

PLENTY TO PONDER IN WILDERNESS

SUNLIGHT never penetrated the thick, smoky darkness permeating the bottom of the "close", as the alley with its canyon-like walls was known.

Yet the piercing screams cut through the murk with ease. The plague doctor was once again lancing little Emily's pus-filled "buboes" with a hot poker. Holding her tightly, her surviving family members sought grim comfort in the knowledge that the procedure would at least give her a 10 per cent to 50 per cent chance of survival. Without emptying her bullae and cauterising her wounds, she had virtually none.

Despite such interventions, and vigorous burning of incense to ward off the lethal "miasmas" they believed would spread the plague, fully half the inhabitants of Mary King's Close would die within weeks, giving it a cursed reputation and a haunted feel that persists to this very day, some 30 feet beneath Edinburgh's cobblestone streets.

In spellbound horror, my colleagues and I learned that even without plague outbreaks, mortality remained high. The dimly lit, overcrowded and underheated cellars, communal toilet buckets emptied on to the streets and poor nutrition all conspired to ensure that around three-quarters of those born never saw their first birthday.

All manner of other wastes, including dead animals, were similarly discarded into the streets. Heavy rains eventually washed them down to the lake below, resulting in the term "raining cats and dogs". It's amazing the things you can learn at a good veterinary conference these days.

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reports on the Animal Welfare Science, Ethics and Law Veterinary Association's autumn conference, which took place in Scotland

Into the wilderness

This was a conference I'd been particularly keen to attend. Given my recent book on the costs and benefits of animal experiments, it would have been negligent of me not to attend any conference focused on the questions "how is research improving animal welfare?" and, in particular, "is such animal research ethically justified?" However, what really compelled my attendance at the autumn conference of the Animal Welfare Science, Ethics and Law Veterinary Association (AWSELVA) was, of course, the massive castle towering over one of Britain's best-preserved medieval cities. As an Australian, my interest extends well beyond such fascinatingly Scottish phenomena of rain, sleet and snow. It definitely includes ancient castles. We don't have many of these back home either, and the few we do have are actually prisons.

Interestingly, the conference was held in the gleaming facilities of the new Royal (Dick) School of Veterinary Studies, apparently situated – if my bus ride was anything to go by – about 100 miles west into the Scottish wilderness. The gleaming glass, metal and electronic screens advertising lecture times reminded me vaguely of the starship Enterprise, as we were led around by a uniformed "crew" member.

My disappointment at noting

his ears were not pointy was quickly dispelled in the pathology suite, however. The body of a giant reindeer was in the cool room, presumably awaiting post-mortem or disposal. You didn't see those in Australian veterinary schools – I couldn't believe how massive it was. Were arctic caribou roaming the wilds outside? We were, after all, deep in the wilderness.

New centre for animal welfare education

The conference was hosted at the Jeanne Marchig International Centre for Animal Welfare Education. This exciting new initiative aims to "promote gold-standard animal welfare and ethics training within veterinary education", through the creation of a diploma, certificate and MSc in animal welfare for veterinarians and others, via distance learning. Through workshops and collaborations with international universities and non-governmental organisations, the centre also seeks to "achieve far-reaching changes in people's attitudes and knowledge through instruction and training at all levels". The centre will "actively seek to make determined progress towards a situation where enhancement of animal welfare is an international priority, and where the boundaries of what is currently legally acceptable will be constantly challenged for the benefit of animals".

Veterinary welfare education and outreach manager Heather Bacon indicated the rising Asian economies would be important targets. Her presentation graphically illustrated some of the serious welfare problems to be found in these countries. Chinese veterinary students, for example, are often not permitted to directly assist with surgery prior to graduation, and so, in desperation, sometimes resort to purchasing their own animals and counterfeit drugs – including



The author heard how some vet students in China teach themselves surgery.

some sourced from the internet – and teaching themselves major surgery unsupervised. As Heather explained, lack of concern for animals is not what motivates these students, but paradoxically, the opposite – particularly, an overwhelming fear of being required to perform surgery as a new graduate with no prior experience, and potentially harming greater numbers of patients as a result. A strong cultural drive to succeed also plays a role. It's tragic these students lack access to the humane surgical and preclinical training programmes successfully implemented in growing numbers of veterinary schools in the UK, North America and Australia (Knight, 2007).

