

**ENTOMOLOGISTS  
OF  
MANITOBA**



## FOREWORD

Entomology in the Province of Manitoba reaches back into the 18th century when exploration of Canada was in its infancy. To recognize and acknowledge the exploits and association of numerous workers, travellers, and explorers with the insects that they encountered, ignored, swatted, or collected, is beyond the scope of this booklet. What is attempted here is to briefly sketch in profile form the principal contributors to the science of entomology in Manitoba.

Because the publication of these profiles is a joint venture of the Entomological Society of Canada (ESC) and the Entomological Society of Manitoba (ESM), certain standards and demands of these two societies had to be met. The former, through its Heritage Committee, wanted the list of entomologists to be as complete as possible while the latter was inclined to limit the inclusion to those whose work was of importance to the ESM. Consequently, profiles of all scientists who made a living as entomologists received first priority.

It was felt that student members of the ESM may have had an important role in the Society and this should not go unrecognized, but unless students remained in the Society after graduation and continued to reside in the province of Manitoba, they should not be dealt with in a full profile. Student members of the ESM and students with graduate degrees in an entomological research field from the University of Manitoba are, therefore, listed together with their thesis topic and supervisor. Inclusion in such a list did not preclude inclusion in the "full profile" section.

Similarly it was felt that residency within the province for several years of their professional career was a necessary criterion for any entomologist to be included in the current listing, whether a Society member or not. Non-members of the E.S.M. were also included if they pre-dated the Society or were notable amateur collectors or naturalists. Non-members who are, or were technicians or performed other service roles rather than as independent investigators, were not included.

Some current members, former members, and early workers in entomology are not included in this compilation of profiles because: one, they failed to complete and submit the necessary biographical information; second, their whereabouts was unknown and thus, could not be contacted; or third, they were missed because of an unfortunate oversight for which I assume responsibility and apologize. Although an all-out attempt was made to make the listing as complete as possible, only those individuals whose names had been submitted or approved by the Executive of the E.S.M., were included.

It is hoped that these profiles will adequately acknowledge the contributions made to entomological science by a variety of very worthy individuals, be they economic entomologists, taxonomists, ivory-tower researchers, collectors or naturalists. For many, their entomological endeavours were simply the culmination of a love for the artistry and creation of one of Nature's most fascinating subjects, the insects. May the men and women listed herein be rewarded in memory by all those who follow, that their contributions to entomology be recognized as significant advancements of biological science, and that their careers remain a part of the rich heritage of Manitoba.

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P.W. Riegert

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- the many entomological friends and colleagues who responded so promptly to my numerous requests for information, photos, etc.
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Dr. P.W. Riegert  
Department of Biology  
University of Regina  
Regina, Saskatchewan  
10 March 1989

## I. EARLY COLLECTORS AND NATURALISTS

**BOGER, H.W.:** lived in Brandon and was a collector of beetles and butterflies.

**BROOKS, George Shirley:** was an avid collector of butterflies and moths. He was employed as a clerk in the coach department of the Canadian National Railway, Transcona shops in Winnipeg. Brooks was born in Suffolk, England in 1872, came to Winnipeg in 1911 and farmed for a few months before joining the railway. He collected all Orders of insects but was partial to the butterflies; most of his acquisitions came from Winnipeg and Victoria Beach. He was very active in the 1920s and 1930s, often in the company of N. Criddle and J.B. Wallis. Some collecting was done in northern Manitoba near Gillam and Churchill, thus he was among the first to identify many species of northern butterflies. After his retirement in 1937, Brooks became the unofficial curator of entomology in the Manitoba Museum and prepared some of their excellent displays of Lepidoptera. He was also the Secretary of the Museum in 1939. In 1942 he published a checklist of the butterflies of Manitoba. He purchased the insect collection of A.J. Dennis and donated it to the Manitoba Museum. Brooks died in 1947.

**DENNIS, A.J. (Jack):** was an amateur collector of insects from Beulah, Manitoba; he specialized in collecting diurnal Lepidoptera. He returned to Beulah after being disabled in World War I to live out his life on a meagre pension. His fine collection dates back to the late 1890s, most of the butterflies being captured in the Beulah and Birtle areas. His acquisitions were bought by G.S. Brooks and are now in the Manitoba Museum.

**DENIKE, William Nelson (1871-1948) :** was born on 11 January 1871 in Thurlow, Northumberland Co., Ontario, where his father farmed 150 acres of cut-over land near Belleville. Nature study came naturally to both father and son; no sprig of grass, nor flower or sedge escaped detection. Young Denike became a school teacher after finishing High School and taught at Norham, near Belleville before coming to Manitoba in 1891. Here he taught and farmed near Altamont. Other schools included LaRiviere, Cypress River, Carman and Winnipeg. He came to Winnipeg as teacher and principal in 1904. Although he excelled in the teaching of all subjects, he was particularly fond of nature studies, that of plants and animals. He collected more than 2,500 plant specimens in southern Manitoba, had them identified by such eminent botanists as John Macoun and James Fletcher, and compiled a catalogue of his acquisitions. He also collected insects of all Orders, one species of tiger beetles that he captured near Ingolf, Manitoba, was named *denikii* in his honour by J.B. Wallis. Denike retired in 1938 and died 2 September 1948.

**DUTHIE, J.S.:** was a native of Winnipeg and a teacher by profession. He loved nothing better than to "go sugaring for moths" with a group of young people; thus instilling a love of nature and of insects in the students from Winnipeg schools.

**GIBBON, Hugh Arkwright:** was a farmer near Mineota, Manitoba, having arrived from England with his parents in 1887 when he was three years old. He roamed the Assiniboine Valley as a boy and became enchanted with its natural history attire. His devotion to, and participation in the collecting of insects almost made him a recluse to his family. He gathered thousands of Lepidoptera from correspondents in many countries, collected for Wards Natural Sciences Establishment, and made voluminous notes on the moths and butterflies he collected in Manitoba. His collection of some 15,000 specimens, being both scientifically valuable and aesthetically admirable, was deposited by his heirs in the Department of Entomology, University of Manitoba, in 1963; later transferred to and housed in the Canadian National Collection, Ottawa.

**HANHAM, Abdiel William:** was a bank manager who came to Winnipeg from Ontario in the late 1880s. He collected all Orders of insects and published the first extensive lists of the Coleoptera and Lepidoptera of Manitoba. He was transferred to Duncan, British Columbia in 1900 and continued his collecting on Vancouver Island until his death in 1944. The fine collection he had amassed was deposited in the Provincial Museum of British Columbia.

**HEATH, E. Firmstone:** was an Englishman who settled on a homestead - named "The Hermitage" - near Cartwright, Manitoba, in 1882. James Fletcher described his home as being "six miles across the prairie from Cartwright, which is almost like six miles from nowhere". His own partially paralyzed physical condition, an ailing teenage son, and the rigours of pioneering life on a primitive homestead, did not deter him from amassing one of the finest butterfly collections in the Canadian Northwest. He was an authority on the taxonomy of some families of Lepidoptera, kept in constant touch with James Fletcher, the Dominion Entomologist of the day, and freely exchanged insect specimens with all collectors. After his death in 1914, the Heath collection was bought by the Manitoba government, rearranged by J.B. Wallis and F.H. Wolley-Dod, and today reposes in the Museum of the Department of Entomology, University of Manitoba.

**HUNTER, A.J.:** was a medical doctor in charge of a missionary hospital near Teulon in the inter-lake region of Manitoba. Although he had a very active medical practice he always seemed to find the time, together with W.A. Cummings, to organize and undertake insect collecting trips with students. His own collection of carefully mounted and labelled specimens was given to the University of Manitoba by his daughter in 1964.

**MACKIE, Donald:** was the registrar of births, marriages, and deaths in Winnipeg. He collected butterflies and preserved the carefully pinned specimens just for their aesthetic appeal. He was not interested in their scientific qualities but simply admired their beauty. When his eyesight began to fail and he no longer could clearly see the beauty he had collected, he donated his well-kept entomological acquisitions to the University of Manitoba in 1940.

**MARMONT, Lindsay Edgar:** was a native of Gloucestershire, England, born in 1860, and emigrated to Canada in 1880. He settled on a homestead near Rounthwaite, Manitoba. As an amateur collector of insects, especially of the beetles, he was often in the company of J.B. Wallis and Norman Criddle. He went to British Columbia in 1907, resided in Maillardville, and was the Justice of the Peace and Mayor of Coquitlam. In British Columbia he turned his attention to the micro-Lepidoptera and cataloged these for the province. He was President of the Entomological Society of British Columbia from 1922 to 1925; the "last of the old brigade - the Aurelius of B.C."

**MAY, J.F.:** was born in England in 1883. He was married in 1914 and lived in Kelwood, Manitoba. Jack was employed as a Forest Ranger in the Riding Mountain Forest Reserve in the 1920s and then as a Game Warden when the area became a National Park in the 1930s. He and his wife Marjorie, collected many butterflies and other attractive insects; as many as they could find in the Park. They soon developed a sideline of selling and exchanging specimens. Many of his butterflies were purchased by F.H. Chermock and J.D. Gunder who, in turn, named a number of new subspecies and forms from the material the Mays had collected. The May collection was shown at various local Fairs in the Province along with many other exotic species from all parts of the world. He left the government service and began a travelling entomological show and exhibition in the United States. May was so successful in this enterprise that he established a permanent home for his collection near Colorado Springs, Colorado. Jack died in 1956. "Mays Tropical Exhibition" is still operated by his son M.J. May thus, perpetuating on a grand scale, a small collection begun in 1903 in southern Manitoba.

**ROBERTS, J.H.D.:** was an employee of the Canadian National Railway and lived in Winnipeg, having arrived there as a boy in 1913. His hobby was collecting beetles and butterflies. In just a few years Roberts had gathered a remarkably good collection of all the local species, thus attesting to his assiduous and industrious collecting ability. Because of pressure of work with the railway he was compelled, in conscience, to give his collection to J.B. Wallis who, in turn, deposited it with the Department of Entomology, University of Manitoba. He was never able to get back to his favourite hobby, though he often desired it; he died in 1953.

