

REFERENCES

- ◆ Adams N & Boice R 1981 Mouse (Mus) burrows: effects of age, strain, and domestication. *Animal Learning & Behavior* 9(1), 140-144
- ◆ Archer J 1973 Tests for emotionality in rats and mice: a review. *Animal Behaviour* 21, 205-235
- ◆ Ardila R, Rezk M, Polanco R, Pereira F 1977 Early handling, electric shock, and environmental complexity: effects on exploratory behavior, 'emotionality,' and body weight. *The Psychological Record* 2, 219-224
- ◆ Arnold CE & Estep DQ 1994 Laboratory caging preferences in golden hamsters (*Mesocricetus auratus*). *Laboratory Animals* 28, 232-238
- ◆ Barclay RJ, Herbert WJ, Poole TB 1988 The disturbance index. A behavioural method of assessing the severity of common laboratory procedures on rodents. UFAW Animal Welfare Research Report No 2 Published by: Universities Federation of Animal Welfare
- ◆ Barnett JL & Hemsworth PH 1990 The validity of physiological and behavioural measures of animal welfare. *Applied Animal Behaviour Science* 25, 177-187
- ◆ Barnett SA & Hocking WE 1981 Are nests built for fun? Effects of alternative activities on nest building by wild house mice. *Behavioral and Neural Biology* 31, 73-81
- ◆ Baumans V, Schlingmann F, Van Herck H, Boere HAG, Tolboom J Assessment of discomfort in the mouse by means of a balance device. *Proceedings of the 6th FELASA Symposium 1996, Basel*. In press
- ◆ Bayne K 1996 Normal and abnormal behaviors of laboratory animals: what do they mean? *Lab Animal* 25(1), 21-24
- ◆ Bayne KAL, Hurst JK, Dexter SL 1992 Evaluation of the preference to and behavioral effects of an enriched environment on male Rhesus monkeys. *Laboratory Animal Science* 42(1), 38-45
- ◆ Bayne KAL, Dexter SL, Hurst JK, Strange GM, Hill EE 1993 Kong® toys for laboratory primates: are they really enrichment or just fomites? *Laboratory Animal Science* 43(1), 78-85
- ◆ Bayne KAL, Strange GM, Dexter SL 1994 Influence of food enrichment on cage side preference. *Laboratory Animal Science* 44(6), 624-629
- ◆ Beaver BV 1989 Environmental enrichment for laboratory animals. *ILAR News* 31(2), 5-11
- ◆ Beilharz RG 1994 Does the notion of environmental enrichment assist animal well-being? In: *Improving the well-being of animals in the research environment*. Baker RM, Jenkin G, Mellor DJ (eds). *Proceedings of the ANZCCART conference 1993, Australia*. pp 139-141
- ◆ Benn DM 1995 Innovations in research animal care. *Journal of the American Veterinary Medical Association* 206(4), 465-468
- ◆ Bennett EL, Diamond MC, Krech D, Rosenzweig MR 1964 Chemical and anatomical plasticity of brain. Changes in brain through experience, demanded by learning theories, are found in experiments with rats. *Science* 146, 610-619
- ◆ Bergmann P, Militzer K, Büttner D 1994/95 Environmental enrichment and aggressive behaviour: influence on body weight and body fat in male inbred HLG mice. *Journal of Experimental Animal Science* 37, 69-78
- ◆ Beynen AC, Gärtner K, Van Zutphen LFM 1993 Standardization of animal experimentation. In: *Principles of laboratory animal science*. Van Zutphen LFM, Baumans V, Beynen AC (eds). Elsevier Science Publishers BV Amsterdam, The Netherlands. pp 101-108

- ◆ Birke LIA, D'Udine B, Albonetti ME 1985 Exploratory behavior of two species of murid rodents, *Acomys cahirinus* and *Mus musculus*: A comparative study. *Behavioral and Neural Biology* 43, 143-161
- ◆ Blom HJM 1993 Evaluation of housing conditions for laboratory mice and rats. PhD Thesis, Utrecht University, The Netherlands
- ◆ Blom HJM, Van Vorstenbosch CJAHV, Baumans V, Hoogervorst MJC, Beynen AC, Van Zutphen LFM 1992 Description and validation of a preference test system to evaluate housing conditions for laboratory mice. *Applied Animal Behaviour Science* 35, 67-82
- ◆ Blom HJM, Van de Weerd HA, Hoogervorst MJC, Schlingmann F, Baumans V, Beynen AC, Van Zutphen LFM 1993 Preferences for cage temperature in laboratory mice as influenced by the type of cage flooring. PhD Thesis, Utrecht University, The Netherlands
- ◆ Blom HJM, Van Tintelen G, Baumans V, Van den Broek J, Beynen AC 1995 Development and application of a preference test system to evaluate housing conditions for laboratory rats. *Applied Animal Behaviour Science* 43, 279-290
- ◆ Blom HJM, Van Tintelen G, Baumans V, Beynen AC 1996a Comparison of sawdust bedding and wire mesh as cage flooring in preference tests with laboratory rats. *Journal of Experimental Animal Science*. In press
