Animal Welfare

ISSN 0962-7286

Volume 13 2004

INDEX

Universities Federation for Animal Welfare
The Old School, Brewhouse Hill, Wheathampstead, Herts AL4 8AN, UK
Tel: +44 1582 831818 Fax: +44 1582 831414
Email: ufaw@ufaw.org.uk Web: www.ufaw.org.uk



List of articles

Volume 13 Issue 1	February 2004
Impact of UK government farm animal welfare policy. RM Bennett, DM Broom, SJ Henson, RJI G Harper	P Blaney and I
Indicators of insensibility and death in cetacea. A Butterworth, L Sadler, TG Knowles and SC Kest	tin 13
Bar chewing as an escape behaviour in mice. RS Lewis and JL Hurst	19
Histological consequences of tooth shortening in piglets. M Hay, J Rue, C Sansac, G Brunel and	nd A Prunier 27
Housing conditions and anxiolytic self-administration. CM Sherwin and IAS Olsson	33
Elephant stereotypies and cortisol. ML Wilson, MA Bloomsmith and TL Maple	39
Movement and mortality of translocated grey squirrels. LW Adams, J Hadidian and V Flyger	45
Effects of road traffic accidents on cats. I Rochlitz	51
Preference of rabbits for grass or coarse mix. TK Leslie, L Dalton and CJC Phillips	57
Dog training methods. EF Hiby, NJ Rooney and JWS Bradshaw	63
Stunning, bleeding and loss of consciousness in catfish. E Lambooij, RJ Kloosterboer, MA Gerritz JW van de Vis	zen and 71
Generalised aversion for non-lethal control of predators. DW Macdonald and SE Baker	77
Environmental complexity and activity in chickens. C Arnould, D Bizeray, JM Faure and C Leter	rier 87
Volume 13 Issue 2	M ay 2004
Recording of stress vocalisations. PC Schön, B Puppe and G Manteuffel	105
Housing design and gorilla welfare. EC Blaney and DL Wells	111
Enrichment for ostrich chicks. JW Christensen and BL Nielsen	119
Social discrimination in rats. OHP Burman and M Mendl	125
Breed differences in acute pain responses. N Archer, AM Johnston and M Khalid	135
Stress in wild-caught Eurasian otters. J Fernández-Morán, D Saavedra, JL Ruiz De La Torre and X Manteca-Vilanova	143
Cage sizes for tamarins. MJ Prescott and HM Buchanan-Smith	151
Head-only electrical stunning of chickens. ABM Raj and M O'Callaghan	159
Environmental effects on maternal behaviour in pigs. S Jarvis, BT Reed, AB Lawrence, SK Calve	171
J Stevenson Reversibility of contraception in Leontopithecus. K De Vleeschouwer, K Leus and L van Elsacker	183
Environmental complexity for laboratory rodents. DB Sørensen, JL Ottesen and AK Hansen	193
ERP's impact on attitudes to training. IFH Purchase and M Nedeva	205
Illuminance preferences of poults and ducklings. CL Barber, NB Prescott, CM Wathes, C Le Sueu	ır and
GC Perry	211
Captive animal training. RJ Young and CF Cipreste	225
Alternatives to nose-ringing in outdoor sows. HL Edge, HLI Bornett, E Newton and SA Edwards Positive human interaction for chimpanzees. KC Baker	233 239
Volume 13 Issue 3	August 2004
Qualitative interpretations of sheep welfare. F Wemelsfelder and M Farish	261
Predation risks and stress responses of sheep. CM Dwyer	269
Behavioural signs of distress in sheep. MS Cockram	283
Assessment of chronic stress in sheep. CM Dwyer and HLI Bornett	293
Foraging enrichment for laboratory rats. SR Johnson, EG Patterson-Kane and L Niel	305
Crowding in pens and cages. MC Appleby	313
Time courses in welfare measures. MS Dawkins, A Edmond, A Lord, S Solomon and M Bain	321
Indicators of thermal tolerance in pigs. E Hillmann, C Mayer and L Schrader	329
Body weight as a measure of stress. GW McLaren, F Mathews, R Fell, M Gelling and DW Macdone	ald 337
Relocation of Sykes monkeys in Kenya. NN Moinde, MA Suleman, H Higashi and J Hau	343
Transport stress in wild badgers. I Montes, GW McLaren, DW Macdonald and R Mian	355
Laying hens on clean and dirty perches. GB Scott and G MacAngus	361
Toys and the welfare of kennelled dogs. DL Wells	367

^{© 2004} Universities Federation for Animal Welfare

Volume 13 Issue 4 November	r 2004
Blood loss after religious slaughter or stunning. MH Anil, T Yesildere, H Aksu, E Matur, JL McKinstry, O Erdo S Hughes and C Mason	ogan, 387
Evaluation of tranquilliser trap for dingo trapping. CA Marks, L Allen, F Gigliotti, F Busana, T Gonzalez,	307
M Lindeman and PM Fisher	393
Fox control using para-aminopropiophenone. CA Marks, F Gigliotti, F Busana, M Johnston and M Lindeman	401
Hatchery welfare. TG Knowles, SN Brown, PD Warriss, A Butterworth and L Hewitt	409
Comfort behaviour in laying hens. MJ Albentosa and JJ Cooper	419
Social status and environmental enrichment of pigs. NE O'Connell, VE Beattie and BW Moss	425
Blindfolding horses. R Parker, R Watson, E Wells, SN Brown, CJ Nicol and TG Knowles	433
Stress responses of guanacos to transport. B Zapata, J Gimpel, C Bonacic, BA González, JL Riveros, AM Ramín	
F Bas and DW Macdonald	439
Computer enrichment for orangutans. LR Tarou, CW Kuhar, D Adcock, MA Bloomsmith and TL Maple	445
Computer enrichment for orangutans. Ex raiou, ev Kanar, D Adecek, MA biodinsmiar and TE Maple	773
Volume 13 Supplement Februar	y 2004
Behaviour and welfare. MS Dawkins	S3
Standard cages and validity of data. CM Sherwin	S 9
Animal cognition and animal welfare. M Mendl and ES Paul	S17
The use of demand functions. MB Jensen, LJ Pedersen and J Ladewig	S27
Comparative tests in animal welfare. R Clubb and G Mason	S33
Brain measures and animal welfare. DM Broom and AJ Zanella	S 4 I
Behavioural priorities of animals in commercial conditions. JJ Cooper	S 4 7
Stereotypy and welfare assessment. GJ Mason and NR Latham	S57
Assessing pain in animals. PA Flecknell and JV Roughan	S7 I
Aversion to agents of anaesthesia and euthanasia. MC Leach, VA Bowell, TF Allan and DB Morton	S77
Fish and welfare. VA Braithwaite and FA Huntingford	S87
Indices of welfare assessment. AJF Webster, DCJ Main and HR Whay	S93
Fractal analysis and animal welfare. KMD Rutherford, MJ Haskell, C Glasbey, RB Jones and AB Lawrence	S99
Assessment of stress responses in zoos animals. DJ Shepherdson, KC Carlstead and N Wielebnowski	S105
Context-dependent choice. M Bateson	S115
Scientific uncertainty and animal welfare. P Sandøe, B Forkman and SB Christiansen	S121
Science and ethics of humane killing methods. DJ Mellor and KE Littin	S127
Welfare trade-offs in wildlife management. JC Reynolds	S133
Animal welfare considerations in biotechnology ethics. IAS Olsson and P Sandøe	S139
Attitudes to animals and animal welfare. JA Serpell	S145
Laying hens welfare standards. CJ Savory	S153
Implementation of scientific results. MC Appleby	S159
Animal welfare standards and the OIE. ACD Bayvel	S163
Contribution of animal welfare science to public policy. M Radford	S171
USDA animal well-being initiatives. RD Reynnells	S175
Guidelines development and scientific uncertainty. G Griffin and C Gauthier	S181
Difficulties applying scientific advances to welfare. L Keeling	S187
Multi-trait selection and animal welfare. AB Lawrence, J Conington and G Simm	S191
Cage sizes for primates in the laboratory. HM Buchanan-Smith, MJ Prescott and NJ Cross	S197
Cognitive and communicative capacities of Grey parrots. IM Pepperberg	S203
Enrichment of laboratory caging for cats. EG Patterson-Kane	S209
Feather pecking: a search for practical solutions. RB Jones, HJ Blokhuis, IC de Jong, LJ Keeling, TM McAdie	6015
and R Preisinger	S215
Ethics and welfare of animals used in education. LA King	S221
Laboratory gerbil housing and husbandry. E Waiblinger and B König	S229

Author and subject index

A hattains	
Abattoirs - Best practice guidelines for the welfare of animals in abattoirs (R)	455
Abnormal behaviour	
- brain measures and animal welfare	541
- environmental complexity and activity in chickens	
Adams LW, Hadidian J and Flyger V Movement and mortality of translocated urban-suburban grey squirrels Adaptation	45
- indicators of thermal tolerance in pigs	329
Adcock D, see Tarou LR Adrenal	
- brain measures and animal welfare	S41
African elephant - elephant stereotypies and cortisol	20
Aksu H, see Anil MH	39
Albentosa M and Cooper JJ Effects of cage height and stocking density on the frequency of comfort	
behaviours performed by laying hens housed in furnished cages	419
Allen L, see Marks CA	
Alternatives	6001
 ethics and welfare of animals used in education	S221
Education, 2nd Edition (B)	255
- InterNICHE publishes their policy on the use of animals and alternatives in education (R)	248
Alternatives to nose-ringing in outdoor sows: 2. The provision of edible or inedible overground enrichment	233
Ambiguities	
- laying hen welfare standards	S153
- Marking amphibians, reptiles and marine mammals (R)	456
Anaesthesia	
- aversion to agents of anaesthesia and euthanasia	\$//
- assessing pain in animals	S71
Anil MH, Yesildere T, Aksu H, Matur E, McKinstry JL, Erdogan O, Hughes S and Mason C	
Comparison of religious slaughter of sheep with methods that include pre-slaughter stunning, and the lack of difference in exsanguination, packed cell volume and meat quality parameters	387
Animal	
- assessing pain in animals	S71
- animal welfare considerations in biotechnology ethics	S139
Animal breeding	
- multi-trait selection and animal welfare	3191
- animal welfare standards and the OIE	S163
Animal-human communication - cognitive and communicative capacities of Grey parrots	cana
Animal protection	3203
- contribution of animal welfare science to public policy	S171
Animal rights - Empty Cages — Facing the Challenges of Animal Rights (B)	462
Animal suffering	702
- qualitative interpretations of sheep welfare	261
Anxiolytic - housing conditions and anxiolytic self-administration	33
Appleby M What causes crowding? Effects of space, facilities and group size on behaviour, with particular	
reference to furnished cages for hens	
Appleby MC Science is not enough: how do we increase implementation?	5159
procedures	225
Applying scientific advances to the welfare of farm animals: why is it getting more difficult?	S187
- cage sizes for primates in the laboratory	S197
Archer N, Johnston AM and Khalid M Differences in the acute pain responses of two breeds of lamb	
following castration and tail docking with the rubber ring method	135
i / G i i i i i i i i i i i i i i i i i	