**SUTTON, Richard W.:** collected in Riding Mountain National Park in the summer of 1940. He was the curator of the Manitoba Museum until the new Manitoba Museum of Man and Nature was established.

## II. FOREST ENTOMOLOGY AND FOREST ENTOMOLOGISTS

### A Summary of the Forest Insect and Disease Survey Field Staff, Manitoba-Saskatchewan Region, 1941 -1970.

The Winnipeg Unit of the Forest Insect Survey was established in 1941 at the then existing Forest Entomology Laboratory on the campus of the University of Manitoba. It was under the jurisdiction of the Division of Entomology, Science Service, Canada Department of Agriculture. Initially the unit was responsible for surveys of all the forested areas from Heron Bay on Lake Superior to the Alberta border. In 1944, entomological responsibility for the forests of north-western Ontario was assigned to the Sault Ste. Marie Laboratory while the forested areas of Alberta were placed in the care of the Winnipeg unit until a regional laboratory was established in Calgary in 1948. It was then that the Winnipeg Unit was made responsible for surveys only of the forested areas of Manitoba and Saskatchewan.

In its early years of development the Survey's primary concern was forest insects. After the formation of the Division of Forest Biology in 1950, however, responsibilities were broadened to include surveys of forest diseases for the Forest Pathology Laboratory, Saskatoon, Saskatchewan. In 1954 the surveys of prairie shelterbelts and aspen grove areas, which were handled formerly by the Entomology Laboratory, Indian Head, Saskatchewan, were added to the duties of the Winnipeg Unit. In ensuing years other notable changes were implemented in departmental and administrative jurisdiction, namely: 1960-1965, Canada Department of Forestry, Forest Entomology and Pathology Branch; 1966-1967, Canada Department of Forestry and Rural Development, Forestry Branch; and 1968-1970, Canada Department of Fisheries and Forestry, Forestry Branch. From then on, and until recently when it was returned to Canada Agriculture, the Forest Entomology and Pathology discipline was under the jurisdiction of the Canadian Forestry Service, Environment Canada.

The primary purpose of the Survey was the detection of outbreaks of forest insects and diseases and the conduction of annual censuses of insect and disease conditions in the forests generally. Although these main objectives changed little over the years, the methods and emphasis applied to attain the desired results underwent considerable adjustments. In the beginning the necessary field observations were accomplished almost entirely through the co-operation and assistance of woods personnel employed by provincial governments and various industrial firms. Contacts were maintained by direct correspondence, distribution of information circulars, and occasional personal visits by Survey officials. Even though the results were encouraging it was soon recognized that the descriptions provided by these untrained individuals did not fulfil the objectives of the survey; the data often arrived late, reports were vague or lacking in detail, and permitted only broad qualitative interpretations to be made. Thus the concept of a full-time Ranger Service, consisting of trained sub-professional persons to travel extensively in the forested areas, was developed.

The first three Forest Insect Ranger positions were established and assigned to the Winnipeg Unit of the Forest Insect Survey in 1945; it was expanded to nine positions in 1950. Two more positions were added in 1954 when the agricultural region was placed under the jurisdiction of the Winnipeg Unit. It permitted the organization of field operations in 10 districts in the two provinces under a supervizing Chief Ranger and three Regional Supervisors. This unique group of individuals became the most widely known group in the Winnipeg Unit, and had a profound influence on the disposition of forest insect and disease survey activities in Manitoba and Saskatchewan. With the acquisition of a year-round Ranger staff the scope and detection aspects of the survey improved and intensified greatly. A sound and highly respected research program was developed by Research Officers assigned to the Unit. The most important functions of the Forest Insect Rangers were to foster and maintain a high degree of contact and co-operation with provincial and industry woods personnel, and to provide instruction and information on forest insect and disease problems. The Rangers' responsibilities

also involved traveling extensively by motor vehicle, aircraft, or boat within their assigned districts to: 1) define the boundaries of forest insect and disease outbreaks, 2) conduct general detection surveys based on repetitive sampling in selected areas, 3) make observations and record data relative to established research projects, and 4) carry out a host of other related activities both in the field and in the laboratory.

A listing of all persons appointed to Ranger staff positions in the Winnipeg Unit of the Forest Insect and Disease Survey (F.I.D.S.) during the period 1945-1970, follows. The resumé depicts mainly the classification, period of employment and district assignments. Some individuals, as noted, remained with the Survey Unit only for a relatively short period of time while others made their appointment a life-time career.

**CAMPBELL, A. Emile** : was initially employed as a provincial Forest Ranger of the Manitoba Department of Natural Resources, then joined the Forest Entomology Laboratory, Winnipeg, as a Forest Insect Ranger on 1 June 1949. In 1960 he was appointed a Regional Supervisor, F.I.D.S., transferred to Canadian Forestry Service, Prince Albert, Saskatchewan, as a Research Technician in 1970, and back to Winnipeg in 1972 where he remained until 1979. Emile's field assignments, as a Ranger, included the Hudson Bay, Saskatchewan, district (1949-1950), and successively, the four districts of Manitoba (1952-1970). In 1951 he was assigned to the Laboratory insect rearing program. He was also responsible for the preparation of the annual District Ranger Reports and the associated Research Reports (1949-1970). He is now retired and resides at 31 Fletcher Bay, Winnipeg, Manitoba.

**DROUIN, James A.** : commenced employment as a Forest Insect Ranger, Forest Entomology Laboratory, Winnipeg, on 15 May 1946. He was appointed a Regional Supervisor, F.I.D.S. in 1955, and was assigned as Head Research Technician of the Larch Sawfly Research Group, Winnipeg, in 1962. Jim transferred to the Northern Forestry Centre, Edmonton, Alberta, in 1970. Jim's many field assignments included a two-year stint of forest insect surveys in Alberta (1946-1947), in several districts of Manitoba (1948-1952), and in the Prince Albert district of Saskatchewan (1953-1961). He served for eight years as the Head Research Technician, Red Rock Lake Field Station in Manitoba (1962-1970). His responsibilities included the preparation of the annual District Ranger Reports (1946-1961), as well as research and technical reports (1961-1969). He is now retired and lives at 11520 - 41st. Avenue, Edmonton, Alberta.

**HANCOX, Ralph W.** : was initially employed as a Wildlife Conservation Officer, Manitoba Department of Natural Resources. He joined the Forest Biology Laboratory, Winnipeg, as a Forest Biology Ranger on 1 June 1960. Ralph terminated his employment on 31 October 1968 to accept a position with the Department of Zoology, University of Manitoba, Winnipeg. While serving as a Ranger he was assigned duties in the Hudson Bay district of Saskatchewan (1960-1962) and the eastern (1963-1964) and northern (1965) districts of Manitoba. From 1966-1968 he was involved in the laboratory insect rearing program, and prepared the annual District Ranger Reports, 1960-1965. He resides at 307 - 133 Niakwa Street, Winnipeg, Manitoba.

**HILDAHL, Vern** : was first appointed on 30 June 1945 as a Forest Insect Ranger by the Forest Entomology Laboratory in Winnipeg. In 1947 he was promoted to Chief Ranger of the Forest Insect Survey responsible for the work in the Manitoba-Saskatchewan region. In 1966 Vern was appointed as Senior Research Technician, Liaison and Services Section, Canadian Forestry Service. Hildahl's primary responsibilities were the development, direction, and supervision of the F.I.D.S. field program from 1947 to 1966. Also, he ensured the publication of the Ranger Reports, the associated scientific and technical publications, and co-authored the annual F.I.D.S. Reports of the Manitoba-Saskatchewan Region for the years 1949 to 1964. He developed and directed the Liaison and Services Section of the Survey Unit from 1960 to 1979. Furthermore, he co-ordinated the provincial Dutch Elm Disease Control

Program in Manitoba from 1979 to 1986; was responsible for the development of the program and the preparation of appropriate legislation. He has made substantial contributions to our knowledge of forest insects, particularly that of the distribution and outbreaks of the forest tent caterpillar and the larch sawfly; the control of the jack-pine budworm and the spruce budworm; and the control and recognition of Dutch Elm disease in the Prairie Provinces. He retired on 31 March 1979 and lives at 805-110 Adamar Road, Winnipeg, Manitoba.

**LALOR, George T.** : commenced employment as a Forest Insect Ranger, Forest Entomology Laboratory, Winnipeg, on 16 June 1949. He terminated the position with the then F.I.D.S. in July 1962 to join Agriculture Canada's Health of Animals Division. As a Ranger he was assigned the three districts of Manitoba (1949-1953), the Meadow Lake district of Saskatchewan (1954-1959), and the Interlake district of Manitoba (1960-1961). He also prepared annual District Ranger Reports, 1949-1961. George is now retired and lives at 1100 - 2080 Pembina Highway, Winnipeg, Manitoba.

**LAWRENCE, John J.** (deceased) : was first employed as a Forest Insect Ranger, Forest Entomology Laboratory, Winnipeg, on 3 August 1948. In 1958 he was appointed Regional Supervisor, F.I.D.S., assigned to the Forest Pathology Research Group as a technician in 1965, then transferred to the Northern Forest Research Centre, Edmonton, Alberta, in 1970. His field assignments, as a Ranger, included the southern district of Manitoba (1948), northern districts of Saskatchewan (1949-1952), and the eastern, western, and southern districts of Manitoba (1953-1964). In addition, he was also responsible for the preparation of the annual District Ranger Reports (1948-1964) and the associated Forest Pathology Reports (1965-1970).

**MACHUK, Anton** (deceased) : initially was employed as a Forest Ranger by the Manitoba Department of Natural Resources. He joined the Forest Biology Laboratory, Winnipeg, as a Forest Biology Ranger, in April 1955. He transferred to the Calgary Laboratory on 31 May 1960 and was killed in an aircraft accident while on forest insect and disease surveys in the Northwest Territories in 1965. Anton carried out his duties as a Ranger in the west-central (1955-1957) and Hudson Bay (1958-1959) districts of Saskatchewan before moving to Alberta. He also prepared the annual District Ranger Reports of 1955-1959.

