Autumn – 2011 ISSN 1175-043X

Protect



Our mission: Working together to ensure New Zealand is protected from the adverse impacts of invasive species



Kiwicare proudly sponsors the New Zealand Biosecurity Institute website and printing and posting of Protect

Kiwicare manufactures and supplies <u>professional</u> products for the protection of New Zealand's natural environment and the control of invasive species.

- ✓ NO Possums Long life possum bait.
- ✓ Thiroprotect animal repellent rabbits, hares, possums.
- ✓ Low residue anti-coagulant rodenticide.
- ✓ NO Wasps Dust for eradication of wasp nests.
- NO Weeds Buster and Glyphosate for soil safe control of invasive weeds.
- ✓ NO Woody Weeds and NO Stumps for control of more difficult pest plants and prevention of re-sprouting.
- ✓ Organic Fertiliser promotes healthy growth of new planting.
- ✓ And many more.....checkout the website or give us a call. Pest animals? Pest plants? Best solutions!



www.kiwicare.co.nz

Protect Autumn 2011

Magazine of the New Zealand Biosecurity Institute

Contents

Click on the name below to jump to the article.

Editor's Note		4
NZBI Contacts		4
Advice for Newcomers: It's all about people		6
News from the Branches		
Central North Island	Heidi Pene	7
Top of the South	Ben Minehan	8
Auckland-Northland & NETS update	David Moverley	9
US conference focuses on biocontrol	Dr Jane Barton	10
Insights into the ecology of possums on		
Molesworth's drylands A Glen, A Byrom, R Pech and I Yockney		
Weedbusters update: School Film Challenge	Carolyn Lewis	14
Biosecurity briefs:		
New butterfly seen in Auckland	John Early	14
Water hyacinth put to use	-	14

Editor's Note

elcome to the first issue of *Protect* magazine for 2011.

The earthquake in Christchurch has delayed this issue slightly and I wish all those affected the best.

Christchurch members who have been able to, have been doing their bit for earthquake relief work in a city that has had its spirit knocked around a bit, but has shown that it will pass the test that lies ahead.

Institute members in and around Christchurch have been helping with clean-up and welfare work.

Every good citizen that can has been helping.

Of the immediate help, I know that Environment Canterbury staff from the central city and outlying depots have been shovelling silt and helping with civil defence among other vital activities.

I know also that many of the staff from the crown research institutes at Lincoln just south of the city have been helping with essential welfare work.

The organisations based around Lincoln seem to have fared reasonably well and their work continues largely as normal.

Organisations in the city are presently suffering disruption to their work and are looking for other premises, among them are Environment Canterbury, the Animal Health Board and the Department of Conservation.

Environment Canterbury among others is setting up satellite offices outside the central city at Lincoln University and AgResearch as well as other sites.

Amidst it all the vital work of organisations and individuals



Protect editor Chris Macann and Institute life member Lynley Hayes were married in January near Christchurch.

involved in biosecurity continues whether it be research, control, prevention or information sharing.

Best wishes, Chris Macann Editor



The New Zealand Biosecurity Institute can be found on the web at **www.biosecurity.org.nz**

Executive contacts			
Craig Davey	President	(06) 952 2800	Craig.Davey@horizons.govt.nz
Pedro Jensen	Vice-President & Lower North Island	(04) 526 5322	pedro.jensen@gw.govt.nz
Rebecca Kemp	Vice-President	(09) 366 2000	rebecca.kemp@arc.govt.nz
Wendy Mead	Secretary		Wendy.Mead@ew.govt.nz
Louise Cook	Treasurer & New Members Officer	(03) 371 3751	louise.cook@tbfree.org.nz
Other officers			
Darion Embling	Central North Island	(07) 859 0790	Darion.Embling@ew.govt.nz
Chris Macann	Protect Editor	021 225 8229	chrismacann@gmail.com
Randall Milne	Otago/Southland	(03) 211 5115	randall.milne@es.govt.nz
Lindsay Vaughan	Top of the South	(03) 543 8432	lindsay.vaughan@tdc.govt.nz
David Brittain	Web manager		david.brittain@kiwicare.co.nz
Seconded Members:			
John Gardner	Ministry of Health	(04) 460 4925	john_gardner@moh.govt.nz
John Sanson	Biosecurity New Zealand	(04) 894 0836	John.Sanson@maf.govt.nz
Alistair Fairweather	Travel/Study Awards Co-ordinator & Vertebrate Pests secondment	(07) 858 0013	afairweather@doc.govt.nz