- ◆ Blom HJM, Van Tintelen G, Van Vorstenbosch CJAHV, Baumans V, Beynen AC 1996b Preferences of mice and rats for type of bedding material. *Laboratory Animals* 30, 234-244
- ◆ Bloomsmith MA, Brent LY, Schapiro SJ 1991 Guidelines for developing and managing an environmental enrichment program for nonhuman primates. *Laboratory Animal Science* 41(4), 372-377
- ◆ Boice R 1977 Burrows of wild and albino rats: effects of domestication, outdoor raising, age, experience, and maternal state. *Journal of Comparative and Physiological Psychology* 91(3), 649-661
- ◆ Boissier J & Simon P 1962 La réaction d'exploration chez la souris. *Thérapie* 17, 1225-1232
- ◆ Brain P 1975 What does individual housing mean to a mouse? *Life Sciences* 16, 187-200
- ◆ Brain PF & Rajendram EA 1986 Nest-building in rodents: a brief cross-species review. In: *Cross-disciplinary studies on aggression*. Brain PF & Ramirez JM (eds). *Publicaciones de la Universidad de Sevilla*. pp 157-182
- ◆ Brantley PJ, Dietz LS, McKnight GT, Jones GN, Tulley R 1988 Convergence between the daily stress inventory and endocrine measures of stress. *Journal of Consulting and Clinical Psychology* 56(4), 549-551
- ◆ Broida J & Svare B 1982 Strain-typical patterns of pregnancy-induced nestbuilding in mice: maternal and experiential influences. *Physiology and Behavior* 25, 153-157
- ◆ Brooks DL, Huls W, Leamon C, Thomson J, Parker J, Twomey S 1993 Cage enrichment for female New Zealand White rabbits. *Lab Animal* 22(5), 30-38
- ◆ Broom DM 1986 Indicators of poor welfare. *British Veterinary Journal* 142, 524-526
- ◆ Broom DM 1988 The scientific assessment of animal welfare. *Applied Animal Behaviour Science* 20, 5-19
- ◆ Broom DM & Johnson KG 1993 *Stress and Animal welfare*. Chapman & Hall London, UK
- ◆ Buhot MC 1986 Nest-box exploration and choice in male and female mice tested under individual and social conditions. *Behavioural Processes* 13, 119-148
- ◆ Buhot MC 1987 Mouse exploration and choice of nestboxes differing in size. *Animal Learning & Behavior* 15(4), 382-394

- ◆ Buhot MC 1989 Exploration and choice by mice among nest boxes differing in size: influence of the inner and the outer dimensions. *The Quarterly Journal of Experimental Psychology* 41B(1), 49-64
- ◆ Buhot-Averseng MC 1981 Nest-box choice in the laboratory mouse: preferences for nest-boxes differing in design (size and/or shape) and composition. *Behavioural processes* 6, 337-384
- ◆ Bulthuis RJA, Bergman AF, Nijessen S, Schlingmann F, Tolboom J, Remie R, Van de Weerd HA, Van Loo PLP, Baumans V, Van Zutphen LFM Automated behaviour classification: the LABORAS project. *Proceedings of the 6th FELASA Symposium 1996, Basel*. In press
- ◆ Büttner D 1991 Climbing on the cage lid, a regular component of locomotor activity in the mouse. *Journal of Experimental Animal Science* 34, 165-169
- ◆ Büttner D 1993 Upright standing in the laboratory rat - Time expenditure and its relation to locomotor activity. *Journal of Experimental Animal Science* 36: 19-26
- ◆ Carlstead K, Brown JL, Monfort SL, Killens R, Wildt DE 1992 Urinary monitoring of adrenal responses to psychological stressors in domestic and nondomestic felids. *Zoo Biology* 11, 165-176
- ◆ Carlstead K, Brown JL, Strawn W 1993 Behavioral and physiological correlates of stress in laboratory cats. *Applied Animal Behaviour Science* 38, 143-158
- ◆ Chamove AS 1989a Environmental enrichment: a review. *Animal Technology* 40(3), 155-178
- ◆ Chamove AS 1989b Cage design reduces emotionality in mice. *Laboratory Animals* 23, 215-219
- ◆ Chmiel Jr DJ & Noonan M 1996 Preference of laboratory rats for potentially enriching stimulus objects. *Laboratory Animals* 30, 97-101
- ◆ Chvédoff M, Clarke MR, Irisarri E, Faccini JM, Monro AM 1980 Effects of housing conditions on food intake, body weight and spontaneous lesions in mice. A review of the literature and results of an 18-month study. *Food Cosmetics and Toxicology* 18, 517-522
- ◆ Clark MM & Galef BG 1980 Effects of rearing environment on adrenal weights, sexual development, and behavior in gerbils: an examination of Richter's domestication hypothesis. *Journal of Comparative and Physiological Psychology* 94(5), 857-863
- ◆ Clough G 1987 The animal house: design, equipment and environmental control. In: *The UFAW handbook on the care and management of laboratory animals*, 6th edition. Poole TB (ed). Longman Scientific & Technical Harlow, UK. pp 108-144
- ◆ Collier GH, Johnson DF, CyBulski KA, McHale CA 1990 Activity patterns in rats (*Rattus norvegicus*) as a function of the cost of access to four resources. *Journal of Comparative Psychology* 104(1), 53-65