behavioural signs of distress	283
Arnould C, Bizeray D, Faure JM and Leterrier C Effects of the addition of sand and string to pens on	
use of space, activity, tarsal angulations and bone composition in broiler chickens	
Assessing pain in animals — putting research into practice	
Assessment of the impact of government animal welfare policy on farm animal welfare in the UK	I
Attitude psychology - attitudes to animals and animal welfare	CLAF
- attitudes to animals and animal welfare	3143
- attitudes to animals and animal welfare	\$145
- ERP's impact on attitudes to training	
Attitudes to animals	203
- attitudes to animals and animal welfare	S145
Automated recording of stress vocalisations as a tool to document impaired welfare in pigs	105
Aversion	
- aversion to agents of anaesthesia and euthanasia	S77
Avian intelligence	
- cognitive and communicative capacities of Grey parrots	S203
Awareness	607
- fish and welfare	587
В	
Badgers Control of the Control of th	
- transport stress in wild badgers	355
Baker KC Benefits of positive human interaction for socially housed chimpanzees	
Baker SE, see Macdonald DW	
Bain M, see Dawkins MS	
Bar chewing	
- bar chewing as an escape behaviour in mice	19
Barber CL, Prescott NB, Wathes CM, Le Sueur C and Perry GC Preferences of growing ducklings and	
turkey poults for illuminance	211
Bas F, see Zapata B	
Bateson M Mechanisms of decision-making and the interpretation of choice tests	S115
Bayvel ACD Science-based animal welfare standards: the international role of the Office International	CLC
des Épizooties	5163
Beattle VE. see C. Connell INE	
Behaviour	381
Behaviour - Animal Innovation (B)	
Behaviour - Animal Innovation (B)	293
Behaviour - Animal Innovation (B)	293 283
Behaviour - Animal Innovation (B)	293 283 S3
Behaviour - Animal Innovation (B)	293 283 S3
Behaviour - Animal Innovation (B)	293 S3 313 459
Behaviour - Animal Innovation (B)	
Behaviour - Animal Innovation (B) - assessment of chronic stress in sheep - behavioural signs of distress in sheep - behaviour and welfare - crowding in pens and cages - Do Animals Think? (B) - effects of road traffic accidents on cats - Feline Behaviour: A Guide for Veterinarians, 2nd Edition (B) - foraging enrichment for laboratory rats - fractal analysis and animal welfare - housing design and gorilla welfare - illuminance preferences of poults and ducklings - predation risks and stress responses of sheep - social status and environmental enrichment of pigs - standard cages and the validity of data - The behavioural biology of the mouse: implications for the welfare of laboratory mice (R) - time courses in welfare measures - toys and the welfare of kennelled dogs Behaviour problems - Handbook of Behavior Problems of the Dog and Cat, 2nd Edition (B)	
Behaviour - Animal Innovation (B) - assessment of chronic stress in sheep - behavioural signs of distress in sheep - behaviour and welfare - crowding in pens and cages - Do Animals Think? (B) - effects of road traffic accidents on cats - Feline Behaviour: A Guide for Veterinarians, 2nd Edition (B) - foraging enrichment for laboratory rats - fractal analysis and animal welfare - housing design and gorilla welfare - illuminance preferences of poults and ducklings - predation risks and stress responses of sheep - social status and environmental enrichment of pigs - standard cages and the validity of data - The behavioural biology of the mouse: implications for the welfare of laboratory mice (R) - time courses in welfare measures - toys and the welfare of kennelled dogs Behaviour problems - Handbook of Behavior Problems of the Dog and Cat, 2nd Edition (B) Behavioural disorders	
Behaviour - Animal Innovation (B) - assessment of chronic stress in sheep - behavioural signs of distress in sheep - behaviour and welfare - crowding in pens and cages - Do Animals Think? (B) - effects of road traffic accidents on cats - Feline Behaviour. A Guide for Veterinarians, 2nd Edition (B) - foraging enrichment for laboratory rats - fractal analysis and animal welfare - housing design and gorilla welfare - housing design and gorilla welfare - illuminance preferences of poults and ducklings - predation risks and stress responses of sheep - social status and environmental enrichment of pigs - standard cages and the validity of data - The behavioural biology of the mouse: implications for the welfare of laboratory mice (R) - time courses in welfare measures - toys and the welfare of kennelled dogs Behaviour problems - Handbook of Behavior Problems of the Dog and Cat, 2nd Edition (B) Behavioural disorders - positive human interaction for chimpanzees	
Behaviour - Animal Innovation (B) assessment of chronic stress in sheep behavioural signs of distress in sheep behaviour and welfare crowding in pens and cages Do Animals Think? (B) effects of road traffic accidents on cats Feline Behaviour. A Guide for Veterinarians, 2nd Edition (B) foraging enrichment for laboratory rats fractal analysis and animal welfare housing design and gorilla welfare illuminance preferences of poults and ducklings predation risks and stress responses of sheep social status and environmental enrichment of pigs standard cages and the validity of data The behavioural biology of the mouse: implications for the welfare of laboratory mice (R) time courses in welfare measures toys and the welfare of kennelled dogs Behaviour problems Handbook of Behavior Problems of the Dog and Cat, 2nd Edition (B) Positive human interaction for chimpanzees Behavioural indicators	
Behaviour Animal Innovation (B) Behavioural signs of distress in sheep Behaviour and welfare Crowding in pens and cages Do Animals Think? (B) Feline Behaviour. A Guide for Veterinarians, 2nd Edition (B) foraging enrichment for laboratory rats fractal analysis and animal welfare housing design and gorilla welfare illuminance preferences of poults and ducklings predation risks and stress responses of sheep social status and environmental enrichment of pigs standard cages and the validity of data The behavioural biology of the mouse: implications for the welfare of laboratory mice (R) time courses in welfare measures toys and the welfare of kennelled dogs Behaviour problems Handbook of Behavior Problems of the Dog and Cat, 2nd Edition (B) Behavioural disorders Positive human interaction for chimpanzees Behavioural indicators behavioural signs of distress in sheep	
Behaviour - Animal Innovation (B) - assessment of chronic stress in sheep - behavioural signs of distress in sheep - behaviour and welfare - crowding in pens and cages - Do Animals Think? (B) - effects of road traffic accidents on cats - Feline Behaviour: A Guide for Veterinarians, 2nd Edition (B) - foraging enrichment for laboratory rats - fractal analysis and animal welfare - housing design and gorilla welfare - housing design and gorilla welfare - illuminance preferences of poults and ducklings - predation risks and stress responses of sheep - social status and environmental enrichment of pigs - standard cages and the validity of data - The behavioural biology of the mouse: implications for the welfare of laboratory mice (R) - time courses in welfare measures - toys and the welfare of kennelled dogs Behaviour problems - Handbook of Behavior Problems of the Dog and Cat, 2nd Edition (B) Behavioural disorders - positive human interaction for chimpanzees Behavioural indicators - behavioural signs of distress in sheep Behavioural management	
Behaviour - Animal Innovation (B) - assessment of chronic stress in sheep - behavioural signs of distress in sheep - behaviour and welfare - crowding in pens and cages - Do Animals Think? (B) - effects of road traffic accidents on cats - Feline Behaviour: A Guide for Veterinarians, 2nd Edition (B) - foraging enrichment for laboratory rats - fractal analysis and animal welfare - housing design and gorilla welfare - housing design and gorilla welfare - illuminance preferences of poults and ducklings - predation risks and stress responses of sheep - social status and environmental enrichment of pigs - standard cages and the validity of data - The behavioural biology of the mouse: implications for the welfare of laboratory mice (R) - time courses in welfare measures - toys and the welfare of kennelled dogs Behaviour problems - Handbook of Behavior Problems of the Dog and Cat, 2nd Edition (B) Behavioural disorders - positive human interaction for chimpanzees Behavioural indicators - behavioural signs of distress in sheep Behavioural management - captive animal training	
Behaviour - Animal Innovation (B) - assessment of chronic stress in sheep - behavioural signs of distress in sheep - behaviour and welfare - crowding in pens and cages - Do Animals Think? (B) - effects of road traffic accidents on cats - Feline Behaviour: A Guide for Veterinarians, 2nd Edition (B) - foraging enrichment for laboratory rats - fractal analysis and animal welfare - housing design and gorilla welfare - illuminance preferences of poults and ducklings - predation risks and stress responses of sheep - social status and environmental enrichment of pigs - standard cages and the validity of data - The behavioural biology of the mouse: implications for the welfare of laboratory mice (R) - time courses in welfare measures - toys and the welfare of kennelled dogs Behaviour problems - Handbook of Behavior Problems of the Dog and Cat, 2nd Edition (B) Behavioural disorders - positive human interaction for chimpanzees Behavioural indicators - behavioural signs of distress in sheep Behavioural management - captive animal training Behavioural needs	
Behaviour - Animal Innovation (B) - assessment of chronic stress in sheep - behavioural signs of distress in sheep - behaviour and welfare - crowding in pens and cages - Do Animals Think? (B) - effects of road traffic accidents on cats - Feline Behaviour. A Guide for Veterinarians, 2nd Edition (B) - foraging enrichment for laboratory rats - fractal analysis and animal welfare - housing design and gorilla welfare - housing design and gorilla welfare - illuminance preferences of poults and ducklings - predation risks and stress responses of sheep - social status and environmental enrichment of pigs - standard cages and the validity of data - The behavioural biology of the mouse: implications for the welfare of laboratory mice (R) - time courses in welfare measures - toys and the welfare of kennelled dogs Behaviour problems - Handbook of Behavior Problems of the Dog and Cat, 2nd Edition (B) Behavioural indicators - positive human interaction for chimpanzees Behavioural management - captive animal training Behavioural needs - behavioural priorities of animals in commercial conditions	
Behaviour - Animal Innovation (B) - assessment of chronic stress in sheep - behavioural signs of distress in sheep - behaviour and welfare - crowding in pens and cages - Do Animals Think? (B) - effects of road traffic accidents on cats - Feline Behaviour: A Guide for Veterinarians, 2nd Edition (B) - foraging enrichment for laboratory rats - fractal analysis and animal welfare - housing design and gorilla welfare - illuminance preferences of poults and ducklings - predation risks and stress responses of sheep - social status and environmental enrichment of pigs - standard cages and the validity of data - The behavioural biology of the mouse: implications for the welfare of laboratory mice (R) - time courses in welfare measures - toys and the welfare of kennelled dogs Behaviour problems - Handbook of Behavior Problems of the Dog and Cat, 2nd Edition (B) Behavioural disorders - positive human interaction for chimpanzees Behavioural indicators - behavioural signs of distress in sheep Behavioural management - captive animal training Behavioural needs	
Behaviour - Animal Innovation (B) - assessment of chronic stress in sheep - behavioural signs of distress in sheep - behaviour and welfare - crowding in pens and cages - Do Animals Think? (B) - effects of road traffic accidents on cats - Feline Behaviour: A Guide for Veterinarians, 2nd Edition (B) - foraging enrichment for laboratory rats - fractal analysis and animal welfare - housing design and gorilla welfare - housing design and gorilla welfare - illuminance preferences of poults and ducklings - predation risks and stress responses of sheep - social status and environmental enrichment of pigs - standard cages and the validity of data - The behavioural biology of the mouse: implications for the welfare of laboratory mice (R) - time courses in welfare measures - toys and the welfare of kennelled dogs Behavioural disorders - positive human interaction for chimpanzees Behavioural indicators - behavioural signs of distress in sheep Behavioural management - captive animal training Behavioural priorities of animals in commercial conditions Behavioural priorities	
Behaviour - Animal Innovation (B) - assessment of chronic stress in sheep - behaviour al signs of distress in sheep - behaviour and welfare - crowding in pens and cages - Do Animals Think? (B) - effects of road traffic accidents on cats - Feline Behaviour: A Guide for Veterinarians, 2nd Edition (B) - foraging enrichment for laboratory rats - fractal analysis and animal welfare - housing design and gorilla welfare - illuminance preferences of poults and ducklings - predation risks and stress responses of sheep - social status and environmental enrichment of pigs - standard cages and the validity of data - The behavioural biology of the mouse: implications for the welfare of laboratory mice (R) - time courses in welfare measures - toys and the welfare of kennelled dogs Behaviour problems - Handbook of Behavior Problems of the Dog and Cat, 2nd Edition (B) Behavioural disorders - positive human interaction for chimpanzees Behavioural indicators - behavioural signs of distress in sheep Behavioural management - captive animal training Behavioural needs - behavioural priorities - the use of demand functions	
Behaviour - Animal Innovation (B) - assessment of chronic stress in sheep - behaviour and welfare - crowding in pens and cages - Do Animals Think? (B) - effects of road traffic accidents on cats - Feline Behaviour. A Guide for Veterinarians, 2nd Edition (B) - foraging enrichment for laboratory rats - fractal analysis and animal welfare - housing design and gorilla welfare - housing design and stress responses of sheep - social status and environmental enrichment of pigs - standard cages and the validity of data - The behavioural biology of the mouse: implications for the welfare of laboratory mice (R) - time courses in welfare measures - toys and the welfare of kennelled dogs Behavioural disorders - positive human interaction for chimpanzees Behavioural indicators - behavioural signs of distress in sheep Behavioural management - captive animal training Behavioural priorities - the use of demand functions Behavioural priorities - the use of demand functions Behavioural priorities - the use of demand functions	