NZBI news

News from the Executive

Kia ora and greetings from the Executive.

Firstly I'd like to acknowledge the people affected by the Canterbury earthquake and to say the NZBI Executive's thoughts and heartfelt concern go to the families and persons affected by the tragedy. To those members affected by this ongoing tragedy we hope you find strength and comfort in the knowledge that people from across the country are lending a hand to get you back to some sort of normality as soon as possible. And for those of us living in other parts we marvel at the stories of selfless actions and deeds of care and compassion from Cantabrians. Our thoughts are with you.

The earthquake has highlighted the importance Christchurch is to the NZBI as presently we have the following roles and Executive members working in the CBD and its vicinity:

Treasurer and membership:	Louise Cook
Web manager:	David Brittain
Web hosting company:	Hairy Lemon
Protect Editor:	Chris Macann
Protect format and layout:	Col Pearson
Accountancy firm:Crowhen, W	/hite & Associates Ltd

All these folk are OK, though still having to deal with the disruptions of things like no access to workplaces or worse their old workplace is no longer viable. We expect to implement some changes to deal with this liability. As such we have a call for a replacement Treasurer.

New Treasurer needed

Since the Canterbury earthquake has exposed our fragility in Christchurch and our current Treasurer will need to be relocated to new work premises, and like all other affected people is busy trying to get other aspects of life to normal we need a replacement to takeover after NETS2011.

If you would like to take on an important role within the NZBI and help out in this time of need please contact any Executive member prior to NETS2011.

Membership flyer

A membership flyer has been developed for you, your branch, or your organisation to use to promote the NZBI. It's a good-looking flyer that can be freely distributed when you see a need. The Executive would like to thank Lindsay Vaughn for driving this project. Please visit the website to download the pdf.

Executive meeting

The Executive met on November 23 in Wellington and was hosted by the Ministry of Health. Among the topics

covered, the main points were: dealing with policy statements, investigating the alignment the NPCA and NETS events, and refining the Biosecurity Month initiative. You can read more about these topics on our website in the Members section.

Our financial position remains in good health and we have adapted to the new era of electronic banking and greater interrogation of our systems well.

Biosecurity Month

We are looking to further capitalise on NETS (National Education and Training Seminars) to highlight the importance of Biosecurity to New Zealand, and beyond. There will be a couple of new initiatives this time round, at branch level and also from the Executive. If you or your organisation would like to get more involved and forward plan events, press releases or other activities to tie in with Biosecurity Month, please contact Pedro Jensen at Greater Wellington: Pedro.Jensen@gw.govt. nz

New members

We would like to extend a warm welcome to all the new members to the Institute. Please excuse the absence of our usual list of new members' names – we have been a little disrupted by the quake.

Subscriptions and contact details

Just a short reminder that subscriptions are due for payment by the end of this month. There are two good reasons to pay by this date. The first is that at \$30 they are \$10 cheaper than subscriptions paid after March 31. The second is that you are only eligible for a member's registration fee at NETS2011 only if you have paid by March 31.

Please tell anyone intending to join NZBI for the first time that attending a NETS conference will allow them to join as trial members and get 18 months free membership.