- ◆ Cooper JJ & Nicol CJ 1991 Stereotypic behaviour affects environmental preference in bank voles, *Clethrionomys glareolus*. *Animal Behaviour* 41, 971-977
- ◆ Dahlborn K, Van Gils BAA, Van de Weerd HA, Van Dijk JE, Baumans V 1996 Evaluation of long-term environmental enrichment in the mouse. *Proceedings of the joint international conference of ICLAS, Scand-LAS and FinLAS 1995, Helsinki*. p 97-106
- ◆ Dawkins M 1981 Priorities in the cage size and flooring preferences of domestic hens. *British Poultry Science* 22, 255-263
- ◆ Dawkins MS 1983 Battery hens name their price: consumer demand theory and the measurement of ethological 'needs'. *Animal Behaviour* 31, 1195-1205
- ◆ Denenberg VH & Morton JRC 1962 Effects of environmental complexity and social groupings upon modification of emotional behavior. *Journal of Comparative and Physiological Psychology* 55(2), 242-246
- ◆ Devenport L, Dallas S, Carpenter C, Renner MJ 1992 The relationship between adrenal steroids and enrichment-induced brain growth. *Behavioral and Neural Biology* 58, 45-50

-
- ◆ Dorr M, Steinberg H, Tomkiewicz M, Joyce D, Porsolt RD, Summerfield A 1971 Persistence of dose related behaviour in mice. *Nature* 231, 121-123
 - ◆ Dudek BC, Adams N, Boice R, Abbott ME 1983 Genetic influences on digging behaviors in mice (*Mus musculus*) in laboratory and seminatural settings. *Journal of Comparative Psychology* 97(3), 249-259
 - ◆ Duncan IJH 1992 Measuring preferences and the strength of preferences. *Poultry Science* 71, 658-663
 - ◆ Engellenner WJ, Goodlett CR, Burrig RG, Donovan PJ 1982 Environmental enrichment and restriction: effects in reactivity, exploration and maze learning in mice with septal lesions. *Physiology & Behavior* 29, 885-893
 - ◆ Escorihuela RM, Tobena A, Fernández-Teruel A 1995 Environmental enrichment and postnatal handling prevent spatial learning deficits in aged hypoemotional (Roman High-avoidance) and hyperemotional (Roman Low-avoidance) rats. *Learning & Memory* 2, 40-48
 - ◆ Ferchmin PA, Bennett EL, Rosenzweig MR 1975 Direct contact with enriched environment is required to alter cerebral weights in rats. *Journal of Comparative and Physiological Psychology* 88(1), 360-367
 - ◆ Forgays DG & Forgays JW 1952 The nature of the effect of free-environmental experience in the rat. *Journal of Comparative and Physiological Psychology* 45, 322-328
 - ◆ Forgays DG & Read JM 1962 Crucial periods for free-environmental experience in the rat. *Journal of Comparative and Physiological Psychology* 55(5), 816-818
 - ◆ Fraser D 1995 Science, values and animal welfare: exploring the 'inextricable connection'. *Animal Welfare* 4, 103-117
 - ◆ Fraser D 1996 Preference and motivational testing to improve animal well-being. *Lab Animal* 25(1), 27-31
 - ◆ Gärtner K 1990 A third component causing random variability beside environment and genotype. A reason for the limited success of a 30 year long effort to standardize laboratory animals? *Laboratory Animals* 24, 71-77
 - ◆ Griebel G, Belzung C, Misslin R, Vogel E 1993 The free-exploratory paradigm: an effective method for measuring neophobic behaviour in mice and testing potential neophobia-reducing drugs. *Behavioural Pharmacology* 4, 637-644
 - ◆ Haemisch A & Gärtner K 1994 The cage design affects intermale aggression in small groups of male laboratory mice: strain specific consequences on social organization, and endocrine activations in two inbred strains (DBA/2J and CBA/J). *Journal of Experimental Animal Science* 36, 101-116
 - ◆ Haemisch A, Voss T, Gärtner K 1994 Effects of environmental enrichment on aggressive behavior, dominance hierarchies, and endocrine states in male DBA/2J mice. *Physiology & Behavior* 56(5), 1041-1048
 - ◆ Hart LA 1994 Opportunities for environmental enrichment in the laboratory. *Lab Animal* 23(2), 24-27
 - ◆ Hebb DO 1947 The effects of early experience on problem-solving at maturity. *The American Psychologist* 2, 306-307
 - ◆ Henderson ND 1970a Brain weight increases resulting from environmental enrichment: a directional dominance in mice. *Science* 169, 776-778
 - ◆ Henderson ND 1970b Genetic influences on the behavior of mice can be obscured by laboratory rearing. *Journal of Comparative and Physiological Psychology* 72(3), 505-511
 - ◆ Henderson ND 1972 Relative effects of early rearing environment and genotype on discrimination learning in house mice. *Journal of Comparative and Physiological Psychology* 79(2), 243-253