- feather pecking: a search for practical solutions	\$215
Benefits of positive human interaction for socially housed chimpanzees	دا∠د 239
Bennett RM, Broom DM, Henson SJ, Blaney RJP, Harper G Assessment of the impact of government	237
animal welfare policy on farm animal welfare in the UK	I
Best practice	
- Best practice guidelines for the welfare of animals in abattoirs (R)	455
- Best practice guidelines on management of wild deer (R)	97
- Guidelines for the accommodation and care of primates in scientific research (R)	456
Bitrex	
generalised aversion for non-lethal control of predators	//
Bizeray D, see Arnould C	
Blaney EC and Wells DL The influence of a camouflage net barrier on the behaviour, welfare and public perception of zoo-housed gorillas	111
Blaney RJP, see Bennett RM	111
Blindfold	
- blindfolding horses	433
Blindsight	
- animal cognition and animal welfare	S17
Blinker	
- blindfolding horses	433
Blokhuis HJ, see Jones RB	
Blood loss	207
- blood loss after religious slaughter or stunning	38/
Body weight	
- body weight as a measure of stress	337
Body weight change as a measure of stress: a practical test	
Bonacic C, see Zapata B	
Bornett HLI, see Dwyer CM, see also Edge HL	
Bowell VA, see Leach MC	
Brain measures	
- brain measures and animal welfare	
Brain measures which tell us about animal welfare	5 4 1
suffering?	\$87
Breed difference	
- breed difference in acute pain responses	135
Breeding and animal welfare: practical and theoretical advantages of multi-trait selection	
Breeding success	
- cage sizes for primates in the laboratory	S197
- cage sizes for tamarins	151
Broiler chickens - environmental complexity and activity in chickens	07
- hatchery welfare	
Broom DM, see Bennett RM	
Broom DM and Zanella AJ Brain measures which tell us about animal welfare	S41
Brown SN, see Knowles TG, see also Parker R	
Buchanan-Smith HM, see Prescott MJ	
Buchanan-Smith HM, Prescott MJ and Cross NJ What factors should determine cage size for primates	
in the laboratory?	S197
Burman OHP and Mendl M Disruptive effects of standard husbandry practice on laboratory rat	105
social discrimination	1 25
Busana F, see Marks CA Butterworth A, Sadler L, Knowles TG and Kestin SC Evaluating possible indicators of insensibility and	
death in cetaceadeath in cetacea	13
Butterworth TG, see Knowles TG	
C	
Cage height	
- comfort behaviour in laying hens	419
Cages	212
- crowding in pens and cages	
Cage sizes for tamarins in the laboratory	151
- reversibility of contraception in Leontopithecus	183
Calvert SK, see Jarvis S	
Can't stop, won't stop: is stereotypy a reliable animal welfare indicator?	S57
Captive animals	
- Environmental Enrichment for Captive Animals (B)	461

Captive man	agement sitive human interaction for chimpanzees	239
Carbon diox	·	
	ersion to agents of anaesthesia and euthanasia	S77
	(C, see Shepherdson DJ	
Castration	eed difference in acute pain responses	135
Cat	sed difference in acute pain responses	133
	ects of road traffic accidents on cats	51
	ndbook of Behavior Problems of the Dog and Cat, 2nd Edition (B)(B)	
Catfish		
	nning, bleeding and loss of consciousness in catfish	71
Cattle	use of demand functions	527
CD-ROM	suse of defination functions	327
	CD-based animal welfare syllabus (R)	95
Central cont	rol	
	reotypy and welfare assessment	S57
	mitis albotorquatus	2.42
- rei Cetacean	ocation of Sykes monkeys in Kenya	343
	icators of insensibility and death in cetacea	13
Chick		
- hat	chery welfare	409
Chicken		
	ctal analysis and animal welfare	
- nea Chimpanzees	ad-only electrical stunning of chickens	159
	s sitive human interaction for chimpanzees	239
Choice	stave naman interaction for chimpanzees	237
	naviour and welfare	S3
Choice test		
- coi	ntext-dependent choice	SI15
	n JW and Nielsen BL Environmental enrichment for ostrich, Struthio camelus, chicks	119
Chronic stre	en SB, see Sandøe P	
	essment of chronic stress in sheep	293
	ess in sheep: assessment tools and their use in different management conditions	
	F, see Young RJ	
Clarias gariep	inus	
	nning, bleeding and loss of consciousness in catfish	71
Classical con	ditioning btive animal training	225
cap Clinical asses	· · · · · · · · · · · · · · · · · · ·	223
	naviour and welfare	S3
	d Mason G Pacing polar bears and stoical sheep: testing ecological and evolutionary hypotheses	
	mal welfare	S33
Coarse mix		
	eference of rabbits for grass or coarse mix	59
Cockram N	1S A review of behavioural and physiological responses of sheep to stressors to identify behavioural signs of distress	202
Cognition	Deliavioural signs of discress	203
	mal cognition and animal welfare	S17
	Animals Think? (B)	
	aluation and the Psychology of Thinking: The Debate (B)	
	asure (Cognition and Emotion Special Edition) (B)	254
	and communicative capacities of Grey parrots — implications for the enrichment of many	cana
	nament	5203
Colony mana	ge sizes for primates in the laboratory	\$197
-	te sizes for tamarins	
Comfort bel		
	mfort behaviour in laying hens	419
Common ma		
	e sizes for tamarins	151
Companion :		C2.02
	gnitive and communicative capacities of Grey parrots	5203
Comparative	nparative tests in animal welfare	533
COI	Transaction cook in minima from to minima manufacture and the second manufa	

 $^{^{\}circ}$ 2004 Universities Federation for Animal Welfare

- the use of demand functions	S27
De Vleeschouwer K, Leus K and Van Elsacker L Re-assessing the reversibility of melengestrol acetate	
(MGA) implants in golden-headed lion tamarins (Leontopithecus chrysomelas): a comparison with golden lion tamarins (L. rosalia)	102
Differences in the acute pain responses of two breeds of lamb following castration and tail docking	
with the rubber ring method	135
evaluation of tranquilliser trap for dingo trapping	393
Disease - Veterinary surveillance strategy in the UK (R)	96
Disruptive effects of standard husbandry practice on laboratory rat social discrimination	125
- behavioural signs of distress in sheep	283
- Handbook of Behavior Problems of the Dog and Cat, 2nd Edition (B)	385
- toys and the welfare of kennelled dogs	
Dog training methods: their use, effectiveness and interaction with behaviour and welfare	
- predation risks and stress responses of sheep	269
- dog training methods	63
Domestic fowl - feather pecking: a search for practical solutions	\$215
Donkeys	
- UK equine industry guidelines for the welfare of horses, ponies and donkeys (R)	375
- illuminance preferences of poults and ducklings	211
Dwyer CM and Bornett HLI Chronic stress in sheep: assessment tools and their use in different management conditions	202
Dwyer CM How has the risk of predation shaped the behavioural responses of sheep to fear and distress?	
E	
Ecological niche	
- comparative tests in animal welfare	S33
Economics	
- difficulties applying scientific advances to welfare	
- implementation of scientific results	5139
2. The provision of edible or inedible overground enrichment	233
Edmond A, see Dawkins MS Education	
- ethics and welfare of animals used in education	S221
- Farm animal welfare in the UK National Curriculum (R)	248
- From Guinea Pig to Computer Mouse: Alternative Methods for a Progressive, Humane	
Education, 2nd Edition (B)	255
- InterNICHE publishes their policy on the use of animals and alternatives in education (R)	248
Effects of amount and frequency of head-only stunning currents on the electroencephalogram	150
and somatosensory evoked potentials in broilers Effects of cage height and stocking density on the frequency of comfort behaviours performed by	139
laying hens housed in furnished cages	419
Effects of the addition of sand and string to pens on use of space, activity, tarsal angulations and bone composition in broiler chickens	07
Emergency slaughter	
- Video on emergency slaughter of farmed livestock (R)	457
Emotion - animal cognition and animal welfare	\$17
- Pleasure (Cognition and Emotion Special Edition) (B)	
- qualitative interpretations of sheep welfare	
Endangered species	100
- Policing International Trade in Endangered Species: The CITES Treaty and Compliance (B)	103
- Applied Animal Endocrinology (B)	384
Enrichment - computer enrichment for orangutans	<i>11</i> F
- housing conditions and anxiolytic self-administration	
- housing design and gorilla welfare	
- toys and the welfare of kennelled dogs	367
Enrichment of laboratory caging for rats: a review	S209