It would also help if you keep us up to date with your current details, in particular when you change jobs. Please let us know if you are resigning or have new contact details. Our treasurer has spent a lot of time in the past chasing lost members and rejected email addresses. This is frustrating and time consuming.

New Editor

This is the first issue with our new editor, Chris Macann. Welcome aboard Chris and thank you for taking on the challenge of creating our quarterly. Chris comes to us with a strong journalistic background and also with

NZBI news

communications experience, so I'm sure we'll be treated to another great run of Protects. I would like to pass on many thanks to Lynne Huggins, our previous editor, for her big efforts pulling together excellent stories from around the country and overseas and weaving her style into *Protect*.

NETS2011

The organising committee has been busy over

summer putting the finishing touches to the programme, sorting field trips and seeking sponsors and speakers. NETS2011 is being held in Auckland, from July 6 to 8. So start preparing now for another fantastic gathering of biosecurity-related presentations, activities, and networking.

> Craig Davey President Craig.Davey@horizons.govt.nz

Advice for newcomers

Protect asks experienced practioners to share two brief pieces of advice they would give to newcomers to biosecurity.

Rob McCaw, Environment Canterbury's Central Area biosecurity team leader based in Christchurch:

- 1. The issues you are dealing with aren't pest issues, they're people issues
- 2. Always leave the gate the way you found it even if it's only half open. *Rob McCaw: a hard*

day at the office.



NZBI news from the branches

Central North Island

he year has been a busy one for members, so much so that we never had a chance to hold a mid-year branch meeting. I would like to take the opportunity to thank Willie Shaw who served as our chairman for three years, and to congratulate Dale Williams on his new role as branch secretary.

The Central branch has had a number of interesting happenings this past year, some of which have made the news.

Maungatautari Ecological Trust

The Maungatautari Ecological Island Trust has become embroiled in a dispute with its funders and surrounding landowners, which arose from raising the number of iwi seats on its board. The dispute is ongoing and meetings are being held to discuss the future of the project following threats from several landowners to disconnect the surveillance systems on their portions of the fence, putting the entire project at risk.

Alligator weed in the Bay of Plenty

Alligator weed was discovered in a waterway in the Carmichael Reserve and in a Welcome Bay river. It has also been found in five other locations across the Bay of Plenty.

It is uncertain how the weed arrived in Tauranga, but it is possible it was transported on plants originating in Northland. It will cost about \$10,000 in the first year to control the weed and \$4000 to \$5000 every year after that. The weed is currently being removed from the waterways, then placed in a pile and sprayed with chemicals.(From:<u>http://www.sunlive.co.nz/news/11274aggressive-weed-found-bay.html</u>)

Multi-agency Wallaby Management Plan

The Department of Conservation and the Bay of Plenty and Waikato regional councils have initiated a review of their management plan for dama wallabies.

Gains made as a result of this multi-agency approach to pest control, include establishing a Wallaby Management Team, gazetting of the feral range and registering a new pesticide use.

Some of the issues include the lack of robust monitoring tools and control methods for wallabies along with a low level of public awareness about the threat of wallabies to biodiversity. While reading a newspaper article about a dog being rescued off a cliff at Rocky Cutting Road near Welcome Bay, Bay of Plenty Regional Council Senior Biosecurity Officer John Mather noticed a reference to the dog often "chasing wallabies".

After attempting to contact the dog's owner, land management officer Dale Williams conducted a postal survey of landowners in the area.

From 60 letters he received seven positive responses of wallaby sightings, dating back more than 10 years. It appears that the original animals are likely to have escaped from someone illegally holding them for live export.



Velvet leaf (Abutilon theophrasti) Photo: Trevor James, Ag Research

Velvet leaf in the Waikato region

Velvet leaf was found in a maize crop and around a maize silage stack in the Te Aroha area in February. It is apparently one of the worst weeds in America and can reduce yields by up to 34% if left uncontrolled. The distribution of velvet leaf in New Zealand is still under investigation by a team from Ag Research, Foundation for Arable Research (FAR), MAFBNZ, and Environment Waikato. Trevor James from Ag Research will give a talk on the findings at NETS.

