NZSAP NEW ZEALAND SOCIETY OF ANIMAL PRODUCTION (INC)

PRESIDENT'S PIECE — OCTOBER 2012

The joint NZSAP/ASAP conference held in early July at Lincoln University was a great success. Well done to the team, led by Grant Edwards at Lincoln who put it all together. A good number of Australians attended the conference. Many of them commented on how well organised the New Zealand society was in comparison to their own national society. Having a blend of papers in our 'red' book, the ASAP one-page paper booklet and in the Animal Production Science journal went well. The 'Living legend' concept was again well received. Dr Alistair Nicol presented the Living Legend paper and it was titled 'The random bouncing ball'. He did a great job outlining some of the areas he has worked in over his career. A few important points that I took out of his talk were firstly, one should grab the opportunities when they appear. Secondly, understanding the principals of good scientific investigation well help ensure you make progress in any research area and thirdly, enjoy what you are doing. Well done Alistair. The young members were again of high standard and this year's winner was Quentin Sciascia.

Our editor Roland did a good job again in getting the proceedings together on time and he did comment that in general authors and reviewers held to their time lines. In that regard the due date for abstracts for the next conference is outlined in this newsletter. So please get your heads together and it would be great to have more than 100 papers at Hamilton next year. Kathryn Hutchinson is the conference organiser. If you have any good ideas re contract sessions, field trips, other activities or you just want to help out then now is the time to get in contact with her.

By way of introduction for those who do not know me I am the Professor of Sheep Husbandry at Massey University where I have been lecturing and researching in sheep production (even a bit of wool) and general reproduction since the late 1990s.

The new NZSAP committee has held one meeting so far. There are many new faces on the committee which is great for the society moving forward. I would like to take this opportunity to thank those who have recently left the committee for their involvement over many years and to thank Jane Kay in particular for her involvement as the executive secretary. On the 2012/2013 committee we have a new position called 'Farmer Representative' which John Booker has taken up. I think this is a good initiative as with all science we need to ensure we have relevance to the end user.

I have recently returned from the combined Annual Meeting of the American Dairy Science Association (ADSA), Asociación Mexicana de Producción Animal (AMPA), American Society of Animal Science (ASAS), Canadian Society of Animal Science (CSAS) and ASAS Western Section (WSASAS) in Phoenix, USA. The conference had more than 2000 abstracts either given as oral presentations or in poster sessions. This meant there was always something of interest across the numerous concurrent sessions. However such a large conference does not allow itself to good interaction between scientists an aspect that I have always enjoyed at our conference. Further it was of interest to note that the standard of presentations and science at our conference was as high if not higher than those at this large international conference.
A final point is that in 2012 the society did not award the McMeekan Memorial Award, the Sir Arthur Ward Award or bestow any Life memberships. There are many worthy candidates who should be nominated. Please follow the guidelines on our webpage and make nominations to the management committee. More details later in this newsletter.

Paul Kenyon
NZSAP President

The opinions expressed in this Newsletter are bloody good ones, but are not necessarily those of the NZSAP

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If you'd prefer to get your newsletter the modern way – just email Kate Crookston, Executive Secretary at nzsap.inc@gmail.com and she will make it so.

ABSTRACTS FOR NEW ZEALAND SOCIETY OF ANIMAL PRODUCTION CONFERENCE 2013

Abstracts for papers to be submitted for the 2013 Conference are due by **Friday 9th November 2012**
Download the *Abstract Submission Form* from the NZSAP Website.
Email the completed form to the Executive Secretary at nzsap.inc@gmail.com

NZSAP CONFERENCE 2013

HAMILTON, NEW ZEALAND

The 73rd Annual NZSAP Conference will be from **2nd – 4th July 2013** at Hamilton. Conference organiser is Kathryn Hutchinson (kathryn.hutchinson@agresearch.co.nz) Planning has begun with a committee formed. Conference venue is booked, the Kingsgate Hamilton. A experienced conference organiser has been employed. An active social programme is planned, watch the web site for updated details. We look forward to seeing you at Hamilton in July 2013.
Kathryn Hutchinson
Conference Organiser

AWARDS APPLICATIONS

Animal Science Award Applications to Executive Secretary
AgResearch Animal Genomics Award applications to Executive Secretary

- **31st January – for travel after 1st April of the year of application**
- **31st July – for travel after 1st October of the year of application**

The Animal Science Award is to promote and advance Animal Science and Production. Specifically it encourages early career development and supports contact with AAAP activities. Applicants must normally have been a member of NZSAP for at least one year prior to application and be a current financial member. Applications are to be sent to the Executive Secretary by 31st July for consideration by the management committee in August/September.

