernard Slippers, Director of FABI, unveiled the new library at FABI (top picture) that has been dedicated to Prof. Mike Wingfield, the founding Director and current President of IUFRO.



Foresters who contributed towards the protection of the indigenous forests of the garden route

Part 1: Early Forest Men, by Georg von dem Bussche

Introduction

The indigenous forests along the coastal plateau from Mossel Bay in the west to Humansdorp in the east represent the largest more or less uninterrupted indigenous forest belt in Southern Africa (Seydack 2004). The total area of this closed canopy evergreen forest is slightly more than 60 000 ha of which two thirds are State owned and mostly managed, for nearly a decade already, by the South African National Parks authority SANParks. The remaining indigenous forest area, mostly in private hands, is subject to strict conservation legislation, controlled by the State Forest authority, presently under the umbrella of the Department Agriculture, Forestry and Fisheries (DAFF).

The saving of these unique forests from the greed of human endeavour can to a great extent be contributed to many devoted and gifted men, who over a period of nearly 300 years have diligently worked for the rescue and later scientific management of these forests.

These days we are not inclined to look back in history and are mostly involved in the present and are busy making plans. But let us briefly look back at the historic development, which led to the preservation of these precious forests, which was driven and enforced by outstanding man, who should not be forgotten.

Early Forest Men

Khoi Khoi and San people made very little impact on the forests. They lived outside the forests and only used building material and fire wood from the edge of the forest.

Carl Peter Thunberg, an eminent botanist and student of Carl Linnaeus (Swedish Botanist), travelled to the Garden Route in the late eighteenth century and reported to the authorities of the Dutch East Indian Company in Cape Town that the forests east of Mossel Bay contain a large amount of harvestable timber, which was scarce at that time at the Cape. This started an uncontrolled harvesting of all easily accessible trees along the Garden Route, first near George and later along the coast to Knysna.

Adrian van Plettenberg, the last Governor of the Dutch East Indian Company at the Cape, arrived 1778 at the previously called "Bahia Formosa". He named the settlement and bay after himself and decided that timber from the surrounding forests should be shipped out to the Cape from this ideal natural harbour.

However only after **J.F. Meding**, an educated official of Prussian origin, was appointed by the company in 1787, was harvesting of the forests near the settlement controlled and the timber finally sent by ship to the Cape. Meding achieved reasonable control of the woodcutters and for the first time ensured that wastage of timber had to be avoided. He

also introduced a "Working Rotation" of the forests, which means, that after harvesting a specific site, the relevant forest had to rest for a while, so that the forest could regenerate (Von Breitenbach 1968). He was resident at Plettenberg Bay until 1813 and under his supervision the present historic "Timber Shed", now a ruin, was built. Meding can be considered to have been the first "Conservator of Forests" because he controlled the woodcutters effectively and prevented complete destruction of the forests. It was reported by Lt. - Col. Richard Collins "that the forest along the road from Knysna to Plettenberg Bay had been worked heavily but not destroyed, thanks to Meding, who controlled the woodcutters".

After Meding, uncontrolled harvesting by the woodcutters commenced again until the Cape Government decided in 1848 that all worked out forests north of Knysna should be sold.

Captain Christopher Harison, who had fought as Lieutenant during the Ama-Xhosa war of 1850 - 1851, was the first officially appointed "Forest Ranger" in 1856 at Witelsbos. By 1866 he introduced an originally French forest management system, called "tire et aire" or shelterwood system, which meant that certain forest areas should be worked and then left for 80 years to regenerate. He wrote "the present license system is good as a preventative one, but it goes no further, and we are now mining our forests instead of farming them". His plans were however not approved and the license system for the woodcutters remained in place (Von Breitenbach 1968). He later introduced the "Section" system in the Tsitsikamma, which meant that selected trees were only allowed to be harvested during a particular period at a specific section. The selective fellings, which are still practiced today, secured the existence of the forests as we have them today. He then became the first "Conservator of Forests" at Knysna in 1874. He advocated though the harvesting of the giant Outeniqua Yellowwood trees (*Podocarpus falcatus*) but was against the introduction of Australian Blackwood (*Acacia melanoxylon*) into the forests.

References

- SEYDACK, A.H.W. and VERMEULEN, W.J., 2004. Timber harvesting from Southern Cape Forests
- VON BREITENBACH, F., 1968. Southern Cape Indigenous Forest Management Manual, Volume 1, Foundations of Management (unpublished report by the Department of Forestry)

The Secret of Forestry Revealed

By Rob Thompson

How was I to know, that a recent field day that we arranged for our private timber growing members, would lead to a celebration of technological innovation, an unplanned journey back in time and the discovery of the answer to the sacred Secret of Forestry?

No... not the answer to the Secret of Life...all of you Galaxy hitch-hikers know by now that that's 42!

So the field day, held in the Comondale area of Mpumalanga, comprised a smorgasbord of technologies available to the modern forester.