Heidi Pene Chairperson Central North Island Branch

NZBI news from the branches

Top of the South



Clare Dunstan describes the control of sweet reed grass.

wenty-two Institute members from organisations including Tasman District Council, the Department of Conservation, Nelson City Council, Nelmac, Southern Monitoring Services and Kaitiaki o Ngahere attended a field day in Blenheim organised by the Marlborough District Council in February.

Pest plants and animals

Two presentations kicked off the field day. First, Jonathon Underwood from the Marlborough District Council spoke on wilding pine control in the Wye Reserve and rabbit control in South Marlborough. In the second presentation, Clare Dunstan from Kaitiaki O Ngahere spoke on controlling reed sweet grass and parrot's feather in Marlborough.

The group travelled to the Grovetown Lagoon and to Gibsons Creek, near Blenheim, to look at the results of the control work on reed sweet grass and parrot's feather that has been carried out since early 2008.

Para Swamp restoration

After lunch the group visited Para Swamp with Fish



Vaughan Lynn describes the willow control operation and the future management of the site.



Ben Minehan moves members across the wetland.

and Game field officer Vaughan Lynn. One of his responsibilities is managing the restoration project in the swamp. The group looked at the results of aerial willow control carried out at the site over the last three years and discussed its long-term management.

We would like to thank all the presenters, especially those from other organisations who gave their time.

Ben Minehan

Senior Biosecurity Officer (Plants) Marlborough District Council NZBI news from the branches

Auckland-Northland and NETS update

he Auckland/Northland Branch has had a productive year, particularly considering the extra workload of planning for NETS2011.

We have continued to split our meetings geographically throughout the year with Northland hosting the branch in spring, Auckland in autumn and compromising on a location in between for our Annual General Branch Meetings (Wellsford). Our branch encompasses a diverse range of landscapes, problems and opportunities, and our meetings have reflected and celebrated this.

NETS2011

The branch is proud to host NETS2011 themed "The Northern Gateway: Tomorrow's Pests Today", which really reflects our region.

Our first plenary session will open with acclaimed Australian author of the best-selling book *Feral Future*, Tim Low, who will talk about global invasive species threats.

Tim will be followed by Nick Waipara framing the Northern Gateway setting, Graeme Inglis on protecting New Zealand from invasions through marine gateways, Waitangi Wood giving an iwi perspective on kauri dieback, and Wendy Billingsley on measuring biosecurity behaviour change.

Additions to the programme

The organising committee has introduced two new sessions for NETS2011. The first is a practical session on identification of new pests whether they are plants, invertebrates, fish, birds, reptiles or marine pests. The

format will allow all delegates to participate in each group.

The second addition is the "biosecurity gems" session in which presenters have a short opportunity to provide an insight into anything biosecurity related.

The closing plenary session, which is scheduled for after lunch on Friday, will be exceptional with John Innes, Andrea Byrom and Mick Clout providing an insight into the future of biosecurity in New Zealand.

Social opportunities

The social programme will be memorable with yetto-be-named high-profile acts to entertain you through dinner and late into the night while you dance those biosecurity blues away. The venue is the Bruce Mason Theatre in Takapuna on Auckland's North Shore, a short stroll to the beach and to an eclectic range of restaurants, bars and nightly entertainment.

Interest in NETS2011 has been strong with all opportunities for presentations being taken by the abstract submission deadline of February 16. Delegates are reminded that it is Rugby World Cup year and demand for accommodation will be high. Registration opens on April Fools Day with Early Bird Registration closing on May 6

Don't miss a great opportunity for learning, fun and networking with your colleagues, organise your flights and accommodation today.

