Contents

List of Participants and Contributors XI
Preface XVIII

Session I. Porphyrin Biosynthesis and Drug Action
Chairman: T. R. Tephly (Iowa City, Iowa)

Maxwell, J. D. (London) and Meyer, U. A. (Zürich) : Drug Sensitivity in Hereditary Hepatic Porphyrinia 1
Fischer, P. W. F.; Krupa, V.; Taub, H.; Murphy, F. R.; Morgan, R., and Marks, G. S. (Kingston, Ont.): Effects of bis-(p-Nitrophenyl) Phosphate and SKF 525-A on the Activity of Porphyrin-Inducing Drugs 10
Barrio, E.; Enriquez De Salamanca, R.; Toni, P.; Yus, E. S.; Mas, V., and Catalan, T. (Madrid) : Effect of Stilbestrol on Hepatic Porphyrins in Rats 33

Session II. Regulation of Hepatic Heme Metabolism
Chairman: R. Schmid (San Francisco, Calif.)

De Matteis, F. (Surrey): Iron-Dependent Degradation of Liver Haem in vivo 37
Sweeney, G. D. (Hamilton, Ont.): Hepatic Catalase Activity during States of Altered Heme Synthesis 53

Contents VI

Unseld, A. and De Matteis, F. (Surrey): Isolation and Partial Characterisation of Green Pigments Produced in Rat Liver by 2-Allyl-2-Isopropylacetamide 71
Liem, H. H. and Muller-Eberhard, U. (La Jolla, Calif.): Effect of Allylisopro-pylacetamide on the Conversion of Heme (Ferrirprotoporphyrin IX) to Bilirubin in Rat Liver Perfusion in vitro 80
Session III. Enzymes of the Heme Pathway
Chairman: R. J. Porra (Canberra City)

Woods, J. S. (Research Triangle Park, N.C.): Studies on the Rate-Limiting Role of -Aminolevulinic Acid Synthetase in Heme Biosynthesis in Fetal Rat Liver 86
Eriksen, L. and Eriksen, N. (Oslo): Possible Pathways in Protoporphyrin Biosynthesis 105
Wagner, G. S.; Dinamarca, M. L., and Tephly, T. R. (Iowa City, Iowa): Studies on Ferrochelatase Activity: Role in Regulation of Hepatic Heme Biosynthesis 111

Session IV. Clinical Biochemistry of Protoporphyrina
Chairman: I. A. Magnus (London)

Nicholson, D. C. (London) and Zawirska, B. (Wroclaw): Porphyrin Production in Terminal Erythropoietic Protoporphiria 137
Labbe, R. F. and Nielsen, L. (Seattle, Wash.): Clinical-Biochemical Interpretations of Erythrocyte Protoporphyrin. Ferrochelatase-Pyridoxal Phosphate Studies . 141

Session V. Pharmacology and Neurochemistry of Porphyrin Precursors (ALA and PBG)
Chairman: U.A. Meyer (Zürich)

Moore, M. R.; McGillion, F. B., and Goldberg, A. (Glasgow): Some Pharmacological and Behavioral Effects of -Aminolaevulinic Acid 148

Contents VII

Session VI. Pathological Biochemistry of Hepatic Porphyrias
Chairman: M. R. Moore (Glasgow)

Bradlow, H. L. (Bronx, N.Y.); Anderson, K., and Kappas, A. (New York, N.Y.): Differences between Cutaneous and Hepatic Steroid 4-5a-Reductase in Patients with Acute Intermittent Porphyria 173
Bradlow, H. L. (Bronx, N.Y.) and Kappas, A. (New York, N.Y.): Metabolism of Testosterone in Variegate Porphyria and Porphyria cutanea tarda 179
Kreimer-Birnbaum, M. (Buffalo, N.Y.) and Tomio, M. J. (Los Angeles, Calif.): Studies on Uroporphyrinogen Synthase from Human Erythrocytes 182
Doss, M. and Schermuly, E. (Marburg a.d. Lahn): Urinary Porphyrin Excretion Pattern and Isomer Distribution of I and III in Human Porphyrin Disorders . 189
Irvine, D. G. and Wilson, D. L. (Saskatoon, Sask.): Oxidized Monopyrroles in Porphyric Disorders and Related Conditions...................................... 217
Haust, H. L.; Haines, D. S. M., and Braun, C. V. (London, Ont.): Some Factors Affecting Red Cell -Aminolaevulinic Acid Dehydrase Activity in Human Subjects 225