**MARTIN, John B.** (deceased) : accepted employment as a Forest Insect Ranger, Forest Entomology Laboratory, Winnipeg, in February 1948. He remained with the Survey Unit until 15 July 1962 when he terminated his services to join the federal Unemployment Insurance Commission. His field assignments included surveys in western and northern districts of Manitoba (1948-1951) and the northern districts of Manitoba and Saskatchewan (1954-1962), separated by a two-year term as a technician in the laboratory insect rearing program (1952-1953). In addition to the survey work, his responsibilities included the preparation of the annual District Ranger Reports (1948-1962).

**McDOWALL, Lionnel L.** : was first appointed as a Forest Insect Ranger, Forest Insect Laboratory, Winnipeg, on 14 May 1946. He was appointed Regional Supervisor, F.I.D.S., in 1955 and as Chief Ranger, F.I.D.S., Manitoba-Saskatchewan Region, in 1966. Lionnel transferred to Sault Ste. Marie, Ontario in 1970 as Chief Ranger of the Ontario Region. From 1946 to 1969 he held many field assignments ranging from Prince Albert, Saskatchewan, to the Interlake region of Manitoba, and finally as Chief Ranger of the two-province region. In addition to the collection of insect and disease data within his assigned districts, he was responsible for the preparation of annual Ranger Reports (1946-1965), Chief Ranger Reports (1966-1969) and the preparation of research and technical publications. He currently resides at 404-3200 Portage Avenue, Winnipeg, Manitoba.

**McLEOD, Bruce B.** : commenced employment as a Forest Insect Ranger, Forest Entomology Laboratory, Winnipeg, on 8 May 1950. In 1965 he was appointed a

Regional Supervisor, F.I.D.S., assigned as a technician to the Dutch Elm Disease Research Group in 1969, and then transferred to the Canadian Forestry Service, Ottawa, Ontario, in 1970 as a Senior Research Technician. While serving as a Ranger, Bruce was assigned the Meadow Lake (1950-1953), northern (1954-1957), and west-central (1958-1959) districts of Saskatchewan, the eastern (1960-1961) and western (1962-1964) districts of Manitoba, and the Prince Albert district of Saskatchewan (1965-1968). He also prepared annual District Ranger Reports (1950-1968) and research and technical reports, 1955-1970. He is now retired and resides at 32 Antrim Road, Winnipeg, Manitoba.

**MORTENSEN, Kenneth L.** : commenced employment as a Forest Insect Ranger, Dominion Entomological Laboratory, Indian Head, Saskatchewan, on 16 February 1953. On 1 April 1954 he transferred to Winnipeg as a Forest Biology Ranger with the F.I.D.S. After his appointment as a Regional Supervisor, F.I.D.S. in 1969, he transferred to the Northern Forestry Centre, Edmonton, Alberta, as a research technician in 1970, and finally to the Canadian Forestry Service, Ottawa, in 1973. To carry out his duties as a Ranger, Ken was assigned to the south-western (1954), southern (1955-1959), and Meadow Lake (1960-1964) districts of Saskatchewan; and the eastern (1965-1967) and western (1968-1969) districts of Manitoba. Ken prepared the annual District Ranger Reports and the associated research reports of 1954-1969. He is now retired and lives at 91 Heath Street, Sault Ste. Marie, Ontario.

**PRATT, Murray R.H.** (deceased) : commenced employment as a Forest Insect Ranger, Forest Entomology Laboratory, Winnipeg, on 19 April 1949. On 1 April 1962 he was transferred to the Forest Research Section, Department of Forestry, as a Senior Research Technician. His field assignments, as a Ranger, included the western and northern districts of Manitoba (1949), Hudson Bay district of Saskatchewan (1951-1957), the Interlake district of Manitoba (1958-1959), and the southern district of Saskatchewan (1960-1961). He was assigned to the laboratory insect rearing program in 1950 and also prepared the annual District Ranger Reports for 1949-1961.

**RENTZ, Cameron L.** : commenced employment as a Forest Biology Ranger with the Forest Biology Laboratory, Winnipeg, in December 1963. He transferred to the Northern Forestry Centre, Edmonton, Alberta, as a Research Technician in 1970 and is still employed at that centre. While serving as a Ranger he was assigned field duties in the southern district of Manitoba (1964), and the Meadow Lake (1965-1968) and southern (1969) districts of Saskatchewan. He prepared annual District Ranger Reports for 1964-1969.

**STILL, Garry N.** : commenced employment as a Forest Biology Ranger with the Forest Biology Laboratory, Winnipeg, in December 1963. He transferred to the Northern Forestry Centre, Edmonton, Alberta, as a research technician in 1970 and is employed there to date. His field duties as a Ranger included service in the Interlake district (1964) and southern (1967-1969) districts of Manitoba, and in the southern district of Saskatchewan (1965-1966). He prepared annual District Reports for 1964-1969.

**TIDSBURY, R. Craig** : was first employed as a Forest Biology Ranger, Forest Biology Laboratory, Winnipeg, in April 1962. He was transferred to the Northern Forestry Centre, Edmonton, Alberta, as a research technician in 1970, and remains employed there to date. While serving as a Ranger, Craig was assigned to the southern (1962) and Hudson Bay (1963-1965) districts of Saskatchewan, and to the northern (1966-1968) and eastern (1969) districts of Manitoba. He prepared annual District Reports for 1962-1969.

**OTHERS** : The following individuals were also employed as Forest Insect Rangers (F.I.R.), Forest Biology Rangers (F.B.R.), or as Forest Research Technicians (F.R.T.) serving with the Manitoba Section of the F.I.D.S. Their current addresses, mostly unknown, are not given but their names and dates of service are worthy of mention.

They include:

**ANDERSON, Allan E.** - F.I.R., 30 April 1945 to 5 May 1948  
**ANDERSON, P.W.** - F.R.T., April 1967 to October 1968  
**ADDISON, William** - F.I.R., October 1946 to August 1947  
**ARTHURS, J.W.** - F.R.T., January 1965 to December 1966  
**BEVERIDGE, W.J.** - F.R.T., April 1967 to July 1970  
**BRIDGMAN, E.F.** - F.I.R., August 1946 to February 1948  
**COOK, T.** - F.I.R., 31 May 1946 to 5 August 1946  
**CRAWFORD, Wayne B.** - F.R.T., April 1966 to July 1970  
**DASHENSKY, Leo W.** - F.B.R., April 1962 to April 1963  
**DEVLIN, R.J.** - F.R.T., April 1965 to December 1966  
**EDMUNDS, Howard A.J.** - F.I.R., May 1947 to November 1949  
**HOMANN, M.J.** - F.R.T., April 1966 to October 1967  
**KNIGHT Albert C.** - F.I.R., 25 May 1948 to 27 January 1949  
**LANG, Robert A.** - F.I.R., February 1948 to July 1948  
**McKAY, Donald H.** - F.I.R., April 1947 to March 1948  
**McLEOD, R.A.** - F.R.T., April 1969 to July 1970  
**MROSKE, B.E.** - F.R.T., April 1969 to July 1970  
**PATTERSON, Vern B.** - F.B.R., 1 April 1954 to 31 March 1955  
**PURSE, Ross C.** - F.I.R., May 1947 to March 1948  
**SHEPHERD, D.N.** - F.R.T., January 1967 to July 1970  
**SIMPSON, A.N.** - F.R.T., April 1967 to July 1970  
**SUTHERLAND, B.G.** - F.R.T., April 1969 to July 1970  
**THOMAS, Phillip, O.** - F.I.R., 30 May 1945 to 30 May 1947  
**VAN DEN ABEELE, R.C.** - F.B.R., August 1963 to November 1965  
**WARACHKA, Mike** - F.B.R., April 1963 to December 1963

### III. ENTOMOLOGISTS ASSOCIATED WITH AGRICULTURAL CHEMICALS COMPANIES AND THE ENTOMOLOGICAL SOCIETY OF MANITOBA

**Andrews, A.W.** - DuPont of Canada, 1970-  
**Ashraff, A.** - Green Cross Insecticides, 1960-1988  
**Birt, F.** - Chipman Chemicals Ltd., 1948-1957  
**Bowden, B.** - Shell Chemical Limited, 1969-1988  
**Craig, A.** - Shell Oil of Canada, 1963-1966  
**Cushon, A.** - Interprovincial Cooperatives, 1961-1972  
**Eastwood, J.** - Velsicol Corporation, 1953-1961  
**Fox, W.B.** - Chipman Chemicals Ltd., 1951-1960  
**Fraser, D.D.** - Naugatuck Chemicals, 1948-1949  
**Fraser, G.R.** - Chipman Chemicals Ltd., 1959-1966  
**Gardiner, R.P.** - Chipman Chemicals Ltd., 1970  
**Howden, J.S.** - Green Cross Insecticides, 1952-1961  
**Ireland, R.** - Geigy Chemicals Ltd., 1968-1988  
**McMillan, A.** - Chipman Chemicals Ltd., 1967  
**Palmer, J.R.** - Chipman Chemicals Ltd., 1973-  
**Peesker, R.** - Chipman Chemicals Ltd., 1968-1970  
**Poulin, D.** - Poulin Exterminators, 1976-1988  
**Pugh, S.** - Canadian Industries Ltd., 1950-1961  
**Riess, C.** - Charles Riess & Co. Exterminators, 1959-1985  
**Silversides, W.** - Interprovincial Cooperatives, 1950-51  
**Skaptason, J.S.** - Green Cross Insecticides, 1950-1951  
**Zirk, E.** - Geigy Chemicals Ltd., 1968-1988

#### IV. GRADUATE STUDENTS IN ENTOMOLOGY AND ZOOLOGY

The following is a list of former graduate students at the University of Manitoba, the degree received, year of graduation, thesis title, and name of supervisor:

**Aitchison, C.W.** - M.Sc., 1977. The activity of subnivean invertebrates in Southern Manitoba. Supervisor: W.O. Pruitt & L.B. Smith.

**Aitchison, C.W.** - Ph.D., 1984. The ecology of winter-active collembolans and spiders. Supervisor: L.B. Smith.

**Al-Hitty, A.** - M.Sc., 1983. Effects of feeding on different varieties of *Brassica* spp. on growth and survival of Bertha armyworm, *Mamestra configurata* Walker, (Lepidoptera: Noctuidae). Supervisor: W.J. Turnock.