The objectives of the **AgResearch Animal Genomics Award** are to facilitate research in the wider field of animal genomics including gene discovery, gene function (physiology) and gene inheritance (animal breeding) studies. In particular, the Award is intended to support conference travel and/or the acquisition of new technical skills by technicians and research associates.

Application forms are available from the Executive Secretary, or on the website http://nzsap.org.nz

NZSAP ANIMAL SCIENCE AWARD TRAVEL REPORT – JEFFEREY LING

Purpose
To present a poster at veterinary student poster competition at the American Association of Swine Veterinarian Annual Meeting
Description of findings of relevance to New Zealand production and animal Science
Porcine Respiratory and Reproductive Syndrome (PRRS) was one of the key swine diseases presented in this conference. Currently, the disease has resulted in significant financial implications for the pig industry in the United States and across the globe. This disease is currently exotic to New Zealand, however stringent biosecurity at borders and import regulations are imperative to ensure the disease free status in the pig herds. Farm biosecurity is a very important management tool in the swine industry. Some pig farms even require a complete shower in and out for anyone entering the barn. In my opinion, most sheep and dairy farms in New Zealand undertake limited biosecurity measures for personnel or visitors coming on farms. If there were an incursion of foreign animal disease, spread of diseases can be very rapid and hence very devastating. In the US, the Department of Agriculture works closely with veterinarians and farmers are involved in the development of risk management plans if a foreign disease enters the country. In New Zealand, given the relatively high herd health status for all livestock species and importance of agriculture to the economy, biosecurity is vital and should not be taken lightly.
"Integrating Science, Welfare, and Economics in Practice" was the theme for the American Association of Swine Veterinarian 2012 Annual Meeting. One of the keynote speakers, Dr Lisa Tokach presented a very thought-provoking talk, discussing whether these components are cornerstones or just a balancing act. While Science is often used in decision makings, it is important not to undermine public perceptions. Animal Welfare is currently a hot topic in the press as far as livestock farming is concerned. Recent news reports on intensive dairy farming and gestation stalls have significantly jeopardised the image of livestock farming in New Zealand. It is believed that expectations of how livestock is treated will be greater in coming years. While there are many animal welfare friendly farming methods proposed at the annual meeting, it is believed that farming community should promote positive farming and continue to convey the message that "it is in farmers' best interest to have healthy and productive animals and that allowing sickness or mistreatment is not just cruel but also economically ignorant".

NZSAP ANIMAL SCIENCE AWARD TRAVEL REPORT – NICOLA SCHREURS

The NZSAP Animal Science Award supported my attendance at the Joint Annual Meeting (JAM 2012) of the American Society of Animal Science, American Dairy Science Association, Canadian Society of Animal Science, Western Section of the American Society of Animal Science and Asociacion Mexicana de Produccion Animal from the 15-19 July 2012 in Phoenix, Arizona.
During the conference I reflected on differences and similarities between animal science in NZ and the US. I wanted to get a gauge of the understanding that American researchers have of animal science in New Zealand and to understand what the research priorities are for American animal scientists.
As the conference progressed it became evident that American researchers have an appreciation of the animal science research undertaken in NZ. New Zealand's pastoral-based production was even more highlighted in the setting of Phoenix where the arid desert-land is in stark contrast to the green pastures that NZ is known for. Our dairy industry is certainly well admired. It was encouraging to note that US researchers were aware of NZ sheep production and they considered that it had a strong focus alongside the dominant dairy sector. Beef production was noted as a main focal point of animal production in the US.
The JAM 2012 conference was huge. Each day had over 300 posters and over 300 oral presentations. There were a multitude of papers looking growth efficiency. This is a popular topic among researchers of beef production in the US. Predicted population growth and competing land use drive research priorities. American researchers use residual feed intake (RFI) as an indicator of efficiency. I questioned the usefulness of categorising animals on RFI compared to the use of Feed Conversion Efficiency (FCE) since, in the research situation; both require measures of growth rates and intake. The answer seems to lie in the fact that RFI is a better tool for genetic selection as FCE is very dependent on the values of intake and gain rather than the genotype of the animal.

