ASAB Newsletter

Winter 2014

A note from the Newsletter Editor…

Dear ASAB member,

Welcome to the Winter 2014 edition of the ASAB Newsletter! What a year 2014 has been. We've had two fantastic meetings in Sheffield at Easter, and in conjunction with ECBB in Prague in the Summer. The recent Winter meeting was held in the Prince Albert Suite at London Zoo on December 4-5th on Individuals in Groups was organised by myself and Prof. David Sumpter (Uppsala University, Sweden), with plenary lectures by Prof. Niels Dingermanse, Dr Andrea Manica and Dr Dora Biro. We had an amazing turn out – just of 300 attendees on each day!

There are a lot of changes afoot on ASAB Council, with Dr Rob Thomas (Education Officer), Dr Lynne Sneddon (Ethics), and Dr Lotte Kvarnemo (Ordinary member) all reaching the end of their time on Council. And after 5 years, it is also my turn to hand over the Newsletter, social media and website baton. It has been a pleasure and a privilege to be part of ASAB and to communicate with the membership. Your new Newsletter and Website editor will be Dr Hannah Rowland; Hannah, welcome and have fun!

Finally, you can receive all the latest ASAB news on grants, awards, conferences and interesting research by following us on Twitter. I hope you enjoy catching up on all the news from ASAB. Wishing you all a very merry Christmas and a happy and productive new year.

With all best wishes,

Lisa Collins

*In this edition…

A View from the Conference

ASAB Winter meeting 2013

In early December, London Zoo hosted the annual return of The Association of the Study of Animal Behaviour's winter conference. Attendees flocked from far and wide in anticipation of the exciting programme devised by Tim Fawcett, Andy Higginson and Pete Trimmer – the Modelling Animal Decisions Group, Bristol. Titled 'The Evolution of Behavioural Mechanisms', the conference showcased a diverse mix of presentations from biologists, psychologists, neuroscientists and computer scientists.

Over two days, attendees enjoyed various talks and had the opportunity to study posters comprising empirical and theoretical research. These presentations explored the adaptive value of behavioural mechanisms and the constraints on their evolution.

Professor Melissa Bateson kick started the conference with the first of three plenary talks. Using European starlings she powerfully demonstrated the long-term effects a harsh, early environment can have on adult cognition and the use of telomeres as a biomarker of condition. She also shed light on the importance of establishing starlings as a model organism for studying early life stresses, explaining that they can be used as an analogue to humans.

Following this, Professor Reuven Dukas took to the stage for the second plenary talk, this time focusing on social information use in fruit flies. With clarity, Dukas explained his recent research, describing the evolutionary and neurogenetic mechanisms involved in social attraction and social learning in adult and larval fruit flies. He also touched on some preliminary work looking at spontaneous social behaviour in larvae during development from hatching to pupation.

To conclude the first day, the adjacent room was filled with posters to allow researchers a platform to exhibit and discuss their work. Meandering through the panoply of cutting edge research, with the ambient buzz of lively discourse, it was easy to get a real sense of the quality of scientific endeavour this meeting attracts.

The next morning welcomed Professor Simon Laughlin, the third plenary speaker of the meeting. With a combination of wit and lucidity he illustrated how the costs of investing in information constrains the brain, a concept which he describes as the dark side of investment. He explained how the brain's ability to process information is constrained by space, materials and energy and that brains have evolved to use these resources efficiently.

This year we were privileged to hear from Marlene Zuk, co-positor of the 'Hamilton-Zuk' hypothesis. Zuk talked about the role behaviour plays in establishment and maintaining novel traits. This lecture was in honour of the great ethologist Niko Tinbergen, whose pioneering ideas concerning individual and social animal behaviour formed the basis of much of the work presented at this meeting.

The conference's title allowed for a broad range of research, making it interesting to see how speakers interpreted the title in their own way. This range of approaches was an important factor in the conferences success.

There was a consensus this year that the conference was of a very high quality. I left the meeting feeling invigorated and inspired and I am sure am I not alone. I eagerly look forward to the next ASAB meeting, scheduled for 7th - 9th April in the University of Sheffield, UK.

Adrian Bell

Centre for Computational Neuroscience and Robotics

University of Sussex, U.K.

