

ASAB Newsletter

Autumn 2012



A note from the Newsletter Editor...

Dear ASAB member,

Welcome to the Autumn 2012 edition of the ASAB Newsletter! I can hardly believe that we're already well into Autumn with the ASAB Winter meeting just weeks away. Ever since I started my doctoral studies, the Winter meeting has been my favourite conference of the academic year. In the last few years, the meeting has coincided with London's first snow of the season which, despite causing travel chaos, didn't diminish the atmosphere and certainly served to increase the Christmassy feel to the event. This year, the theme of the meeting is 'Cognition in the Wild'. I for one will be there with bells on!

In the meantime, I hope you enjoy catching up on all the news from ASAB since the Summer.

With all best wishes,

Lisa Collins

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In the news...

A brief look at some of the animal behaviour coverage in the media this Autumn

A study, recently featured in The Times newspaper, found that **ageing in orb-web spiders** (*Zygiella x-notata*) **affects web geometry**. Anotaux et al. (2012, *Anim. Beh.* 84:1113-1121) discovered that older spiders invest less silk in their webs and proposed that age-induced changes in web construction might also reflect reduced locomotor and/or cognitive function.

Using his trunk to change the shape of his vocal tract, **an Asian elephant** in the Everland Zoo, South Korea, **imitates human speech**. "Koshik" may have learned this skill to strengthen bonds with his human caretakers due to lack of conspecific contact during a critical period of social development (Stoeger et al., 2012, *Curr. Biol.* 22:1-5).

Two whales that were stranded on Opape Beach, New Zealand, in 2010 have since been identified, through DNA analysis, as the spade-toothed beaked whale (*Mesoplodon traversii*) - **the world's rarest marine mammal**. Thompson et al. (2012, *Curr. Biol.* 22:R905-R906) provide the first images and morphological description of this rare species.

Size, as opposed to energetic constraint, appears to be the main driver for **sex-cheating European tree frogs** (*Hyla arborea*). Brepson et al. (2012, *Anim. Beh.* 84:1253-1260) experimentally manipulated the nutritional status of small and large male frogs, enabling the first direct comparison to be made between inherent disadvantage and energetic constraint hypotheses.

Chérie Part, Queen's University Belfast

*Professor Tim Birkhead receives ASAB Medal 2012 *

Professor Tim Birkhead, University of Sheffield, UK, was awarded the 2012 ASAB Medal. The ASAB Medal, specially designed by Jonathan Kingdon and struck in bronze, is awarded annually for contributions to the science of animal behaviour - through teaching, writing, broadcasting, research, through fostering any of these activities, or through contributing to the affairs of ASAB itself.



Prof. Tim Birkhead receiving the ASAB Medal from ASAB President Prof. Jane Hurst at the ECBB/ASAB meeting in Essen, July 2012.

* View from the Conference: VIth ECBB Conference, Essen, 2012 *

The VIth ECBB Conference, held at the University of Duisburg-Essen, Germany, began on the 19th of July with an entertaining and memorable ice-breaker. I arrived in Essen later that night and was unfortunately unable to attend, a fact of which I was reminded, and regretted, throughout the week. The following morning we were welcomed to the conference by Professor Ulrich Radtke, followed by a plenary by Professor Patrizia d’Ettorre, who gave an overview of research her lab has been undertaking on recognition of social identity in ants.

The meat of the conference followed. There were five concurrent sessions on at any time with subjects on the first day spanning: public information use in sexual selection, the use of bioacoustics tools to assess emotions in animals, social behaviour, strategies against foes, and a memorial symposium in memory of the recently departed Dr Björn Siemers. This was the first time that I had attended an ECBB meeting and throughout the conference I was impressed, and humbled, by how the group feels and acts like a caring community, especially regarding Dr Siemers. Two talks I particularly enjoyed during the day were by Dr. Alex Wilson which investigated whether individual behaviour was consistent across metamorphosis in tadpoles/frogs, and my favourite talk of the conference, given by (PhD student) Alex Vail, on gesturing and cooperative hunting between moray eels and coral trout.