So all-in-all the overall research focus seems similar – how to feed an increasing world population with limiting resources – searching for the efficiencies. The main difference is that America is more inward looking with the concern on sustaining feeding of the American peoples while in New Zealand the realisation is that we will not be feeding the masses and to remain economically sustainable requires focus is on the discerning, high-end market where product quantity is less important.

Side-note: To quench my curiosity about the farming systems in Arizona my partner and I drove out into the countryside surrounding Phoenix after the conference....thinking.... how could anything be farmed in this dryness and heat (we got temperatures above 45°C while in Phoenix). Then, lo and behold, we came across acres and acres of lucerne (alfalfa) and next thing there was feedlots with long, long sheds with water misting fans and black and white cows enjoying the shade. See photos below.

AgResearch Animal Genomics International Travel Award Report – Rayna anderson

The NZSAP AgResearch Animal Genomics International Travel Award allowed me to attend the Plant and Animal Genome Conference which was held in January 2012 in San Diego, USA.

The Plant and Animal Genome (PAG) Conference is the largest international scientific meeting reporting on non-human species research. It is designed to provide a forum on recent developments and future plans for plant and animal genome projects worldwide. Consisting of technical presentations, poster sessions, exhibits and workshops, the conference is an excellent opportunity to exchange ideas, and get a comprehensive update of current methods and technologies being used in genetic research. PAG XX brought together over 2,700 leading scientists and researchers from over 65 countries. More than 1,700 scientific abstracts were submitted and over 1,000 posters were presented.

Within our research group there has been extensive use of Illumina high-density (50K) genotyping arrays for genome-wide association studies in sheep, but the costs related with this technology limit its use commercially in New Zealand to the key industry sires. Low-density single nucleotide polymorphism (SNP) panels combined with imputation (prediction of ungenotyped markers) should decrease costs and encourage greater adoption of this technology by breeders. I presented a poster at PAG detailing the 5K ovine chip that AgResearch developed as part of Ovita funded research and we are currently evaluating it for imputation accuracy and potential as a commercial product.

Feedback from my presentation and sessions I attended supported the need for robust, flexible, lower-cost and higher throughput SNP genotyping options. The PAG trade displays and workshops gave me the opportunity to investigate low cost platforms suitable for genotyping small to moderate numbers of SNPs (50-300) with large numbers of samples. Such technology would make our research and the benefits of genomic selection accessible to a larger portion of New Zealand's sheep, cattle, aquaculture and forestry sectors.

I gained valuable insights into how early stage users have integrated these systems into both research and commercial settings including their DNA sample preparation and storage techniques, use of liquid handling robotics and selection of analysis software. Results of this are currently being implemented in our research and commercial developments.

I would like to thank NZSAP for their financial support which made attending this conference possible. The knowledge gained will benefit our animal research and ultimately industry by providing smarter and more cost effective genetic solutions.

AgResearch Animal Genomics Award Travel Report – Matt Bixley

Purpose:
The $2000 AgResearch Animal Genomics International Travel Award was used to attend the Association for the Advancement of Animal Breeding and Genetics (AAABG) 30th Anniversary Conference, Adelaide, Australia. I presented a paper entitled “Building a Deer SNP Chip”.
The AgResearch Animal Genomics International Travel Award covered the travel and accommodation expenses while AgResearch funded my conference fees. Most meals were part of the conference package but two full days of travel started to add up.

AAABG fits well with the scope of work undertaken within the Animal Genomics Group. Sessions were run concurrently so choice was often required. Topics were varied and generally consisted of speakers from a cross section of global research and industry.

