

CONTRIBUTORS

- ADER, R., *University of Rochester School of Medicine and Dentistry, Rochester, New York, U.S.A.*
- ADLER, J. H., *Hadassah Medical School, Jerusalem, Israel*
- ALBERT, Z., *Polish Academy of Science, Wrocław, Poland*
- VAN BEKKUM, D. W., *Radiobiological Institute TNO, Rijswijk Z.H., The Netherlands*
- BERTIN, R., *Laboratoire de Pharmacodynamie Biochimique, Collège de France, Paris, France*
- BLOOD, B., *Office of International Health, Public Health Service, Washington D.C., U.S.A.*
- BRONSON, F. H., *The Jackson Laboratory, Bar Harbor, Maine, U.S.A.*
- CADOT, M., *Laboratoire de Pharmacodynamie Biochimique, Collège de France, Paris, France*
- CHEVILLARD, L., *Laboratoire de Pharmacodynamie Biochimique, Collège de France, Paris, France*
- COSNIER, J., *Laboratoire de Psychophysiologie, Faculté des Sciences, Lyon, France*
- CUMMING, C. N. W., *Carworth Inc., New City, New York, U.S.A.*
- DEORAS, P. J., *Haffkine Institute, Bombay, India*
- DREPPER, K., *Institut für Veterinär-Biochemie der Freien Universität, Berlin, Germany*
- ELLIS, T. M., *M.R.C. Laboratory Animals Centre, Carshalton, Surrey, England*
- FLYNN, R. J., *Argonne National Laboratory, Illinois, U.S.A.*
- GAY, W. I., *Animal Resources Branch, National Institutes of Health, Bethesda, Maryland, U.S.A.*
- HEINECKE, H., *Deutsche Akademie der Wissenschaften zu Berlin, Institut für Mikrobiologie und Experimentelle Therapie, Jena, Germany*
- HOBIK, H. P., *Farbenfabriken Bayer AG, Wuppertal-Elberfeld, Germany*
- JELÍNEK, V., *Research Institute for Pharmacy and Biochemistry, Kouřímská 17, Prague, Czechoslovakia*
- JOUBERT, C. J., *National Nutrition Research Institute, Council for Scientific and Industrial Research, Pretoria, South Africa*
- KÁLLAI, L., *Laboratory Animals Institute, and Hungarian Academy of Sciences, Medical Radiological Research Institute, Budapest, Hungary*
- KRAFT, L. M., *School of Veterinary Medicine, University of Pennsylvania, Philadelphia, U.S.A.*
- LANE-PETTER, W., *I.C.L.A., Cromwell House, Huntingdon, England*
- LEMONDE, P., *Institut de Microbiologie et d'Hygiène, de l'Université de Montreal, Laval-les-Rapides, Canada*

- LOOSLI, R., *Tierfarm A.G., Sisseln, Switzerland*
MEISTER, G., *Farbenfabriken Bayer AG, Wuppertal-Elberfeld, Germany*
METZGER, K.-G., *Farbenfabriken Bayer AG, Wuppertal-Elberfeld, Germany*
NOMURA, T., *Central Institute for Experimental Animals, Tokyo, Japan*
PAYNE, P. R., *National Institute for Medical Research, Mill Hill, London, England*
PETRÁNYI, G., *Hungarian Academy of Sciences, Medical Radiological Research Institute, Budapest, Hungary*
PLEASANTS, J. R., *Lobund Laboratory, University of Notre Dame, Notre Dame, Indiana, U.S.A.*
PORTER, G., *M.R.C. Laboratory Animals Centre, Carshalton, Surrey, England*
QUARTERMAN, J., *The Rowett Research Institute, Bucksburn, Aberdeen, Scotland*
REDDY, B. S., *Lobund Laboratory, University of Notre Dame, Notre Dame, Indiana, U.S.A.*
RÜMKE, CHR. L., *Department of Pharmacology, Free University, Amsterdam, The Netherlands*
SCOTT, M. G., *Royal Veterinary College, London, England*
SCOTT, P. P., *University of London, Royal Free Hospital School of Medicine, London, England*
SHORT, D. J., *National Institute for Medical Research, Mill Hill, London, England*
SIMIONESCU, N., *Institute of Endocrinology, Bucharest, Rumania*
TAKAHASHI, H., *Central Institute for Experimental Animals, Tokyo, Japan*
TAVERNOR, W. D., *Royal Veterinary College Field Station, North Mimms, nr. Hatfield, Herts., England*
VAN DER WAALJ, D., *Radiological Institute TNO, Rijswijk Z.H., The Netherlands*
WHEATER, D. W. F., *Research Department, I.C.I. Pharmaceuticals Division, Alderley Park, Macclesfield, England*
WIDDOWSON, E. M., *Medical Research Council Department of Experimental Medicine, University of Cambridge, Cambridge, England*
WOSTMANN, B. S., *Lobund Laboratory, University of Notre Dame, Notre Dame, Indiana, U.S.A.*
YAMAUCHI, C., *Central Institute for Experimental Animals, Tokyo, Japan*