Frost and rust resistant wattle clones being released for commercial production. Allow that to sink in for a moment...wattle clones! We all know of *Eucalyptus* clones, but wattle clones are about as familiar to the industry as income tax rebates are to the average salary slave. Quite a breakthrough for South African wattle growers and entirely necessary in order to compete and remain relevant given the strides being made by Brazil in this arena. The coupling of clone production with frost and rust resistance characteristics had the wattle growers present believing that Christmas had come early this year and that they had indeed met, and bettered, all of Santa's good behaviour requirements!

Next up, was a presentation pertaining to an array of mechanical harvester and biomass processors that would make any military tank commander drool. Of course the price tags on these machines do carry health warnings to accounting personnel given the high risk of inducing cardiac arrest. Nevertheless, the technologies available on board these beasts are literally cutting edge and with their output, forestry is likely to surpass many more production milestones in years to come.

Speaking of military commanders, the field day then focussed on the vicious war that rages between pests and commercial trees. Pests attack. Foresters select, breed, bulk-up resistant trees and deploy. New pests arrive.

Foresters select, breed, bulk-up resistant trees and deploy. Repeat ... continuously. Walking through the *Eucalyptus* hybrid selection trial sites and seeing the desiccated state of some of the non-improved and pest susceptible controls, one realises just how far we have progressed technologically as an industry. It is also quite apparent that we can never stop. This is a war without option of negotiated settlement.

It was then onto a series of field stops focussing in on silvicultural advancements. High pressure, sub soil-surface water injection into planting pits, in order to create the ultimate tilth and water mix for the new cutting, initiated quite a debate amongst practitioners present, however, it was the silvicultural drone that had them literally dumbstruck and in awe. So many of them wanted to take this machine back to their man-caves! Even the ladies present cast admiring eyes over the lines of the craft. This flying machine, capable of carrying a liquid payload of up to 15kg, is able to fly precision missions to apply exact prescriptions of water, herbicide, fungicide or other, either along rows of trees, or, to specific individuals requiring special attention, remotely, and even at night. This innovation opens up the scope of silvicultural operations beyond most known current limitations and its cost efficiency and chemical application economies are bound to endear extensive drone usage in years to come.

A tractor-drawn combustion chamber designed for fire break preparation, ended the day off in a spectacular manner. The leading edge of the chamber, equipped with paraffin injectors, ignites the grass over which the chamber is travelling, whilst water nozzles on the trailing edge, douse the flames and present a burnt, safe and clean fire-break. Is this the answer to

the current Paraquat impasse? Perhaps not entirely but it is certainly part of the solution and an impressive part indeed. Practitioners with a penchant for pyromania will be well pleased!

That evening, whilst walking the streets of the Vryheid metropolis in search of sustenance and libation, in the company of a long standing forester colleague and a young forestry accountant (yes, we are obliged to socialise with them occasionally - it's the right thing to do), conversation turned to the field day and the technologies we had witnessed.

"I wonder how much further technology will take us in forestry...what else is left to discover?" enquired our number-cruncher friend.

"Technology creeps up on us without us really realising it and will carry on doing so for ever" responded our rather sage forestry colleague. "Look at all that we have experienced during our careers" he added with his voice carrying an aura of wisdom and experience.

And so it was that two forestry ballies, with a youngster as captive audience, began a voyage of reminiscence over a period that we refused to quantify lest it provided a damning indication of our vintage. Suffice it to say that the conversation commenced around the time of the word processor making its debut in the typing pool of our forestry office. We will defend to the death that no mention was made of wind-up farm line telephones. We have no idea what those were. The office party held, when the first fax machine was installed, is still fresh in our memory however.

The barn size high tech office computer room, frequented by a strange pallid geek who spoke of DOS, was always a place of mystery and intrigue and accessible to no-one without coke-bottle glasses. One day, technicians installed a single terminal providing access to us plebs and forcing us to hack away (for days and weeks), at budgets, on a platform called Lotus, that was definitely possessed by the devil himself.

A significant turning point in our careers commenced when our regional manager was mysteriously spirited away to Head Office, in the big smoke, for a week. He returned, a look of reverence on his face and called us all into the meeting room. "Colleagues" he said in a tone that commanded attention, "From now on we will start to use Windows!" We all glanced in unison at the meeting room windows and back to him. Our collective thought was that the city environs had sadly pushed him beyond the limit of his mental fortitude. "Each Window has a drop down box with a menu" he explained. Despite our misgivings about window-boxes and fallen menus, Microsoft had arrived and was to change and influence our lives forever.

We would drive around our plantations in our vehicles (sans factory fitted aircon) with dashboard sized two-way radios and antennas long enough to potentially interfere with air traffic. Our homes were equipped with similar monster radios and antennas that would beep, gurgle, and shout at all hours of the day and night, all in the interests of staying in contact and for fire duty standby. One of the most hallowed days in forestry history is the day that we were presented with Nokia bricks...sorry cell phones, for communication purposes. Apart from the obvious uses as weighted self-defence weapon or bench press dumbbell, these Nokias could actually be used to make a call. The monster radios disappeared and we all developed impressive upper body strength and very pervable abs carting our new cell phones around.

In the field, *Eucalyptus* seedling material gradually started to be replaced by GXC hybrids. Enumerations were conducted using high (cont.on pg 5)

The Eucalyptus Leaf Roller, *Strepsicrates* sp.