- Animal Genetics
- Delivery of Genomics to Industry
- Genotype by Environment Interactions
- Genomic Selection
- Behaviour and Welfare
- Gene Mapping
- Dairy Cattle
- Beef Cattle
- Pigs
- Breeding Program Design
- Animal Genomes
- Disease Resistance
- Biotechnology Tools & Challenges
- Sheep Wool/Sheep Meat
- Aquaculture
- Statistical Methods

The paper I presented on Building a Deer SNP Chip was well attended in the Biotechnology Tools session and generated some discussion around the methods and how they have been used across other species and what that means for others. It also lead to an invitation to Speak at the University of Sheffield while there on holiday.
The Genomic Selection and Statistical Methods sessions were highly topical for the New Zealand attendees with LIC working heavily on Selection in Dairy Cattle and AgResearch working towards selection in the sheep industry. Methods were at times robustly discussed.
The development of the aquaculture industry in New Zealand is on par (or marginally ahead) with that of Australia based on the talks presented in that session. The New Zealand industry appear to be further ahead in confirming genetics relationships with DNA as opposed to manual records.
At a personal level attendance solidified my desire to grow further in the analysis of both genotypic and phenotypic data with particular interest in the sheep and deer industries.
Again thank you to NZSAP for the grant and allowing me to develop my career at Agresearch.

McMeekan and Sir Arthur Ward Awards and Life Membership

The **McMeekan Memorial Award** recognises an outstanding individual contribution made to New Zealand animal production and/or the Society, during the previous five years. Nominations must be signed by two financial members of the Society and must contain documented evidence of the way or ways in which the nominee's efforts have made an outstanding contribution to New Zealand animal production and/or the Society during the five years before the nomination. A potential recipient need not be a current member of the Society. The Award is in honour of Dr C P McMeekan a foundation member, past president, life member and distinguished leader in animal production, research and administration in New Zealand and the world.

The **Sir Arthur Ward Award** recognises the successful application of scientific research or farmer experimentation through a series of trials or effective extension when applied to an aspect of animal production in New Zealand. The nominee may be an individual, a company or an organisation, and need not be a member of the Society. Nominations must be signed by two financial members of the Society and must contain documented evidence of how the nominee's efforts have made a substantial contribution towards the adoption of a practice(s) that has facilitated more efficient animal production in terms of output per animal, per labour unit or per farm. The phrase "adoption of a practice" is to be broadly interpreted and may relate to the development of a technique, a piece of equipment, or a husbandry practice; the effective encouragement of sound principles of animal production; or the development of a new aspect of animal production.

The Management Committee is also seeking recommendations for the conferment of **Honorary Life Membership**. The Committee shall consider recommendations from members and a formal nomination will be read at the 2012 Annual General Meeting. **Honorary Life Members** shall be persons who have rendered significant service to the cause of animal production. Last year Life Membership was been conferred on John Smith and Jock Macmillan.

Nominations for these awards should be sent to the Executive Secretary by **March 31st 2013**

Preparing world class graduates always Professor’s aim

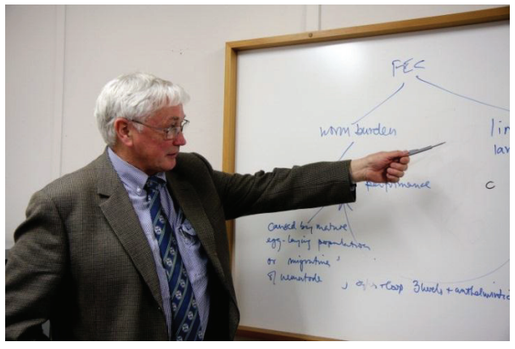
Advocacy for science as the essential foundation of agriculture has been a constant theme in the teaching, research and administrative career of Yorkshire-born Professor Andrew Sykes, who retired in May 2012 as Professor of Animal Science and Head of the Department of Agricultural Sciences at Lincoln University, after 34 years on the staff, including a period as Pro Vice-Chancellor.

“I have always seen my prime role as ensuring that Lincoln University graduates in animal science could go on from New Zealand to any university or research organisation in the world and not be out of their depth intellectually,” says Professor Sykes.

“Ensuring that Lincoln University is operating at an acceptable international level scientifically, and extending my students to achieve their best, have been central concerns in my job as a teacher and research supervisor.”

Professor Sykes can list numerous examples of former high achieving students who now occupy top positions in science, industry and other areas both in New Zealand and overseas.

“I can actually remember where particular individuals were sitting in the lecture theatres and what we were discussing at the moment when their ‘lights went on’ - students such as Dr Stephen Bishop, now Professor of Animal Disease Genetics at Edinburgh University, Dr John Penno CEO of Synlait, and Dr Tim Mackle CEO of DairyNZ.”