> David Moverley, Chairman Auckland-Northland Branch

Conference highlights

US conference focuses on biocontrol

Did you know that earthworms are unwanted, exotic invasive species in the forests of Massachusetts, USA, or that two tiny insects that attack hemlock trees (*Tsuga* spp.) could have catastrophic impacts on aquatic insects in high-altitude forests there? These are two of the many tid-bits that plant pathologist **Dr Jane Barton** learned in October when she attended the 2010 Biological Control for Nature conference in Northampton, Massachusetts. Her attendance was made possible, in large part, by the NZBI Professional Development Award. Here are some of Jane's observations.

The risks and benefits of classical biological control

t was mostly "classical" biological control that was discussed at the conference. That is where an organism from one country is introduced to control a weed or pest in another country. Since the 1990s there has been much debate on how to balance the "risks" and potential "benefits" associated with this technique.

This debate has been rather one-sided, with most publications emphasising the potential negative effects of agent introductions. At least that was the case until last year when a major paper was published that looked at the benefits gained by natural ecosystems worldwide from the introduction of biological control agents (Van Driesche et al. 2010).

It was the publication of this paper that led to the organisation of the Biological Control for Nature conference. According to the conference organiser, Roy Van Driesche, of the University of Massachusetts, the aim of the conference was to "explore the benefits of classical biological control for the control of invasive insects and plants in natural forests, and associated habitats such as wetlands, grasslands and deserts".

This topic was of particular interest to me because I work on the biological control of environmental weeds, and also because I have an interest in weighing up the costs versus the benefits of pathogens used for biological control of weeds.

Biocontrol in natural versus agricultural ecosystems

Many of the conference talks had an ecological theme. Speakers recognised that natural ecosystems are generally more complex than agricultural ones, and that this needs to be taken into account during biological



Dr Jane Barton at a picturesque lunch spot during a field trip. Photo: Dr Quentin Paynter, Landcare Research

control efforts.

The first talks were about the importance of targeting weeds and ecosystems where biological control will have the greatest positive impact on valued species, so that you get a good "bang-for-your-buck" in terms of ecosystem restoration. Perhaps the best example of this was given by Dr Cliff Moran from South Africa who works in one of the most important and speciesrich vegetation types in the world: the South African Fynbos. He said that an economic analysis had shown the benefit:cost ratio of biocontrol in the Fynbos was 768:1.

Aquatic weed biocontrol and excessive nutrient levels

Many talks were about aquatic weeds, and a recurrent theme was the interaction between the weed, the biocontrol agent and the concentration of various nutrients in the water in which the weeds live.

Conference highlights

Nutrient levels can apparently determine the success or failure of a biocontrol project because where nutrient levels are very high aquatic weeds can often grow so fast that biocontrol agents that feed or cause disease on their tissues simply can't keep up. It was reported that there were also cases where biocontrol agents succeeded, despite high nutrient levels in the water, but then the targeted aquatic weed was replaced by another one. The speakers' conclusions were that in aquatic systems often weeds were a symptom rather than a cause of the problem; the real problem being excessive nutrient levels. They suggested that nutrient levels should be tackled first, and then the weeds. Further, they proposed that in some cases, desirable plant species needed to be sown/planted into the watercourse once weed levels decreased.

Smilax and Cape tulip biological control

The issue of "what replaces the target weed" was also discussed by Dr Louise Morin (CSIRO, Australia). Her talk was about the weed bridal creeper (Asparagus asparagoides, also known as smilax in NZ). A rust fungus and two insects were introduced to Australia to control this weed. It was very successful, and the goal of reducing the cover of the weed was achieved. Louise explained that the problem they had now was that in some degraded sites the success of the agent led to an increase in leaf-litter and bare ground and another weed from South Africa (cape or German ivy, Delairea odorata, a species that has naturalised in NZ) was taking advantage of that and replacing the bridal creeper. In retrospect, she believes that land managers should have been out in the forest sowing seed of desirable, native species in the spaces left as the weed declined. She realises this often wouldn't have been economically feasible, but thought it should have been attempted at areas with high conservation value.