The second day of the conference started with a very interesting plenary by Professor John Phillips which covered the past, present and future possibilities of research of magnetic orientation. Similar to the previous day, there was a huge diversity of sessions including: learning and cognition, behavioural aspects of magnetic orientation, intraspecific variation in primate social dynamics and vocalization and acoustic signals. I particularly enjoyed a talk by (PhD student) Tomer Czaczkes on the complexity of ant pheromone trails, a topic that always seems to feature at

conferences, but is always interesting. The second day also boasted a massive poster session which preceded a great night out with the conference dinner at the “Dampfe” Essen-Borbeck (brewery) and dancing until sunrise.

With some a little worse-for-wear, the final day of the conference started with an interesting talk by Associate Professor Radim Šumbera on how to study behaviour in subterranean rodents. The following sessions comprised more social behaviour themes including: the evolution of social behaviour, behaving with a social network in mind, decision making and personality and magnetic and spatial orientation. I found a lot of these talks very interesting, in particular, on head colour reflecting personality type in Gouldian finches (by PhD student Leah Williams) and the role of plasticity, rather than personality, in foraging decision making in chacma baboons (by PhD student Alecia Carter).

This conference was my first ECBB, and my first international conference. In the months preceding, I was unsure whether or not I would attend but I am glad I did. It is a community I would love to stay associated with, and hopefully I’ll make it to the next conference!

William Feeney
The Australian National University

ASAB puts the 3Rs at top of the experimental agenda: "Implementation of the 3Rs in behavioural and physiological research"

The aim of this meeting was primarily educational in highlighting how the humane principles of the 3Rs – reduction, replacement and refinement – should be adopted in our experimental protocols. An additional aim was to provide a unique networking opportunity bringing behavioural scientists into contact with comparative physiologists from the Society of Experimental Biology (SEB). This meeting was jointly funded by ASAB, SEB and also the National Centres for the 3Rs (www.nc3rs.org) who promote and fund studies aimed at validating and implementing 3Rs approaches. ASAB members share many interests with SEB studying the underlying mechanisms of behaviour and the physiological consequences. Therefore, this networking event provided a forum for the discussion of the potential challenges in implementing the 3Rs in behavioural and physiological research. Researchers using animals are increasingly asked to justify their techniques not just to grant funding or regulatory bodies but also to the general public so this meeting promoted intelligent ethical thinking.

Many of us are aware of the meaning of the 3Rs: specifically, reduction comprises both a reduction in the number of protected animals used and reduction in the severity or type of harm the animal may be caused; replacement proposes that alternatives such as cells, tissues or non-protected animals should be considered instead of a protected animal; and refinement represents techniques that seek to improve animal welfare and husbandry. There were some wonderful examples of all of the 3Rs. A clear example of improved handling and husbandry was shown in the elegant work by Jane Hurst, ASAB President, whose research has changed the way rodents are handled in laboratories. Mice handled by more humane methods such as cupping in the whole hand and capture in a cylinder were in much better welfare and yielded less variable data. Kath Sloman, UWS, demonstrated how much stress affects embryonic zebrafish and that this can have lifelong consequences highlighting a key issue of maintaining our animals in good health at all times. The Animal Group Chair Craig Franklin proposed the use of remote sensors to measure physiology and behaviour in the field rather than capturing the animal and conducting lab work that may be inherently stressful.