By Samantha Bush and Brett Hurley

In May 2019, the Forestry and Agricultural Biotechnology Institute (FABI) sent an alert out on TreeHealthNet about the presence of a new pest on *Eucalyptus*, *Strepsicrates* sp., a type of moth. The caterpillars are the damaging life stage; they use their silk to roll the *Eucalyptus* leaves together forming a shelter. These shelters are also the caterpillars' source of food and feeding can be severe enough to skeletonise the rolled leaves and cause leaf death.

This pest was first noticed by FABI's industry partner Sappi. After a visit to the infested site, the caterpillars that were collected were reared to adults and were sequenced at the laboratories at FABI. The sequence information showed that the caterpillars belong to the *Strepsicrates* genus, but this information did not match with sequence information available for the species within that genus. Therefore, the species of this pest is unknown and must still be confirmed using morphological characteristics. To do so, specimens have been sent to a world expert at the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in Canberra, Australia.

Other *Strepsicrates* species are known from Australia, as well as Asia, New Zealand and Ghana where it is reported as an invasive pest, and in South and North America.

Strepsicrates species have been reported to infest a broad range of *Eucalyptus* species, including *E. dunnii*, *E. macarthurii* and *E. nitens*. Insecticides have been used to manage *Strepsicrates* species, but this is hampered by the fact that the larvae are protected inside the leaves. A number of natural enemies of *Strepsicrates* species have been identified and the use of biological control is thus an option. In addition, sex pheromones of these moths could be used for monitoring and potential management strategies.

The current priorities are to confirm the identification of this insect pest, determine its distribution and host association, and investigate management options. Please report suspected occurrences of this insect, based on the symptoms of the larvae, to diagnostic.clinic@fabi.up.ac.za.



The Secret of Forestry Revealed

(Cont from pf 4.) tech needle compasses, electronic hypsometers, planimeters and an analogue clipboard and pen. Harvesting was done by chainsaw and Bell logger. All was good and we knew no different.

A vivid memory is one of visiting a friend in one of the corporate planning offices and being shown something absolutely mind boggling. He typed a sentence onto his computer and within a minute his colleague in another office answered him with the response showing on the screen. Wow! This could potentially have some use going forward! And so we entered the computer age. The internet made its appearance along with lap top computers, data-loggers and digital mapping technologies. Forestry had arrived in the modern age and the technology trajectory it found itself on, was, and remains epic.

Bell loggers and similar, underwent rapid metamorphic transitions into space-age feller buncher / processor units. GCX hybrids were joined and surpassed by an array of new genetic combinations as knowledge of sites, pests and management protocols rose exponentially. Foresters themselves began to train differently, develop specialised skill sets and generally embrace the new world order with enthusiasm and confidence.

"Ja, you're right, we have seen a lot of technology over the last 60 years" said our number cruncher nodding his head.

"Hey, easy up on the 60 years son" remonstrated my forestry colleague "you're supposed to do sums well. Do I look 90?"

To our delight Vryheid does provide the odd fermented beverage from various outlets. Having sampled a few, and certainly illustrating the manner in which a libation or two provides greater insight and understanding, my colleague made a comment that had us all staring at him in wonder and awe. This was a Number 42 moment!

"You know" he said, "Despite all of the technology and advancements in forestry, most of it doesn't really matter..."

I glanced at number cruncher, who appeared just as confused as me..."Hey Boet, don't leave us hanging...what do you mean?" I prompted.

"Well, you can have all the technology that you like, but if you don't plant the tree correctly from onset, none of it really matters!" he responded.

A lightbulb moment indeed!

Despite all that we know, with all of the tools at our disposal and knowledge of just about everything at our fingertips, if we, as forestry practitioners, don't do the right thing right, right from the beginning, we set ourselves onto a pathway to disaster and wasted effort.

The Secret of Forestry revealed No need for thanks...You are most welcome!

Upcoming events

- 6–8 November 2019. IUFRO Working Group 7.03.13 'Biological control of forest insect pests and pathogens', University of Pretoria. See <https://www.fabinet.up.ac.za/index.php/event/iufro/>

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June 2019 birthdays



01-Jun	GERMISHUIZEN I.	14-Jun	GEVERS W.K.E.
01-Jun	MEYER W.K.	15-Jun	HENDERSON C.S.
03-Jun	WILLIAMS L.A.	15-Jun	KOTZE H.
04-Jun	BOAKE J.B.	16-Jun	BUCHLER M.
04-Jun	MITCHELL R.G.	16-Jun	MBOKANE S.
05-Jun	POOL J.G.	17-Jun	BOTHMA J.C.
06-Jun	FEELY J.E.	17-Jun	RAMANTSWANA M.
06-Jun	LUBALA D.	17-Jun	SILBERBAUER L.C.
08-Jun	CRAWFORD-BRUNT R.J.	19-Jun	THOMPSON R.
08-Jun	MORRIS A.R.	21-Jun	SIVPARSAD B.J.
10-Jun	MEINCKEN M.	23-Jun	HARRISON I.
11-Jun	LAWRIE D.G.		

Newsletter compiled by Andrew McEwan