 - ◆ Henderson ND 1976 Short exposures to enriched environments can increase genetic variability of behavior in mice. *Developmental Psychobiology* 9(6), 549-553

- ◆ Henderson ND 1977 The role of motor learning and cage size in the early enrichment effect in mice. *Developmental Psychobiology* 10(5), 481-487
- ◆ Holson RR 1986 Feeding neophobia: a possible explanation for the differential maze performance of rats reared in enriched or isolated environments. *Physiology & Behavior* 38, 191-201
- ◆ Hubrecht RC 1993 A comparison of social and environmental enrichment methods for laboratory housed dogs. *Applied Animal Behaviour Science* 37, 345-361
- ◆ Hull EM, Kastaniotis C, L'Hommedieu G, Franz J 1976 Environmental enrichment and crowding: behavioral and hormonal effects. *Physiology & Behavior* 17, 735-741
- ◆ Huls WL, Brooks DL, Bean-Knudsen D 1991 Response of adult New Zealand White rabbits to enrichment objects and paired housing. *Laboratory Animal Science* 41(6), 609-612
- ◆ Hymovitch B 1952 The effects of experimental variations on problem solving in the rat. *Journal of Comparative and Physiological Psychology* 45, 313-321
- ◆ Jensen P & Toates FM 1993 Who needs 'behavioural needs'? Motivational aspects of the needs of animals. *Applied Animal Behaviour Science* 37, 161-181
- ◆ Joffe JM, Rawson RA, Mulick JA 1973 Control of their environment reduces emotionality in rats. *Science* 180, 1383-1384
- ◆ Juraska JM, Henderson C, Müller J 1984 Differential rearing experience, gender, and radial maze performance. *Developmental Psychobiology* 17(3), 209-215
- ◆ Kant GJ, Leu JR, Anderson SM, Mougey EH 1987 Effects of chronic stress on plasma corticosterone, ACTH and prolactin. *Physiology & Behavior* 40, 775-779
- ◆ Katz HB & Davies CA 1984 Effects of differential environments on the cerebral anatomy of rats as a function of previous and subsequent housing conditions. *Experimental Neurology* 83, 274-287
- ◆ Kiecolt-Glaser JK, Ricker D, George J, Messick G, Speicher CE, Garner W, Glaser R 1984 Urinary cortisol levels, cellular immunocompetency, and loneliness in psychiatric inpatients. *Psychosomatic Medicine* 46(1), 15-23
- ◆ Kingston SG & Hoffman-Goetz L 1996 Effect of environmental enrichment and housing density on immune system reactivity to acute exercise stress. *Physiology & Behavior* 60(1), 145-150
- ◆ Kiyono S, Seo ML, Shibagaki M, Inouye M 1985 Facilitative effects of maternal environmental enrichment on maze learning in rat offspring. *Physiology & Behavior* 34, 431-435
- ◆ Koolhaas JM, Baumans V, Blom HJM, Von Holst D, Timmermans PJA, Wiepkema PR 1993 Behaviour, stress and well-being. In: *Principles of laboratory animal science*. Van Zutphen LFM, Baumans V, Beynen AC (eds). Elsevier Science Publishers BV Amsterdam, The Netherlands. pp 75-99
- ◆ Kramer K, Van Acker SABE, Voss HP, Grimbergen JA, Van der Vijgh WJF, Bast A 1993 Use of telemetry to record electrocardiogram and heart rate in freely moving mice. *Journal of Pharmacological and Toxicological Methods* 30(4), 209-215
- ◆ Krech D, Rosenzweig MR, Bennett EL 1962 Relations between brain chemistry and problem-solving among rats raised in enriched and impoverished environments. *Journal of Comparative and Physiological Psychology* 55(5), 801-807
- ◆ La Torre JC 1968 Effect of differential environmental enrichment on brain weight and on acetylcholinesterase and cholinesterase activities in mice. *Experimental Neurology* 22, 493-503
- ◆ Laininger M 1989 Kann mit einfachen Verhaltenstests das Wohlbefinden von Labortieren beurteilt werden? Verhaltensuntersuchung am Beispiel der Ratte. Inaugural-dissertation Freien Universität Berlin, Germany

- ◆ Lea SEG & Roper TJ 1977 Demand for food on fixed-ratio schedules as a function of the quality of concurrently available reinforcement. *Journal of the Experimental Analysis of Behavior* 27(2), 371-380
- ◆ Lee CT 1972 The development of nest-building behavior in inbred mice. *Journal of General Psychology* 87, 13-21
- ◆ Lee CT 1973 Genetic analyses of nest-building behavior in laboratory mice (*Mus musculus*). *Behavior Genetics* 3(3), 247-256
- ◆ Lee CT & Wong PTP 1970 Temperature effect and strain differences in the nest-building behavior of inbred mice. *Psychonomic Science* 20(1), 9-10
- ◆ Line SW & Morgan KN 1991 The effects of two novel objects on the behavior of singly caged adult Rhesus Macaques. *Laboratory Animal Science* 41(4), 365-369