A major theme of the meeting was to refine current protocols and try to use non-invasive physiological sampling. Julie Lane, Food and Environment Research Agency, demonstrated how her lab uses hair, saliva and even excretory products to measure physiology in mammals not only in captive situations but also from field studies. Following this, the measurement of a variety of hormones in the water from fish tanks was highlighted by Peter Hubbard, CCMAR, and Lynne Sneddon, ASAB Ethics Secretary, who showed that repeated samplings on the same individuals are feasible with this approach thereby reducing the numbers of fish used. Animals may be subject to terminal sampling to obtain these results and as such this is a substantial refinement in physiological measurements. The validation of these approaches demonstrated that long transport durations were significantly stressful for the common clownfish and pheromones have a potent endocrinological impact upon tilapia.

Studies using cells, embryos and invertebrates demonstrated how these can be used to replace protected animals and can yield comparable results. Both Daniel Osorio, Sussex University, and Mark Briffa, Plymouth University, reported their innovative work on vision in cephalopods and personality in hermit crabs and cnidarians, respectively, demonstrating the feasibility of using an unprotected model. Vicky MacRae, Roslin Institute, validated the use of a cell line in exploring new mechanisms of bone formation and vascular calcification in rodents.

Toxicology obviously uses very high numbers of animals to determine the impact of toxicants on animal physiology. To reduce animal use, Andy Cossins, Liverpool University, showed how his lab has effectively used zebrafish embryos in transcriptomic study of a range of toxicants that suggests they can replace adult fish. Nic Bury, KCL, provided a new means of assessing toxicants in natural waters using isolated gills and was able to transport these tests to rivers in the back of his car.

Improving husbandry and keeping animals in optimum condition is essential for obtaining reliable data.

. The use of behavioural indicators to assess and improve animal welfare was discussed in a range of studies from orang-utans by Alex Weiss, Edinburgh; to rodents by Joseph Garner, Stanford, and Rob Deacon, Oxford.

Behavioural measurements are of course non-invasive and can allow the researcher to intervene to minimise stress thereby reducing the impact upon the animal. Matt Leach's (Newcastle University) innovative work on measuring face shape to assess pain during experimental procedures means the administration of pain killers or the use of humane end points are better informed.

The discussion session was led by Mark Prescott (NC3Rs), Lynne Sneddon (ASAB Ethics Chair) and Craig Franklin (SEB) who emphasised the use of perceptive, well informed decisions when conducting experiments on protected animals. To maintain scientific integrity and utility of the results the best model should be employed and that ethical decisions should be applied to all animals regardless of whether they were protected. ASAB's journal *Animal Behaviour* embodies this intelligent thinking by having a rigorous set of ethical guidelines that authors must adhere to as well as using NC3Rs ARRIVE guidelines for full and transparent reporting of results (<http://www.nc3rs.org.uk/page.asp?id=1357>).

After a full programme of informative talks, there were a number of posters to view at the networking event and the £1000 prize went to Miss Kamar Ameen-Ali from the University of Durham. Kamar received the prize for her exceptionally clear poster, which described her work on recognition memory in

rats. The work has involved the development of a novel continual trial apparatus which allows multiple trials within a test session. Her new method has equivalent statistical power to traditional tests, but uses half as many animals. The poster judges, Kath Sloman, Mark Briffa and Mark Prescott were particularly impressed how much Kamar's research bore relevance to improving the lot of rats who are stressed by being handled multiple times. The prize money will allow Kamar to present her findings at the European Brain and Behaviour Society (EBBS) conference in Munich next year.

With 117 delegates this was a very successful meeting and stimulated much discussion with the 3Rs covered in detail using a variety of models and scientific questions. The aim of informing and empowering researchers in implementing the 3Rs in a variety of contexts was definitely met. I am grateful to Mark Prescott and the rest of the NC3Rs staff for their assistance in organising this meeting and of course to NC3Rs, SEB and ASAB Council for funding. Thanks go to Talja Dempster (SEB) and Lisa Collins (ASAB) for their hard work advertising the meeting and to the many ASAB members who attended.