474 Index to Volume 13

Environment	
- environmental effects on maternal behaviour in pigs	171
Environmental complexity	102
- environmental complexity for laboratory rodents	193
- alternatives to nose-ringing in outdoor sows	233
- behavioural priorities of animals in commercial conditions	S47
- enrichment for ostrich chicks	
- enrichment of laboratory caging for rats	
- environmental complexity and activity in chickens	87
- environmental complexity for laboratory rodents	
- Environmental Enrichment for Captive Animals (B)	461
- feather pecking: a search for practical solutions	S215
- foraging enrichment for laboratory rats	
- positive human interaction for chimpanzees	
Environmental enrichment for ostrich, Struthio camelus, chicks	119
Environmental preference	
- illuminance preferences of poults and ducklings	211
Equine industry	275
- UK equine industry guidelines for the welfare of horses, ponies and donkeys (R)	3/5
Erdogan O, see Anil MH	
Escape - bar chewing as an escape behaviour in mice	10
Ethical decisions concerning animal biotechnology: what is the role of animal welfare science?	
Ethics	
- Animal (B)	383
- animal welfare considerations in biotechnology ethics	
- Animals and Ethics: An Overview of the Philosophical Debate (B)	99
- attitudes to animals and animal welfare	
- ERP's impact on attitudes to training	
- ethics and welfare of animals used in education	
- guidelines development and scientific uncertainty	
- Internet-based learning tool on ethics of animal farming (R)	
- implementation of scientific results	
- science and ethics of humane killing methods	
- USDA animal well-being initiatives	
- welfare trade-offs in wildlife management	
Ethics and welfare of animals used in education: an overview	S221
Eurasian otter	
- stress in wild-caught Eurasian otters	143
European Commission The walfers of colored desired and a second of contract from the Foundation (P)	455
- The welfare of animals during transport: a report from the European Food Safety Authority (R)	4 33
European Food Safety Authority - The welfare of animals during transport: a report from the European Food Safety Authority (R)	455
Euthanasia	433
- aversion to agents of anaesthesia and euthanasia	\$77
Evaluating possible indicators of insensibility and death in cetacea	
Evaluation	
- Evaluation and the Psychology of Thinking: The Debate (B)	251
Evaluation of the tranquilliser trap device (TTD) for improving the humaneness of dingo trapping	
Evolution	
- comparative tests in animal welfare	S33
Experimental animals	
- ERP's impact on attitudes to training	205
Expert (Delhi) survey	
- impact of UK government farm animal welfare policy	
Exploration	
- enrichment for ostrich chicks	119
Extensive management	
- Improving sheep welfare in extensively managed flocks (R)	377
_	
	01.45
Factors influencing human attitudes to animals and their welfare	5145
Farish M, see Wemelsfelder F	
Farm animals difficulties applying scientific advances to welfare	C107
- difficulties applying scientific advances to welfare	
- Internet-based learning tool on ethics of animal farming (R)	
- Precision Livestock Farming (B)	
record driving (b)	

Farm animal welfare standards	
- impact of UK government farm animal welfare policy	I
- environmental effects on maternal behaviour in pigs	171
Faure JM, see Arnould C	
Feather pecking - feather pecking: a search for practical solutions	S215
Feather pecking in poultry: the application of science in a search for practical solutions	S215
Felines	270
- Feline Behaviour: A Guide for Veterinarians, 2nd Edition (B)	3/9
Fernández-Morán J, Saavedra D, Ruiz De La Torre JL and Manteca-Vilanova X Stress in wild-caught	
Eurasian otters (Lutra lutra): effects of a long-acting neuroleptic and time in captivity	143
Fish - guidelines development and scientific uncertainty	SIRI
Fish and welfare: do fish have the capacity for pain perception and suffering?	S87
Fisher PM, see Marks CA	
Flecknell PA and Roughan JV Assessing pain in animals — putting research into practice	S71
Flyger V, see Adams LW Food animals	
- Applied Animal Endocrinology (B)	384
Foraging	222
- alternatives to nose-ringing in outdoor sows	233
- context-dependent choice	S115
Foraging enrichment for laboratory rats	305
Forkman B, see Sandøe P Fox control using a para-aminopropiophenone formulation with the M-44 ejector	401
Fractal analysis of animal behaviour as an indicator of animal welfare	
Freedom food	
- indices for welfare assessment	S93
Freedom of movement - crowding in pens and cages	313
Frequency	
- head-only electrical stunning of chickens	159
Furnished cages - comfort behaviour in laying hens	419
Comore benaviour in laying ners	117
G	
Gauthier C, see Griffin C Gelling M, see McLaren GW	
Gene technology	
- animal welfare considerations in biotechnology ethics	S139
Genetically modified animals - guidelines development and scientific uncertainty	CIOI
- Refinement and reduction in the production of genetically modified mice (R)	
Gerbil	
- laboratory gerbil housing and husbandry	S229
Gerritzen MA, see Lambooij E Gigliotti F, see Marks CA	
Gimpel J, see Zapata B	
Glasbey C, see Rutherford KMD	
Golden-headed lion tamarin - reversibility of contraception in Leontopithecus	102
González BA, see Zapata B	165
Gonzalez T, see Marks CA	
Gorilla - housing design and gorilla welfare	
Government policy	111
- impact of UK government farm animal welfare policy	I
Grazing	
- preference of rabbits for grass or coarse mix	59
- computer enrichment for orangutans	445
Grey parrot	
- cognitive and communicative capacities of Grey parrots	S203
studies to promote efficient production of guidelines on the care and use of fish in research, teaching	
and testing	181

- stress responses of guanacos to transport	420
Guidelines development and scientific uncertainty: use of previous case studies to promote	
efficient production of guidelines on the care and use of fish in research, teaching and testing	SIRI
cincione production of guidelines on the care and use of fish in research, teaching and testing	
H	
Habituation, capture and relocation of Sykes monkeys (Cercopithecus mitis albotorquatus) on the	
coast of Kenya	343
Hadidian J, see Adams LW	
Halal	
- blood loss after religious slaughter or stunning	387
Handling	202
- assessment of chronic stress in sheep	
- blindfolding horses	
- body weight as a measure of stress	
Hansen AK, see Sørensen DB	
Harper G, see Bennett RM	
Haskell MJ, see Rutherford KMD	
Hatchery	
- hatchery welfare	409
Hau J, see Moinde NN	
Hay M, Rue J, Sansac C, Brunel G and Prunier A Long-term detrimental effects of tooth clipping or	
grinding in piglets: a historical approach	27
Head-only electrical stunning and bleeding of African catfish (Clarias gariepinus): assessment of	
loss of consciousness	71
Hens	
- indices for welfare assessment	
- laying hens on clean and dirty perches - time courses in welfare measures	
	321
Henson SJ, see Bennett RM Hewitt L, see Knowles TG	
Hiby EF, Rooney NJ and Bradshaw JWS Dog training methods: their use, effectiveness and interaction	
with behaviour and welfare	63
Higashi H, see Moinde NN	
Hillman E, Mayer C and Schrader L Lying behaviour and adrenocortical response as indicators of the	
thermal tolerance of pigs of different weights	329
Histology	
- histological consequences of tooth shortening in piglets	27
Horse	
- blindfolding horses	
- UK equine industry guidelines for the welfare of horses, ponies and donkeys (R)	375
Housing	
- assessment of stress responses in zoo animals	5105
- environmental complexity for laboratory rodents	193
- laboratory gerbil housing and husbandry	
- standard cages and the validity of data	37
- housing design and gorilla welfare	111
- toys and the welfare of kennelled dogs	
Housing conditions affect self-administration of anxiolytic by laboratory mice	
How has the risk of predation shaped the behavioural responses of sheep to fear and distress?	
Hughes S, see Anil MH	
Human-animal interaction	
- dog training methods	
- positive human interaction for chimpanzees	239
Humane	
- USDA animal well-being initiatives	S175
Humaneness	202
- evaluation of tranquilliser trap for dingo trapping	393
Humane pest control	C127
- science and ethics of humane killing methods	312/
Humane slaughter - science and ethics of humane killing methods	\$127
Humane Slaughter Association	
- Best practice guidelines for the welfare of animals in abattoirs (R)	455
- Video on emergency slaughter of farmed livestock (R)	
Humanities	
- Animal (B)	383

Huntingford FA, see Braithwaite VA Hurst JL, see Lewis RS Husbandry	
- assessment of stress responses in zoo animals	S105
Husbandry procedures - captive animal training	225
- social discrimination in rats	
I	
Impact assessment	
- impact of UK government farm animal welfare policy	I
Implementation - difficulties applying scientific advances to welfare	5197
Influence of social status on the welfare of growing pigs housed in barren and enriched environments	425
Informed debate: the contribution of animal welfare science to the development of public policy	SI71
Injuries - Reducing injuries to dairy cattle (R)	458
Innovation	
- Animal Innovation (B)	381
- Policing International Trade in Endangered Species: The CITES Treaty and Compliance (B)	103
Internet (D)	254
- Internet-based learning tool on ethics of animal farming (R)	250
J	
Jarvis S, Reed BT, Lawrence AB, Calvert SK and Stevenson J Peri-natal environmental effects on	171
maternal behaviour, pituitary and adrenal activation, and the progress of parturition in the primiparous sow Jensen MB, Pedersen LJ and Ladewig J The use of demand functions to assess behavioural priorities	171
in farm animals	
Johnson SR, Patterson-Kane EG and Niel L Foraging enrichment for laboratory rats	305
Johnston M, see Marks CA	
Jones RB, Blokhuis HJ, de Jong IC, Keeling LJ, McAdie TM and Preisinger R Feather pecking in	
poultry: the application of science in a search for practical solutions	S215
Johes ND, see Nutrieriord Nr ID	
K	0.10-
Keeling L Applying scientific advances to the welfare of farm animals: why is it getting more difficult? Keeling LJ, see Jones RB	518/
Kestin SC, see Butterworth A	
Khalid M, see Archer N	
Killing - stunning, bleeding and loss of consciousness in catfish	71
King LA Ethics and welfare of animals used in education: an overview	
Kloosterboer RJ, see Lambooij E	
Knowles TG, Brown SN, Warriss PD, Butterworth A and Hewitt L Welfare aspects of chick handling in broiler and laying hen hatcheries	409
Knowles TG, see Butterworth A, see also Parker R	
König B, see Waiblinger E Kuhar CW, see Tarou LR	
Rullar CVV, See Tallou Lix	
L .	
Laboratory - enrichment of laboratory caging for rats	\$209
Laboratory animals	
Handbook of Laboratory Animal Science, 2nd Edition — Volume 1: Essential Principles and	25-
Practices, and Volume 2: Animal Models (B)	257
- standard cages and the validity of data	S9
Laboratory mouse - Refinement and reduction in the production of genetically modified mice (R)	O.
- Refinement and reduction in the production of genetically modified mice (R)	
Laboratory rat	
- social discrimination in rats	127
Lambooij E, Kloosterboer RJ, Gerritzen MA and van de Vis JW Head-only electrical stunning and	
bleeding of African catfish (Clarias gariepinus): assessment of loss of consciousness	71
Lambs - breed difference in acute pain responses	