Session VII. Diagnosis and Therapy of Acute Intermittent Porphyria
Chairman: L. Wetterberg (Stockholm)

McEwin, R. (Sydney): Porphyria in Australia 233
Beattie, A. D. and Goldberg, A. (Glasgow): Acute Intermittent Porphyria. Natural History and Prognosis 245
Kostrzewska, E. (Warsaw): Incidence and Clinical Problems of Acute Intermittent Porphyria in Poland 255
Petryka, Z. J.; Dhar, G. J., and Bossenmaier, I. (Minneapolis, Minn.): Hematin Clearance in Porphyria 259
Bradlow, H. L. (Bronx, N.Y.) and Kappas, A. (New York, N.Y.): Alterations in Cortisol Metabolism in Patients with Acute Intermittent Porphyria 266
Kappas, A. (New York, N.Y.) and Bradlow, H. L. (Bronx, N.Y.): Metabolism of Progesterone and Etioclanolone in Patients with Acute Intermittent Porphyria 271
Kappas, A. (New York, N.Y.) and Bradlow, H. L. (Bronx, N.Y.): Enhancement of 5a-Steroid Hormone Metabolism in Patients with Acute Intermittent Porphyria Following Treatment with Triiodothyronine 274
Contents VIII

Mühler, E. (Saarbrücken) : Corticosteroid Therapy of Acute Intermittent Porphyria. Clinical Observations 277
Heilmann, E. and Müller, K.-M. (Münster): Clinical and Morphological Aspects of Acute Intermittent Porphyria 282

Session VIII. Clinical Biochemistry and Therapy of Chronic Hepatic Porphyrias
Chairmen: R. McEwin (Sydney) and N. R. Pimstone (Cape Town)

Doss, M.; Schermuly, E. (Marburg a.d. Lahn); Look, D., and Henning, H. (Mölln) : Enzymatic Defects in Chronic Hepatic Porphyrias 286
Topi, G. C. and D’Alessandro Gandolfo, L. (Rome) : Liver in Porphyria cutanea tarda 312
Look, D. (Mölln) and Doss, M. (Marburg a.d. Lahn): Fluorescence and Biochemical Findings in Liver Biopsies in Chronic Hepatic Porphyrias 325
Taylor, J. S. and Roenigk, H. H., jr. (Cleveland, Ohio): Estrogen-Induced Porphyria cutanea tarda symptomatica 328
Siklsi, Cs. and Simon, N. (Szeged) : Lipoid Malabsorption in Porphyria cutanea tarda hepatica 336
Janiš, J. (Bratislava): Changes of Serum Lipids in Chronic Hepatic Porphyrias 341
Van De Velde, R. (Kranenburg) and Doss, M. (Marburg a.d. Lahn): Chronic Hepatic Porphyrias in Chronic Liver Diseases. Patient Studies, Urinary Porphyrin Screening Procedure and Clinical Chemistry 344
Henning, H.; Vogel, H.-M. (Mölln), and Lüders, C. J. (Berlin): Serum Enzymes and Iron Levels in Chronic Hepatic Porphyrias 348
Horkay, I.; Stenszky, V.; Nagy, E.; TamAsi, P., and Szab, M. (Debrecen): Lymphocytotoxic Antibodies in Patients with Cutaneous Porphyrias 350
Lange, C.-E. ; Bloch, H. ; Veltman, G., and Doss, M. (Bonn) : Urinary Porphyrins Among PVC Workers 352
Kowertz, M. J. (Santa Clara, Calif.): Hepatocutaneous Recovery in Porphyria cutanea tarda 356
Gajdos, A. and Gajdos-Török, M. (Paris) : Treatment of Porphyria cutanea tarda with Adenosine 5'-Monophosphoric Acid 361
Petres, J.; Consbruch, U., and Hartmann, M. (Freiburg i.Br.): Clinical Study of the Effect of Pyridoxal 5'-Phosphate in Porphyria cutanea tarda 364

Session IX. Porphyrin Metabolism in Various Experimental Porphyrias
Chairman: R. F. Labbe (Seattle, Wash.)