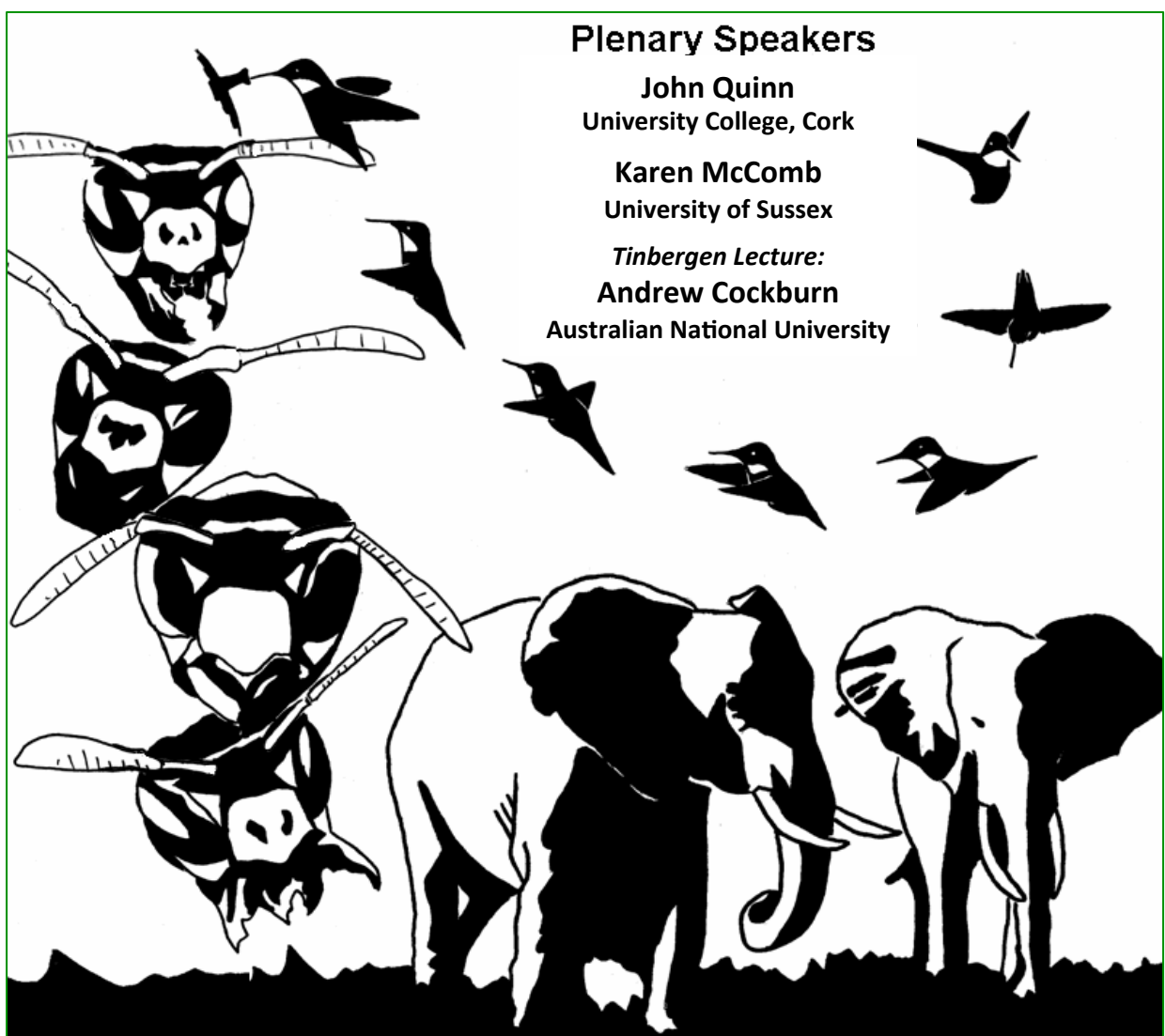
Lynne Sneddon
ASAB Ethics Secretary



NC3Rs Prize winner: Kamar Ameen-Ali from the University of Durham receiving the £1000 poster prize from Mark Prescott, NC3Rs for her poster on developing a better method for testing memory in rats.