Global data sharing collaboration identifies opportunities for considerable animal savings in drug safety assessment

An international cross-company data sharing initiative has brought together pharmaceutical regulators and industry representatives in an effort to proactively analyse historic practice in the use of recovery animals in toxicology studies, and to identify opportunities to embed improvements. The findings of the data-sharing exercise not only promise savings in animal numbers, but also in time and money for the drug development industry.

The collaboration between 30 major pharmaceutical companies, contract research organisations and academic institutions, as well as regulators from Europe and the US, has led to several key recommendations laid out in a paper recently published in *Regulatory Toxicology and Pharmacology*.

As part of the drug development process, it is important to assess recovery – whether toxic side effects from new drugs persist after treatment or whether they can be reversed – and sometimes companies will use animals to evaluate this, but the recent findings indicate that there may be a better way.

The project, jointly headed by the National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs) and the UK Medicines and Healthcare Products Regulatory Agency (MHRA), found that decisions regarding when and if recovery animals are included on repeat-dose toxicology studies could be strengthened, and all participants in this project were keen to explore ways in which they can improve practice. A thorough review of the literature and consideration of previously gathered information on a similar or related compound should add weight to decisions related to recovery animal use.

The collaborative effort analysed data on 137 compounds from 259 studies. A questionnaire completed by many of the collaborators found that historically there has been wide variation in recovery animal use; whilst many companies included recovery animals in all studies and at all dose levels to support Phase 1 clinical trials, there were some companies that did not include any recovery animals at all.

David Jones from the MHRA said:“Recovery animals are currently used inconsistently across studies and between companies. The MHRA, the EU’s Safety Working Party and the USA’s FDA, therefore, thought it important to have the opportunity for discussions with pharmaceutical industry representatives regarding the utility of recovery animals, to provide further clarity about when these test are necessary and when they are not. The NC3Rs provide an ideal arena in which regulators and industry can meet and discuss such issues.”

If the use of recovery animals is deemed necessary for a particular study, the authors have also provided guidance for experimental design. They recommend that investigators should refrain from using recovery animals in early studies and consider their use later in development once more information on the toxicity profile is known. Careful consideration should also be given when deciding on the appropriate species, the range of dose groups that need to be tested, and the size of these groups. Number and size of groups should be kept to a minimum.

Dr Vicky Robinson, Chief Executive of the NC3Rs, said: “This is another great example of industry and regulators working together through partnerships facilitated by the NC3Rs. If , as a result of these findings, recovery animals are only used where they are really needed, and this change is implemented across all drug development pipelines, then the reduction in animal use could be substantial.”

Sewell F, Chapman K, Baldrick P *et al*: Recommendations from a global cross-company data sharing initiative on the incorporation of recovery phase animals in safety assessment studies to support first-in-human clinical trials. *Regulatory Pharmacology and Toxicology* (2014) DOI: 10.1016/j.yrtph.2014.07.018