However, Heather and her colleagues plan to provide animal welfare workshops for audiences in Asia and elsewhere, but Heather also noted the importance of overcoming any notions that our compassion towards animals or welfare standards are necessarily superior. She described a survey revealing high animal welfare appreciation among Chinese veterinarians, and aptly pointed out the UK had a tradition of upholding animal welfare for more than a century – however, numerous, serious problems remain.

Ethics of animal welfare research

Other lectures were similarly fascinating, and sometimes controversial. Prof

Peter Sandøe, of the University of Copenhagen, noted that animal welfare research may be less ethically justified than some other animal research, because it is not aimed at alleviating human diseases. On the other hand, it can increase biological understanding and inform policy, potentially resulting in animal welfare benefits.

He described the use of the "Bateson's cube" to ethically evaluate proposed animal experiments. Probable magnitudes should be assigned to each of three "dimensions": the costs to the animals, the practical relevance or benefit of the research, and the advances in scientific understanding. The location within the resultant cube may indicate ethical status. However, simplistic interpretations value experiments, resulting in increased scientific understanding, equally with those delivering actual medical benefit. This would rarely be considered correct, either by philosophers or society at large.

Prof Sandøe also noted that much research is actually of low-to-moderate scientific benefit or practical relevance, but causes moderate to high levels of animal suffering. Such research should not, he asserted, be approved. However, research is more justifiable if conducted on procedures already occurring, such as routine farm animal husbandry procedures and, particularly, if outcomes are realistically likely to improve policy and best practice. Examples

included an experiment recording marked differences in pain responses when analgesics were provided during calf dehorning. The relevant Danish law is being changed to require analgesia for this clearly painful procedure.

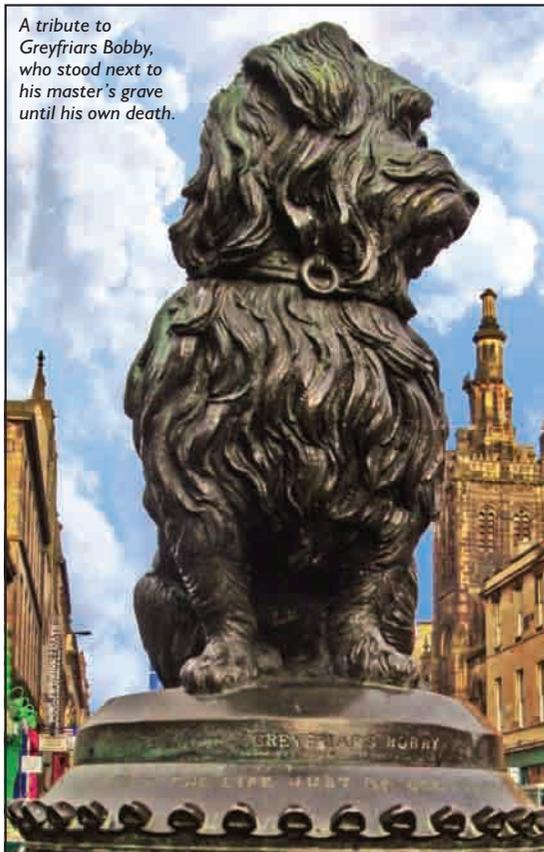
A dramatic example provided by Nick Sparks of the Scottish Agricultural College (SAC), related to outbreaks of highly pathogenic and transmissible avian diseases, such as avian influenza H5N1. With UK farms often containing 100,000 to 200,000 chickens, the difficulties in swiftly and humanely killing entire populations to minimise disease spread, while minimising human health risks, are not hard to imagine. Research by Dr Sparks and his colleagues indicates that pressurised liquid carbon dioxide mixtures can partially achieve these aims. They tested their method on a pullet flock with Marek's disease that required culling.

Injection of CO₂ mixtures into poultry sheds lowered temperatures to -45°C to -85°C in various areas within six minutes. However, the birds are believed to lose consciousness within around three minutes, when CO₂ concentrations reach 20 per cent.