Jones, K.; Magnus, I. A. (London), and Janoušek, V. (Prague): Environmental Lighting and Porphyrin Metabolism in the Rat 385


San Martín de Viale, L. C.; Calmanovici, R. W. de; Rios de Molina, M. del C., and Grinstein, M. (Buenos Aires): Porphyrin Metabolism in Experimental Lead Intoxication 398

Gajdos, A. and Gajdos-Török, M. (Paris): The Effect of an Inhibitor Isolated from Rhodopseudomonas spheroides on the Biosynthesis of Porphyrins by Homogenates of the Rat Liver 402

Session X. Experimental Chronic Hepatic Porphyria
Chairman: G. S. Marks (Kingston, Ont.)

Lui, H.; Sampson, R., and Sweeney, G. D. (Hamilton, Ont.): Hexachlorobenzene Porphyria. Purity and Metabolic Fate of Hexachlorobenzene 405


Elder, G. H.; Evans, J. O., and Matlin, S. (Cardiff): The Porphyrinogenic Action of Polychlorinated Hydrocarbons 424

Simon, N.; Siklisi, Cs., and Ksz, F. (Szeged): The Role of Damages in Cellular Membrane Structures in the Development of Porphyria cutanea tarda 432


San Martin de Viale, L. C.; Rios de Molina, M. del C.; Wainstok de Calmanovici,

Contents X

Session XI. Analytical Biochemistry of Porphyrins
Chairman: S. Schwartz (Minneapolis, Minn.)

Porra, R. J. and Skyring, G. W. (Canberra, ACT): The Isobacteriochlorin-Type Prosthetic Groups of Various Microbial Sulphite Reductases. Isolation, Properties and Problems Associated with Their Biosynthesis 459
With, T. K. (Svendborg): Decarboxylation of Uroporphyrin by Heating at Atmospheric Pressure 478
With, T. K. (Svendborg): An Easy Method for De-Metallation of Porphyrin Preparations, Controlled by Mass Spectrometry 481
Lim, C. K. and Stoll, M. S. (London): Identification of the Main Porphyrin Excreted in Hereditary Coproporphyria 486
With, T. K. (Svendborg): A Simplified System of Clinical Porphyrin Analysis of Urine and Feces Based on Thin-Layer Chromatography 492

Subject Index 500

The discussions and several short communications are published in a supplement to this volume by Dr. Falk GmbH, Freiburg i.Br., ‘Reports of the Discussions on Porphyrins in Human Diseases’, edited by M. Doss and Pola Nawrocki.

List of Participants and Contributors

Adjarov, D., Institute of Nutrition, Center of Hygiene at the Medical Academy, 1431—Sofia (Bulgaria)
D’Alessandro Gandolfo, L., Istituto S. Gallicano, I-00197 Rome (Italy)
Anderson, K., Montefiore Hospital, Bronx, NY 10467 (USA)
Anlauf, M., Medizinische Klinik, Abteilung für Nieren- und Hochdruckkranke, Universitätsklinikum
Essen, D-4300 Essen (FRG)
Atsmon, A., Beilinson Medical Center, Petah Tiqva (Israel)
Barrio, E., Institute of Experimental Medicine, Medical Faculty of the University,
Madrid (Spain)
Batlle, A. M. Del C., Department of Biochemistry, University, Buenos Aires (Argentina)
Beattie, A. D., Stobhill General Hospital, Department Materia Medica, University of
Glasgow, Glasgow G21 3UW (Scotland)
Beattie, D. S., Mount Sinai School of Medicine, City University of New York, New York,
NY 10029 (USA)
Becker, D. M., Department of Hematology, School of Pathology, University of Witwatersrand,
Johannesburg (South Africa)
Blekenhorst, G., Department of Medicine, University of Cape Town, Cape Town,
7900 (South Africa)
Bloch, H., Universitäts-Klinik für Hautkrankheiten, D-5300 Bonn-Venusberg (FRG)
Blum, I., Beilinson Medical Center, Petah Tiqva (Israel)
Böhm, S., Medizinische Klinik der Städtischen Krankenanstalten, D-6600 SaarbrückenWinterberg
(FRG)
Bradlow, H. L., Montefiore Hospital and Medical Center, Bronx, NY 10467 (USA)
Braun, C. V., Children’s Psychiatric Research Institute, London, Ont. (Canada)
Brodie, M. J., Stobhill General Hospital, Department Materia Medica, University of
Glasgow, Glasgow G21 3UW (Scotland)
Brugsch, J., Theodosius-Krankenhaus, D-1000 Berlin (FRG)
Calmanovici R. W. de, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos
Aires (Argentina)
Carlson, R. E., Department of Chemistry, University of British Columbia, Vancouver
(Canada)