Participants in Discussions

- BATRA, B. KUMARI, *Indian Cancer Research Centre, Parel, Bombay, India*
BLEBY, J., *Laboratory Animals Centre, Medical Research Council Laboratories, Carshalton, Surrey, England*
BROWN, ANNIE, M., *Laboratory Animals Centre, Medical Research Council Laboratories, Carshalton, Surrey, England*
BÜHLMANN, J. R. Geigy S. A., Basle, Switzerland

- COHEN, B. J., *Animal Care Unit, Department of Physiology, University of Michigan, Ann Arbor, Michigan, U.S.A.*
- CONALTY, M. L., *Laboratories, Medical Research Council of Ireland, Trinity College, Dublin, Ireland*
- EPPER, C. E., *Comisión Nacional de Energía Atómica, Buenos Aires, Argentina*
- FRIEDMANN, J. C., *Institut de Recherches sur les Maladies du Sang, Hôpital St. Louis, Paris, France*
- FRIIS, C. W., *Animal Division, G1, Bomholtgard, Leven, Denmark*
- HEINE, W., *Zentralinstitut für Versuchstierzucht, Hannover-Linden, Germany*
- HILL, B. E., *La Société des Elevages Charles River France, St. Aubin-les-Elbeuf, France.*
- HIRSCHFELD, W. K., *Zootechnisch Instituut der Rijks Universiteit, Centraal Proefdierenbedrijf T.N.O., Utrecht, Netherlands*
- ILLMAN, O., *Field Laboratories, University of Sheffield, England*
- KREMER, ANNE M., *Zootechnisch Instituut der Rijks Universiteit, Centraal Proefdierenbedrijf T.N.O., Utrecht, Netherlands*
- KUNSTÝŘ, I., *Perštín 2, Prague, Czechoslovakia*
- LAVELLE, S., *Department of Experimental Medicine, University College, Galway, Ireland*
- MAISIN, J. H. F., *Institut du Cancer, Louvain, Belgium*
- MESHORER, A., *Diagnostic Laboratory, Laboratory Animals Breeding Centre, The Weizmann Institute of Science, Rehovoth, Israel*
- MØLLER NIELSEN, I., *H. Lundbeck & Co. A/S, Copenhagen/Valby, Denmark*
- MONTALENTI, G., *Istituto di Genetica, Città Universitaria, Rome, Italy*
- MÜHLBOCK, O., *The Netherlands Cancer Institute, Amsterdam, Netherlands*
- PATERSON, J. S., *Allington Farm, Porton Down, Salisbury, England*
- RODERIG, H., *Laboratory Animal Department, Hadassah Medical School, Hebrew University, Jerusalem, Israel*
- SABOURDY, M., *Centre de Sélection des Animaux de Laboratoire, C.N.R.S., Gif-sur-Yvette, S.-et-O., France*
- SEAMER, Dr. J., *Microbiological Research Establishment, Porton, Salisbury, England*
- ŠEDA, Dr. M., *Research Institute for Natural Drugs, Prague, Czechoslovakia*
- SPIEGEL, A., *Zentralinstitut für Versuchstierzucht, Hannover-Linden, Federal German Republic*
- WALKER, A. I. T., *Shell Research Ltd., Sittingbourne, Kent, England*
- WARD, R. J., *Research and Development Laboratories, Reckitt & Sons Ltd., Hull, Yorkshire, England*
- WHELDON, G. H., *Huntingdon Research Centre, Huntingdon, England*
- WILSON, C. W. M., *Department of Pharmacology, Trinity College, Dublin, Ireland*
- YAGER, R. H., *Institute of Laboratory Animal Resources, National Academy of Sciences, Washington, D.C., U.S.A.*