- ◆ Lisk RD, Pretlow RA, Friedman SM 1969 Hormonal stimulation necessary for elicitation of maternal nest-building in the mouse (*Mus musculus*) *Animal Behaviour* 17, 730-737
- ◆ Love JA 1994 Group housing: meeting the physical and social needs of the laboratory rabbit. *Laboratory Animal Science* 44(1), 5-11
- ◆ Lynch CB, Hegmann JP 1972 Genetic differences influencing behavioral temperature regulation in small mammals. I. Nesting by *Mus musculus*. *Behavior Genetics* 2(1), 43-53
- ◆ Lynch CB, Hegmann JP 1973 Genetic differences influencing behavioral temperature regulation in small mammals. II. Genotype-environment interactions. *Behavior Genetics* 3, 145-154
- ◆ Mackintosh JH 1973 Factors affecting the recognition of territory boundaries by mice (*Mus musculus*). *Animal Behaviour* 21, 464-470
- ◆ Mackintosh JH 1981 Behaviour of the house mouse. *Symposia of the Zoological Society London* 47, 337-365
- ◆ Manosevitz M 1970 Early environmental enrichment and mouse behavior. *Journal of Comparative and Physiological Psychology* 71(3), 459-466
- ◆ Manosevitz M & Montemayor RJ 1972 Interaction of environmental enrichment and genotype. *Journal of Comparative and Physiological Psychology* 79(1), 67-76
- ◆ Manosevitz M & Joel U 1973 Behavioral effects of environmental enrichment in randomly bred mice. *Journal of Comparative and Physiological Psychology* 85(2), 373-382
- ◆ Manosevitz M & Pryor JB 1975 Cage size as a factor in environmental enrichment. *Journal of Comparative and Physiological Psychology* 89(6), 648-654
- ◆ Manosevitz M, Campenot RB, Swencionis CF 1968 Effects of enriched environments upon hoarding. *Journal of Comparative and Physiological Psychology* 66(2), 319-324
- ◆ Manser CE 1992 The assessment of stress in laboratory animals. Published by RSPCA Horsham, UK
- ◆ Manser CE, Morris TH, Broom DM 1995 An investigation into the effects of solid or grid cage flooring on the welfare of laboratory rats. *Laboratory Animals* 29, 353-363
- ◆ Manser CE, Elliot H, Morris TH, Broom DM 1996. The use of a novel operant test to determine the strength of preference for flooring in laboratory rats. *Laboratory Animals* 30, 1-6
- ◆ Markowitz H & Gavazzi A 1995 Eleven principles for improving the quality of captive animal life. *Lab Animal* 24(4), 30-33
- ◆ Markowitz H & Line S 1990 The need for responsive environments. In: *The experimental animal in biomedical research*, vol I. Rollin BE (ed). CRC Press, USA. pp 153-170
- ◆ Matthews LR 1994 A new methodology for assessing the behavioural requirements of captive animals. In: *Improving the well-being of animals in the research environment*.

- Baker RM, Jenkin G, Mellor DJ (eds). Proceedings of the ANZCCART conference 1993, Australia. pp 143-146
- ◆ Mazurski EJ 1994 Handling and emotionality in laboratory rats. In: Improving the well-being of animals in the research environment. Baker RM, Jenkin G, Mellor DJ (eds). Proceedings of the ANZCCART conference 1993, Australia. pp 81-85
 - ◆ McFarland DJ 1977 Decision making in animals. *Nature* 269, 15-21
 - ◆ Mench JA 1994 Environmental enrichment and exploration. *Lab Animal* 23(2), 38-41
 - ◆ Minematsu S, Hiruta M, Taki M, Fujii Y, Aburada M 1991 Automatic monitoring system for the measurement of body weight, food and water consumption and spontaneous activity of a mouse. *The Journal of Toxicological Sciences* 16, 61-73
 - ◆ Mondragón R, Mayagoitia L, Lopéz-Luján A, Díaz JL 1987 Social structure features in three inbred strains of mice, C57BL/6J, BALB/cJ, and NIH: A comparative study. *Behavioral and Neural Biology* 47, 384-391
 - ◆ Mulder JB 1974 Bedding selection by rats. *Laboratory Animal Digest* (9), 27-30
 - ◆ Mulder JB 1975 Bedding preferences of pregnant laboratory-reared mice. *Behavior Research Methods & Instrumentation* 7(1), 21-22
 - ◆ Nagy ZM & Glaser HD 1970 Open-field behavior of C57BL/6J mice: effect of illumination, age, and number of test days. *Psychonomic Science* 19(3), 143-145
 - ◆ Newberry RC 1995 Environmental enrichment: increasing the biological relevance of captive environments. *Applied Animal Behaviour Science* 44, 229-243
 - ◆ Nolen GA & Alexander JC 1966 Effects of diet and type of nesting material on the reproduction and lactation of the rat. *Laboratory Animal Care* 16(4), 327-336
 - ◆ Norris ML & Adams CE 1976 Incidence of pup mortality in the rat with particular reference to nesting material, maternal age and parity. *Laboratory Animals* 10, 165-169
 - ◆ Novak MA, Rulf A, Munroe H, Parks K, Price C, O'Neill P, Suomi SJ 1995 Using a standard to evaluate the effects of environmental enrichment. *Lab Animal* 24(6), 37-42