List of Participants and Contributors XII

Catalan, T., Institute of Experimental Medicine, Medical Faculty of the University,
Madrid (Spain)
Chernev, K., Institute of Nutrition, Center of Hygiene at the Medical Academy, 1431
Sofia (Bulgaria)
Consbruch, U., Psychiatrische und Nervenklinik der Universität Freiburg, D-7800 Freiburg
(FRG)
Cueni, B., Stadtspital Waid, CH-8000 Zürich (Switzerland)
Dhar, G. J., Northwestern Hospital Minneapolis, University of Minnesota, Minneapolis,
MN 55407 (USA)
Dinamarca, M. L., Department of Pharmacology, Toxicology Center, University of Iowa,
Iowa City, IA 52242 (USA)
Dohmen, K., Medizinische Klinik, Abteilung für Nieren- und Hochdruckkranke, Universitätsklinikum Essen, D-4300 Essen (FRG)
Dolphin, D., Department of Chemistry, University of British Columbia, Vancouver (Canada)
Doss, M., Abteilung für Klinische Biochemie im Fachbereich Humanmedizin der Universität Marburg, D-3550 Marburg (FRG)
Druschky, K.-F., Nervenklinik der Universität Erlangen, D-8520 Erlangen (FRG)
Eales, L., Department of Medicine, University of Cape Town, Cape Town, 7900 (South Africa)
Elder, G. H., Department of Chemical Pathology, Welsh National School of Medicine, Cardiff CF4 4XN (England)
Eriksen, L., Institute of Physiology, University of Oslo, Oslo (Norway)
Eriksen, N., Institute of Physiology, University of Oslo, Oslo (Norway)
Evans, J. O., Welsh National School of Medicine, Cardiff CF4 4XN (England)
Falk, H., Freiburg im Breisgau (FRG)
Faust, V., Nervenklinik der Universität Freiburg, D-7800 Freiburg (FRG)
Ferramola, A. M., Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires (Argentina)
Fischer, P. W. F., Department of Pharmacology, Queens University, Kingston, Ont. (Canada)
Formgren, B., Department of Psychiatry, St. Gören’s Hospital, Karolinska Institute, S—112 81 Stockholm (Sweden)
Freyholtz, H., Department of Medicine, University of Minnesota, Minneapolis, MN 55455 (USA)
Fröhlich, J., Medizinische Klinik der Universität Freiburg, D-7800 Freiburg (FRG)
Gajdos, A., Faculty of Medicine, University of Paris, F-75017 Paris (France)
Gajdós-Török, M., Faculty of Medicine, University of Paris, F-75017 Paris (France)
Georgiev, G., Institute of Nutrition, Center of Hygiene at the Medical Academy, 1431 Sofia (Bulgaria)
Gerok, W., Medizinische Klinik der Universität Freiburg, D-7800 Freiburg (FRG)
Goldberg, A., Department of Materia Medica, Stobhill General Hospital, University of Glasgow, Glasgow G21 3UW (Scotland)
Gray, C. H., Department of Chemical Pathology, King’s College Hospital, Medical School University of London, London SE5 8RX (England)