For the young Andrew Sykes his own “lights” went on at Bangor University, North Wales, during lectures in hill sheep production by Mr Gwynn Williams. As a result, and after completing a science degree with honours in agriculture, he decided to opt for an academic career rather than pursue his original intention to be a farmer.

An Agricultural Research Council (ARC) doctoral scholarship took him to Edinburgh University where he did a PhD in hill breed variation to climatic stress at the ARC Animal Breeding Research Organisation and he had his first encounter with New Zealand and Lincoln University.

“My supervisor in Edinburgh was Professor Hugh Donald, a New Zealander and Lincoln graduate who was Director of the Animal Breeding Research Organisation, located on Edinburgh University’s science campus.

“Because of his connection with Lincoln, Professor Donald often did job interviewing in the UK for College positions. In fact, when the time came, I had already had a prolonged interview for the Lincoln position to which I was eventually appointed.”

Andrew obtained his PhD in 1967 and worked for the next 10 years at Moredun Research Institute, Edinburgh. He had concluded that nutrition and nutritional diseases were more important to hill sheep production than cold exposure and went on to produce significant papers on calcium and phosphorus metabolism and requirements, and on the interaction of endoparasites and nutrition in sheep.

At Moredun there was an early lesson in the scientific importance of challenging doctrine.

“Work was being done there on tooth loss, broken mouth and bone weakness in sheep. The conventional wisdom was that the answer would lie in identifying and correcting mineral deficiencies. Based on medical work with malnourished children in Africa, suffering from marasmus and kwashiorkor, I was drawn to the idea that a nematode parasite investigation might be more fruitful. My youthful enthusiasm was indulged with approval for a small experiment, which everyone believed would lead nowhere and conveniently serve to shut me up. Well, the opposite happened, astounding results emerged and suddenly the dominance of the mineral explanation for animal bone disorders was under challenge.”

The nematode parasite work won international acclaim and led to speaking engagements and conference invitations abroad. From one engagement, in Sydney, Andrew travelled to New Zealand, visiting Wallaceville Experimental Station and Lincoln College. At Lincoln he met the Professor of Animal Science Ian Coop who was on the eve of retirement. College Principal Professor James Stewart invited Andrew to consider applying for the job, which he did.
When Andrew arrived at Lincoln in 1978 he saw the task ahead as one of upgrading the institution from “agricultural college thinking” to “university thinking” and of shifting the emphasis in animal science from technical and extension work more towards rigorous scientific enquiry.

“There was only one masters student in Animal Science the year I arrived, and there had been no Animal Science masters graduates in the previous two years. I saw it as essential to lift our performance in the postgraduate and research areas if we were to be a credible scientific department. Slowly the numbers started to come through as the department developed its research potential. A high point for Lincoln University was reached around 1990 when we were at the cutting edge of animal transgenics and produced New Zealand’s first transgenic animal and became involved in work on ‘super woolly’ sheep.”

Andrew’s own research covered mineral metabolism, control of endoparasites, growth and development of animals and parasite resistance. He has always insisted on the highest standards of work and encouraged good ideas. Narrowness of vision is anathema to him and he has been involved in medical research with his osteocalcin studies, he has collaborated with the dental world in his studies of broken mouth in sheep and he encouraged the early use in New Zealand of CT scanning technology to determine meat, muscle and bone conformation and ratios in sheep.

Scientists need funding and research space, he says, and he believes that the politicisation of science funding through adoption of an outcomes driven model for allocating research money, does not provide this space.

“The importance and relevance of research is not necessarily determined by particular time horizons. Research done today may not provide a return-on-investment for 15 or 20 years. There are numerous examples of this and I have always exhorted my staff to look at the long-term, the big picture.”

Professor Sykes sees exciting long-term prospects for work undertaken in Lincoln University’s Department of Agricultural Sciences. For example there is continuation of the research undertaken by lecturer Dr Andy Greer, whose doctoral project he supervised.

It was an extension of his own earlier work on production losses associated with gastrointestinal nematode parasite infection in sheep. Dr Greer, who like Professor Sykes went on to Moredun Research Institute for a period after completing his PhD, found that it was an animals’ immune response to the presence of the parasites, rather than physical damage caused by the parasites, that led to reduced appetite and nutrient utilisation and consequent production losses.

“If we can manipulate the immune response we can take a hand in minimising appetite loss and thereby assist the maintenance of productivity. And productivity is what farming is all about,” says Professor Sykes.