NC3Rs Lynne: Lynne Sneddon, ASAB Ethics Chair, providing closing comments to a very successful meeting.



Plenary Speakers

John Quinn

University College, Cork

Karen McComb

University of Sussex

Tinbergen Lecture:

Andrew Cockburn

Australian National University



ASAB WINTER CONFERENCE 2012

COGNITION IN THE WILD

Organisers:

Sue Healy (susan.healy@st-andrews.ac.uk) & Andy Hurly (hurly@uleth.ca)

6-7th December, Zoological Society Meeting Rooms, London Zoo

Abstracts to Sue Healy by 15th August

No Registration Required

***BioNav Conference ***

11th – 13th April 2013, Royal Holloway College, University of London, UK.

A new type of conference for the UK, bringing together scientists and researchers who study how animals navigate and scientists who design the navigation systems of autonomous unmanned vehicles. The common interest – Bionav – the incorporation of navigational techniques used by animals into advance navigation systems.

Keynote speakers:

Dr Mikel Miller, Chief Scientist, AFRL/RW, Eglin AFB, Fla, USA

Professor K Lohmann, North Carolina University, USA

Professor M V Srinivasan, University of Queensland, Australia

Professor M M Walker, University of Auckland, New Zealand

For detailed information visit: <http://www.rin.org.uk/Events.aspx?ID=110&SectionID=23&ItemID=2054>

***37th Annual Meeting of the Waterbird Society ***

24 – 29 September 2013 in Wilhelmshaven, Germany

The **Waterbird Society** will hold its 37th annual meeting in 2013 in Germany for the first time. The Institute of Avian Research “Vogelwarte Helgoland”, one of the oldest ornithological research institutes in the world, will be the host. The meeting venue is the Stadthalle, located in the centre of Wilhelmshaven on the German North Sea coast. The three day scientific program will consist of plenaries, symposia, contributed papers and poster sessions. Saturday 28 September will be a joint scientific day with the International Wader Study Group (IWSG) annual conference (27 to 30 September).

Please check www.waterbirds.org for updated information.

Ento '13 International Symposium and Annual National Science Meeting

4th-6th September 2013, University of St Andrews, Scotland

"Thirty years of Thornhill & Alcock: The Evolution of Insect Mating Systems"

Symposium Convenors: David Shuker (david.shuker@st-andrews.ac.uk) and Leigh Simmons

(leigh.simmons@uwa.edu.au). National Science Meeting Convenor: Graham Stone (graham.stone@ed.ac.uk)

The International Symposium will celebrate 30 years of Thornhill and Alcock's ground-breaking book *The Evolution of Insect Mating Systems*. The book has had an enormous impact on multiple generations of entomologists and behavioural ecologists, and we will celebrate that achievement and explore the progress we have made in understanding insect mating systems and reproductive behaviour since 1983. The original book covered many aspects of insect mating systems, from the evolution of sex and sexual systems, through to how ecology and sexual selection interact to shape the mating systems we see. Much has happened in the three decades since the book was published, including major advances in our understanding of the evolution of sex, sexual selection (especially mate choice and post-copulatory sexual selection), the mechanistic basis of reproductive behaviour, and of course sexual conflict. Insects have played a major role in all these developments, as the symposium and the accompanying volume will highlight.

Symposium speakers to include: Göran Arnqvist (Uppsala); Boris Baer (University of Western Australia); Roger Butlin (University of Sheffield); Trish Moore (University of Georgia); Ben Normark (UMASS); Leigh Simmons (University of Western Australia); Per Smiseth (University of Edinburgh); Rhonda Snook (University of Sheffield); Nina Wedell (University of Exeter)

For further details please: <http://www.royensoc.co.uk/content/ento-13-4-6-september-2013>