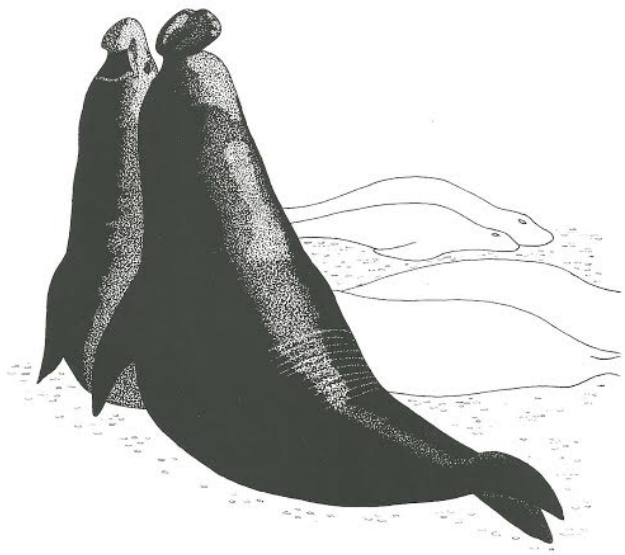
* Death of Linda Gray*

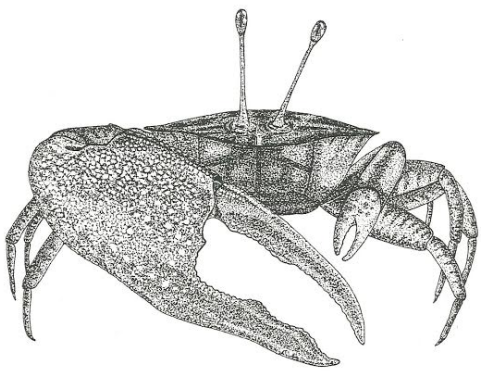
At the end of August 2014, Linda Gray died after a short illness. Linda was one of our two main illustrators for material that the ASAB education project produced over the 17 years that I served as the Education Officer. Her final teaching post was at Sawston Community College.

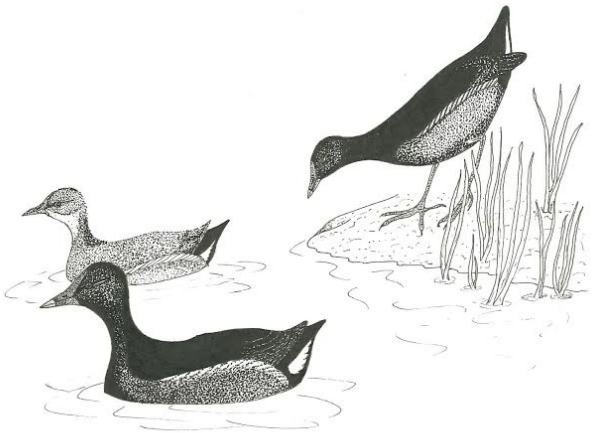
When I started in post at Homerton College, Cambridge with Michael Reiss, Linda was working for the SAPS (Science and Plants for Schools) project and was a contributor to the SAPS newsletter, providing both text and drawings. I saw her drawings in the newsletter and asked if she could perhaps produce one or two for each termly issue of *Feedback*, the ASAB education newsletter. From issue 2 onwards, her delightful drawings featured in *Feedback* and also in our books, both the A level and GCSE book, and all the resources, workshops and conference material we subsequently produced. Her black and white drawings added significantly to the impact of the material and all were produced in her own time and for a nominal cost. She was an Editor`s dream contributor, as the illustrations were unfailingly presented before the printing deadline and were always accurately and crisply drawn. Linda continued to provide illustrations until I retired at the start of 2011 and over that period had provided over 100 illustrations for ASAB – a considerable output for an amateur artist. The ASAB education project owes her a great debt of gratitude for the work she produced for us.

She will be greatly missed by her husband, Dr Jim Gray, her son Alan and daughter Catherine and by all who knew her at Cambridge. Linda was a quiet, kind and delightful lady and it was a privilege to have known and worked with her.

Michael Dockery







ASAB Education Committee News

Lots of exciting things have happened in the world of the Education Committee since our last update. We have some marvellous new platforms for our resources. http://www.nationalstemcentre.org.uk/asab Download them and watch the videos directly. We have published some resources on The Times Educational Supplement pages. http://www.tes.co.uk/teaching-resources/ Finally, have a look at our new about me page http://about.me/ASABeducationcommittee for the rest of our links and updates.

The Association for Science Education conference was a big success. ASAB shared the biology stand with a number of other learned societies and biological associations. We co-sponsored a speaker with The British Ecological Society - Dr Susannah Thorpe University of Birmingham for the Biology in the Real World lectures. Her title was Natural Selection as the Powerhouse of Diversity: Adaptation of form and behaviour to the environment. Susannah talked about the evolution of bipedalism. She explored some of the key similarities and differences among the apes and revealed how these relate to the evolution of locomotion.