**Allen, W.R.** - M.Sc., 1939. An ecological study of *Melanoplus mexicanus mexicanus* (Saussure). Supervisor: A. Gibson.

**Apablaza, J.U.** - M.Sc., 1967. Some relationships between three species of aphids and three cereal grains. Supervisor: A.G. Robinson.

**Baker, S.R.** - M.Sc., 1976. Metabolism of the insect growth regulator, methoprene, by Japanese quail (*Coturnix coturnix japonica*). Supervisor: G.M. Findlay.

**Bakker, T.** - M.Sc., 1974. Population fluctuations and movements of *Macrosiphum avenae* (Fabricus) on wheat, oats, and barley. Supervisor: A.G. Robinson.

**Barber, R.P.A.** - M.Sc., 1979. An *Aphis fabae* in Manitoba which feeds on nasturtium and not on faba bean. Supervisor: A.G. Robinson.

**Barker, R.G.** - M.Sc., 1973. Effects of various sugar and honey treatments on the foraging activity of honey bees. Supervisor: S.C. Jay.

**Barrett, C.F.** - M.Sc., 1962. Life history and habits of *Pachygonatopus minimus* Fenton and *Tomosvaryella sylvatica* Meig., parasites of the six-spotted leafhopper *Macrostes fascifrons* (Stal) in Manitoba. Supervisor: A.G. Robinson.

**Batulla, B.A.** - M.Sc., 1983. A survey of the predators and parasitoids of aphids in Manitoba with emphasis on the interaction between the thirteen spotted lady beetle *Hyppodamia tridecimpunctata* L. and the pea aphid *Acyrtosiphon pisum* Harris. Supervisor: A.G. Robinson.

**Belvett, V.B.** - M.Sc., 1965. Studies on the resistance of some barley varieties to four species of aphids. Supervisor: A.G. Robinson.

**Bertholet, N.A.** - M.Sc., 1985. The foraging behaviour of honey bees (*Apis mellifera* L.) on selected cultivars of *Brassica campestris* L. and *Brassica napus* L. Supervisor: S.C. Jay.

**Bhalla, O.P.** - Ph.D., 1967. Effects of chemosterilants and growth regulators on the pea aphid, *Acyrtosiphon pisum* (Harris) fed on an artificial diet. Supervisor: A.G. Robinson.

**Bracken, G.K.** - M.Sc., 1960. Studies on the host orientation and feeding behaviour of some hematophagous flies with special reference to tabanidae and *Stomoxys calcitrans* (Linn.). Supervisor: A.J. Thorsteinson.

**Bracken, G.K.** - Ph.D., 1962. Some aspects of host orientation and species distribution of tabanidae (Diptera) in Manitoba. Supervisor: A.J. Thorsteinson.

**Brandt, N.R.** - M.Sc., 1964. Orientation, dispersal and control of mosquitoes in the Greater Winnipeg area. Supervisor: A.J. Thorsteinson.

**Brown, W.A.W.** - M.Sc., 1982. Effect of effluent from a nuclear research facility on benthic macroinvertebrates. Supervisor: J.E. Guthrie.

**Brust, R.A.** - M.Sc., 1960. Biology and control of mosquitoes in the Greater Winnipeg area. Supervisor: A.J. Thorsteinson.

**Buckner, C.H.** - M.Sc., 1954. The role of small mammals as predators of the larch sawfly *Pristiphora erichsoni* Htg., in eastern Manitoba. Supervisor: R.A. Wardle.

**Burachynsky, V.I.** - M.Sc., 1982. A study of the temporal and spatial relationships between small mammals and the immature stages (larvae and nymphs) of the American dog tick, *Dermacentor variabilis* (Say) (Acari: Ixodidae) in an aspen parkland region near Birds Hill Park, Manitoba. Supervisor: T.D. Galloway.

**Burnett, P.A.** - Ph.D., 1974. Responses of cereals to barley yellow dwarf virus infection initiated by different numbers of viruliferous aphids and to feeding by nonviruliferous aphids. Supervisor: A.G. Robinson.

**Burton, D.K.** - M.Sc., 1984. Impact of *Bacillus thuringiensis* var. *israelensis* in dosages used for black fly (Simuliidae) control against target and non-target organisms in the Torch River, Saskatchewan. Supervisor: M.M. Galloway.

**Burzynski, A.Z.** - M.Sc., 1976. Accumulation and elimination of cesium<sup>137</sup> by five aedine species of mosquitoes and by a common predator *Notonecta undulata*. Supervisor: R.A. Brust.

**Buth, J.A.L.** - M.Sc., 1983. The bionomics of three potential vectors of Western Equine Encephalitis in Manitoba. Supervisor: R.A. Brust.

**Campbell, A.** - M.Sc., 1969. The predatory behaviour of the larvae of *Colymbetes sculptilis* (Harris) and *Graphoderus occidentalis* Horn (Coleoptera: Dytiscidae). Supervisor: A.J. Thorsteinson.

**Chang, S.S.** - M.Sc., 1969. The influence of some fungi associated with flour and humidity on the survival and development of *Cryptolestes turcicus* (Grouvelle) (Coleoptera: Cucujidae). Supervisor: S.R. Loschiavo.

**Chang, S.** - M.Sc., 1963. An investigation of the behaviour of floral scents on aggregation behaviour of the mosquito *Aedes aegypti* L. (Culicidae: Diptera). Supervisor: A.J. Thorsteinson.

**Chen, Y.H.** - M.Sc., 1968. Some biological studies on aphids, including differentiation between genera and species based on chromosome numbers. Supervisor: A.G. Robinson.

**Chiang, Y.N.** - M.Sc., 1979. Predation by coccinellids of *Acyrtosiphon pisum* (Harris) on fababeans. Supervisor: N.J. Holliday.

**Chiukowski, L.N.** - M.Sc., 1954. The effect of some organic insecticides on the control of the onion maggot, *Hylemya antiqua* (Meig.) (Diptera: Anthomyiidae), and the germination of onion and turnip seed. Supervisor: A.G. Robinson

**Cole, T.V.** - M.Sc., 1951. Potato insects and their control in Manitoba. Supervisor: A.V. Mitchener.

**Conroy, J.C.** - M.Sc., 1974. Taxonomy and ecology of the water mites of Marion Lake, B.C. with a description of a new species, *Pionopsis* Nov. Sp. (Acari: Pionidae). Supervisor: F.J. Ward.



**Costello, R.A.** - M.Sc., 1967. Ecology and control of mosquitoes of the Winnipeg area, with special reference to *Aedes vexans* (Meigen). Supervisor: R.A. Brust.

**Christie, G.C.** - M.Sc., 1974. Behavioural and phenological studies of woodland mosquitoes in the Winnipeg area. Supervisor: A.J. Thorsteinson.

**Currie, R.W.** - M.Sc., 1982. Some factors affecting the orientation of drone honey bees (*Apis mellifera* L.). Supervisor: S.C. Jay.

**Diehl-Jones, W.L.** - M.Sc., 1986. Experimental analysis of cellular immunity in the insect *Galleria mellonella* L. Supervisor: .....

**Dixon, D.P.** - M.Sc., 1979. Factors affecting the production of honey bee queens (*Apis mellifera* L.) in Manitoba. Supervisor: S.C. Jay.

**Dixon, R.D.** - M.Sc., 1969. Ecology of mosquito larvae in the Winnipeg area and evaluation of insecticides for future use in mosquito control. Supervisor: R.A. Brust.

**Dolinski, M.G.** - M.Sc., 1972. An investigation of some environmental factors influencing the distribution and detection of the rusty grain beetle *Cryptolestes ferrugineus* (Stephens) (Coleoptera: Cucujidae). Supervisor: W. Hanec.

**Dyer, D.J.** - M.Sc., 1980. The effects of malathion on the behavior and cholinesterase enzymes of the honey bee (*Apis mellifera* L.). Supervisor: S.C. Jay.

**Ellis, R.A.** - Ph.D., 1973. Sibling species delimitation in the *Aedes communis* (DeGeer) aggregate (Diptera: Culicidae). Supervisor: R.A. Brust.

**English, N.C.** - M.Sc., 1975. A three generation study of effects of ingestion of the pesticides Abate and Sencor on Japanese quail. Supervisor: G.M. Findlay.

**Evans, K.W.** - M.Sc., 1971. The bionomics of *Wyeomyia smithii* (Coquillett), the pitcher plant mosquito (Diptera: Culicidae: Sabethini). Supervisor: R.A. Brust.

**Farkas, M.J.** - M.Sc., 1985. The population dynamics of *Wyeomyia smithii* (Coquillett) in Manitoba and northwestern Ontario. Supervisor: R.A. Brust.

**Feng, R.B.** - M.Sc., 1969. Some factors affecting the honey stomach contents of worker honey bees (*Apis mellifera* L.). Supervisor: S.C. Jay.

**Fingler, B.G.** - M.Sc., 1980. The effect of indoor wintering on honey bee colonies in Manitoba. Supervisor: S.C. Jay.

**Friesen, M.K.** - M.Sc., 1981. Effects of the insecticide permethrin on the aquatic life stages of the burrowing mayfly *Hexagenia rigida* (Ephemeroptera: Ephemeridae). Supervisor: T.D. Galloway.

**Furgala, B.** - M.Sc., 1954. The effect of the honey bee, *Apis mellifera* (L.), on the seed set, yield and hybridization of the cultivated *Helianthus annuus* L. Supervisor: A.V. Mitchener.

**Galloway, W.J.** - M.Sc., 1983. Ecology and overwintering biology of potential mosquito vectors of western equine encephalitis in Manitoba. Supervisor: R.A. Brust.

**Galloway, T.D.** - Ph.D., 1977. Application of the mermithid nematode, *Romanomermis culicivorax* Ross and Smith, 1976, for mosquito control in Manitoba and taxonomic investigations in the genus *Romanomermis* Coman, 1961. Supervisor: R.A. Brust.

