

1981 ANNUAL REPORT
DEPARTMENT OF PATHOLOGY
KINGSTON GENERAL HOSPITAL

PERSONNEL

Dr. D.M. Robertson	Pathologist-in-Chief
Dr. H.D. Steele	Director of Laboratories
Dr. W.E.N. Corbett	Associate Director of Laboratories Hematology
Dr. G.F. Kipkie	Surgical Pathology
Dr. P. Chadwick	Microbiology
Dr. A.F. Clark	Biochemistry
Dr. G.J. Delisle	Microbiology
Dr. W.A. Fletcher	Pediatric Pathology Cytology
Dr. P. Ford	Immunopathology
Dr. A.R. Giles	Blood Bank
Dr. J. Holden	Cytogenetics
Dr. R. Kisilevsky	Anatomical Pathology
Dr. S.K. Ludwin	Neuropathology
Dr. P.N. Manley	Anatomical Pathology
Dr. S. Nag	Neuropathology
Dr. M.J. Raymond	Biochemistry
Dr. R. Stewart	Virology
Dr. J.C. Wyllie	Anatomical Pathology

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Dr. Nathan Kaufman, former Pathologist-in-Chief at Kingston General Hospital, and former Professor and Head of the Department of Pathology, Queen's University, was appointed an Honorary Member of the Medical Staff at Kingston General Hospital by the Board of Governors. In addition, Dr. Kaufman was appointed Professor Emeritus of Pathology at Queen's University, effective July 1, 1981.

Principal Watts of Queen's University announced that Dr. A.F. Clark, Associate Professor of Pathology, Queen's University, was appointed Associate Dean for Research, Faculty of Medicine, for the term September 1, 1981, to June 30, 1984. Dr. Clark assumed his duties on a part-time basis while maintaining his other work as Clinical Chemist at Kingston General Hospital, and Professor of Biochemistry at Queen's University.

Certain changes were made in the supervisory responsibilities for the technical laboratories of the Department of Pathology effective October 1, 1981. Dr. W.A. Fletcher became Supervisor of Cytology. Dr. S.K. Ludwin became Supervisor of the Diagnostic Neuropathology Laboratory. Dr. S. Nag became Supervisor of the In-Common Electron Microscopy Unit.

HIGHLIGHTS

The Division of Neuropathology, Department of Pathology, hosted the annual meeting of the Canadian Association of Neuropathologists. This meeting was held at the Donald Gordon Center, Queen's University, September 10-12, 1981.

A high profile emphasis on safety in the laboratories was maintained by the Clinical Laboratories Safety Committee. Regular meetings of the committee monitored requirements of the Health and Safety Act. The development of two new Safety documents, one outlining regulations for

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everyone in the laboratory, and the other outlining specific procedures for each laboratory, are nearing completion.

STATISTICS

The work volume in the laboratory, expressed as DBS units, declined by slightly more than 2% in 1981-82. This was accomplished in part by streamlining certain quality control and calibration procedures within the laboratory; as well, there was a small drop in demand for in-patient laboratory services which might be a reflection of changing patterns of utilization by the medical staff.

FUTURE PLANS

Two new pathologists will be joining the departmental staff in July 1982. Dr. Sally Elisabeth Ford, a graduate of London University Medical School, trained in Pathology in England and at Kingston General Hospital, and in Cardiovascular Pathology at the University of Western Ontario. Dr. Ford's prime responsibility will be in Cardiovascular Pathology. Dr. John Timothy Feltis is a graduate of Queen's University who trained in General Pathology in this department, and is presently a Medical Research Council of Canada Fellow at the Mount Sinai School of Medicine in New York. His primary responsibility will be in pathology of the kidney and general surgical pathology.

Dr. G.F. Kipkie, who has been in the department since 1949, will be leaving in June 1982. His contributions to the department have been many, and he will be greatly missed.

For the last several years, the department has been vigorously planning a much needed expansion of the hospital laboratories, which are presently both over-crowded and unsafe. It appears likely at the present time that some of this expansion will begin in 1982-83, although realization of the required amount of space still appears many years in the future.

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In early 1982 the Department of Pathology assumed professional responsibility for the laboratory attached to the Perinatal Intensive Care Unit and which had previously been operated by the Department of Obstetrics and Gynecology. This arrangement will be reviewed later this year to determine whether satisfactory operation has been achieved.