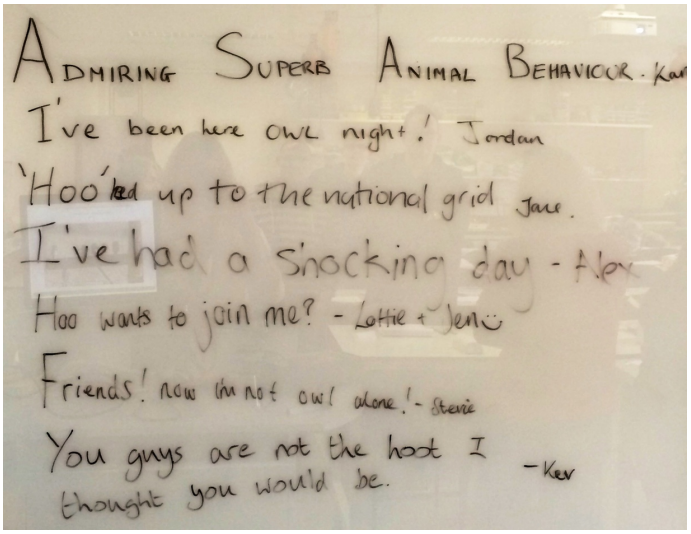
We are excited to announce that Professor Tim Guildford will be speaking on our behalf at next year's conference in January at the University of Reading. The theme of the Biology in the Real World lectures this year is 'Voyage of Discovery' and Tim will be unravelling the mechanisms by which animals map the environments through which they travel. He will also talk about the modern technologies used to help answer questions such as... What cues do birds use to navigate home across familiar areas? How do long distance wandering seabirds migrate across the open oceans?

Dr Ezio Rosato from the University of Leicester did a splendid job of representing us at the Association for the teaching of Psychology Conference in the summer. His talk 'Rhythms of Life' was very well received by the delegates. Ezio spoke about circadian, tidal and circaanual rhythms, his research using Drosophila and actiograms. He has a wicked sense of humour and all the teachers thought he was fabulous.
We also used the ATP conference to showcase a new resource written by Michael Dockery for the Manchester Museum. Written with GCSE and A level psychology in mind this resource is based on the the Bennet-Levy and Marteau study (1984) it explores human fears of animals. You can download the free lesson plans here: http://www.tes.co.uk/teaching-resource/Phobia-Human-fears-of-animals-6428784/
School visits have included examples of nest building and moth counting. The Committee would like to thank Jeff Davey and Alice Gribble for their time and expertise used to enthral students at Mount Stuart Primary School in Cardiff.

We continue to train teachers; however, I think their caption competition skills may need improving. Can you do any better?

Charlotte Evans
ASAB Education Officer
behaviour@cardiff.ac.uk


Micea Costina



ASAB Grant reports

Can an embryo learn?

If you're a snail embryo it certainly seems so! Pond snails are able to sense chemicals released by their predators whilst they are still embryos in the egg and alter their behaviour accordingly.

Researchers at Aberystwyth University, University of Exeter and University of Plymouth have now shown that when snails are exposed to predator smell during this very early developmental stage, they are better able to avoid predatory fish once they hatch.

This 'pre-programmed' response may be extremely important for snails to be able to survive just after hatching when they are very small and vulnerable.

Their findings are published in the latest edition of the journal *Freshwater Biology* (http://doi.wiley.com/10.1111/fwb.12512).
Pond snails are extremely important to freshwater environments, helping to control the growth of plants which can clog up our rivers.

They are also under threat from invasive predators including the killer shrimp and signal crayfish.

Understanding how snails are able to learn about predators at different life stages, from embryo to adult, will give us a good indication about how capable they may be of surviving under these increasingly risky conditions.

To get an idea of how snails respond to predators, the team looked at how pond snails, *Lymnaea stagnalis*, responded to smell from a predatory fish, tench.

The snails were exposed to predator smell throughout their embryonic development in egg capsules.

Once they hatched out, they were kept in a predator-free environment for a week, and then tested for how they respond to predator smell.

Snails exposed to the predator smell as embryos strongly responded to the smell when they re-encountered it as juveniles, crawling out of the water to escape the potential predator.

The lead author Dr Sarah Dalesman (Leverhulme Trust Early Career Fellow at Aberystwyth University) said; "We were quite surprised at how well the snails were able to learn during this very early phase of development."

The ability to respond to potential predators while still in the egg may be extremely important in allowing young vulnerable snails to survive.

"We also found embryos exposed to the predator smell hatched out at a smaller size than those kept in predator-free conditions". This mirrors effects of stress on development in mammals, including humans, where foetuses of stressed mothers are often smaller at birth than their non-stressed counterparts.

Dr. Simon Rundle (University of Plymouth) stated that; "One of the most important findings in this study was that there appeared to be a genetic component to the snails' behaviour, with those animals whose grandparents had experienced fish predators in the wild showing the biggest response".