List of Participants and Contributors XIII

Grinstein, M., Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires (Argentina)
Hartmann, M., Hautklinik der Universität Freiburg, D-7800 Freiburg (FRG)
Haust, H. L., Children’s Psychiatric Research Institute, London, Ont. (Canada)
Heilmann, E., Medizinische Poliklinik der Universität Münster, D-4400 Münster (FRG)
Henning, H., Klinik Föhrenkamp der BfA, D-2410 Mölln (FRG)
Hoevevar, V., Department of Surgery, Universitäts-Klinik, D-6900 Heidelberg (FRG)
Horkay, I., Department of Dermatology, University Medical School, 4012 Debrecen (Hungary)
Ihlenfeldt, J., Klinik Föhrenkamp der BfA, D-2410 Mölln (FRG)
Irvine, D. G., Psychiatric Research Unit, University Hospital, Saskatoon S7N OW8 (Canada)
Ivanov, E. D., Institute of Nutrition, Center of Hygiene at the Medical Academy, 1431 Sofia (Bulgaria)
Janis, J., Department of Clinical Biochemistry, Municipal Hospital, CS-800 00 Bratislava (Czechoslovakia)
Janousek, V., Department of Photobiology, Institute of Dermatology, London E9 6BX (England)
Jones, K., Department of Photobiology, Institute of Dermatology, London E9 6BX (England)
Kappas, A., The Rockefeller University New York, New York, NY 10021 (USA)
Klawitter, S., Medizinische Klinik der Städtischen Krankenanstalten, D-6600 Saarbrücken-Winterberg (FRG)
Koeman, J. H., Department of Toxicology, Agricultural University, Wageningen (The Netherlands)
Koskelo, P., Third Department of Medicine, Medical Faculty of the University, Helsinki (Finland)
Koss, G., Institut für Toxikologie und Pharmakologie der Universität Marburg, D-3550 Marburg (FRG)
Kostrzewska, E., Department of Surgery, Institute of Haematology, 00-957 Warsaw (Poland)
Ksz, F., Department of Dermatology, Medical School of the University, H-6701 Szeged (Hungary)
Kowertz, M. J., The Permanente Medical Group, Sunnyvale, CA 94087 (USA)
Kramer, S., Department of Hematology, School of Pathology, University of the Wit-watersrand, Johannesburg (South Africa)
Kreimer-Birnbaum, M., Department of Medicine, Medical College of Ohio at Toledo, Toledo, OH 43614 (USA)
Krupa, V., Department of Pharmacology, Queen’s University, Kingston, Ont. (Canada)
Krustev, L., Institute of Nutrition, Center of Hygiene at the Medical Academy, 1431 Sofia (Bulgaria)
Labbé, R. F., Department of Laboratory Medicine, University of Washington, Seattle, WA 98195 (USA)
Lang, E., FA für Gynäkologie, Weiden (FRG)
Lange, C. E., Universitätsklinik für Hautkrankheiten, D-5300 Bonn-Venusberg 1 (FRG)
Leitner, H., Medizinische Klinik des Städtischen Krankenhauses, D-7530 Pforzheim
List of Participants and Contributors XIV

Liem, H. H., Department of Biochemistry, Scripps Clinic Research Foundation, La Jolla, CA 92037 (USA)
Lim, C. K., Department of Chemical Pathology, King’s College Hospital, Medical School, University of London, London SE5 8RX (England)
Llambias, E. B. C., Department of Biochemistry, University of Buenos Aires, Buenos Aires (Argentina)
Lockwood, W. H., Department of Chemical Pathology, Royal Postgraduate Medical School, London W. 12 (England)
Look, D., Klinik Föhrenkamp der BfA, D-2410 Mölln (FRG)
Lüders, C. J., Pathologisches Institut des Städtischen Wenckebach-Krankenhauses, D-1000 Berlin (FRG)
Lui, H., Medical Centre, McMaster University, Hamilton, Ont. (Canada)
Magnus, I. A., Department of Photobiology, Institute of Dermatology, University of London, London SE5 8RX (England)
Maines, D. S. M., Children’s Psychiatric Research Institute, London, Ont. (Canada)
Maines, M. D., The Rockefeller University New York, New York, NY 10021 (USA)
Marks, G. S., Department of Pharmacology, Queen’s University, Kingston, Ont. (Canada)
Mas, V., Institute of Experimental Medicine, Medical Faculty of the University, Madrid (Spain)
Matlin, S., Welsh National School of Medicine, Cardiff CF4 4XN (England)
DeMatteis, F., Toxicology Unit, Medical Research Council, Carshalton (England)
Maxwell, J. D., Department of Medicine, St. George’s Hospital, London (England)
McEwin, R., Health Commission, Sydney, NSW 2000 (Australia)
McGillon, F. B., Department of Materia Medica, Stobhill General Hospital, University of Glasgow, Glasgow G21 3UW (Scotland)
Meyer, U. A., Abteilung für Klinische Pharmakologie, Medizinische Universitätsklinik des Kantonsspitals, CH-8091 Zürich (Switzerland)
Moore, M. R., Stobhill General Hospital, University of Glasgow, Glasgow G21 3UW (Scotland)
Morgan, R., Department of Pharmacology, Queen’s University, Kingston, Ont. (Canada)
Mühler, E., Neurologische Klinik der Städtischen Krankenanstalten, D-6600 Saarbrücken-Winterberg (FRG)
Müller, K.-M., Pathologisches Institut der Universität Münster, D-4400 Münster (FRG)
Muller-Eberhard, U., Department of Biochemistry, Scripps Clinic and Research Foundation, La Jolla, CA 92037 (USA)
Murphy, F., Department of Pharmacology, Queen’s University, Kingston, Ont. (Canada)
Nagy, E., Department of Dermatology, University Medical School, 4012 Debrecen
Nawrocki, P., Abteilung für Klinische Biochemie im Fachbereich Humanmedizin der Universität Marburg, D-3350 Marburg (FRG)

