# Animal Welfare

Vol 1 No 3 1992

# **Editorial**

# **Articles**

Communication between rats
Woodchip bedding for chimpanzees
Behaviour of kennelled dogs
Significance of fowls bathing in dust
Behavioural needs in mammals

Reports and comments

Book and video reviews

Letters

UNIVERSITIES
FEDERATION
FOR
ANIMAL
WELFARE

# Animal Welfare

#### The UFAW Journal

Editor-in-Chief
Roger Ewbank
Universities Federation for Animal Welfare

Companion Animals
Dr James Serpell
University of Cambridge
307 Huntingdon Road
Cambridge CB3 0JQ England

Laboratory animals
Professor Anton C Beynen
State University Utrecht
P O Box 80.166
3508 TD Utrecht
The Netherlands

Farm animals
Professor Piet Wiepkema
Wageningen Agricultural University

Marijkeweg 40

6709 PG Wageningen, The Netherlands

Zoo and wild animals
Dr Miranda Stevenson
Royal Zoological Society of Edinburgh
Edinburgh Zoo
Murrayfield
Edinburgh EH12 6TS Scotland

#### Editorial advisers

Dr Marcia Edwards
Zoological Society of London

Professor David Morton University of Birmingham

### Professor John Webster University of Bristol

Animal Welfare, the UFAW journal, brings together the results of scientific research and technical studies related to the welfare of animals kept on farms, in laboratories, in zoos, as companions or living in the wild. The aim is to publish information that has welfare benefits across the whole range of species. It is intended to act as a focus for the advancement of animal welfare science and technology in order to help ensure that relevant knowledge is more readily available where most needed. Opinions expressed by authors do not necessarily reflect the views of UFAW, its Council, Staff, Members or Associates, the Editors or the Editorial Advisers.

Subscription rates: £50/US\$100 (UFAW members: £40/US\$80) per annum.

Orders: Should be made direct to UFAW and are accepted by Volume, which will consist of four issues per year.

Articles: Instructions for authors are summarized on the inside back cover. Manuscripts should be submitted to the appropriate Editor or to the Editor-in-chief.

#### © 1992 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 Publishers.

# Animal Welfare

## The UFAW Journal

Volume 1 Number 3	July 1992
CONTENTS	
EDITORIAL	151
ARTICLES	
Communication between rats of experiment-induced stress and its impact on experimental results A C Beynen	153
Woodchip bedding as enrichment for captive chimpanzees in an outdoor enclosure <i>L Brent</i>	161
The behaviour of dogs in a rescue shelter  D Wells and P G Hepper	171
The significance of fowls' bathing in dust  D W van Liere	187
The nature and evolution of behavioural needs in mammals T B Poole	203
REPORTS AND COMMENTS	221
BOOK AND VIDEO REVIEWS	226
LETTERS	229

Published by
Universities Federation for Animal Welfare
8 Hamilton Close, South Mimms, Potters Bar,
Herts EN6 3QD UK
Tel: 0707 58202 Fax: 0707 49279