 - ◆ Ödberg FO 1987 The influence of cage size and environmental enrichment on the development of stereotypies in bank voles (*Clethrionomys glareolus*). *Behavioural Processes* 14, 155-173
 - ◆ Orok-Edem E & Key D 1994 Response of rats (*Rattus norvegicus*) to enrichment objects. *Animal Technology* 45(1), 25-30
 - ◆ Ottoni EB & Ades C 1991 Resource location and structural properties of the nestbox as determinants of nest-site selection in the golden hamster. *Animal Learning and Behavior* 19(3), 234-240
 - ◆ Peng X, Lang CM, Drozdowicz CK, Ohlsson-Wilhelm BM 1989 Effect of cage population density on plasma corticosterone and peripheral lymphocyte populations of laboratory mice. *Laboratory Animals* 23, 302-306
 - ◆ Pennycuik PR 1973 Behaviour of mice housed in groups at 4, 21, and 33 °C. *Australian Journal of Biological Sciences* 26, 917-926
 - ◆ Peters A & Festing M 1990 Population density and growth rate in laboratory mice. *Laboratory Animals* 24, 273-279
 - ◆ Poole TB 1988 Behaviour, housing and welfare of non-human primates. In: New developments in biosciences: their implications for laboratory animal science. Beynen AC & Solleveld HA (eds). Martinus Nijhoff Publishers Dordrecht, The Netherlands. pp 231-237
 - ◆ Poole TB 1992 The nature and evolution of behavioural needs in mammals. *Animal Welfare* 1, 203-220
 - ◆ Porter G & Lane-Petter W 1965 The provision of sterile bedding and nesting materials with their effects on breeding mice. *Journal of the Animal Technician Association* 16, 5-8

-
- ◆ Prior H & Sachser N 1994/95 Effects of enriched housing environment on the behaviour of young male and female mice in four exploratory tasks. *Journal of Experimental Animal Science* 37, 57-68
 - ◆ Quirce CM & Maickel RP 1981 Alterations of biochemical parameters by acute and repetitive stress situations in mice. *Psychoneuroendocrinology* 6(1), 91-97
 - ◆ Rawleigh JM & Kemble ED 1992 Test-specific effects of FG-7142 on isolation-induced aggression in mice. *Pharmacology, Biochemistry and Behavior* 42, 317-321
 - ◆ Rawleigh JM, Kemble ED, Ostrem J 1993 Differential effects of prior dominance or subordination experience on conspecific odor preferences in mice. *Physiology & Behavior* 54, 35-39
 - ◆ Reinhardt V 1996 Frequently asked questions about safe pair-housing of macaques. *Animal Welfare Information Center Newsletter* 7(1), 11
 - ◆ Renner MJ 1987 Experience-dependent changes in exploratory behavior in the adult rat (*Rattus norvegicus*): overall activity level and interactions with objects. *Journal of Comparative Psychology* 101(1), 94-100
 - ◆ Renner MJ & Rosenzweig MR 1986a Object interactions in juvenile rats (*Rattus norvegicus*): effects of different experiential histories. *Journal of Comparative Psychology* 100(3), 229-236
 - ◆ Renner MJ & Rosenzweig MR 1986b Social interactions among rats housed in grouped and enriched conditions. *Developmental Psychobiology* 19(4), 303-313
 - ◆ Renner MJ & Hackett Renner C 1993 Expert and novice intuitive judgments about animal behavior. *Bulletin of the Psychonomic Society* 31(6), 551-552
 - ◆ Riley V 1981 Psychoneuroendocrine influences on immunocompetence and neoplasia. *Science* 212, 1100-1109
 - ◆ Roper TJ 1973 Nesting material as a reinforcer for female mice. *Animal Behaviour* 21, 733-740
 - ◆ Rose FD, Dell PA, Love S 1985 Behavioural consequences of different types of environmental enrichment in the rat. *IRCS Medical Science* 13, 748-749
 - ◆ Rose MA 1994 Environmental factors likely to impact on an animal's well-being - an overview. In: *Improving the well-being of animals in the research environment*. Baker RM, Jenkin G, Mellor DJ (eds). Proceedings of the ANZCCART conference 1993, Australia. pp 99-116
 - ◆ Rosenzweig MR 1966 Environmental complexity, cerebral change, and behavior. *American Psychologist* 21, 321-332
 - ◆ Rosenzweig MR & Bennett EL 1969 Effects of differential environments on brain weights and enzyme activities in gerbils, rats, and mice. *Developmental Psychobiology* 2(2), 87-95
 - ◆ Rosenzweig MR & Bennett EL 1972 Cerebral changes in rats exposed individually to an enriched environment. *Journal of Comparative and Physiological Psychology* 80(2), 304-313
 - ◆ Rosenzweig MR, Krech D, Bennett EL 1960 A search for relations between brain chemistry and behavior. *Psychological Bulletin* 57(6), 476-492
 - ◆ Rosenzweig MR, Krech D, Bennett EL, Diamond MC 1962 Effects of environmental complexity and training on brain chemistry and anatomy: a replication and extension. *Journal of Comparative and Physiological Psychology* 55(4), 429-437