**Giberson, D.J.** - M.Sc., 1984. Life history and production dynamics of *Ephoron album* Say (Ephemeroptera: Polymitarcidae) in the Valley River, Manitoba. Supervisor: T.D. Galloway.

**Gold, D.G.** - M.Sc., 1978. Studies on the dispersal and swarming behaviour of *Aedes* mosquitoes in southern Manitoba. Supervisor: R.A. Brust.

**Govind, C.K.** - Ph.D., 1971. Structural and functional aspects of flight in the milkweed bug, *Oncopeltus fasciatus* (Dallas). Supervisor: J.W.T. Dandy.

**Graham, R.A.M.** - M.Sc., 1980. Studies on the rearing and mating of queen honey bees (*Apis mellifera* L.). Supervisor: S.C. Jay.

**Gruszka, J.M.** - M.Sc., 1979. Indoor wintering of honey bee colonies in Manitoba. Supervisor: S.C. Jay.

**Guthrie, J.E.** - Ph.D., 1969. Uptake and elimination of <sup>137</sup>Cs in aquatic insects. Supervisor: R.A. Brust.

**Hanec, W.** - M.Sc., 1955. Observations on some muscid and calliphorid flies associated with farm animals with special reference to the house fly, *Musca domestica* L. Supervisor: A.J. Thorsteinson.

**Harcus, J.L.** - M.Sc., 1967. Rearing studies of queen honey bees. Supervisor: S.C. Jay.

**Harley, K.L.S.** - Ph.D., 1965. An experimental investigation of the influence of glycosides, steroids, and other plant constituents on the feeding behaviour, development, and survival of the two-striped grasshopper, *Melanoplus bivittatus* (Say), Acrididae: Orthoptera. Supervisor: A.J. Thorsteinson.

**Harris, J.L.** - M.Sc., 1980. A population model and its application to the study of honey bee colonies. Supervisor: S.C. Jay.

**Hedlin, A.F.** - M.Sc., 1952. Insects attacking caragana and their control in the prairie provinces. Supervisor: A.V. Mitchener.

**Henderson, L.P.** - M.Sc., 1977. Laboratory transmission of western encephalomyelitis by *Culex tarsalis* Coquillett and its behavior in Richardson's ground squirrel, *Spermophilus richardsonii* (Sabine). Supervisor: R.A. Brust.

**Heron, R.J.** - Ph.D., 1962. An investigation of the effects of some chemical constituents of the host plants and related compounds on the feeding responses of larvae of the spruce budworm, *Choristoneura pinus* Free. Supervisor: J.A. McLeod.

**Howe, G.J.** - M.Sc., 1972. Ecology of slugs in Manitoba, and accumulation, storage and excretion of DDT in their bodies. Supervisor: G.M. Findlay.

**Howe, G.J.** - Ph.D., 1977. The effects of various insecticides applied to a terrestrial model ecosystem or fed in the diet on the serum cholinesterase level and reproductive potential of Coturnix quail. Supervisor: G.M. Findlay.

**Howlader, M.A.** - Ph.D., 1985. The biology of calling behaviour in the Bertha armyworm *Mamestra configurata* Walker (Lepidoptera: Noctuidae). Supervisor: G.H. Gerber.

**Hsu, S.J.** - Ph.D., 1963. Resistance of barley varieties to the aphid *Rhopalosiphum padi*. Supervisor: A.G. Robinson.

**Ikumogunniyi, B.A.** - M.Sc., 1955. A study of two horticultural insect pests. Supervisor: A.G. Robinson.

**Iordanou, N.T.** - M.Sc., 1968. The effect of temperature on the toxicity of five insecticides for the control of five species of stored-product insects. Supervisor: F.L. Watters.

**Ireland, R.E.** - M.Sc., 1968. Survey of benthic insects in the Winnipeg River. Supervisor: A.G. Robinson.

**Joia, B.S.** - Ph.D., 1983. Insecticidal efficacy and residues of cypermethrin and fenvalerate in stored wheat. Supervisor: S.R. Loschiavo.

**Kalpage, K.S.P.** - M.Sc., 1966. Aedine mosquitoes of Manitoba: egg identification. Supervisor: R.A. Brust.

**Kalpage, K.S.P.** - Ph.D., 1970. The effect of daylength and temperature on the induction and termination of diapause in *Aedes atropalpus* (Coquillett), and field and laboratory studies of autogeny and hibernation in some mosquitoes from Manitoba. Supervisor: R.A. Brust.

**Kapatsa, G.M.** - M.Sc., 1979. Growth, development and survival of *Mamestra configurata* Walker, (Lepidoptera: Noctuidae) on various reported food plants. Supervisor: W.J. Turnock.

**Keeratikasikorn, M.** - M.Sc., 1972. Biology and ovarian development of the cabbage maggot *Hylemya brassicae* (Bouche) (Diptera: Anthomyiidae). Supervisor: W. Hanec.

**Kgoroba, G.** - M.Sc., 1980. A study of the seasonal dynamics of the ticks *Dermacentor variabilis* (Say) and *Haemophysalis leporispalustris* (Packard) in a marshland habitat. Supervisor: H.E. Welch.

**Kohm, S.** - M.Sc., 1935. The biology and control of *Sciara coprophila* Lintner (Sciariidae: Diptera) on house plants. Supervisor: A.V. Mitchener.

**Kolach, A.J.** - M.Sc., 1964. The effect of low temperature and starvation on the survival and development of the German cockroach, *Blattella germanica* (L.). Supervisor: W. Hanec.

**Lai, J.H.** - M. Sc., 1969. Rearing queens in the laboratory with small groups of worker honey bees. Supervisor: S.C. Jay.

**Laurence, G.A.** - M.Sc., 1967. The biology of the European corn borer, *Ostrinia nubilalis* (Hubn.) in Manitoba. Supervisor: W. Hanec.

**Lejeune, R.R.** - M.Sc., 1940. Studies on the biological control of the spruce budworm, *Cacoecia fumiferana* Clemens, in southeastern Manitoba, and northwestern Ontario. Supervisor: R.A. Wardle.

**Liu, Y.** - Ph.D., 1973. Biological factors affecting the laboratory rearing of queen honey bees. Supervisor: S.C. Jay.

**Liscombe, E.A.R.** - Ph.D., 1964. An investigation of the effects of milling fraction of bread wheat on the biology of two cucujids *Cryptolestes turcicus* (Grouv.) and *Cryptolestes ferrugineus* (Steph.). Supervisor: A.J. Thorsteinson.

**Lococo, D.** - M.Sc., 1979. Ultrastructure and morpho-genesis of the female accessory gland in the insect *Rhodnius prolixus*. Supervisor: .....

**Loschiavo, S.R.** - M.Sc., 1950. Sublethal effects of DDT residues on the confused flour beetle, *Tribolium confusum* Duv. Supervisor: R.A. Wardle.

**Loschiavo, S.R.** - Ph.D., 1964. An investigation of the chemosensory influence of some extracts of Brewer's yeast and cereal products on aggregation and feeding behavior of the confused flour beetle, *Tribolium confusum* Duval. Supervisor: A.J. Thorsteinson.

**Lutz, D.A.** - M.Sc., 1979. Structural and physiological aspects of 5th instar ovarian development in *Rhodnius prolixus* (Insecta:Hemiptera). Supervisor: .....

**Madder, D.J.** - M.Sc., 1978. The disappearance from, efficacy in, and effect on non-target organisms of diflubenzuron, methoprene and chlorpyrifos in a lentic ecosystem. Supervisor: W.L. Lockhart.

**Madder, M.C.A.** - M.Sc., 1978. Some ant-aphid associations in Manitoba with observations on interactions between *Formica oreas comptula* Wheeler and aphids at Birds Hill Park, Manitoba. Supervisor: A.G. Robinson.

**Maiteki, G.A.** - Ph.D., 1985. Seasonal abundance, damage assessment and economic threshold of the pea aphid *Acyrtosiphon pisum* (Harris) on field peas in Manitoba. Supervisor: R.J. Lamb.

**Malaipan, S.** - Ph.D., 1979. Studies of honey bees (*Apis mellifera* L.) on fababeans (*Vicia faba* L.). Supervisor: S.C. Jay.

**Malyk, M.R.** - M.Sc., 1971. Factors affecting the numbers of aphids on grain crops in Manitoba with observations on aphid predators and parasites. Supervisor: A.G. Robinson.

**McGinnis, K.M.** - M.Sc., 1982. Reproductive biology and ecology of *Aedes togoi* (Theobald) (Diptera: Culicidae). Supervisor: R.A. Brust.

**Mensah, G.W.K.** - Ph.D., 1979. Persistence and translocation of organophosphorus insecticides on structural surfaces and in stored grain. Supervisor: F.L. Watters.

**Mitchener, A.V.** - M.Sc., 1927. 1. The currant fruit- fly, *Epochra canadensis* Loew, in Manitoba. 2. Optimum feeding temperatures for the dark-sided cutworm, *Euxoa messoria* Harris. Supervisor: R.A. Wardle.

**Moore, H.W.** - M.Sc., 1936. An intensive study of the grasshoppers of economic importance at Arnaud, Manitoba, 1935. Supervisor: R.A. Wardle.

**Muldrew, J.A.** - M.Sc., 1952. A study of the natural immunity of the larch sawfly (*Pristiphora erichsonii* Htg.), to the introduced parasite *Mesoleius tenthredinis* Morley, in Manitoba and Saskatchewan, Canada. Supervisor: R.A. Wardle.

**Murray, V.I.E.** - M.Sc., 1965. A study of myiasis in man and other animals in Manitoba. Supervisor: J.A. McLeod.

**Neill, G.B.** - Ph.D., 1982. Bionomics of the sunflower beetle, *Zygogramma exclamatoris* (F.) (Coleoptera: Chrysomelidae) and its parasites in Manitoba. Supervisor: P.H. Westdal.

**Nelson, D.L.** - M.Sc., 1971. Population growth studies of package bee colonies in Manitoba. Supervisor: S.C. Jay.

**Nelson, D.L.** - Ph.D., 1985. The effect of apiary relocation on the orientation of honey bees. Supervisor: S.C. Jay.

**Nelson, E.V.** - Ph.D., 1966. The behaviour of honey bees (*Apis mellifera* L.) in a flight and rearing room. Supervisor: S.C. Jay.