Lameness	
- assessment of chronic stress in sheep	293
Latham NR, see Mason GJ Lawrence AB, Conington J and Simm G Breeding and animal welfare: practical and theoretical	
advantages of multi-trait selection	S191
Lawrence AB, see Jarvis S, see also Rutherford KMD	
Laying hen - comfort behaviour in laying hens	410
- hatchery welfare	
Laying hen housing systems	
- laying hen welfare standards	
Laying hen welfare standards: a classic case of 'power to the people'	S153
Leach MC, Bowell VA, Allan TF and Morton DB Measurement of aversion to determine humane methods of anaesthesia and euthanasia	577
Legislation	3//
- contribution of animal welfare science to public policy	S171
- difficulties applying scientific advances to welfare	S187
Leg problems	
- environmental complexity and activity in chickens	8/
Le Sueur C, see Barber CL	
Leterrier C, see Arnould C	
Leus K, see De Vleeschouwer K	
Lewis RS and Hurst JL The assessment of bar chewing as an escape behaviour in laboratory mice	19
Life science - ethics and welfare of animals used in education	caal
- ethics and wehare of animals used in education	3221
- illuminance preferences of poults and ducklings	211
Lindeman M, see Marks CA	
Littin KE, see Mellor DJ	
Livestock - Precision Livestock Farming (B)	255
- Video on emergency slaughter of farmed livestock (R)	
Loading	
- blindfolding horses	433
Long-acting neuroleptic	
- stress in wild-caught Eurasian otters	
Long-term detrimental effects of tooth clipping or grinding in piglets: a historical approach	2/
Luce's choice axiom	
- context-dependent choice	S115
Lying behaviour	
- indicators of thermal tolerance in pigs	329
Lying behaviour and adrenocortical response as indicators of the thermal tolerance of pigs of different weights	329
difference weights	
M	
MacAngus G, see Scott GB	
Macdonald DW and Baker SE Non-lethal control of fox predation: the potential of generalised aversion	77
Macdonald DW, see McLaren GW, see also Montes I, see also Zapata B	//
Main DCJ, see Webster A F	
Management	
- elephant stereotypies and cortisol	39
Manteca-Vilanova X, see Fernández-Morán J	
Manteuffel G, see Schön PC Manure	
- laying hens on clean and dirty perches	361
Maple TL, see Tarou LR, see also Wilson ML	
Marine	
- Marking amphibians, reptiles and marine mammals (R)	456
Marking - Marking amphibians, reptiles and marine mammals (R)	456
Marks CA, Allen L, Gigliotti F, Busana F, Gonzalez T, Lindeman M and Fisher PM Evaluation	130
of the tranquilliser trap device (TTD) for improving the humaneness of dingo trapping	393
Marks CA, Gigliotti F, Busana F, Johnston M and Lindeman M Fox control using	
a para-aminopropiophenone formulation with the M-44 ejector	401
Mason C, see Anil MH Mason G, see Clubb R	

^{© 2004} Universities Federation for Animal Welfare

Mason GJ and Latham NR Can't stop, won't stop: is stereotypy a reliable animal welfare indicator?	S57
Maternal behaviour - environmental effects on maternal behaviour in pigs	171
Mathews F, see McLaren GW	
Matur E, see Anil MH	
Mayer C, see Hillmann E McAdie TM, see Jones RB	
McKinstry JL, see Anil MH	
McLaren GW, Mathews F, Fell R, Gelling M and Macdonald DW Body weight change as a measure of	227
stress: a practical test	33/
Measurement of aversion to determine humane methods of anaesthesia and euthanasia	S77
Measuring stress	255
- transport stress in wild badgers	
Melengestrol acetate	
- reversibility of contraception in Leontopithecus	183
Mellor DJ and Littin KE Using science to support ethical decisions promoting humane livestock slaughter and vertebrate pest control	\$127
Mendl M and Paul ES Consciousness, emotion and animal welfare: insights from cognitive science	
Meles meles	
- transport stress in wild badgers	355
Metacognition - animal cognition and animal welfare	S17
Mian R, see Montes I	
Mice - bar chewing as an escape behaviour in mice	10
- environmental complexity for laboratory rodents	
- housing conditions and anxiolytic self-administration	
- The behavioural biology of the mouse: implications for the welfare of laboratory mice (R)	
Minimising harm - science and ethics of humane killing methods	\$127
Moinde NN, Suleman MA, Higashi H and Hau J Habituation, capture and relocation of Sykes	
monkeys (Cercopithecus mitis albotorquatus) on the coast of Kenya	343
Montes I, McLaren GW, Macdonald DW and Mian R The effect of transport stress on neutrophil activation	255
in wild badgers (Meles meles)	335
Moss BW, see O'Connell NE	
Motivation	
- the use of demand functions	
Tiovernent and mortality of transfocated arbain subarbain givey squirreis	
N N N D I I I I I I I I I I I I I I I I	
Nedeva M, see Purchase IFH Neural networks	
- recording of stress vocalisations	107
Neuroscience	
The Neuroscience of Social Interaction: Decoding, Imitating, and Influencing the Actions of Others (B)	390
Neutrophil activation	300
- transport stress in wild badgers	355
Newton E, see Edge HL	
Nicol CJ, see Parker R Niel L, see Johnson SR	
Nielsen BL, see Christensen JW	
Non-human primates	
- computer enrichment for orangutans	
Nose-ringing	//
- alternatives to nose-ringing in outdoor sows	233
0	
Obedience	
- dog training methods	63
Objectivity	CIO
- scientific uncertainty and animal welfare	5121
O'Connell NE, Beattie VE and Moss BW Influence of social status on the welfare of growing pigs	
housed in barren and enriched environments	425

Office International des Épizooties	
- animal welfare standards and the OIE	S163
- indices for welfare assessment	S93
Olsson IAS and Sandøe P Ethical decisions concerning animal biotechnology: what is the role of	
animal welfare science?	S139
Openness	
- scientific uncertainty and animal welfare	S121
Operant conditioning - captive animal training	225
Opioids	,
- brain measures and animal welfare	S41
Orangutans - computer enrichment for orangutans	445
Ostrich	
- enrichment for ostrich chicks	119
Ottesen JL, see 301 ensem DB	
P	
Pacing polar bears and stoical sheep: testing ecological and evolutionary hypotheses about animal welfare	533
Pain	
- Animal pain: the need for a cross-species approach (R)	
- assessing pain in animals	
- behaviour and welfare	
- qualitative interpretations of sheep welfare	
Pain and distress	
- guidelines development and scientific uncertainty	181
Pain assessment - assessing pain in animals	\$71
- Pain and Practical Pain Therapy, Proceedings from the AVERT and ANZCCART Conference	
14–16 May 2001, Melbourne, Australia (B)	101
Pain response - breed difference in acute pain responses	125
Pain scoring	133
- assessing pain in animals	S71
Pain therapy	
- Pain and Practical Pain Therapy, Proceedings from the AVERT and ANZCCART Conference 14–16 May 2001, Melbourne, Australia (B)	101
PAPP	101
- fox control using para-aminopropiophenone	401
Para-aminopropiophenone	
- fox control using para-aminopropiophenone	401
Parasitism - assessment of chronic stress in sheep	293
Parker R, Watson R, Wells E, Brown SN, Nicol CJ and Knowles TG The effect of blindfolding horses	
on heart rate and behaviour during handling and loading onto transport vehicles	433
Parturition	171
- environmental effects on maternal behaviour in pigs	1/1
- preference of rabbits for grass or coarse mix	59
Patterson-Kane EG Enrichment of laboratory caging for rats: a review	S209
Patterson-Kane EG, see Johnson SR	
Paul ES, see Mendl M Pepperberg IM Cognitive and communicative capacities of Grey parrots — implications for the	
enrichment of many speciesenrichment of many species	\$203
Perches	
- laying hens on clean and dirty perches	361
Perch material	27.1
- laying hens on clean and dirty perches	561
- enrichment for ostrich chicks	119
Pedersen LJ, see Jensen MB	
Peri-natal environmental effects on maternal behaviour, pituitary and adrenal activation, and the	171
progress of parturition in the primiparous sow	1/1
- stress in wild-caught Eurasian otters	143