 - ◆ Rosenzweig MR, Bennett EL, Hebert M, Morimoto H 1978 Social grouping cannot account for cerebral effects of enriched environments. *Brain Research* 153, 563-576
 - ◆ Ryszkowski L & Truszkowski J 1970 Survival of unweaned and juvenile bank voles under field conditions. *Acta Theriologica* 15(15), 223-232

- ◆ Saibaba P, Sales GD, Stodulski G, Hau J 1995 Behaviour of rats in their home cages: daytime variations and effects of routine husbandry procedures analysed by time sampling techniques. *Laboratory Animals* 30, 13-21
- ◆ Sandøe P & Simonsen HB 1992 Assessing animal welfare: where does science ends and philosophy begin? *Animal Welfare* 1, 257-267
- ◆ Scharmann W 1991 Improved housing of mice, rats and guinea-pigs: a contribution to the refinement of animal experiments. *ATLA* 19, 108-114
- ◆ Schleidt WM 1951 Nest und 'Zuflucht' bei Mäusen. *Zeitschrift für Tierpsychologie* 8, 137-140
- ◆ Schlingmann F, Van de Weerd HA, Baumans V, Remie R, Van Zutphen LFM. A balance device for the analysis of behavioural patterns of the mouse. Submitted
- ◆ Schneider CW & Chenoweth MB 1970 Effects of hallucinogenic and other drugs on the nest-building behaviour of mice. *Nature* 225, 1262-1263
- ◆ Sherwin CM & Nicol CJ 1995 Changes in meal patterning by mice measure the cost imposed by natural obstacles. *Applied Animal Behaviour Science* 43, 291-300
- ◆ Sluyter F, Bult A, Lynch CB, Van Oortmerssen GA, Koolhaas JM 1995 A comparison between house mouse lines selected for attack latency or nest-building: evidence for a genetic basis of alternative behavioral strategies. *Behavior Genetics* 25(3), 247-252
- ◆ Spinelli JS & Markowitz H 1985 Prevention of cage associated distress. *Lab Animal* 14(8), 19-24
- ◆ Stafleu FR, Rivas E, Rivas T, Vorstenbosch J, Heeger FR, Beynen AC 1992 The use of analogous reasoning for assessing discomfort in laboratory animals. *Animal Welfare* 1, 77-84
- ◆ Stauffacher M 1992 Group housing and enrichment cages for breeding, fattening and laboratory rabbits. *Animal Welfare* 1, 105-125
- ◆ Stauffacher M 1994 Improved husbandry systems - an ethological concept. *Proceedings of the 5th FELASA Symposium 1993, Brighton*. pp 68-73
- ◆ Stricklin WR 1995 Space as environmental enrichment. *Lab Animal* 24(4), 24-29
- ◆ Thiessen DD 1961 Mouse exploratory behavior and body weight. *The Psychological Record* 11, 299-304
- ◆ Thiessen DD, Zolman JF, Rodgers DA 1962 Relation between adrenal weight, brain cholinesterase activity, and hole-in-wall behavior of mice under different living conditions. *Journal of Comparative and Physiological Psychology* 55(2), 186-190
- ◆ Truszkowski J 1974 Utilization of nest boxes by rodents. *Acta Theriologica* 19(29), 441-452
- ◆ Van de Weerd HA & Baumans V 1995 Environmental enrichment in rodents. In: *Environmental Enrichment Information Resources for Laboratory Animals*. AWIC Resource Series no 2. pp 145-149
- ◆ Van de Weerd HA, Baumans V, Koolhaas JM, Van Zutphen LFM 1994 Strain specific behavioural response to environmental enrichment in the mouse. *Journal of Experimental Animal Science* 36, 117-127
- ◆ Van de Weerd HA, Van den Broek FAR, Baumans V 1996 Preference for different types of flooring in two rat strains. *Applied Animal Behaviour Science* 46, 251-261
- ◆ Van de Weerd HA, Van Loo PLP, Van Zutphen LFM, Koolhaas JM, Baumans V Preferences for nest boxes as environmental enrichment for laboratory mice. Submitted/a [Chapter 4 of this thesis]
- ◆ Van de Weerd HA, Van Loo PLP, Van Zutphen LFM, Koolhaas JM and Baumans V Long-term behavioural and physiological effects of nesting material as environmental enrichment for laboratory mice. Submitted/b [Chapter 6 of this thesis]

- ◆ Van de Weerd HA, Van Loo PLP, Van Zutphen LFM, Koolhaas JM, Baumans V Preferences for nesting material as environmental enrichment for laboratory mice. Accepted/a. Accepted for publication in *Laboratory Animals* [Chapter 3 of this thesis]
- ◆ Van de Weerd HA, Van Loo PLP, Van Zutphen LFM, Koolhaas JM, Baumans V Strength of preference for nesting material as environmental enrichment in laboratory mice. Accepted/b. Accepted for publication in *Applied Animal Behaviour Science* [Chapter 5 of this thesis]
- ◆ Van de Weerd HA, Bulthuis RJA, Bergman AF, Nijessen S, Schlingmann F, Tolboom J, Van Loo PLP, Remie R, Baumans V, Van Zutphen LFM Description and validation of a sensing platform for the automatic classification of mice and rat behaviour. In preparation