**Northcott, F.E.** - M.Sc., 1952. The identification of digestive enzymes in several species of destructive grasshoppers; a qualitative analysis of different enzymes produced in various stages of development. Supervisor: A.J. Thorsteinson.

**Obadofin, A.A.** - Ph.D., 1979. Growth, development, survival and food selection of the red turnip beetle, *Entomoscelis americana* Brown (Coleoptera: Chrysomelidae), on species of Cruciferae. Supervisor: G.H. Gerber.

**Pankiw, P.** - M.Sc., 1951. The effect of certain diseases and insects on seed setting in alfalfa. Supervisor: .....

**Peschken, D.P.** - M.Sc., 1960. Investigations on the sensory behaviour and ecology of black flies (Simuliidae:Diptera) in the Whiteshell Forest Reserve, Manitoba. Supervisor: A.J. Thorsteinson.

**Plowright, R.C.** - Ph.D., 1966. Domestication and caste differentiation in bumblebees. Supervisor: S.C. Jay.

**Proctor, P.J.** - M.Sc., 1961. The feeding responses of some phytophagous insects to chemical leaf constituents. Supervisor: A.J. Thorsteinson.

**Prystupa, B.D.** - M.Sc., 1983. The biology and control of the slug *Deroceras laeve* (Gastropoda:Pulmonata: Limacidae) in Manitoba strawberry fields. Supervisor: N.J. Holliday.

**Rabkin, F.B.** - M.Sc., 1939. Studies on the biology of the Manitoba Jack pine scale *Toumeyella* sp. (Coccidae, Homoptera). Supervisor: R.A. Wardle.

**Rawn, G.P.** - M.Sc., 1977. Disappearance and bioactivity of dursban insecticide in temporary pools. Supervisor: G.M. Findlay.

**Richardson, H.P.** - Ph.D., 1966. Some vector virus, host-plant relationships of the six-spotted leafhopper, *Macrosteles fascifrons* (Stal) and aster yellows virus in Manitoba. Supervisor: A.G. Robinson.

**Richardson, R.J.** - M.Sc., 1982. The effects of habitat disturbance on the occurrence of carabid beetles. Supervisor: N.J. Holliday.

**Robertson, D.R.** - M.Sc., 1960. Analysis of factors affecting cost of honey production and marketing in Manitoba. Supervisor: A.G. Robinson.

**Robinson, A.G.** - Ph.D., 1961. Effects of some herbicides and plant growth regulators on the pea aphid, *Acyrtosiphon pisum* (Harris), caged on treated broad bean, *Vicia faba* L. Supervisor: J.A. McLeod.

**Rojanavongse, V.** - Ph.D., 1976. A taxonomic study of the genus *Aphis* L. (Homoptera: Aphididae) in Manitoba. Supervisor: A.G. Robinson.

**Romanow, W.** - M.Sc., 1952. Orthoptera of Manitoba. Supervisor: A.V. Mitchener.

**Scott, J.A.** - M.Sc., 1961. Some experiments on the role of olfactory stimulants in insect behaviour. Supervisor: A.J. Thorsteinson.

**Sebastien, R.J.** - M.Sc., 1980. The influence of formulation on the toxicity and rate of uptake of methoxychlor in rainbow trout (*Salmo gairdneri* Richardson) and some non-target species of aquatic insects when used as a black fly (Diptera: Simuliidae) larvicide. Supervisor: W.L. Lockhart.

**Sigurdson, W.J.** - M.Sc., 1984. Bioelectric aspects of the *Rhodnius prolixus* ovariole: extracellular current mapping during oogenesis. Supervisor: .....

**Smirl, C.B.** - M.Sc., 1970. A study of the development and performance of package bees in Manitoba. Supervisor: S.C. Jay.

**Smith, D.L.** - M.Sc., 1959. Population surveys and control of mosquitoes in the Greater Winnipeg area. Supervisor: A.J. Thorsteinson.

**Smith, D.N.** - M.Sc., 1939. Contributions to the bionomics of the spruce budworm, *Cacoecia fumiferana* Clem., in southeastern Manitoba and northwestern Ontario. Supervisor: R.A. Wardle.

**Smith, S.M.** - Ph.D., 1970. The biting flies of the Baker Lake region, Northwest Territories (Diptera: Culicidae and Simuliidae). Supervisor: R.A. Brust.

**Soehngen, U.** - Ph.D., 1971. Crop content and pollen load studies of honey bees. Supervisor: S.C. Jay.

**Subasinghe, S.M.** - Ph.D., 1983. Variation in the effects of host plant on the pea aphid, *Acyrtosiphon pisum* (Harris) (Homoptera: Aphididae). Supervisor: P.A. MacKay.

**Sun, R.Y.** - M.Sc., 1965. Some host relationships of aphids, including differentiation between genera and species based on chromosome studies. Supervisor: A.G. Robinson.

**Sutherland, J.R.G.** - M.Sc., 1954. An ecological approach to the chemical control of capsid bugs (Hemiptera, Miridae) attacking cacao in Western Nigeria. Supervisor: R.A. Wardle.

**Tauber, M.** - M.Sc., 1959. The feeding behaviour of the clear-winged grasshopper *Camnula pellucida* (Scudder) (Orthoptera: Acrididae) with special reference to the chemotactic influence of some organic constituents found within food plants. Supervisor: A.J. Thorsteinson.

**Taughong, S.** - M.Sc., 1975. Persistence on structural surfaces of residues of organophosphorus and pyrethroid insecticides against five species of stored-product insects. Supervisor: F.L. Watters.

**Tauthong, P.** - Ph.D., 1975. The biology and systematics of *Aedes campestris* Dyar and Knab (Diptera: Culicidae) and related species in Manitoba and Saskatchewan. Supervisor: R.A. Brust.

**Taylor, B.W.** - M.Sc., 1973. Colonization and diapause studies of *Aedes dorsalis* (Meigen) (Diptera: Culicidae). Supervisor: R.A. Brust.

**Taylor, B.W.** - Ph.D., 1980. The effect of photoperiod and temperature on the induction, maintenance, and termination of embryonic diapause in *Aedes vexans* Meigen (Diptera: Culicidae). Supervisor: R.A. Brust.

**Thornton, D.P.** - M.Sc., 1978. Studies on the biology of three mermithid parasites (Nematoda: Mermithidae) of mosquitoes. Supervisor: R.A. Brust.

**Tomalak, M.** - Ph.D., 1984. Nematode parasites of bark beetles (Coleoptera:Scolytidae) in Manitoba: Taxonomy and Pathogenicity. Supervisor: H.E. Welch.

**Tostowaryk, W.** - M.Sc., 1964. Investigations of the orientation behaviour of horse flies (Tabanidae, Diptera) in relation to visual perception and chemical control. Supervisor: A.J. Thorsteinson.

**Trimble, R.J.M.** - M.Sc., 1972. An ecological study of mosquitoes in the area of Pinawa, Manitoba, with special reference to the distribution and abundance of the genus *Aedes*. Supervisor: A.J. Thorsteinson.

**Tsuang, C.Y.J.** - M.Sc., 1970. Cold hardiness and some ecological observations of the European corn borer, *Ostrinia nubilalis* (Hubn.) in Manitoba. Supervisor: W. Hanec.

**Ure, K.R.** - M.Sc., 1967. Biology of the sugar-beet root maggot *Tetanops myopaeformis* (Roder) (Diptera: Otitidae) in the laboratory. Supervisor: W. Hanec.

**Valdimarsson, G.** - M.Sc., 1987. The development of microtubular arrays in the germ tissue of an insect telotrophic ovary. Supervisor: .....

**Van Deveire, P.J.** - M.Sc., 1981. Flight and host-seeking behaviour of adult black flies in the Souris River area, Manitoba. Supervisor: R.A. Brust.

**Waikakul, Y.** - M.Sc., 1973. Behavioural studies of virgin queen honey bees. Supervisor: S.C. Jay.

**Waikakul, Y.** - Ph.D., 1976. Behavioural studies of queen honey bees (*Apis mellifera* L.) with workers and other queens. Supervisor: S.C. Jay.

**Watson, A.J.** - M.Sc., 1984. The dynamics of the *Rhodnius prolixus* follicle cell cytoskeleton: Ultrastructure and immunocytochemistry. Supervisor: .....

**Watters, F.L.** - M.Sc., 1949. High frequency sterilization of cereals. 1. Determination of the dielectric constant, power factor and loss factor of larvae of *Tenebrio molitor* and whole wheat flour. Supervisor: R.A. Wardle.

**Watters, F.L.** - Ph.D., 1964. An investigation of some environmental factors influencing the locomotor activity of *Cryptolestes ferrugineus* (Stephens) (Coleoptera: Cucujidae), a pest of stored grain. Supervisor: A.J. Thorsteinson.

**Westdal, P.H.A.N.** - Ph.D., 1969. Blue dwarf of oats and aster yellows: diseases of cereals transmitted by the aster leafhopper, *Macrosteles fascifrons* Stall. Supervisor: A.G. Robinson.

**Westwood, A.R.** - M.Sc., 1979. Ecological studies on the black flies of the Souris River, Manitoba. Supervisor: R.A. Brust.

**White, N.D.G.** - Ph.D., 1979. Interrelations in stored-wheat ecosystems infested with multiple species of insects: a descriptive and multivariate analysis. Supervisor: R.N. Sinha.

**Wickstrom, R.D.** - M.Sc., 1973. Algae, bacteria and detritus in the growth, development and survival of two *Aedes* mosquitoes. Supervisor: A.J. Thorsteinson.

**Wiens, A.P.** - M.Sc., 1972. Bionomics of the pitcher plant midge *Metriocnemus khabi* (Coquillett) (Diptera: Chironomidae). Supervisor: R.A. Brust.

**Wilson, G.G.** - M.Sc., 1969. The influence of food plant constituents on growth and mortality of the migratory grasshopper *Melanoplus sanguinipes* (Fab.) (Orthoptera: Acrididae) inoculated with *Nosema locustae* Canning (Microsporidia: Nosematidae). Supervisor: A.J. Thorsteinson.