^{© 2004} Universities Federation for Animal Welfare

	GC, see Barber CL	
Persev	veration	CET
Pest co	stereotypy and welfare assessment	33/
-	welfare trade-offs in wildlife management	S133
Pet ow	wnership	
-	effects of road traffic accidents on cats	5 I
Phillip	ps CJC, see Leslie TK	
Philoso		
-	A New Approach to Conservation (B)	
-	Animals and Ethics: An Overview of the Philosophical Debate (B)	
- Physiol	Empty Cages — Facing the Challenges of Animal Rights (B)	1 02
-	social status and environmental enrichment of pigs	425
Pig	300ta 3tata 3th	
٠-	alternatives to nose-ringing in outdoor sows	233
-	environmental effects on maternal behaviour in pigs	171
-	fractal analysis and animal welfare	
-	indicators of thermal tolerance in pigs	
-	Pig Production Problems: John Gadd's Guide to their Solutions (B)	
-	social status and environmental enrichment of pigsthe use of demand functions	
- Piglet	the use of definant functions	
-	histological consequences of tooth shortening in piglets	27
_	effects of road traffic accidents on cats	
Pig pro	oduction	
-	Pig Production Problems: John Gadd's Guide to their Solutions (B)(B)	103
Pig str	ress	
	recording of stress vocalisations	107
Pleasu		25.4
- D-1:4:	Pleasure (Cognition and Emotion Special Edition) (B)	254
Politics	s implementation of scientific results	\$150
Ponies	·	
-	UK equine industry guidelines for the welfare of horses, ponies and donkeys (R)	375
Popula	ation control management	
·-	reversibility of contraception in Leontopithecus	183
Poultry	у	
	feather pecking: a search for practical solutions	S215
Precau	utionary approach	CIO
- Precisi	guidelines development and scientific uncertainty	3181
-	Precision Livestock Farming (B)	255
Predat	÷ , ,	233
-	predation risks and stress responses of sheep	269
Predat	tor control	
-	fox control using para-aminopropiophenone	401
Prefere		
-	behaviour and welfare	
-	context-dependent choice	
-	foraging enrichment for laboratory ratspreference of rabbits for grass or coarse mix	
-	time courses in welfare measures	
Prefe	rence of domestic rabbits for grass or coarse mix feeds	
	rences of growing ducklings and turkey poults for illuminance	
Preisi	inger R, see Jones RB	
	cott MJ and Buchanan-Smith HM Cage sizes for tamarins in the laboratory	151
	cott MJ, see Buchanan-Smith HM	
	cott NB, see Barber CL	
Primat		CIO
-	cage sizes for primates in the laboratory	
-	Training non-human primates using positive reinforcement techniques (R)	
Proble	ematic behaviour	
-	dog training methods	63
Psycho	ology	
-	Evaluation and the Psychology of Thinking: The Debate (B)	251
Psycho	ological well-being	
-	computer enrichment for orangutans	445

Public policy	
- animal welfare standards and the OIE	
- contribution of animal welfare science to public policy	3171
- laying hen welfare standards	S153
Public understanding - laying hen welfare standards	CLES
Puppe B, see Schön PC	3133
Purchase IFH and Nedeva M The impact of the ethical review process for research using animals in	
the UK: attitudes to training and monitoring by those working under the Animals (Scientific Procedures) Act 1986	205
Q	
Qualitative behaviour assessment	
- qualitative interpretations of sheep welfare	
Quality assurance	201
- indices for welfare assessment	S93
R	
Rabbit	
- preference of rabbits for grass or coarse mix	
Radford M Informed debate: the contribution of animal welfare science to the development of public policy	S171
the electroencephalogram and somatosensory evoked potentials in broilers	159
Ramirez AM, see Zapata B	
Rat	5200
- enrichment of laboratory caging for rats	
- foraging enrichment for laboratory rats	305
Rattus norvegicus	5200
- enrichment of laboratory caging for rats	5209
- social status and environmental enrichment of pigs	425
Re-assessing the reversibility of melengestrol acetate (MGA) implants in golden-headed lion	
tamarins (Leontopithecus chrysomelas): a comparison with golden lion tamarins (L. rosalia)	183
- cage sizes for tamarins	151
Red fox	
- fox control using para-aminopropiophenone	
Reduction	//
- Refinement and reduction in the production of genetically modified mice (R)	95
Reed BT, see Jarvis S Refinement	
- laboratory gerbil housing and husbandry	S229
- Refinement and reduction in the production of genetically modified mice (R)	95
- Remote monitoring of animals in scientific procedures (R)	
Refinement of gerbil housing and husbandry in the laboratory	5229
- contribution of animal welfare science to public policy	S171
- USDA animal well-being initiatives	
- welfare trade-offs in wildlife management	5133
- Welfare in animal sanctuaries, shelters and re-homing centres (R)	247
Reinforcement	2.12
- Training non-human primates using positive reinforcement techniques (R)	249
- relocation of Sykes monkeys in Kenya	343
Religious slaughter	
- blood loss after religious slaughter or stunning	387
Relocation - relocation of Sykes monkeys in Kenya	343
Remote monitoring	
- Remote monitoring of animals in scientific procedures (R)	96
Repellency - generalised aversion for non-lethal control of predators	77
Reproductive technology	
- animal welfare considerations in biotechnology ethics	S139
Reptiles	

- Marking amphibians, reptiles and marine mammals (R)	456
Rescue shelters - toys and the welfare of kennelled dogs	367
Research - USDA animal well-being initiatives	
Research validity - standard cages and the validity of data	
Review - enrichment of laboratory caging for rats	
Reynnells RD United States Department of Agriculture: building bridges through innovative animal well-being initiatives	
Reynolds JC Trade-offs between welfare, conservation, utility and economics in wildlife management — a review of conflicts, compromises and regulation	
Riveros JL, see Zapata B Road traffic accident	3133
- effects of road traffic accidents on cats	51
Rochlitz I The effects of road traffic accidents on domestic cats and their owners	
- aversion to agents of anaesthesia and euthanasia	S77
- standard cages and the validity of data	S9
Rooting behaviour	
- alternatives to nose-ringing in outdoor sows	233
Roughan JV, see Flecknell PA Ruiz De La Torre JL, see Fernández-Morán J Rutherford KMD, Haskell MJ, Glasbey C, Jones RB and Lawrence AB Fractal analysis of animal	500
behaviour as an indicator of animal welfare	399
S Saavedra D, see Fernández-Morán J	
Sadler L, see Butterworth A Sanctuaries	
- Welfare in animal sanctuaries, shelters and re-homing centres (R)	247
Sandøe P, Forkman B and Christiansen SB Scientific uncertainty — how should it be handled in relation to scientific advice regarding animal welfare issues?	
Sandøe P, see Olsson IAS	
Savory CJ Laying hen welfare standards: a classic case of 'power to the people'	S153
Schön PC, Puppe B and Manteuffel G Automated recording of stress vocalisations as a tool to document impaired welfare in pigs	
Schrader L, see Hillmann E Science	
- implementation of scientific results	S159
Science is not enough: how do we increase implementation?	
Scientific advice	
- scientific uncertainty and animal welfare	S121
Science-based animal welfare standards: the international role of the Office International	
des Epizooties	S163
Scientific assessment of harm - science and ethics of humane killing methods	S127
Scientific research	
- The use of non-human animals in research: a guide for scientists (R)	375
Scientific uncertainty - scientific uncertainty and animal welfare	S121
Scientific uncertainty — how should it be handled in relation to scientific advice regarding animal	
welfare issues?	S121
- attitudes to animals and animal welfare	S145
Scott GB and MacAngus G The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces	361
Scientific debate - difficulties applying scientific advances to welfare	S187
Sciurus carolinensis - movement and mortality of translocated grey squirrels	45
Self-administration - housing conditions and anxiolytic self-administration	33
Sensibility	12
- indicators of insensibility and death in cetacea	
Shechita - blood loss after religious slaughter or stunning	387

Sheep	
- assessment of chronic stress in sheep	
- behavioural signs of distress in sheep	
- Improving sheep welfare in extensively managed flocks (R)	
- predation risks and stress responses of sheep	
- qualitative interpretations of sheep welfare	
Shell quality	
- time courses in welfare measures	321
Shelters - Shelter Medicine for Veterinarians and Staff (B)	460
- Welfare in animal sanctuaries, shelters and re-homing centres (R)	
Shepherdson DJ, Carlstead KC and Wielebnowski N Cross-institutional assessment of stress responses	
in zoo animals using longitudinal monitoring of faecal corticoids and behaviour	
Sherwin CM and Olsson IAS Housing conditions affect self-administration of anxiolytic by laboratory mice	
Sherwin CM The influence of standard laboratory cages on rodents and the validity of research data	39
Slaughter	
- head-only electrical stunning of chickens	159
- stunning, bleeding and loss of consciousness in catfish	71
Slipperiness	241
- laying hens on clean and dirty perches	361
- body weight as a measure of stress	337
Social complexity	
- Animal Social Complexity: Intelligence, Culture, and Individual Societies (B)	101
Social discrimination	
- social discrimination in rats	127
Social disruption - social discrimination in rats	127
Social interactions	127
The Neuroscience of Social Interaction: Decoding, Imitating, and Influencing the Actions	
of Others (B)	380
Social recognition	
- social discrimination in rats	12/
- social status and environmental enrichment of pigs	425
Societies	
- Animal Social Complexity: Intelligence, Culture, and Individual Societies (B)	101
Sociology	0.150
- implementation of scientific results	5159
Sørensen DB, Ottesen JL and Hansen AK Consequences of enhancing environmental complexity for	
laboratory rodents — a review with emphasis on the rat	193
Space	
- crowding in pens and cages	313
Species differences - comparative tests in animal welfare	coo
Species-specific needs	333
- cage sizes for primates in the laboratory	S197
Squirrel	
- movement and mortality of translocated grey squirrels	45
Standards - animal welfare standards and the OIE	\$143
- animal welfare standards and the OIE	3163
- Statistics for the Behavioural Sciences: An Introduction (B)	252
Stereotypic behaviour	
- elephant stereotypies and cortisol	39
Stereotypic swaying and serum cortisol concentrations in three captive African elephants (Loxodonta	30
africana)	39
- assessment of stress responses in zoo animals	
- comparative tests in animal welfare	
- laboratory gerbil housing and husbandry	S229
- stereotypy and welfare assessment	S57
Stevenson J, see Jarvis S Stocking density	
Stocking density - comfort behaviour in laying hens	419
Stranding	