CONTENTS

Preface	v
Contributors	vii
Introduction by W. Lane-Petter	xv

Section 1. Handling, Production, Organization

Handling, Sexing and Palpating Laboratory Animals. DOUGLAS J. SHORT	3
Handling of Scorpions. P. J. DEORAS	17
Handling of Snakes. P. J. DEORAS	21
Assessment of Environmental Influence on the Biological Responses of the Animal. G. PORTER	29
A Technique of Skin Grafting in Rats and Rabbits. Gyöző PETRÁNYI JR., and LÁSZLÓ KÁLLAI	43
Large-scale Production of Mice and Rats in a Controlled Environment. C. N. WENTWORTH CUMMING	51
Selection, Training and Control of Staff. W. LANE-PETTER	61

Section 2. Nutrition

The Relationship between Protein and Calorie Requirements of Laboratory Animals. P. R. PAYNE	77
Vitamins in Nutrition of Laboratory Animals. V. JELÍNEK	97
The Importance of Trace Elements in the Nutrition of Laboratory Animals. JOHN QUARTERMAN	115
Total Nutritive Requirements for Small Laboratory Rodents (including Rodents Indigenous to South Africa). C. J. JOUBERT	133
The Relation of the Nutrition of the Young Animal to its Subsequent Growth, Fertility and Lactation. E. M. WIDDOWSON	147
Nutritive Requirements for Carnivora. PATRICIA P. SCOTT and M. G. SCOTT	163
Water-soluble, Non-antigenic Diets. BERNARD S. WOSTMANN, JULIAN R. PLEASANTS and BANDARU S. REDDY	187
Production of Diets for SPF and Germ-free Animals with Special Regard to Injury of the Protein Value Following Sterilization. K. DREPPER	207

Section 3. Ecology and Disease

The Influence of Psychological Factors on Disease Susceptibility in Animals. ROBERT ADER	219
Aspects of Stress in Animals. J. H. ADLER	239
Influence of Various Environmental Factors on Neoplastic Diseases. PAUL LEMONDE	255
Effect of Number of Animals per Cage on the Development of Spontaneous Neoplasms. ZYGMUNT ALBERT	275
Note on Ringtail in Rats. ROBERT J. FLYNN	285
Epidemiological Aspects of Disease in Laboratory Animals. LISBETH M. KRAFT	289

Section 4. Zoonoses and Other Diseases

Zoonoses in Common Laboratory Animals. ROLF LOOSLI	307
Zoonoses Problems and their Control in Laboratory Animal Colonies. WILLIAM I. GAY and BENJAMIN D. BLOOD	327
The Bacterial Flora of an SPF Colony of Mice, Rats and Guinea-pigs. D. W. F. WHEATER	343
The Control of Disease in Laboratory Animals. ROBERT J. FLYNN	361
Resident Infection in Laboratory Animal Colonies and their Influences on Experiments. D. VAN DER WAALJ and D. W. VAN BEKKUM	373
Comparative Bacteriological and Pathological Investigations on Commercially Available SPF-Animals. G. MEISTER, H. P. HOBIK and K.-G. METZGER	387

Section 5. Physiology. Psychophysiology

The Influence of Rearing Temperature on some Physiological Characteristics of Small Laboratory Animals (Homoeotherms). L. CHEVILLARD, R. BERTIN and M. CADOT	395
The Experimental Environment and its Influence on the Blood Picture of Laboratory Animals. HORST HEINECKE	447
Influence of Environmental Temperature on Physiological Functions of the Laboratory Mouse. TATSUJI NOMURA, CHUHEI YAMAUCHI and HIROSHI TAKAHASHI	459
Surgical Experimental Models in Endocrinology. NICOLAE SIMIONESCU	471
The Role of Certain Early Environmental Conditions on the Psychophysiological Development of Animals. J. COSNIER	493
Effects of Social Stimulation on Adrenal and Reproductive Physiology of Rodents. F. H. BRONSON	513

Section 6. Pharmacology. Pharmaco-Ecology

The Use and Abuse of Relaxant Drugs. W. D. TAVERNOR	545
Some Remarks on the Pharmacology of Anaesthesia. CHR. L. RÜMKE	557

CONTENTS

xiii

Environmental Influences on Drug Responses in Laboratory Animals. THERESA M. ELLIS	569
Pharmaco-Ecology and some Nutritional Paradoxes. L. KÁLLAI .. .	589
Author Index	615
Subject Index	635