The department has again submitted a request to establish a satellite laboratory in relation to the Intensive Care Unit and the P.A.R. to perform certain high volume stat procedures, particularly blood gases.

TEACHING

Postgraduates:- Twenty-two house staff were registered in the post-graduate training program in the Department of Pathology for 1981-1982. In addition, two residents from the Department of Medicine, and two residents from the Department of Obstetrics and Gynecology were on rotation in the department.

The postgraduate teaching program in the department includes daily and weekly conferences, seminars, quiz and review sessions conducted by members of the department in collaboration with other clinical and basic science departments. In addition, members of the Department of Pathology participate in a large number of interdepartmental and intradepartmental conferences and seminars.

A Departmental Postgraduate Education Committee composed of the Head of the department, six senior staff members, and one resident, meets at regular intervals. Its function is to develop and carry out departmental and faculty policies on in-training evaluation, resident program evaluation, and other matters relating to the postgraduate training in the department.

Graduate:- Two Master of Science students and one Ph.D. student were registered in the department as graduate students.

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Undergraduate:- Eighty-two second medical year undergraduates took General Pathology and Special Pathology during the academic year 1981-1982. Eight second year undergraduates were in the department as Summer Interns during the summer of 1981. One fourth year student took an Elective in the department during the Spring of 1981.

Fellows:- Dr. Roger G.E. Palfree, the recipient of a Medical Research Council of Canada Fellowship, was with the Cancer Research Group of the Department of Pathology, supervised by Dr. Elliott, for the period December 1980 to March 1982.

Dr. J.T. Feltis, a Resident in the Department of Pathology during 1980-81, was awarded a Medical Research Council Fellowship and spent 1981-1982 in the Department of Pathology, Mount Sinai School of Medicine, New York, N.Y., under the supervision of Dr. Jacob Churg, in the area of renal pathology.

VISITING LECTURERS

An impressive roster of Visiting Lecturers presented Seminars, Lectures, and participated in conferences in the department during the year. A list of the Visiting Lecturers with titles of their presentations is appended (Appendix I).

ACHIEVEMENTS

Fifteen year pins were presented to the following individuals: Mary Waugh, Head Technologist in the chemistry division; Elsa Silolereo, Technologist, and Dolores Murray, Media Maker. Appreciation for the dedication and contribution of these individuals was expressed.

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EXTRAMURAL ACTIVITIES OF NATIONAL AND INTERNATIONAL IMPORTANCE

Dr. A.F. Clark: Dr. Clark is a member of both the Ontario Cancer Treatment and Research Foundation Biochemistry Grants Review Panel, and Working Party on CEA and Estrogen Receptors. He is a member of the Ontario Council of Health Joint Research Review Task Force. Dr. Clark is also a Scientific Officer of the Medical Research Council Maintenance Grants Panel. Dr. Clark was also appointed Associate Dean (Research) at Queen's University in September 1981. On University committees, Dr. Clark is Chairman of the Principal's Advisory Research Committee, Subcommittee I; a member of the Animal Care Committee; a member of the Radiation Safety Committee; and a member of the Queen's University Ethics Review Committee.

Dr. P. Chadwick: Dr. Chadwick is Chairman of the Second Year Curriculum Committee at Queen's University and Chairman of the Exotic Diseases Committee at Kingston General Hospital.

Dr. W.E.N. Corbett: Dr. Corbett is Consultant Pathologist for the Canadian Tumour Reference Centre of the National Cancer Institute of Canada, on the diagnostic panel for lymphoreticular malignancies. Dr. Corbett is a member of the Residency Training Committee of the Canadian Association of Pathologists. Other activities include membership in the St. Lawrence College School of Medical Laboratory Technology committee and membership in the Kingston General Hospital Educational Programs Committee.

Dr. W.A. Fletcher: Dr. Fletcher is a member of the executive of the Canadian Society of Cytology; a member of the Canadian Association of Pathologists Commission on Continuing Education; the Toronto Institute of Medical Technology Advisory Council - Cytotechnology; and a member of the Council, Section on Laboratory Medicine, Ontario Medical Association. At the Kingston General Hospital Dr. Fletcher is Chairman of the Tissue Committee; member of the Medical Audit Committee and the Planning Committee for Laboratory Development. At the Lennox and Addington County General Hospital in Napanee Dr. Fletcher is Chairman of the Infection Control Committee and the Medical Audit Committee. He is also a member of the Perinatal Mortality Committee at Moose Factory Hospital.