Invasive threats to hemlock

The conference was not just about biocontrol of weeds: about half of the talks were about biological control of pests, mostly invertebrates that attack plants.

Despite their impressive size, hemlock trees are apparently being killed by two small invasive insects: the hemlock woolly adelgid (*Adelges tsugae*) and the elongate hemlock scale (*Fiorinia externa*). Hemlocks are very important species as they are the only tree that shades streams in some mountain habitats, and without shade, water temperatures rise to the point where native insects can not breed in them. This was a very good lesson on how seemingly unrelated species can impact each other in natural ecosystems. A predator of the adelgid has been released as a biocontrol agent.



Dr Jane Barton, right, and Dr Louise Morin on a field trip surrounded by a weed which has been targeted by biocontrol in Australia (Bathurst burr, Xanthium sp.). Photo: Dr Marion Seier.

Earthworms as invaders

The idea of earthworms as invaders was a novel one for me. According to Wikipedia "Invasive species of earthworms, specifically from the suborder Lumbricina are migrating and spreading through North America. Their introduction is having drastic affects on the nutrient cycles in temperate/coniferous forests. These earthworms increase the cycling and leaching of nutrients by breaking up decaying organic matter and spreading it into the soil. Since these northern forests rely on thick layers of decaying organic matter for growth and nutrition, they are diminishing in diversity and young plants struggle in these environments. Many species of trees and other plants may be incapable of surviving such drastic changes in available nutrients. This change in the plant diversity directly affects the other organisms of the environment and often leads to increased invasions of other exotic species as well as overall temperate forest decline. (http://en.wikipedia. org/wiki/Invasive earthworms of North America).

Bernd Blossey, of Cornell University, explained that the organisms that naturally break down detritus in these forest ecosystems are salamanders which are threatened by the earthworm invasion. Any plans for biological control of earthworms were not mentioned.

The success of pathogens

Dr Ann Hajek, of Cornell University, revealed that micro-organisms used as classical biological control agents for insects also have an unblemished record. That is, there have not been any reports of non-target damage resulting from the release of numerous viruses, bacteria, fungi and nematodes as classical biological control agents for invertebrates.

Despite the excellent safety record of pathogens,

Conference highlights

several speakers noted that pathogens are used much less often than insects as biocontrol agents, and that this seems to be because people fear pathogens.

In an often quoted paper, Freeman and Charudattan (1985) said: "Despite the lack of documented serious conflicts, there is an air of pathophobia that has brought to a virtual standstill the application of the classical approach in the use of plant pathogens for weed control."

That was written 25 years ago. Pathogens are used more now than then, but still much less than they could be. They remain the solution of last resort when given their good safety record they should really be one of the first options explored when it comes to tackling intractable weeds.

Fortunately pathophobia is not a big issue for us in

New Zealand. Here we use whatever organism we think gives the best ratio of benefit to risk.

More information

More information on the conference, including downloads of many of the presentations, can be found at http://biocontrolfornature.ucr.edu/program.html

Jane's talk was for a session titled "Foodweb and Nontarget Effects of Biological control". Her title was "Predictability of pathogen host range in biological control of weeds". Jane said happily the pathogens released against weeds to date have behaved as predicted by pre-release research. She will repeat her talk at NETS.

Insights into the ecology of possums on Molesworth's drylands

Al Glen, Andrea Byrom, Roger Pech & Ivor Yockney Landcare Research

Ithough possums are a major environmental and agricultural pest in New Zealand, little information is available on their ecology in drylands, which cover about 19% of the country.

A team of ecologists at Landcare Research have recently completed a study describing the ecology of brushtail possums in a dryland environment. Their paper, recently submitted for publication, describes the diet, movement patterns and survival rates of possums on Molesworth Station in the north-east of the South Island.