## V. PROFILES OF MANITOBA ENTOMOLOGISTS



**AITCHISON, Caroline Williams**  
B.A. (1965) Colo.; B.Sc.(Hon.) (1972),  
M.Sc. (1977), Ph.D. (1984) Manitoba  
Born: 15 October 1943  
New Haven, Conn., U.S.A.  
Address: Department of Zoology  
University of Manitoba  
Winnipeg, Manitoba R3T 2N2

Cassie's interest in Arts led to a degree in French at the University of Colorado. This interest was strengthened by a year at the Université de Bordeaux, but was replaced by her curiosity of science when at the Australian National University during 1966-1969. She vigorously pursued her studies of zoology after arriving in Manitoba in 1970; gaining three degrees and valuable experience as a laboratory demonstrator (1969-1976), research assistant (1970-1985), Post-doctoral Fellow (1987-1988), and as a current Research Associate. Her work has encompassed studies of animals in a cold environment. This included life histories, activities, food preferences and food chains of winter-active beetles, collembola, flies, and hymenoptera, and subnivean spiders and shrews. She has undertaken the cataloging of Manitoba spiders and a taxonomic revision of the spider genus *Islandiana*.



**ALLEN, Willard Ross**  
B.S.A. (1936), M.Sc. (1939) Manitoba;  
Ph.D. (1952) Minnesota  
Born: 10 January 1913  
Toronto, Ontario  
Died: 10 June 1973  
Winnipeg, Manitoba

Willard started his career in entomology at the Dominion Entomological Laboratory, Brandon, in 1936, studying the ecology of grasshoppers until 1942. He then turned to the chemical control of field crop and garden insects; seconded in 1946 for one year to the Defence Research Board Laboratory, Suffield, Alberta, to select and evaluate insecticides. Thereafter he worked as a toxicologist on soil insecticides at Brandon and at the Research Station, Winnipeg. Willard was meticulous in measuring insecticide residues, objected to the indiscriminate use of toxic substances and to the registration of wide-spectrum pesticides. His forewarnings of insect resistance and ecological damage attested to his deep insight into, and concern about environmental pollution. He was a strong proponent of the practice of responsible economic entomology. In 1951 and 1952 he served as President of the E.S.M.



**ARNTFIELD, Peter William**  
B.Sc (Hon.)(1969) Guelph; M.Sc.  
(1973), Ph.D. (1977) McGill  
Born: 16 October 1946  
Toronto, Ontario  
Address: 225 Laurent Drive  
Winnipeg, Manitoba  
R3V 1S1

Peter's formative years, spent at the family-owned resort near Halliburton, Ontario, included an acquaintance with aquatic fauna. He spent his summers (1969-1971) as a Student Assistant with the Biosystematics Research Institute, turning his acquired talents to the systematics of the Diptera. While at Macdonald College he worked as a Sessional Lecturer (1977-1978), teaching courses in morphology, systematics, and invertebrate zoology, and was an assistant to the Curator of the Lyman Entomological Museum. As a "post-doc" at the University of Manitoba (1978-1981), Peter studied the factors affecting diapause development in mosquitoes, later (1981) he examined the stable fly problem in Pointe Pelee National Park for the Canada Biting Fly Centre. As a self-employed entomologist he worked on the identification of fossil and extant chironomids from the Qu'Appelle Lakes for Environment Canada (1981-1982). Currently he is identifying copepods, arctic molluscs and other crustacea from the Beaufort Sea for a consulting firm in Winnipeg. Peter has participated in committee work of the E.S.M. and represented the Society on the Manitoba Environmental Council.



**ASKEW, Walter**  
Born: 15 December 1928  
Bengough, Saskatchewan  
Retired: 31 January 1987  
Winnipeg, Manitoba  
Address: 1 Agate Bay  
Winnipeg, Manitoba R2J 2K1

Having completed some undergraduate courses in zoology and psychology at Brandon College (1947-1950), Wally signed on as a student assistant at the Dominion Entomological Laboratory, Brandon, in 1949. The following summer he worked as a mosquito control field supervisor for the City of Brandon but returned to the Brandon Entomological Laboratory in 1951. He remained with Agriculture Canada as a Research Technician, serving at Brandon and, after 1957, at the Research Station, Winnipeg. His interest in field crop insects, especially the rearing and control of root maggots and cutworms in rutabagas, sugar beets, canola, and onions, led to a successful and fruitful career in economic entomology. Wally served as a sub-committee Chairman of the Western Committee on Crop Pests and was a member of the team responsible for the registration of several insecticides used for the control of destructive insects on field crops in Manitoba. He also served as Treasurer of the E.S.M. from 1976-1987.



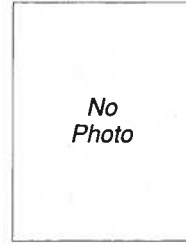
**AYRE, Gordon Leonard**  
 B.S.A. (1951); M.S.A. (1953) U.B.C.  
 Born: 18 May 1930  
 Trail, British Columbia  
 Retired: 1 April 1989  
 Address: Research Station  
 Agriculture Canada  
 195 Dafoe Road  
 Winnipeg, Manitoba R3T 2M9

After completing his University training in 1953, Gordon joined Agriculture Canada in Vancouver. Here he worked on the biological control of insect pests in truck crops and market gardens, and on the control of ants. In 1957 he transferred to the Research Station, Belleville, Ontario, where he investigated the biology and behaviour of ants. After closure of that Station in 1972, Gordon was re-assigned to the Research Station, Winnipeg, where he has assessed the damage and studied the biology and control of cutworms. Since 1973 Gordon has been very active in the affairs of the Entomological Society of Manitoba as Treasurer (1973-1974), Editor (1979), President (1975), and Treasurer of Joint-Meetings (1977, 1985).



**BARKER, Philip Shaw**  
 Ing. Agr. (1957) Mexico; M.Sc. (1960)  
 Berkely; Ph.D. (1965) McGill  
 Born: 2 August 1933  
 Queretaro, Mexico  
 Address: Research Station  
 Agriculture Canada  
 195 Dafoe Road  
 Winnipeg, Manitoba, R3T 2M9

Phil initiated his entomological career by working with Doug Barnes at the Rockefeller Institute in Mexico. After completing his University graduate training he joined the research staff of entomologists in Winnipeg studying stored products insects. Here he investigated the life histories and bionomics of the most common grain-infesting insects including the mites that feed on the eggs of grain beetles. The results of these investigations enhanced the understanding of the control of mites by fumigation. Phil then investigated the diffusion processes of fumigants as they passed through grain bulks; their penetrating power, unequal distribution, and the killing potential as related to moisture, freezing, and the volume of stored grain. These studies have improved the techniques used for the control of stored grain pests on the prairies. Phil has served as President (1970) and Editor (1971-1972, 1975-1982) of the E.S.M.



**BARKER, Randy**  
 B.S.A. (1971), M.Sc. (1973) Manitoba  
 Born: 1 April 1947  
 Winnipeg, Manitoba  
 Address: 6200 No. 4 Road  
 Richmond, B.C. V6Y 2S9

Randy's interest in biology soon became evident when he enrolled in the Faculty of Agriculture at the University of Manitoba, and majored in Apiculture. After completing his Master's work on the foraging behaviour of honey bees, he joined the Manitoba Department of Agriculture in 1973 as the Provincial Apiarist. Here his interest in apiculture and pollination soon led to the introduction of innovative procedures for overwintering honey bee colonies in Manitoba. By adapting such procedures to the winter conditions of the province, the industry soon experienced a marked increase in the number of colonies that were overwintered. When he left for British Columbia in 1978 to become a beekeeper specializing in the pollination of local crops, his apiarist position was assigned to Don Dixon.



**BERCK, Benjamin F.C.I.C.**  
 B.S.A. (1935), M.Sc. (1953) Manitoba  
 Born: 20 April 1912  
 West Kildonan, Manitoba  
 Retired: 1977  
 Address: 843 Queenston Bay  
 Winnipeg, Manitoba  
 R3N 0Y1

Ben, a chemist, got started in entomology as a technician with the Board of Grain Commissioners' research facility in Winnipeg. He joined B.N. Smallman in 1941 to develop methods of measuring the amounts of DDT applied to surfaces, especially boxcars, and to its loss by absorption and efflorescence. He developed analytical methods of determining the concentration of fumigants, their retention by stored products, and factors affecting vaporization. He demonstrated that stored grain acts like a chromatographic column and carbon tetrachloride acts like an eluent in a mixture of fumigants. Further investigation of fumigant persistence, their residues, and sorption by cereals, have enabled those in the grain trade to greatly improve their capabilities of storing grain and keeping it free of noxious mites and insects.



**BIRD, Ralph Durham**

B.Sc. (1924). M.Sc. (1926) Manitoba;  
Ph.D. (1929) Illinois  
Born: 1901 Arrow River, Manitoba  
Retired: 20 May 1966, Winnipeg, Manitoba  
Died: 1 March 1972, Salt Springs Island, B.C.

Ralph trained as an ecologist under the direction of V.E. Shelford at Illinois. During the winters of 1929-1933 he taught at the University of Oklahoma while the summers were spent investigating insect ecological problems for the Oklahoma Biological Survey and the Dominion Entomological Laboratories at Vernon and Hat Creek, B.C. In 1933 he replaced the deceased N. Criddle at Treesbank, Manitoba, then transferred to Brandon, and in 1957 headed the Entomology Section of the Research Station, Winnipeg. For many years he conducted grasshopper abundance surveys and participated in provincial grasshopper control campaigns. He investigated the biology and control of the sweet clover weevil, crop depredations by blackbirds, and the effect of land use on insect populations. His authoritative ecological treatise, "The Ecology of the Aspen Parkland", remains very relevant today. Ralph served as President of the E.S.M. in 1965.