Dr. P.M. Ford: Dr. Ford is a member of the Arthritis Society Medical and Scientific Committee. Dr. Ford is also a representative on the Continuing Medical Education committee of the Ontario Medical Association.

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Dr. A.R. Giles: Dr. Giles is a member of the Canadian Plasma Exchange Study Group; the Canadian Hemophilia Society M.S.A.C. (Ontario Chapter) and the Ontario Factor VIII Group.

Dr. J.A. Holden: Dr. Holden is a panel member of the Toronto Institute of Medical Technology Workshop Planning Committee and a professional consultant to the examination committee of the Canadian Society of Laboratory Technologists.

Dr. G.F. Kipkie: Dr. Kipkie continues as a member of the Medical Advisory Board of the Ontario Cancer Treatment and Research Foundation. He is a member of their Consultant Pathologists Group, and a member of their Diagnostic and Treatment Committee.

Dr. R. Kisilevsky: Dr. Kisilevsky is a Scientific Officer on the Grants Committee for Pathology and Morphology, Medical Research Council. Dr. Kisilevsky also serves as a member of the Research Grants Panel of the Medical and Scientific Committee of the Canadian Arthritis and Rheumatism Society.

Dr. S.K. Ludwin: Dr. Ludwin is a member of the Medical Advisory Board of the Multiple Sclerosis Society of Canada. In addition, he is a Nucleus Member of the Royal College Specialty Committee in Neuropathology. Dr. Ludwin is also Canadian representative to the International Society of Neuropathologists.

Dr. P.N. Manley: Dr. Manley serves on the following committees of the Canadian Association of Pathologists:- Chairman, Commission on Continuing Education; Director, Annual Workshop and Short Course Program; member of the Central Scientific Planning Committee; member of the Resident Training Committee and Chairman of the Travel Awards Committee.

Dr. M.J. Raymond: Dr. Raymond is a member of the Ontario Council of Health Task Force on High Technology Diagnostic Laboratory Procedures and Equipment.

Dr. D.M. Robertson: Dr. Robertson is a Scientific Officer for the Neurosciences Committee, Medical Research Council; a member of the Test Committee in Neuropathology, American Board of Pathology; Vice-President of the International Academy of Pathology; a member of the Editorial Board of Laboratory Investigation; a member of the Ontario Council of Health Committee on High Technology Health Procedures and Equipment and a member of the Advisory Panel; Consultant in Pathology of the Ontario Cancer Foundation, Kingston Clinic; a member of the National Advisory Committee of the Canadian Brain Tissue Bank; a member of the Advisory Board of 'Clinical Neuropathology - An International Journal'; Vice-President (United States -

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Canadian Division) of the International Academy of Pathology; and Consultant Neuropathologist of the Canadian Tumour Reference Centre. Dr. Robertson is Chairman of the Biohazards Committee of Queen's University and Chairman of the Faculty Postgraduate Education Committee. He is also Chairman of the Ad Hoc Budget Committee of Kingston General Hospital and Vice-President of the Medical Advisory Committee at K.G.H.

Dr. H.D. Steele: At Kingston General Hospital Dr. Steele is a member of the Ambulatory Care Clinics and the Clare Nelson Committee. At St. Mary's of the Lake Hospital he is Chairman of the Infection Control Committee and a member of the Medical Advisory Committee. Dr. Steele is also Chairman of the Medical Laboratory Technology Advisory Committee of St. Lawrence College.

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RESEARCH

Dr. A.F. Clark: Dr. Clark's research is concerned with androgen and estrogen metabolism. He has been studying androgen metabolism in the rat especially as it relates to the prostate gland. Prostatic enzymes involved in androgen metabolism are being studied so as to understand their role in controlling the expression of androgenic activity. The androgen dependence of the prostatic enzyme, acid phosphatase, is being studied. Prostate cell culture studies are being initiated to investigate androgen metabolism, indicators of androgen actions and the mechanism of androgen actions in normal cells and ones treated with carcinogenic compounds. In collaboration with the Department of Medicine he is conducting studies on the kinetics of androgen metabolism in humans and the role of serum binding proteins in controlling androgen metabolism.