Neethling, A. C., Department of Chemical Pathology, University of Stellenbosch, Tygerberg Hospital, Tiervlei, Cape (South Africa)

Nicholson, D. C., Department of Chemical Pathology, King's College Hospital, Medical School, London SE5 8RX (England)

Nielsen, L., Department of Laboratory Medicine, University of Washington, Seattle, WA 98195 (USA)

Padmanaban, G., Department of Biochemistry, Indian Institute of Science, Bangalore 560012 (India)

Patton, G. M., Department of Biochemistry, Mount Sinai School of Medicine, New York, NY 10029 (USA)

Pausch, J., Medizinische Klinik der Universität Freiburg, D-7800 Freiburg (FRG)

Percy, V. A., Department of Chemical Pathology, University of Stellenbosch, Tygerberg Hospital, Tiervlei, Cape (South Africa)

Petres, J., Universitätsklinik für Hautkrankheiten, D-7800 Freiburg (FRG)

Petryka, Z. J., Northwestern Hospital Minneapolis, University of Minnesota, Minneapolis, MN 55407 (USA)

Pimstone, N., Department of Medicine, University of Cape Town, Cape Town 7900 (South Africa)

Porra, R. J., Division of Plant Industry, CSIRO, Canberra City, ACT 2601 (Australia)

Rajamanickam, C., Department of Biochemistry, Indian Institute of Science, Bangalore 560012 (India)

Reutter, W., Institut für Biochemie der Universität Freiburg, D-7800 Freiburg (FRG)

Rfos de Molina, M. del C., Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires (Argentina)

Roenigk, H. H., jr., Department of Dermatology, Cleveland Clinic, Cleveland, OH 44106 (USA)

Ruge, W., Abteilung für Stoffwechselkrankheiten, Medizinische Hochschule Hannover, Oststadtkrankenhaus, D-3000 Hannover (FRG)

Runge, W., Department of Medicine, University of Minnesota, Minneapolis, MN 55455 (USA)

de Salamanca, R. E., Institute of Experimental Medicine, Medical Faculty of the University, Madrid (Spain)

Sampson, R., Medical Centre, McMaster University, Hamilton, Ont. (Canada)

Sancovich, H. A., Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires (Argentina)

Sanwald, R., Medizinische Klinik des Städtischen Krankenhauses, D-7530 Pforzheim
San Martín de Viale, L. C., Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires (Argentina)
Sardana, M. K., Department of Biochemistry, Indian Institute of Science, Bangalore 560012 (India)
Sarkar, D., Department of Medicine, University of Minnesota, Minneapolis, MN 55455 (USA)
Schäfer, P., Verlag S. Karger AG, CH-4011 Basel (Switzerland)
Schermuly, E., Abteilung für Klinische Biochemie im Fachbereich Humanmedizin der Universität Marburg, D-3550 Marburg (FRG)
Schoenfeld, N., Beilinson Medical Center, Petah Tiqva (Israel)
Schmid, R., San Francisco Medical Center, University of San Francisco, CA 94117 (USA)
Schneider, H. J., Botanisches Institut der Universität Köln, D-5000 Köln (FRG)
Schwartz, S., Department of Medicine, University of Minnesota, Minneapolis, MN 55455 (USA)
Seubert, A., Hautklinik der Universität Göttingen, Göttingen (FRG)

