

titles include: A social history of post-war animal protection; Farm animals and their welfare in 2000; Progress in livestock handling and slaughter techniques in the United States 1970–2000; Animal research — a review of developments 1950–2000; and Urban wildlife. Reasonably enough in an HSUS publication, the USA holds centre stage throughout much of the book — most discussion of law is focused on US law, for example — but many of the essays discuss their subjects and their history in a global context. The standard of writing is very high. The issues are presented in a stimulating and thoughtful way, and there are plenty of interesting and useful illustrations, charts and histograms (ranging from changes in world populations of livestock species to numbers of annual citations in the scientific literature to Russell and Burch's *Principles of Humane Experimental Technique* 1959–1999).

Although not all of the stories here are of improvements during the last half-century and the contributors do not shy away from identifying the many areas in which serious problems remain, there is a pleasingly upbeat, optimistic and positive tone throughout much of the book. Through recognising the many advances that have been made and the ways in which they have come about, the book is likely to encourage further advances. Some of the essays are better balanced than others, and perhaps few will agree with all of the views expressed. However, it provides a very good introduction to the state of animal protection at the present time and deserves to be widely read.

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*The State of the Animals 2001*. Edited by Deborah J Salem and Andrew N Rowan. Published by the Humane Society Press, 2100 L Street, NW, Washington DC 20037, USA. 212 pp. Letter paperback. Price \$29.50.

#### **EU pig welfare rules: recent reports**

On 19 June 2001, at the Agriculture Council in Luxembourg, EU agriculture Ministers agreed a revision to the welfare Directive 91/630/EEC. Member States are required to implement the new Directive by 1 January 2003. The new Directive confirms an EU-wide ban on individual sow stalls and requires that sows and gilts shall be kept in groups from four weeks after service to one week before the expected time of farrowing. The group pens must have sides greater than 2.8 m in length. When for less than six individuals, the pens must have sides greater than 2.4 m in length. In addition, when they are group housed, the following minimum space allowances must be provided for sows and gilts: the total unobstructed floor area available to each gilt after service and to each sow must be at least 1.64 m<sup>2</sup> and 2.25 m<sup>2</sup>, respectively; and, when groups comprise 40 or more individuals, the unobstructed floor area may be decreased by 10 per cent. However, sows and gilts raised on holdings of fewer than 10 sows may be kept individually during this period, provided that they can turn around easily in their boxes.

The new Directive also includes more stringent requirements for floor surfacing in pens. At least 0.95 m<sup>2</sup> of floor area per gilt after service and at least 1.3 m<sup>2</sup> per pregnant sow must be continuous solid flooring, of which a maximum of 15 per cent can be reserved for drainage openings. When concrete slatted floors are used for pigs kept in groups, the maximum width of the openings must be 11 mm for piglets, 14 mm for weaners, 18 mm for rearing pigs and 20 mm for gilts after service and sows. The minimum slat width must be 50 mm for piglets and weaners and 80 mm for rearing pigs, for gilts after service and for sows.

The Directive also requires that sows and gilts to have permanent access to manipulable materials. Furthermore, sows and gilts kept in groups must be fed in a manner that allows each individual to acquire enough food even when competitors are present. In addition to high-energy food, all dry pregnant sows and gilts must be given a sufficient quantity of bulky or high-fibre food to satisfy their hunger and their need to chew.

New requirements for training stockmen have also been specified. Any individual who employs or engages persons to attend to pigs must ensure that those persons have received instructions and guidance.

Further reviews of the Directive are due to be held in 2004 and 2008. The first will report on socio-economic and sanitary consequences, environmental effects, and climatic conditions associated with the new Directive. In addition, the effects of space allowances and floor types and techniques and systems of pig production that will reduce the need for castration will be considered. The second report will include findings on tail-biting, stocking densities and farrowing crates.

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Council Directive amending Directive 91/630/EEC laying down minimum standards for the protection of pigs (2001). Available at [http://europa.eu.int/comm/food/fs/aw/aw\\_legislation/pigs/prop\\_en.pdf](http://europa.eu.int/comm/food/fs/aw/aw_legislation/pigs/prop_en.pdf)

### **The use of genetically modified animals**

“The potential benefits of causing genetic modifications are great but so too may be the costs.” Thus opens the chapter on welfare in the recently published Royal Society report on the use of genetically modified animals. In this chapter, the ways in which genetic modification — and the techniques used to cause it — may affect welfare are outlined. It is concluded that: “Although genetic modification is capable of generating welfare problems, in the view of the Royal Society, no qualitative distinction can be made between genetic modification technology and modification produced by artificial chemicals or radiation. Indeed, the targeted character of modern genetic technology may provide fewer welfare problems than older techniques”.

Following a 16-point summary and a brief introduction, the report includes chapters entitled: What is genetic modification?; Techniques for altering genetic make-up; Uses of GM animals; Safety; Welfare; Weighing benefits against burdens; and Conclusions and recommendations. It provides clear and concise overviews of these issues. Although concluding that the development of GM animals has been hugely beneficial in many areas, the report emphasises that continued research on the welfare and use of these animals is essential if uncertainties about welfare and health and safety issues are to be properly addressed.

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*The Use of Genetically Modified Animals* (May 2001). The Royal Society, Policy Document 5/01. Available from Science Advice Section, The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG, UK; <http://www.royalsoc.ac.uk>. ISBN 0 85403 556 7. 46 pp. A4 paperback.

### **Motivation in laying hens: studies of perching and dustbathing behaviour**

Anna Olsson’s doctoral thesis provides information about perching motivation and the effects of social factors on dustbathing motivation in laying hens. The aims of her doctorate were: to study the effect on behaviour of preventing access to perches for night-time roosting; to quantify hens’ motivation for night-time perching and how this is affected by social stimuli; to study how social stimuli affect dustbathing motivation; and, to study the motivational background of sham dustbathing.

The study of night-time roosting showed that as soon as the lights were extinguished, birds began to perch; birds tended to perch close together on the top perch and remained there for the entirety of the dark period. It was also found that birds without access to a perch spent significantly less time sitting ( $P < 0.05$ ) and walked more ( $P < 0.05$ ) than those with access to a perch.

Motivation for night-time roosting was measured using a push-door. Hens pushed through significantly heavier doors to gain access to a room containing a perch than to a room that did