	13
Stress - assessment of stress responses in zoo animals	CINE
- behavioural signs of distress in sheep	203 337
- fish and welfare	
- fractal analysis and animal welfare	
- predation risks and stress responses of sheep	
- stress in wild-caught Eurasian otters	
- stress responses of guanacos to transport	
- Zoo research guidelines: monitoring stress in zoo animals (R)	
Stress in wild-caught Eurasian otters (Lutra lutra): effects of a long-acting neuroleptic and time in	
captivity	143
Structuring of standards	
- laying hen welfare standards	S153
Struthio camelus	
- enrichment for ostrich chicks	119
Student choice	
- ethics and welfare of animals used in education	S221
Stunning	
- blood loss after religious slaughter or stunning	
- head-only electrical stunning of chickens	
- stunning, bleeding and loss of consciousness in catfish	/ 1
Suffering	CO-7
- fish and welfare	587
Suleman MA, see Moinde NN	
Surveillance	07
- Veterinary surveillance strategy in the UK (R)	90
Sykes monkeys - relocation of Sykes monkeys in Kenya	242
Syllabus	
- A CD-based animal welfare syllabus (R)	95
- A CD-based diffinitive Welfare Syllabas (IX)	/3
Т	
Tail docking	
- breed difference in acute pain responses	135
Tarou LR, Kuhar CW, Adcock D, Bloomsmith MA and Maple TL Computer-assisted enrichment for	
zoo-housed orangutans (Pongo bygmaeus)	445
zoo-housed orangutans (Pongo þygmaeus)	445
zoo-housed orangutans (Pongo þygmaeus)	
zoo-housed orangutans (Pongo þygmaeus)	
zoo-housed orangutans (Pongo pygmaeus)	329
zoo-housed orangutans (Pongo pygmaeus)	329 13
zoo-housed orangutans (<i>Pongo pygmaeus</i>)	329 13
zoo-housed orangutans (Pongo pygmaeus)	329 13 361
zoo-housed orangutans (Pongo pygmaeus)	329 13 361
zoo-housed orangutans (Pongo pygmaeus) Temperature - indicators of thermal tolerance in pigs Time to death - indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared	32936119
zoo-housed orangutans (Pongo pygmaeus) Temperature - indicators of thermal tolerance in pigs Time to death - indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe)	32936119433
zoo-housed orangutans (Pongo pygmaeus) Temperature - indicators of thermal tolerance in pigs	32936119433439
zoo-housed orangutans (Pongo pygmaeus) Temperature - indicators of thermal tolerance in pigs	32936119433439
zoo-housed orangutans (Pongo pygmaeus) Temperature - indicators of thermal tolerance in pigs Time to death - indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe) The effect of transport stress on neutrophil activation in wild badgers (Meles meles) The effects of road traffic accidents on domestic cats and their owners The impact of the ethical review process for research using animals in the UK: attitudes to training	32936143343951
zoo-housed orangutans (Pongo pygmaeus) Temperature - indicators of thermal tolerance in pigs	32936143343951
zoo-housed orangutans (Pongo pygmaeus) Temperature - indicators of thermal tolerance in pigs Time to death - indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe) The effect of transport stress on neutrophil activation in wild badgers (Meles meles) The effects of road traffic accidents on domestic cats and their owners The impact of the ethical review process for research using animals in the UK: attitudes to training and monitoring by those working under the Animals (Scientific Procedures) Act 1986 The influence of a camouflage net barrier on the behaviour, welfare and public perception of	32936143343951
Temperature - indicators of thermal tolerance in pigs	3293614334395151
Temperature - indicators of thermal tolerance in pigs Time to death - indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe) The effect of transport stress on neutrophil activation in wild badgers (Meles meles) The effects of road traffic accidents on domestic cats and their owners The impact of the ethical review process for research using animals in the UK: attitudes to training and monitoring by those working under the Animals (Scientific Procedures) Act 1986 The influence of a camouflage net barrier on the behaviour, welfare and public perception of zoo-housed gorillas The influence of standard laboratory cages on rodents and the validity of research data	329361439515151
Temperature - indicators of thermal tolerance in pigs Time to death - indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe) The effect of transport stress on neutrophil activation in wild badgers (Meles meles) The effects of road traffic accidents on domestic cats and their owners The impact of the ethical review process for research using animals in the UK: attitudes to training and monitoring by those working under the Animals (Scientific Procedures) Act 1986 The influence of a camouflage net barrier on the behaviour, welfare and public perception of zoo-housed gorillas The influence of standard laboratory cages on rodents and the validity of research data The influence of toys on the behaviour and welfare of kennelled dogs	32936143951205111367
Temperature - indicators of thermal tolerance in pigs Time to death - indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe) The effect of transport stress on neutrophil activation in wild badgers (Meles meles). The effects of road traffic accidents on domestic cats and their owners The impact of the ethical review process for research using animals in the UK: attitudes to training and monitoring by those working under the Animals (Scientific Procedures) Act 1986 The influence of a camouflage net barrier on the behaviour, welfare and public perception of zoo-housed gorillas The influence of standard laboratory cages on rodents and the validity of research data The influence of toys on the behaviour and welfare of kennelled dogs The use of demand functions to assess behavioural priorities in farm animals	32936143951205111367
Temperature - indicators of thermal tolerance in pigs Time to death - indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe) The effect of transport stress on neutrophil activation in wild badgers (Meles meles) The effects of road traffic accidents on domestic cats and their owners The impact of the ethical review process for research using animals in the UK: attitudes to training and monitoring by those working under the Animals (Scientific Procedures) Act 1986 The influence of a camouflage net barrier on the behaviour, welfare and public perception of zoo-housed gorillas The influence of standard laboratory cages on rodents and the validity of research data The influence of toys on the behaviour and welfare of kennelled dogs The use of demand functions to assess behavioural priorities in farm animals	32936143951205111367
Temperature - indicators of thermal tolerance in pigs Time to death - indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe) The effect of transport stress on neutrophil activation in wild badgers (Meles meles) The effects of road traffic accidents on domestic cats and their owners The impact of the ethical review process for research using animals in the UK: attitudes to training and monitoring by those working under the Animals (Scientific Procedures) Act 1986 The influence of a camouflage net barrier on the behaviour, welfare and public perception of zoo-housed gorillas The influence of standard laboratory cages on rodents and the validity of research data The influence of toys on the behaviour and welfare of kennelled dogs The use of demand functions to assess behavioural priorities in farm animals Theory of mind The Neuroscience of Social Interaction: Decoding, Imitating, and Influencing the Actions of	32936143951205111S9367
Temperature - indicators of thermal tolerance in pigs	32936143951205111S9367
Temperature - indicators of thermal tolerance in pigs	32936143343951205111
Temperature - indicators of thermal tolerance in pigs Time to death - indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe) The effect of transport stress on neutrophil activation in wild badgers (Meles meles). The effects of road traffic accidents on domestic cats and their owners The impact of the ethical review process for research using animals in the UK: attitudes to training and monitoring by those working under the Animals (Scientific Procedures) Act 1986 The influence of a camouflage net barrier on the behaviour, welfare and public perception of zoo-housed gorillas The influence of standard laboratory cages on rodents and the validity of research data The influence of toys on the behaviour and welfare of kennelled dogs The use of demand functions to assess behavioural priorities in farm animals Theory of mind The Neuroscience of Social Interaction: Decoding, Imitating, and Influencing the Actions of Others (B) Thermoregulation - indicators of thermal tolerance in pigs	32936143343951205111
Temperature - indicators of thermal tolerance in pigs Time to death - indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe) The effect of transport stress on neutrophil activation in wild badgers (Meles meles). The effects of road traffic accidents on domestic cats and their owners The impact of the ethical review process for research using animals in the UK: attitudes to training and monitoring by those working under the Animals (Scientific Procedures) Act 1986 The influence of a camouflage net barrier on the behaviour, welfare and public perception of zoo-housed gorillas The influence of standard laboratory cages on rodents and the validity of research data The influence of toys on the behaviour and welfare of kennelled dogs The use of demand functions to assess behavioural priorities in farm animals Theory of mind The Neuroscience of Social Interaction: Decoding, Imitating, and Influencing the Actions of Others (B) Thermoregulation - indicators of thermal tolerance in pigs Time course of changes in egg-shell quality, faecal corticosteroids and behaviour as welfare measures in	3293614334395120511189367380329
Temperature indicators of thermal tolerance in pigs Time to death indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe) The effect of transport stress on neutrophil activation in wild badgers (Meles meles) The effects of road traffic accidents on domestic cats and their owners The impact of the ethical review process for research using animals in the UK: attitudes to training and monitoring by those working under the Animals (Scientific Procedures) Act 1986 The influence of a camouflage net barrier on the behaviour, welfare and public perception of zoo-housed gorillas The influence of stoys on the behaviour and welfare of kennelled dogs The use of demand functions to assess behavioural priorities in farm animals Theory of mind The Neuroscience of Social Interaction: Decoding, Imitating, and Influencing the Actions of Others (B) Thermoregulation indicators of thermal tolerance in pigs Time course of changes in egg-shell quality, faecal corticosteroids and behaviour as welfare measures in laying hens	3293614334395120511189367380329
Temperature indicators of thermal tolerance in pigs Time to death indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe) The effect of transport stress on neutrophil activation in wild badgers (Meles meles) The effects of road traffic accidents on domestic cats and their owners The impact of the ethical review process for research using animals in the UK: attitudes to training and monitoring by those working under the Animals (Scientific Procedures) Act 1986 The influence of a camouflage net barrier on the behaviour, welfare and public perception of zoo-housed gorillas The influence of standard laboratory cages on rodents and the validity of research data The influence of toys on the behaviour and welfare of kennelled dogs The use of demand functions to assess behavioural priorities in farm animals Theory of mind The Neuroscience of Social Interaction: Decoding, Imitating, and Influencing the Actions of Others (B) Thermoregulation indicators of thermal tolerance in pigs Time course of changes in egg-shell quality, faecal corticosteroids and behaviour as welfare measures in laying hens Tooth clipping	3293614334395120551367380329
Temperature indicators of thermal tolerance in pigs Time to death indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe) The effect of transport stress on neutrophil activation in wild badgers (Meles meles). The effects of road traffic accidents on domestic cats and their owners The impact of the ethical review process for research using animals in the UK: attitudes to training and monitoring by those working under the Animals (Scientific Procedures) Act 1986 The influence of a camouflage net barrier on the behaviour, welfare and public perception of zoo-housed gorillas The influence of toys on the behaviour and welfare of kennelled dogs The use of demand functions to assess behavioural priorities in farm animals Theory of mind The Neuroscience of Social Interaction: Decoding, Imitating, and Influencing the Actions of Others (B) Thermoregulation indicators of thermal tolerance in pigs Time course of changes in egg-shell quality, faecal corticosteroids and behaviour as welfare measures in laying hens Tooth clipping histological consequences of tooth shortening in piglets	3293614334395120551367380329
Temperature indicators of thermal tolerance in pigs Time to death indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe) The effect of transport stress on neutrophil activation in wild badgers (Meles meles). The effects of road traffic accidents on domestic cats and their owners The impact of the ethical review process for research using animals in the UK: attitudes to training and monitoring by those working under the Animals (Scientific Procedures) Act 1986. The influence of a camouflage net barrier on the behaviour, welfare and public perception of zoo-housed gorillas The influence of standard laboratory cages on rodents and the validity of research data. The influence of toys on the behaviour and welfare of kennelled dogs The use of demand functions to assess behavioural priorities in farm animals Theory of mind The Neuroscience of Social Interaction: Decoding, Imitating, and Influencing the Actions of Others (B) Time course of changes in egg-shell quality, faecal corticosteroids and behaviour as welfare measures in laying hens Tooth clipping histological consequences of tooth shortening in piglets Tooth grinding	32936143343951205367380329321
Temperature indicators of thermal tolerance in pigs Time to death indicators of insensibility and death in cetacea The ability of laying hens to negotiate perches of different materials with clean or dirty surfaces The assessment of bar chewing as an escape behaviour in laboratory mice The effect of blindfolding horses on heart rate and behaviour during handling and loading onto transport vehicles The effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos (Lama guanicoe) The effect of transport stress on neutrophil activation in wild badgers (Meles meles). The effects of road traffic accidents on domestic cats and their owners The impact of the ethical review process for research using animals in the UK: attitudes to training and monitoring by those working under the Animals (Scientific Procedures) Act 1986 The influence of a camouflage net barrier on the behaviour, welfare and public perception of zoo-housed gorillas The influence of toys on the behaviour and welfare of kennelled dogs The use of demand functions to assess behavioural priorities in farm animals Theory of mind The Neuroscience of Social Interaction: Decoding, Imitating, and Influencing the Actions of Others (B) Thermoregulation indicators of thermal tolerance in pigs Time course of changes in egg-shell quality, faecal corticosteroids and behaviour as welfare measures in laying hens Tooth clipping histological consequences of tooth shortening in piglets	32936143343951205367380329321