This research work was funded by a Leverhulme Trust Early Career Fellowship (Dr. Dalesman) and an undergraduate student scholarship from the Association for the Study of Animal Behaviour (Angharad Thomas).

Dr Sarah Dalesman, Leverhulme Trust Early Career Fellow, IBERS, Aberystwyth University

TV company opportunity

A British TV Production company is producing a new programme focusing on feline aggression towards human. With the help of expert behaviourists and veterinary specialists the show intends to shed light on the underlying causes of this distressing behaviour, ultimately hoping to improve the relationship and understanding between cats and their owners across the nation.

They are looking for new cases, at the pre-treatment & pre-diagnosis stage, to feature in the show as well as experienced professionals to provide insight that may help unravel and unpack the various causes of aggression in specific cases.

If you'd like to learn more or are aware of a case of this nature than please get in touch with Sian Jones on sian.rebecca.jones@outlook.com or 07449936533.

SEB Prague 2015: Understanding intraspecific variation in animal phenotypes from genes to behaviour

Date: 30th June (all day)
Organised by: Lynne Sneddon (University of Liverpool) and Mark Briffa (University of Plymouth)

Confirmed speakers: Nadia Aubin-Horth (University of Laval), **Judy Stamps** (University of California at Davis), **Shaun Killen** (University of Glasgow), **Kath Sloman** (University of West Scotland), **Susanne Foitzik** (University of Mainz), **David McKenzie** (University of Montpellier)
Description: Consistent between-individual variation in behaviour or 'animal personality' occurs in a variety of contexts and has been recognised in many animals including humans. This session will explore the functions and proximate causes of 'animal personality' using techniques in behaviour, molecular biology, genomics, physiology and neurobiology with speakers at the forefront of this burgeoning field.
Abstract submission deadline 24th April 2015
http://www.sebiology.org/meetings/Prague/abstracts.html

Behaviour 2015, Cairns: Animal personality, aggression and physiological responsiveness

Date: 9-14th August 2015 (day of symposia TBC)
Organised by: Lynne Sneddon (University of Liverpool) and Mark Briffa (University of Plymouth)
Speakers: Culum Brown (Macquarie University), **Alastair Wilson** (University of Exeter); **Øyvind Øverli** (Norwegian University of Life Sciences); **Lynne Sneddon** (University of Liverpool)
Description: The propensity to be aggressive and win agonistic interactions affects the probability of survival and overall fitness with the dominant or winner of contests usually in the best physiological condition. This symposium shall address the proximate causes and ultimate functions of animal aggression and tease apart the link between aggressiveness, personality and stress coping style. It will explore the functions and proximate causes of aggression using techniques in behaviour, molecular biology, physiology and neurobiology.
Abstract submission deadline 16th March 2015
http://www.behaviour2015.org/abstract-submission/
Informal enquiries to Lynne (lsneddon@liverpool.ac.uk) or Mark (mark.briffa@plymouth.ac.uk)

The Behaviour Ecology and Evolution Research (BEER) Centre at Durham University is delighted to be hosting the Association for the Study of Animal Behaviour's Postgraduate Workshop and Easter Conference from 18th to 20th March 2015.

The Easter ASAB conferences expressly welcome submissions from students to present their research findings in spoken or poster presentations.

Note that travel grants are available to cover expenses for student members of ASAB. Please note that the deadline for travel grants is February 1st 2015.

There are prizes for both best student poster and best student spoken presentation.

The Conference (Thursday 19th - Friday 20th March) will be preceded on Wednesday 18th March by the Postgraduate Workshop, focussing on 'Careers Outside Academia.

Please join us for our reception on Wednesday for BEER beer and The Trial of Chimpanzee Jack!

Confirmed Plenary Speakers: Dr Tristram Wyatt, University of Oxford, UK.
Dr Paula Stockley, University of Liverpool, UK.

Abstracts now invited for submission, deadline February 9th 2015.


2015
Behaviour
34TH INTERNATIONAL
ETHOLOGICAL CONFERENCE
SAVE THE DATE
9-14 AUGUST 2015
CAIRNS CONVENTION CENTRE
AUSTRALIA
For further details visit www.behaviour2015.org