This example of contemporary research joins a long list of achievements in the application of science in animal production at Lincoln University during Professor Sykes’ time. They include installation of the first CT scanner for sheep; establishment of a feed analysis service and pioneering research work on silage quality; development of the first Lean Growth Index for sheep; refinements in pregnancy diagnosis; development of the New Zealand ovine sire reference scheme; and establishment of the Flock-Linc sheep recording bureau. All of these contributions to animal production have been underpinned by solid science.

An area about which Professor Sykes has serious reservations, in terms of the wisdom of current science funding, is the work investigating methane production in the rumen of livestock.

“There is huge redundancy in the microbial population of the rumen, which has ensured the nutritional survival of the species. Some estimates suggest that over 70 different methanogenic bacteria inhabit the rumen and these would need to be controlled to reduce methane emissions. I suggest this is a ‘mission impossible’.

“As the world is short of food, I believe it would make more sense to cost emissions per unit of product. This would readily show that work to improve livestock productivity through improved genetics, nutrition and disease prevention would far outweigh possibilities from rumen manipulation. Such productivity gains since 1990 have already improved this efficiency by between 15 – 30 percent.”

Outside of Lincoln University, Professor Sykes has played an active role in animal science in New Zealand and internationally. He is a past President of the New Zealand Society of Animal Production, a past president of the Asia Australasian Association of Animal Production Societies, and has been chair of the International Advisory Committee for the International Symposia Series on the Nutrition of Herbivores. He has too been a regular technical consultant to joint programmes in livestock development for the FAO/International Atomic Energy Agency. There have been numerous technical and other professional visits over the years to South America, Asia and elsewhere.

In 1991 he was the recipient of the New Zealand Society of Animal Production's prestigious McMeekan Memorial Award for his leadership in education, research and administration in animal science and his domestic and international advancement of the society.

The citation said his most lasting contribution would be his "vision of the future of animal production in New Zealand and his challenge to his fellow scientists and farmers to think of the wider issues of animal production."

In 1992, in recognition of his contribution to animal health in the New Zealand livestock industries, he was invited to deliver the New Zealand Veterinary Association's prestigious Ira Cunningham Memorial Award address.

An accomplished musician and patron of the Lincoln University Music Society, Professor Sykes is a Life Member of Chamber Music New Zealand, having served on the national board for 119 years, the last three as President.

Professor Sykes and wife Margaret farm a 110 acres at Brookside, near Leeston.

DR J B HUTTON

It is with sadness that we recognise the recent passing of one of the NZSAP Honorary Life Members – Dr John Hutton. John's keen intellect in asking the difficult questions at NZSAP Conferences will be sadly missed. Our thoughts are with his family at this time.
A more formal recognition of John's contribution to New Zealand Agriculture and our Society will be published in the 2013 conference proceedings.

ASHLEY CENTENNIAL BOOK

In 2010 NZSAP contributed funds to the publication of a centennial book covering the first 100 years of Ashley Dene a property owned by Lincoln University. This book has now been published and is available from the Lincoln University bookshop at a cost of $40 incl GST. If members are interested in purchasing a copy orders can be made directly through the bookshop (03) 325 3892 email: thelinc@lincoln.ac.nz or by contacting the newsletter editor CM Logan email: Chris.Logan@lincoln.ac.nz 027 6048450

MEMBERSHIP

A warm welcome on behalf of NZSAP to our new members:

ALISTAIR	BLACK	Lincoln University
JORGE	ZURITA	Christchurch
MARK	ILLSTON	Taihape
OMAR	AL-MARASHDEH	Lincoln University
CONAL	HARKIN	Lincoln University
PAUL	SMITH	Hastings
LORNA	MCNAUGHTON	LIC
FRANCES	CREAGH	LIC
REUBEN	HARLAND	Palmerston North
ALICE	ALLSOP	Napier

2 resignations were received and 13 members were removed from membership, leaving a Current Membership Total of 444.

MANAGEMENT COMMITTEE

		Phone	Fax	Email	Location
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S.I FARMER REP	John Booker	03 314 4129 (day)		j.booker@amuri.net	Nth Canterbury
EXEC. SEC.	Kate Crookston	07 823 9345		nzsap.inc@gmail.com	

An electronic version of this newsletter and other information on the Society is available at: http://nzsap.org.nz

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