

# Animal Welfare

Vol 9 No 3

2000

## Articles

*Leg nociceptors in poultry*

*Social isolation in weaned piglets*

*Contraception in Leontopithecus*

*Vulva biting in breeding sows*

*Modulation of aggression in male mice*

*Evaluation of welfare in cattle herds*

## Short communication

*Survival of hand-reared tawny owls*

## Reports and comments

## Book reviews

## Books received

## Letters

UNIVERSITIES  
FEDERATION  
FOR  
ANIMAL  
WELFARE

# Animal Welfare

ISSN 0962-7286

*Editor-in-Chief:* James K Kirkwood

*Publications Officer:* Helen O'Leary *Editorial Assistant:* Sara Oakeley

*Typesetter:* Samantha Griffin

Universities Federation for Animal Welfare

The Old School, Brewhouse Hill, Wheathampstead, Herts AL4 8AN, UK

Tel: 01582 831818 Fax: 01582 831414

Website: <http://www.ufaw3.dircon.co.uk>

## Section Editors

### *Farmed mammals and fish*

**Professor Berry M Spruijt**

Animal Welfare Centre

Utrecht University

Yalelaan 17

3584 CL Utrecht, The Netherlands

### *Zoo and wild animals*

**Dr Miranda Stevenson**

Ashlea

Dean Lane

Bishops Waltham

Hampshire SO32 1FX, UK

### *Ethics, philosophy and social science*

**Professor Peter Sandøe**

Department of Animal Science and Animal Health

The Royal Veterinary and Agricultural University

Groennegaardsvej 8

DK-1870 Frederiksberg C, Denmark

### *General animal welfare studies*

**Professor David Fraser**

Animal Welfare Program

Faculty of Agricultural Sciences and Centre

for Applied Ethics

University of British Columbia

2357 Main Mall, Vancouver, Canada V6T 1Z4

### *Editorial Advisers*

**Dr Robert Baker** - ANZCCART, University of Adelaide, Australia

**Dr M F Bouissou** - INRA, Nouzilly, France

**Professor D Broom** - University of Cambridge, UK

**Professor M Stamp Dawkins** - University of Oxford, UK

**Mr Roger Ewbank** - Ealing, London, UK

**Dr Michael Festing** - University of Leicester, UK

### *Companion animals*

**Dr Dennis C Turner**

Institute for applied Ethology and Animal Psychology  
(IEAP)

Vorderer Siten 30

Postfach 8816 Hirzel, Switzerland

### *Laboratory animals*

**Professor Jann Hau**

Department of Comparative Medicine

University of Uppsala

Box 570

75123 Uppsala, Sweden

### *Poultry*

**Dr Linda Keeling**

Department of Animal Environment and Health

Swedish University of Agricultural Sciences

PO Box 234

SE-532 23 Skara, Sweden

**Professor Benjamin Hart** - University of California, Davis, USA

**Mr C Barrie Hart** - Berkhamsted, Herts, UK

**Professor David Morton** - University of Birmingham, UK

**Dr James Serpell** - University of Pennsylvania, USA

**Professor John Webster** - University of Bristol, UK

**Professor Piet Wiepkema** - Oosterbeek, The Netherlands

*Animal Welfare* (ISSN 0962-7286) brings together the results of scientific research and technical studies related to the welfare of animals kept on farms, in laboratories, as companions, in zoos or managed in the wild.

**Subscription rates:** Individuals £50/US\$100 per Volume; Corporate/Institutes/Libraries £70/US\$140 per Volume.

**Orders:** Can be made direct to UFAW and are accepted by Volume, which consists of four issues per year.

**Papers:** Instructions for authors are summarized on the inside back cover; comprehensive instructions are available on request. Manuscripts should be submitted preferably to the appropriate Section Editor, or to the Editor-in-Chief.

*Animal Welfare* is abstracted in *Biological Abstracts*; *CAB Abstracts*; *Current Contents/Agriculture, Biology and Environmental Sciences*; *Current Primate References*; *Focus on: Veterinary Science & Medicine*; *Humans & Other Species*; *Research Alert*; *SciSearch*; *Sociological Abstracts*; *Toxicology Abstracts*; *Veterinary Update*; is indexed in *Zoological Record*, and is covered by the *Science Citation Index*.

© 2000 UFAW

All rights reserved; no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means; electronic, mechanical, photocopying, recording or otherwise without the prior written permission of the Publisher. Opinions expressed by authors do not necessarily reflect the views of UFAW, its Council, Staff, Members or Associates, the Section Editors or the Editorial Advisers.

# Animal Welfare

ISSN 0962-7286

Volume 9 Number 3

August 2000

## CONTENTS

### ARTICLES

- Noceptors in the legs of poultry: implications for potential pain in pre-slaughter shackling 227  
*M J Gentle and V L Tilston*
- Effects of different degrees of social isolation on the behaviour of weaned piglets kept for experimental purposes 237  
*M S Herskin and K H Jensen*
- An evaluation of the suitability of contraceptive methods in golden-headed lion tamarins (*Leontopithecus chrysomelas*), with emphasis on melengestrol acetate (MGA) implants: (I) effectiveness, reversibility and medical side-effects 251  
*K De Vleeschouwer, K Leus and L Van Elsacker*
- A descriptive survey of the range of injuries sustained and farmers' attitudes to vulva biting in breeding sows in south-west England 273  
*S Rizvi, C J Nicol and L E Green*
- Modulation of aggression in male mice: influence of cage cleaning regime and scent marks 281  
*P L P Van Loo, C L J J Kruitwagen, L F M Van Zutphen, J M Koolhaas and V Baumans*
- Evaluation of welfare indicators for the social environment in cattle herds 297  
*T Jóhannesson and J T Sørensen*

### SHORT COMMUNICATION

- Post-release survival of hand-reared tawny owls (*Strix aluco*) 317  
*J A Bennett and A D Routh*

### REPORTS AND COMMENTS

- 323  
Alternatives to animal use in research: workshop on isolated perfused organs  
Should raptor populations be controlled?  
Standards of modern zoo practice  
*The Use of Wildlife for Research*  
SCAS report on the benefits of keeping animals in schools

### BOOK REVIEWS

- 327  
*The Evolution of Consciousness*  
*Livestock, Ethics and the Quality of Life*  
*Animal Biology and Care*  
*Animal Geographies*  
*If a Lion Could Talk: Animal Intelligence and the Evolution of Consciousness*  
*An Introduction to Veterinary Medical Ethics: Theory and Cases*  
*Equine Behaviour: Principles and Practice*

### BOOKS RECEIVED

### LETTERS

338  
340

Published by  
Universities Federation for Animal Welfare  
The Old School, Brewhouse Hill, Wheathampstead, Herts AL4 8AN, UK  
Tel: 01582 831818 Fax: 01582 831414