- ◆ Van den Broek FAR, Klomp maker H, Bakker R, Beynen AC 1995 Gerbils prefer partially darkened cages. *Animal Welfare* 4, 119-123
- ◆ Van Loo PLP, Van de Weerd HA, Baumans V 1996 Short and long term influence of an easy applicable enrichment device on the behaviour of the laboratory mouse. Proceedings of the joint international conference of ICLAS, Scand-LAS and FinLAS 1995, Helsinki. p 113-118
- ◆ Van Oortmerssen GA 1971 Biological significance, genetics and evolutionary origin of variability in behaviour within and between inbred strains of mice (*Mus musculus*). A behaviour genetic study. *Behaviour* 38, 1-92
- ◆ Van Rijzingen I 1995 Functional recovery after brain damage. Effects of environmental enrichment and ORG 2766 treatment. PhD Thesis, Utrecht University, The Netherlands
- ◆ Van Rijzingen IMS, Fermont PCJ, Hoogland M, Gispens WH, Spruijt BM. Environmental enrichment affects behavioural measures of adaptation in adult rats. Submitted
- ◆ Van Rooijen J 1980 Wahlversuche, eine ethologische Methode zum Sammeln von Messwerten, um Haltungseinflüsse zu erfassen und zu beurteilen. Aktuelle Arbeiten zur artgemässen Tierhaltung. *KTBL Schrift* 264, 165-185
- ◆ Van Rooijen J 1983/84 Preference tests, motivations, models and welfare. *Applied Animal Ethology* 11, 1-6
- ◆ Van Zutphen LFM, Hedrich HJ, Van Oortmerssen GA 1993 Genetic standardization. In: Principles of laboratory animal science. Van Zutphen LFM, Baumans V, Beynen AC (eds). Elsevier Science Publishers BV Amsterdam, The Netherlands. pp 127-142
- ◆ Veasey JS, Waran NK, Young RJ 1996 On comparing the behaviour of zoo housed animals with wild conspecifics as a welfare indicator. *Animal Welfare* 5, 13-24
- ◆ Von Holst D 1986 Vegetative and somatic components of tree shrew's behaviour. *Journal of the Autonomic Nervous System, supplement* 657-670
- ◆ Walsh RN & Cummins RA 1976 The open-field test: a critical review. *Psychological Bulletin* 83(3), 482-504
- ◆ Walsh RN 1981 Effects of environmental complexity and deprivation on brain anatomy and histology: a review. *International Journal of Neuroscience* 12, 33-51
- ◆ Ward GE & DeMille D 1991 Environmental enrichment for laboratory mice (*Mus musculus*). *Animal Technology* 42(3), 149-156
- ◆ Watson DSB 1993 Evaluation of inanimate objects on commonly monitored variables in preclinical safety studies for mice and rats. *Laboratory Animal Science* 43(4), 378-380
- ◆ Wechsler B 1995 Coping and coping strategies: a behavioural view. *Applied Animal Behaviour Science* 43, 123-134
- ◆ Weinert D 1994-96 Lower variability in female as compared to male laboratory mice: investigations on circadian rhythms. *Journal of Experimental Animal Science* 37, 121-137
- ◆ Wemelsfelder F 1990 Boredom and laboratory animal welfare. In: The experimental animal in biomedical research, vol I. Rollin BE (ed). CRC Press Florida, USA. pp 234-272

- ◆ Wemelsfelder F 1994 Animal boredom - A model of chronic suffering in captive animals and its consequences for environmental enrichment. *Humane Innovations and Alternatives* 8, 587-591
- ◆ Westerhof I, Lumeij JT, Mol JA, Van den Brom WE, Rijnberk A 1992 In vivo studies on the effects of ovine corticotrophin-releasing hormone, arginine vasotocin, arginine vasopressin, and haloperidol on adrenocortical function in the racing pigeon (*Columba livia domestica*). *General and Comparative Endocrinology* 88, 76-82
- ◆ Whary M, Peper R, Borkowski G, Lawrence W, Ferguson F 1993 The effects of group housing on the research use of the laboratory rabbit. *Laboratory Animals* 27, 330-341
- ◆ Widman DR & Rosellini RA 1990 Restricted daily exposure to environmental enrichment increases the diversity of exploration. *Physiology & Behavior* 47, 57-62
- ◆ Williams RA, Howard AG, Williams TP 1985 Retina damage in pigmented and albino rats exposed to low levels of cyclic light following a single mydriatic treatment. *Current Eye Research* 4, 97-102
- ◆ Wolfe JL & Barnett SA 1977 Effects of cold on nest-building by wild and domestic mice, *Mus musculus* L. *Biological Journal of the Linnean Society* 9, 73-85
- ◆ Würbel H, Stauffacher M, Von Holst D 1996 Stereotypies in laboratory mice - quantitative and qualitative description of the ontogeny of 'wire-gnawing' and 'jumping' in ICR and ICR nu - mice. *Ethology* 102. In press
- ◆ Young MS, Li YC, Lin MT 1993 A modularized infrared light matrix system with high resolution for measuring animal behaviors. *Physiology & Behavior* 53, 545-551