- toys and the welfare of kennelled dogs	367
Trade-offs between welfare, conservation, utility and economics in wildlife management — a review of conflicts, compromises and regulation	\$133
Trade policy	
- animal welfare standards and the OIE	S163
Training	
- ERP's impact on attitudes to training	
- Training non-human primates using positive reinforcement techniques (R)	2 4 9
- dog training methods	63
Transgenic	
- animal welfare considerations in biotechnology ethics	S139
Translocation	45
- movement and mortality of translocated grey squirrels	45
- blindfolding horses	433
- stress responses of guanacos to transport	439
- transport stress in wild badgers	
- The welfare of animals during transport: a report from the European Food Safety	455
Authority (R) Welfare of animals during transport (R)	
Trapping	
- body weight as a measure of stress	337
- evaluation of tranquilliser trap for dingo trapping	
Traps	
- welfare trade-offs in wildlife management	S133
Turkey poults - illuminance preferences of poults and ducklings	211
- multimance preferences or pourts and ducklings	LII
U	
UK legislation	
- ERP's impact on attitudes to training	205
United States Department of Agriculture: building bridges through innovative animal well-being initiatives	CITE
Urban	31/3
- movement and mortality of translocated grey squirrels	45
Using behaviour of assess animal welfare	
Using science to support ethical decisions promoting humane livestock slaughter and vertebrate pest	0107
controlUse of space	512/
ose of space - environmental complexity and activity in chickens	87
V	
Van de Vis JW, see Lambooij E	
Van Elsacker L, see De Vleeschouwer K	
Vertebrate pest - evaluation of tranquilliser trap for dingo trapping	393
Veterinary medicine	
- Shelter Medicine for Veterinarians and Staff (B)	460
Veterinary procedures	
- captive animal training	225
Veterinary studies - A CD-based animal welfare syllabus (R)	0.5
- Feline Behaviour: A Guide for Veterinarians, 2nd Edition (B)	
Veterinary surveillance	
- Veterinary surveillance strategy in the UK (R)	96
Veterinary treatment	
- effects of road traffic accidents on cats	51
Visitors - housing design and gorilla welfare	111
- nousing design and gorilla welfare	111
- recording of stress vocalisations	107
•	
W	
Waiblinger E and König B Refinement of gerbil housing and husbandry in the laboratory	S229
Warriss PD, see Knowles TG Wathes CM see Barber Cl	
Wathes CM, see Barber CL Watson R, see Parker R	
Webster AJF, Main DCJ and Whay HR Welfare assessment: indices from clinical observation	S93
• • • • • • • • • • • • • • • • • • • •	

Welfare aspects of chick handling in broiler and laying hen hatcheries	409
Welfare assessment	
- bar chewing as an escape behaviour in mice	19
- recording of stress vocalisations	107
Welfare assessment: indices from clinical observation	S93
Wells DL, see Blaney EC	
Wells DM The influence of toys on the behaviour and welfare of kennelled dogs	367
Wemelsfelder F and Farish M Qualitative categories for the interpretation of sheep welfare: a review	241
Whaling	201
- indicators of insensibility and death in cetacea	13
What causes crowding? Effects of space, facilities and group size on behaviour, with particular	
reference to furnished cages for hens	313
What factors should determine cage size for primates in the laboratory?	
Whay HR, see Webster AJF	
Wielebnowski N, see Shepherdson DJ	
Wild dog	
- evaluation of tranquilliser trap for dingo trapping	393
Wildlife	
- movement and mortality of translocated grey squirrels	45
Wildlife management	
- welfare trade-offs in wildlife management	\$122
Wildlife rehabilitation	3133
- A New Approach to Conservation (B)	162
Wilson ML, Bloomsmith MA and Maple TL Stereotypic swaying and serum cortisol concentrations in	20
three captive African elephants (Loxodonta africana)	39
World Trade Organisation - animal welfare standards and the OIE	6143
- animal welfare standards and the OIE	
V	
Y T. A. (1941)	
Yesildere T, see Anil MH	
Young RJ and Cipreste CF Applying animal learning theory: training captive animals to comply with	225
veterinary and husbandry procedures	225
_	
Z	
Zapata B, Gimpel J, Bonacic C, González BA, Riveros JL, Ramírez AM, Bas F and Macdonald DW The	
effect of transport on cortisol, glucose, heart rate, leukocytes and body weight in captive-reared guanacos	
(Lama guanicoe)	439
Zoo animals	
- Conservation, education, research, and ethical review in zoos (R)	
- International Zoo Yearbook, Volume 38 (B)	
- Zoo research guidelines: monitoring stress in zoo animals (R)	377
Zoos	
- assessment of stress responses in zoo animals	S105
- housing design and gorilla welfare	111
Zoos forum	
- Conservation, education, research, and ethical review in zoos (R)	247

Reports and comments index

A Strategy for Enhancing Veterinary Surveillance in the UK (DEFRA publication)	96
Best Practice Guidance (Deer Commission for Scotland publication)	97
Best Practice Guidelines for the Welfare of Broilers and Hens in Abattoirs (HSA publication)	455
Best Practice Guidelines for the Welfare of Cattle in Abattoirs (HSA publication)	455
Best Practice Guidelines for the Welfare of Pigs in Abattoirs (HSA publication)	
Concepts in Animal Welfare (WSPA & University of Bristol CD-ROM)	
Educating Humane Citizens: Farm Animal Welfare and the Curriculum (CIWF Trust publication)	
Emergency Slaughter: Practical Guidance on the Humane Killing of Injured, Diseased, and Non-Viable	
Livestock (HSA publication)	457
Equine Industry Guidelines Compendium for Horses, Ponies and Donkeys (ADAS Consulting publication)	
From House Mouse to Mouse House: The Behavioural Biology of Free-Living Mus musculus and	
its Implications in the Laboratory (Applied Animal Behaviour Science)	457
InterNICHE Policy on the Use of Animals and Alternatives in Education (InterNICHE publication)	248
Marking Amphibians, Reptiles and Marine Mammals: Animal Welfare, Practicalities and Public Perceptions	
in New Zealand (Massey University publication)	456
MRC Ethics Guide: Best practice in the Accommodation and Care of Primates Used in Scientific Procedures	
(MRC publication)	
Proceedings of a Workshop on Improving Sheep Welfare on Extensively Managed Flocks: Economics,	
Husbandry and Welfare (Macaulay Institute publication)	377
Reducing Injuries to Dairy Cattle (DEFRA publication)	458
Refinement and Reduction in Production of Genetically Modified Mice (BVAAWF/FRAME/RSPCA/	
UFAW Joint Working Group publication)	95
Refinements in Telemetry Procedures (BVAAWF/FRAME/RSPCA/UFAW Joint Working Group publication)	96
The Ethical Matrix: ethics and Animal Farming (CIWF Trust publication)	250
The Need for a Cross-species Approach to the Study of Pain in Animals (Journal of the American	
Veterinary Association)	376
The Report on Companion Animal Welfare Establishments: Sanctuaries, Shelters and Re-homing Centres	
(CAWC publication)	247
The Use of Non-human Animals in Research: A Guide for Scientists (Royal Society publication)	375
The Welfare of Animals During Transport (European Food Standards Authority publication)	376
The Welfare of Animals During Transport. Scientific Report of the Scientific Panel on Animal Health and	
Welfare on a Request from the Commission related to the Welfare of Animals During Transport	
(Question No EFSA-Q-2003-094) (EFSA publication)	455
Training Non-human Primates Using Positive Reinforcement Techniques (Applied Animal Welfare Science)	249
Zoo Research Guidelines: Monitoring Stress in Zoo Animals (Federation of Zoological Gardens of	
Great Britain and Ireland publication)	377
Zoos Forum Handbook (Zoos Forum publication)	247

Book and CD-ROM reviews index

Aitken G 2004 A New Approach to Conservation	463
Bate M 2002 Pain and Practical Pain Therapy. Proceedings from the AVERT and ANZCCART Conference,	
14-16 May 2001, Melbourne, Australia	101
Beaver BV 2003 Feline Behaviour: A Guide for Veterinarians, 2nd Edition	379
Cox \$ 2003 Precision Livestock Farming	
de Waal and Tyack PL 2003 Animal Social Complexity: Intelligence, Culture and Individual Societies	101
Frith CD and Wolpert DM 2004 The Neuroscience of Social Interactions: Decoding, Imitating and	
Influencing the Actions of Others	380
Influencing the Actions of Others	383
Gadd J 2003 Pig Production Problems: John Gadd's Guide to their Solutions	103
Hau J and van Hoosier Jr GL 2003 Handbook of Laboratory Animal Science, 2nd Edition —	
Volume 1: Essential Principles and Practices, and Volume 2: Animal Models	257
Jukes N and Chiuia M 2003 From Guinea Pig to Computer Mouse: Alternative Methods for a	
Progressive, Humane Education, 2nd Edition	
Landberg G, Hunthausen W and Ackerman L 2003 Handbook of Behavior Problems of the Dog and Cat, 2nd Edition	385
Miller L and Zawistowski S 2004 Shelter Medicine for Veterinarians and Staff	460
Olney PJS and Fisken FA 2003 International Zoo Yearbook, Volume 38	100
Over DE 2003 Evolution and the Psychology of Thinking: The Debate	251
Reader SM and Laland KN 2003 Animal Innovation	
Reeve R 2002 Policing International Trade in Endangered Species: The CITES Treaty and Compliance	
Regan T 2004 Empty Cages — Facing the Challenges of Animal Rights	462
Russel JA 2003 Pleasure (Cognition and Emotion Special Edition)	
Russo R 2003 Statistics for the Behavioural Sciences: An Introduction	252
Squires EJ 2003 Applied Animal Endocrinology	384
Taylor A 2003 Animals and Ethics: An Overview of the Philosophical Debate	99
Wynne CDL 2004 Do Animals Think?	459
Young RJ 2003 Environmental Enrichment for Captive Animals	461