List of Participants and Contributors XVI

Shanley, B. C., Department of Chemical Pathology, Tygerberg Hospital, Tiervlei, Cape Town (South Africa)
Siklsi, C., Department of Dermatology, Medical School of the University, H-6701 Szeged (Hungary)
Simon, N., Department of Dermatology, Medical School of the University, H-6701 Szeged (Hungary)
Skyrning, G. W., Division of Plant Industry, CSIRO, Canberra City, ACT 2601 (Australia)
Smith, A., Department of Chemical Pathology, King’s College Hospital, Medical School, London SE5 8RX (England)
Sweeney, G. D., McMaster University, Medical Center, Hamilton, Ont. (Canada)
Szab, M., Department of Dermatology, University Medical School, 4012 Debrecen (Hungary)
Stephenson, B., Department of Medicine, University of Minnesota, Minneapolis, MN 55455 (USA)
Stenszky, V., Department of Dermatology, University Medical School, 4012 Debrecen (Hungary)
Stoll, M. S., Department of Chemical Pathology, King’s College Hospital, Medical School, London SE5 8RX (England)
Strik, J. J. T. W. A., Department of Toxicology, Agricultural University, Wageningen (The Netherlands)
Tamasi, D., Department of Dermatology, University Medical School, 4012 Debrecen (Hungary)
Taub, H., Department of Pharmacology, Queen’s University, Kingston, Ont. (Canada)
Taylor, J. S., Department of Dermatology, Cleveland Clinic, Cleveland, OH 44106 (USA)
Tephly, T. R., Department Pharmacology, Toxicology Center, University of Iowa, Iowa City, IA 52242 (USA)
Theuer, D., Medizinische Hochschule Hannover, D-3000 Hannover-Kleefeld (FRG)
Tiepermann, R. von, Abteilung für Klinische Biochemie im Fachbereich Humanmedizin der Universität Marburg, D-3550 Marburg (FRG)
Tigier, H. A., Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires (Argentina)
Tomio, M., University of California, Department of Biochemistry, Los Angeles, CA 90014 (USA)
Toni, P., Institute of Experimental Medicine, Medical Faculty of the University, Madrid (Spain)
Topi, G., Istituto S. Gallicano, I-00197 Rome (Italy)
Unseld, A., Toxicology Unit, Medical Research Council, Carshalton (England)
Van de Velde, R., Spezialabteilung für Leber- und Stoffwechselkrankene beim St.-Johannes-Hospital, D-4193 Kranenburg bei Kleve (FRG)
Veltman, G., Universitätsklinik für Hautkrankheiten, D-5300 Bonn-Venusberg (FRG)
ViLoen, I. D., Department of Hematology, School of Pathology, University of the Witwatersrand, Johannesburg (South Africa)
Vogel, H. M., Klinik Föhrenkamp der BfA, Mölln (FRG)
Wagner, G. S., Department of Pharmacology, Toxicology Center, University of Iowa, Iowa City, IA 52242 (USA)

List of Participants and Contributors XVII

Watson, C. J., Northwestern Hospital Minneapolis, University of Minnesota, Minneapolis, MN 55407 (USA)
Wetterberg, L., Department of Psychiatry, Karolinska Institute, St. Gorans Hospital, S—112 81 Stockholm (Sweden)
Wider de Xifra, E. A., Department of Biochemistry, University of Buenos Aires, Buenos Aires (Argentina)
Wilson, D. L., Psychiatric Research Unit, University Hospital, Saskatoon, Sask. S7N 0008 (Canada)
With, T. K., Svendborg Hospital, Svendborg Sygehus, DK-5700 Svendborg (Denmark)
Woods, J. S., Biochemical Toxicology Section, National Institute of Environmental Health Sciences, Research Triangle Park, NC 27709 (USA)
Yehoshua, H., Beilinson Medical Center, Petah Tiqva (Israel)
Yus, E. S., Institute of Experimental Medicine, Medical Faculty of the University, Madrid (Spain)
Zawirska, B., Department of Chemistry, King’s College Hospital, Medical School,
Fortunate circumstances were largely responsible for the scheduling of the First International Porphyrin Meeting on Porphyrins in Human Diseases, May 1st to 4th, 1975, held in Freiburg im Breisgau so unexpectedly soon after the International Research Conference on Regulation of Porphyrin and Heme Biosynthesis in Summer of 1973 in Marburg an der Lahn. The present Meeting, whose scientific preparation and organization were again in the hands of the Clinical Biochemistry Research Unit of the Faculty of Medicine of the Philipps University in Marburg, blossomed like the one in Marburg into a scientific event worthy of the name through the active cooperation and participation of a large group of well-known scientists from all over the world.