Dr. A.R. Giles: Dr. Giles research activities are as follows:- (1) investigation of the thrombogenicity of prothrombin complex concentrates, (2) investigation of the association between thrombocytopenic bleeding and antibiotic therapy, (3) development of a Factor VIII bypassing therapy for hemophiliacs with a Factor VIII inhibitor, (4) combined *in vitro* and *in vivo* study of the interaction of specific clotting factors and their inhibition by their natural inhibitors with particular reference to Protein-C and Factors V and VIII and (5) investigation of the role of plasmapheresis in the treatment of severe rheumatoid arthritis.

Dr. R. Kisilevsky: Dr. Kisilevsky's research concerns (1) the protein synthesizing apparatus of liver cells, and the manner in which this apparatus is upset in induced disease states. The particular problems at the moment are:- (a) modulation of ribosome structure (b) an examination of several enzymes involved in ribosomal protein phosphorylation (c) mRNA metabolism (d) initiation factor phosphorylation - all during induced cell injury; (2) Pathogenesis of experimental murine amyloidosis.

Dr. S.K. Ludwin: Dr. Ludwin's project deals with the mechanisms of remyelination in the central nervous system. This study involves the use of Cuprizone to cause demyelination in the central nervous system of young mice. Through the use of electron microscopy, radio-autography and immunohistochemistry, Dr. Ludwin is attempting to elucidate the cellular mechanisms involved in remyelination. As remyelination with the central nervous system is a rare phenomenon, this model may help to understand some of the limitations of remyelination which may be applicable in some cases of human disease. In addition, a new project involving oligodendrocyte mitogenesis in tissue culture

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explants of the central nervous system has been started under funding from the P.S.I. Foundation. A tissue culture lab has been established for this purpose.

Dr. P.N. Manley: Dr. Manley's research activities involve the immunohistochemical demonstration of antigen in tissue sections with particular interest in the investigation of the specificity of prostatic secretory acid phosphatase and its ultrastructural localization.

Dr. S. Nag: Dr. Nag's research concerns the following:- (1) Studies of cerebral findings in experimental acute and chronic hypertension at the light and electron microscopic level. In addition, immunoperoxidase studies of both human and animal brains is underway to localise extravasation of endogenous serum albumin; (2) Studies of cells obtained from isolated cerebral microvessels is ongoing.

Dr. M.J. Raymond: Dr. Raymond has continued the development and improvement of the methodologies employed in the clinical chemistry laboratory. His research interest is the investigation of the potential applications for computers within the clinical laboratories. This ongoing study is concerned with the possible impact of computerization on the handling of patient data, laboratory management and resident teaching programs within the department.

Dr. D.M. Robertson: Dr. Robertson is studying models of experimental diabetic neuropathy. In collaboration with Dr. H. Dinsdale of the Department of Medicine, Dr. Robertson is studying the effects of acute and chronic hypertension on cerebral blood flow and permeability. Dr. Robertson, in collaboration with Drs. Kerbel, Elliott and Lagarde of the Cancer Research Group of the Department of Pathology, are jointly carrying out research in tumor biology and immunogenetics.

Dr. H.D. Steele: Dr. Gorwill of the Department of Obstetrics and Gynecology and Dr. Steele have developed and utilized a mouse model to study the effect of certain hormones on cervico-vaginal development, and the relationship of these to neoplasia. The preliminary work has been completed, and has been both presented and accepted for publication.

Dr. J.C. Wyllie: Dr. Wyllie's research activities conducted during the past year consisted of a comparative study of the absorption and utilization of haemoglobin iron and inorganic iron by the rat during growth and development.

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VISITING LECTURERS

Dr. M. Ali, Departments of Pathology and Medicine, McMaster University, presented a seminar in the departmental library in April, 1981, entitled, "Acquired Hemoglobinopathies".

Dr. E. Potworowski, Armand Frappier Institute, Montreal, presented an informal Research Seminar in the conference room of Botterell Hall entitled, "Possible Role of Two Distinct Thymic Stromal Fractions in AKR Leukemogenesis" in April 1981.

Dr. Derrick Dexter, Chief Pathologist, Plains Health Center, Regina, and Professor of Pathology, University of Saskatchewan, presented a special seminar in April 1981 in the departmental library entitled, "Mitral Valve Disease".