Concentrations of 45 per cent for five minutes were believed to cause death. The key welfare question, therefore, seems to be how long the birds endure freezing conditions before losing consciousness.

Another concerns the aversiveness of the gas mixture itself, although postmortem findings apparently failed to reveal significant

A tribute to Greyfriars Bobby, who stood next to his master's grave until his own death.



Below: Sean Wensley. Right: The Royal (Dick) School of Veterinary Studies. Inset: Peter Sandøe.



respiratory tract inflammation. Nevertheless, such whole-house gassing appears to be the current state of the art, when considering both animal welfare and practicality. This begs a disturbing ethical question: if this is the best we can do, should we actually be doing it at all? That is, should we really be housing massive numbers of chickens in close confinement, with the result that rapid transmission of such diseases leaves us with little other choice? I believe we certainly don't need chickens or their eggs to survive, or to satisfy any important human need.

The state of our nation's pets

PDSA senior veterinary surgeon for communication and education Sean Wensley provided a similarly eye-opening presentation about the welfare status of the UK's pets.

Following a YouGov survey, PDSA released its first *PDSA Animal Wellbeing (PAW) Report* in March 2011, assessing the husbandry knowledge and behaviour of dog, cat and rabbit owners. It concluded that UK pets were "stressed, lonely, overweight, bored, aggressive, misunderstood... but loved".

Unfortunately for our pets, what counts are not our feelings towards them, but actions. Sean noted widespread lack of awareness of basic husbandry practices and owners' duty of care, and asked how veterinarians, pet food companies and other pet industry players could address this.

One way is through the use of language. Educational material, from veterinarians and charities, can advise on the health and well-being of rabbits and guinea pigs (plural) – for example, to reinforce the message that these social animals should not be kept alone. PDSA also has a range of other strategies, including an interactive online tool to advise about appropriate pet acquisition, pet welfare leaflets and a "Pet Fit Club" competition to raise awareness of pet obesity.

Some potential benefits of pet keeping were described by developmental psychologist Joanne Williams, from the SAC. Children growing up around companion or farm animals are likely to develop superior biological understanding and attitudes towards animals and, also, greater development of empathy – which offers the potential for wider social benefits.

Several of her SAC colleagues also provided interesting presentations. Rick D'Eath described his study into pig aggression, which can affect weight gain at weaning, prevalence of carcase lesions and meat quality. However, such aggression appears moderately heritable, raising the possibility of breeding as a potential solution, along with housing and management alterations.

Malcolm Mitchell described his studies into the welfare of

transported pigs, which seemed to repeatedly require that he relocate to the south of Spain every summer to study climatic effects. I resolved, therefore, to offer my services in providing weather data from the Caribbean, or indeed, any of the under-studied islands of the tropics.

Unfortunately, Marie Haskell's presentation seemed to indicate such study might be unnecessary, and that behavioural indicators

might instead be used to assess farm animal welfare. However, I continue to maintain that a tropical beach provides the optimal academic environment for analysis of such data, assisted by strong sunglasses, champagne and a fourth-generation Macbook Pro.

Greyfriars Bobby

The conference concluded with a chance to sample vegan haggis at the legendary Henderson's Vegetarian Restaurant later that

evening, in another Edinburgh cellar. A fine time was had by all, which continued the next day when some colleagues and I visited Greyfriars graveyard, to pay our respects at the grave of Greyfriars Bobby.

This faithful Skye Terrier lingered by the grave of his master for 14 years, until his own death in 1872. "Let his loyalty and devotion be a lesson to us all", remains inscribed upon his tombstone to this day, although it is difficult to

imagine any human successfully emulating such canine virtue.

AWSELVA is to be congratulated for organising such a fine conference. This one will be hard to beat, but I look forward to seeing the organisation try. Regardless, if a medieval castle is thrown in, I'll be there.

References

Knight A (2007). The effectiveness of humane teaching methods in veterinary education, *ALTEX* 2007 24(2): 91-109. ■

ANDREW KNIGHT has authored more than 80 publications on animal issues, including *The Costs and Benefits of Animal Experiments* (Palgrave Macmillan, 2011, www.andrewknight.info). He travels the world in search of novel ways to fulfil his continuing education requirements. His resultant adventures are chronicled at www.andrewsadventures.info

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