Whereas the conference in Marburg in 1973 was devoted mainly to basic research on porphyrin and heme biosynthesis, the Freiburg Meeting centered around the clinical biochemistry of the porphyrias, including diagnosis and treatment. Papers on porphyrin metabolism under experimental conditions, on synopsis and interdependence of porphyrin synthesis and heme catabolism, contributions to clinical pharmacology and hepatology, enzymology and analytical biochemistry were oriented around the central topic of the meeting.

The Proceedings of the Freiburg Meeting can be regarded with justification complementing the Proceedings of the Marburg Conference1, which appeared in 1974 with the same publishers, for the basic research reported in Freiburg was focussed largely on topics of direct pathobiochemical and clinical relevance. Both the Marburg Conference in 1973 and the Freiburg Meeting in 1975 demonstrate convincingly the intensive pace with which porphyrin research is moving ahead. Some aspects of great importance in environmental research, such as the study of the effects of lead and of various organic noxae on porphyrin and heme formation, have barely been scratched on the surface.

It was a major goal of this Meeting to crystallize out the quintessence of the achievements of experimental and clinical medicine in understanding porphyrias. In spite of the expansion of the scope of porphyrina research through the intensification of Clinical Biochemistry, providing essential new information, new challenges are provided by the unresolved problems of

1 Doss, M. (ed.): Regulation of porphyrin and heme biosynthesis (Karger, Basel 1974). Preface XIX
enzymology and biochemical genetics of porphyrias, necessitating fresh approaches.

The contents of the Proceedings are arranged in accordance with the twelve sessions which formed the backbone of the conference. For technical reasons, the discussions of the individual sessions and the general open discussion (Session XII), as well as several short communications, most of which originated during the discussion itself, appear in a supplementary volume through the cooperation of Dr. Dr. Herbert Falk2. I would like to express my sincere gratitude to the Session Chairmen for their excellent cooperation: Dr. T. R. Tephly, USA (I. Porphyrin Biosynthesis and Drug Action), Dr. Rudi Schmid, USA (II. Regulation of Hepatic Heme Metabolism), Dr. R. J. Porra, Australia (III. Enzymes of the Heme Pathway), Dr. I. A. Magnus, UK (IV. Clinical Biochemistry of Protoporphyrin), Dr. U. A. Meyer, Switzerland (V. Pharmacology and Neurochemistry of Porphyrin Precursors), Dr. M. R. Moore, Scotland (VI. Pathological Biochemistry of Hepatic Porphyrias), Dr. L. Wetterberg, Sweden (VII. Diagnosis and Therapy of Acute Intermittent Porphyria), Dr. R. McEwin, Australia and Dr. N. R. Pimstone, South Africa (VIII. Clinical Biochemistry and Therapy of Chronic Hepatic Porphyrias), Dr. R. F. Labbe, USA (IX. Porphyrin Metabolism in Various Experimental Porphyrias), Dr. G. S. Marks, Canada (X. Experimental Chronic Hepatic Porphyria), and Dr. S. Schwartz, USA (XI. Analytical Biochemistry of Porphyrins).

The prerequisites for initiating and stimulating would not have been met without the continuous support of our work in Marburg by the German Research Society (Deutsche Forschungsgemeinschaft) over the past several years. For this reason I find it appropriate to express my gratitude to the Deutsche Forschungsgemeinschaft here for its faithful and continuous support.


Preface XX

of the scientific program of our Research Unit. On the same note, this conference, let alone this Proceedings volume (including the supplement with the Reports of the Discussions), would never have come to be without the generous organization of the Meeting in Freiburg by Dr. Herbert Falk. I am convinced that he has provided a resonant accent for the further ‘induction’ of porphyrin research. In the name of all participants I wish to express my sincere thanks for his sponsoring this meeting and for the personal attention which he has given all the scientific contributions and the publication of the Proceedings.
Marburg an der Lahn, April 1975 Manfred Doss