Dr. N. Kaufman, former Head of the Department of Pathology, and currently Secretary-Treasurer of the United States-Canadian Division of the International Academy of Pathology, presented a special seminar in the department in May 1981 entitled, "Future Directions in Pathology".

Dr. Feroze N. Ghadially, Professor and Joint-Head of Pathology, University of Saskatchewan, Saskatoon, presented a special seminar in June 1981 in the departmental library entitled, "Diagnostic Electron Microscopy of Tumours".

Dr. Bob Wiltrout, Laboratory of Immunodiagnosis, National Institutes of Health, Bethesda, Maryland, presented an informal research seminar in the conference room of Botterell Hall in July 1981. The title of his seminar was, "Studies on Activated Macrophage and NK Cell Tumoricidal Function".

Professor A.J.S. Davies, Chairman, Division of Immunobiology, Chester Beatty Research Institute, London, England, presented a seminar entitled, "Projects being carried out in the Division of Immunobiology, Chester Beatty Research Institute, London, England" in the conference room of Botterell Hall in September 1981.

Dr. Ariela Pomerance, Consultant Histopathologist - Cardiovascular Diseases, Mount Vernon & Harefield Hospitals, Northwood, England, presented two seminars in the department during her visit in October 1981. The seminars were entitled, "How a Pathologist Looks at a Heart", and "Pathology of Thoracic Aortic Aneurysms". In addition, Dr. Pomerance met informally with the staff and residents in the department at Kingston General Hospital and at Hotel Dieu Hospital, and presented a Cardiology seminar in Etherington Hall. Dr. Pomerance was funded and sponsored in part by the Ontario Heart Foundation.

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Dr. Timothy Feltis, Medical Research Council Fellow, Department of Pathology, Mount Sinai School of Medicine of the City University of New York, presented a seminar in the departmental library in December 1981. His seminar was entitled, "Exploring the Relationship Between IgA Nephropathy and Henoch-Schönlein Purpura Syndrome".

Dr. John G. Gartner, Medical Research Fellow, Department of Physiology, McGill University, presented a seminar in the departmental library in January 1982. The title of his seminar was, "Oncological Association of the Ebstein Barr Virus".

Dr. Drummond Bowden, Professor and Head, Department of Pathology, University of Manitoba, was a Queen's Quest Visiting Scholar in the department in January 1982. Dr. Bowden presented a seminar entitled, "The Cellular Pathology of Lung Injury". In addition, he presented a slide seminar for the staff and residents in the departmental library, case presentations with the Department of Pediatrics, and Dr. Bowden was Pathology Discussant in the Clinicopathological Conference in Etherington Amphitheatre.

Dr. Isaiah J. Fidler, Director, Cancer Metastasis and Treatment Laboratories, and Head, Biology of Metastasis Basic Research Program, Frederick Cancer Research Center, Frederick, Maryland, presented a Medical Sciences Lecture in Etherington Hall auditorium in January, 1982. Dr. Fidler was sponsored by the Department of Pathology and the Department of Continuing Education, Health Sciences. The title of his lecture was, "The Pathogenesis of Cancer Metastasis".

Dr. Eva Turley, University of Calgary, presented an informal research seminar in the conference room of Botterell Hall in January 1982 entitled, "Glycosaminoglycans and Cell Movement".

Dr. H. Sonnenberg, Department of Physiology, University of Toronto, presented a seminar in March, 1982, in the departmental library. The title of his seminar was, "Natriuretic Hormone. Who Needs It?".

Dr. P.A. Cancilla, Professor of Pathology (Neuropathology), University of Iowa, Iowa City, was a Queen's Quest Visiting Scholar in the department in April 1982. Dr. Cancilla presented the Neurosciences Lecture in the departmental library entitled, "Properties of Cerebral Endothelium *In Vivo* and *In Vitro*". Dr. Cancilla also conducted a case presentation with the neuropathology residents and a slide seminar for the residents and staff in the departmental library.

Dr. J. Pouyssegur, Department of Biochemistry, Centre National de la Recherche Scientifique, University of Nice, France, presented a research seminar in the conference room of Botterell Hall in April 1982. The title of his seminar was, "Early Events in Growth Factor Action - Cation Fluxes and Protein Phosphorylation: A Common Coupling Mechanism".