The stomach contents of 100 possums, collected in summer 2005, were dominated by forbs and sweet briar, which were consumed in larger amounts than expected based on their availability.

Sweet briar shrubs were also frequently used by possums as a daytime refuge. Another invasive plant, crack willow, was a strongly preferred food, although available only in small quantities.

Willow trees have also been shown in previous studies to be an important source of shelter for possums. These results suggest that invasive willow and sweet briar may facilitate the existence of possums by providing abundant food and shelter. In turn, it is possible that possums act as a seed vector, facilitating the spread of these weeds. The team suggest that this possible mutualism between invasive species warrants further investigation.

Radio-tracking showed that possums on Molesworth Station were highly mobile, occupying an average area



Possum sheltering in a briar shrub. Photo: Andrea Byrom

of 5.1ha which is considerably more than the 1-2ha typical of New Zealand forests.

The annual survival rate of radio-collared possums was estimated at 85% for adults and 54% for subadults.

Other findings included a decrease in the capture rate of possums with increasing altitude. This basic ecological information will be useful in modelling and managing the impacts of possum populations in dry grassland/shrubland ecosystems.

Weedbusters update

School film challenge

Imost 70 schools have now signed up for the Weedbusters Two Minute Film Challenge. Please continue to spread the word about it. It would be great if we got 100 schools hooked up for this.

The information sheet I have sent teachers is very general and brief, just a starting point for them, so they have the main messages and concepts they need in order to feel confident to explore this topic further.

If you would like to know more about the information I have sent to teachers, the two main websites are <u>www.weedbusters.org.nz</u> and

www.landcareresearch.co.nz/education/weeds/. There is however an overwhelming number of weed sites on the internet so I have encouraged teachers to email me at info@ weedbusters.org.nz if they want more information on any aspect of the backgrounder, and also throughout the challenge when students might have questions, so I can point them in the right



Working together to protect New Zealand www.weedbusters.org.nz

direction to save teachers some time. A resource has been prepared to give some ideas for activities and discussions to increase students' knowledge of weeds.

Carolyn Lewis National Weedbusters Coordinator

Biosecurity briefs

New butterfly seen in Auckland

n January 15 this year I saw an unusual butterfly fluttering around and feeding on agapanthus flowers in an Epsom garden. It was clearly one of the swallowtail butterflies in the

genus *Papilio* of which there are many species throughout the world but none in New Zealand ... until now!

I was able to see it briefly up close but not able to capture it to get an accurate identification. It was similar in general colour and appearance to the one pictured here but there are many species that look much alike and the differences between them can be subtle.

Slightly smaller than a monarch and being much paler in colour – a nice creamy lemon with contrasting oblique black bands across the forewings – made it stand out from a distance. Its flight is more swift than the lazy lolloping flight of a monarch. What species of *Papilio* is it? Where did it come from? How did it get here? Is it established and breeding here? Is there only one or are there more?

Is it only in Auckland or also in other parts of NZ as well? Your help is vital in answering these questions.

If you see a butterfly looking like this please contact me with details of where and when you saw it. An actual specimen to confirm the record is needed, failing that a good photo.

> John Early, Auckland Museum jearly@aucklandmuseum.com ph 09 306 7042

Water hyacinth put to good use

Students from the Chalmers University of Technology in Sweden, who were on a class trip to Lake Victoria in Kenya, took note of the invasive species of water hyacinth that was choking the shoreline. They set out to come up with a way to help rid the land of this unwanted weed while tackling the country's problem of a lack of feminine sanitary protection.

Water hyacinth is a natural fiber that is sometimes

used as a textile or in papermaking. The students came up with the idea that instead of just ripping out the water hyacinth, of using it to create a sanitary pad for Kenyan women who normally do not have access to feminine protection.

The product called "Jani" meaning a leaf or sheet, is made up of four layers of water hyacinth paper.

The students hope the biodegradable product may be useful in all countries.