**BODNARYK, Robert Peter**

B.A. (1963) McMaster; M.Sc. (1965),  
Ph.D. (1967) Waterloo.  
Born: 4 November 1940  
Kamsack, Saskatchewan  
Address: Research Station  
Agriculture Canada  
195 Dafoe Road  
Winnipeg, Manitoba R3T 2M9

Robert began his career as a biochemist investigating the structure of insect peptides at the National Institute of Arthritis and Metabolic Diseases, U.S.N.I.H., in Bethesda, Maryland. He joined the Agriculture Research Institute, Belleville, Ontario, in 1968 and after its closure went to the Department of Zoology, Oxford University, to study catecholamines with Prof. Brunet. Robert then joined the I.P.M. Section, Research Station, Winnipeg, in 1972 to study the biochemistry, physiology, and toxicology of insect pests. His research has included the discovery of: the gamma-glutamyl cycle and several new compounds in the sclerotization of insect cuticle; the "AG" process of synergism involving insecticides that alter cyclic AMP or GMP metabolism; the regulation of insect diapause by cyclic nucleotides; the effects of ecdysone on insect diapause and development; and the regulation of biogenic amines by taurine. He was awarded the first C.Gordon Hewitt Award of the E.S.C. in 1975.



**BRACKEN, Garth Kyles**

B.S.A. (1956) McGill; M.Sc. (1960),  
Ph.D. (1962) Manitoba  
Born: 24 January 1933  
Orangeville, Ontario  
Address: Research Station  
Agriculture Canada  
195 Dafoe Road  
Winnipeg, Manitoba R3T 2M9

Garth's post graduate work involved the investigation of host orientation and feeding behaviour of tabanids, and the development of the Manitoba horsefly trap. In 1962 he joined the staff of the Biological Research Institute of Biological Control, Belleville, Ontario, where he worked on the dietary requirements of adult parasitoids. Following a transfer to Winnipeg in 1972, Garth investigated the relationship between the yield loss of canola and larval density of Bertha armyworm. He also determined the period of protection needed by canola seedlings from adult flea beetles and the potential losses due to root feeding by flea beetle larvae. More recently he has been engaged in developing a damage index for measuring loss of yield of sunflowers caused by the sunflower midge, and has tested the efficacy of monitoring systems and the potential of biological control methods in curbing cabbage root maggot damage to rutabagas. Garth served as President of the E.S.M. in 1984.



**BRADLEY, George Arthur**

B.S.A. (1937) Guelph; M.S. (1939)  
Michigan St.; Ph.D. (1961) McGill  
Born: 19 March 1913  
St. Catharines, Ontario  
Retired: 1978  
Address: unknown

George joined the research staff of the Dominion Entomological Laboratory, Indian Head, Saskatchewan, as an aphid taxonomist in 1949. Here he studied the parasites and predators of the yellow headed spruce sawfly. When that laboratory closed he transferred to the Forest Biology Laboratory, Winnipeg, in 1956, still continuing his active career in aphidology. In 1970 he once again was transferred, this time to the Biosystematic Research Institute, Ottawa, where he remained until retirement. Throughout his active entomological career, George was involved with forest insects, publishing widely on the taxonomy of the aphid genus *Cinara*, and on forest ants. He constantly tried to find alternatives to chemical control using biological agents. He firmly believed that the maintenance of a pollution-free environment was an objective that deserved the attention of all, especially economic entomologists.



**BRUST, Reinhart Albert F.E.S.C.**  
 B.S.A. (1959), M.Sc. (1960) Manitoba;  
 Ph.D. (1964) Illinois  
 Born: 7 February 1934, Sibbald, Alberta  
 Address: Department of Entomology  
 University of Manitoba  
 Winnipeg, Manitoba  
 R3T 2N2

Biting fly entomology has been the life-blood of Reiny's professional career. His experience as a Research and Teaching Assistant, at both the Universities of Manitoba and Illinois (1959-1964) prepared him for an active academic life in the Department of Entomology in Winnipeg beginning in 1965. Starting with studies of the biology and control of mosquitoes and black flies (1960-1964), he proceeded to unravel the mysteries of thermal stress, sexual dimorphism, blood feeding, and oviposition behaviour of the prairie *Aedes* species. He diverted briefly to a study of the biosystematics of the *Aedes communis* group, then turned to a study of mosquito dispersal and vectoring of Western Equine Encephalitis. Concomitant with this research he was responsible for much of the teaching of insect ecology, medical entomology, insect control, and epidemiology of arthropod-borne diseases. He has studied the fluctuations of black fly populations in the Souris River, the effects of chemicals on non-target aquatic organisms, and is advisor to the City of Winnipeg and the Province of Manitoba regarding mosquito control and surveillance and control of Western Equine Encephalitis. Reiny has served as Chairman and member of several important committees of the E.S.M. and the E.S.C.



**BUCHER, Gordon Edward F.E.S.C.**  
 B.A. (1937), M.A. (1939) Toronto;  
 Ph.D. (1946) Ohio State  
 Born: 28 March 1917  
 Toronto, Ontario  
 Retired: December 1981  
 Winnipeg, Manitoba  
 Died: 1 February 1982  
 Winnipeg, Manitoba

Gordon began his entomological career as a Student Assistant at the Dominion Parasite Laboratory, Belleville, Ontario (1936-1941). He returned there after a stint in the Canadian Army (1942-1946), then transferred to Europe to establish the European Laboratory of the Commonwealth Institute for Biological Control in Feltmeilen, Switzerland. On his return in 1948 he headed the Biological Control Investigations Laboratory, Kingston, Ontario, until 1955. He went back to Belleville to head a program of insect pathology (1955-1972) and was then transferred to Winnipeg where he remained until his retirement. His early work included studies on insect taxonomy, morphology, and ecology, in particular the micro-organisms useful in grasshopper control. His latest work dealt with the pathology-ecology of insects in rapeseed and their control.



**BUTH, JoAnne Leona**  
 B.Sc. (1976) Winnipeg; M.Sc. (1983)  
 Manitoba  
 Born: 23 May 1954  
 Vernon, British Columbia  
 Address: 207 Cullen Drive  
 Winnipeg, Manitoba  
 R3R 1P5

Following her graduation from the University of Winnipeg, JoAnne accepted a position as Research Supervisor, Insect Control Branch, of the City of Winnipeg. Here she supervised applied research on the biology and control of mosquitoes, bark beetles, tree defoliators, and nuisance insect pests. In 1982 she was appointed Technical Information Officer, Agriculture Canada Research Station, Winnipeg, with duties that included public relations and the transfer of scientific technology to the public, business agencies, and industry. In 1986 she joined the Dow Chemical Company in Winnipeg as a Research Agronomist. The duties of this position include responsibility for the research and development of proprietary herbicides and insecticides in Manitoba, and the supervision of field testing of pesticides for efficacy and crop tolerance in preparation for PCP registration.



**COBB, Donald George**  
 B.Sc. (1973) Winnipeg  
 Born: 29 October 1951  
 Winnipeg, Manitoba  
 Address: Freshwater Institute  
 501 University Crescent  
 Winnipeg, Manitoba  
 R3T 2N6

Following graduation from the University, Donald was appointed, in 1973, as an Aquatic Invertebrate Biologist with the Resource Development and Research Section of the Freshwater Institute, Winnipeg. Here he could follow his interests which centered on the ecological distribution and taxonomy of Trichoptera, Ephemeroptera, and Plecoptera. He has studied the aquatic insects in the spawning rivers and streams of the Dauphin Lake drainage basin. He has used insect species as indicators of poor spawning conditions caused by channelization and substrate instability, and as indicators of improved habitat in rehabilitation projects.





**COLE, Thomas Victory**

B.S.A. (1949), M.Sc.(1951) Manitoba

Born: 20 October 1918

Elkhorn, Manitoba

Retired: 1966

Address: 779 Warsaw Avenue

Winnipeg, Manitoba

R3M 1B7

Following a year of teaching in a Public School, Tom enlisted and spent four years in the Royal Canadian Air Force. After demobilization and subsequent University training, he joined the staff of the Dominion Field Crop Insect Laboratory, Brandon, in 1949, having worked there as a Student Assistant the previous summer. In the early part of his career he investigated the life history and habits of insects on potatoes and also of root maggots on radishes, turnips, and onions. In 1953 Tom took charge of the project on insect pollination of alfalfa. He developed a field and bee habitat management program to increase and maintain high populations of wild bees adjacent to seed alfalfa fields. In the years before retirement Tom studied the cause and effects of aster yellows due to virus infection.



**CONROY, John Charles**

B.Sc. (1961) Dublin; M.Sc. (1963)

Galway; Ph.D. (1974) Manitoba

Born: 27 July 1939

Dublin, Ireland

Address: Department of Biology

University of Winnipeg

Winnipeg, Manitoba R3B 2E9

Because John believed in leprechauns that would guarantee his success at the far end of the rainbow, he made a successful transition, in 1963, from the University College, Galway, to the then United College, Winnipeg. He had embarked upon a career in entomological-acarological academia; his interests being the taxonomy and ecology of water mites. He has published on these matters but he is also charmed by the dragonflies and intrigued by host-parasite relationships between insects and mites. At the University of Winnipeg, John has been responsible for the teaching of zoology of the higher vertebrates, general entomology, and the usual first-year courses. He served as President of the E.S.M. in 1978.



**CRIDDLE, Norman**

Naturalist

Born: 14 May 1875

Addlestone, Surrey, England

Died: 4 May 1933

Brandon, Manitoba

Norman Criddle was western Canada's most distinguished naturalist. He excelled not only in entomology but was proficient also in mammalogy, ornithology, botany, music, painting, and poetry. A settler at Aweme, Manitoba, he, by careful observation and experimentation, recorded the biologies of wildlife creatures, the interdependence (ecology) of plants and animals, controlled insect pests, and sought to preserve the natural environment. He was placed in charge of the newly founded Dominion Entomological Laboratory at Treesbank, Manitoba in 1913; a position he filled with honour and renown. His "Criddle Mixture" of horse dung and arsenic spread in fields to control grasshoppers, is well remembered as are the equally effective methods of curbing the damage of a host of field crop and garden insects. Many of his methods of insect control, fundamental to sound economic entomological practice, are still in use today.



**CUMMING, William Archibald**

B.S.A. (1932), D.Sc.(Hon.)(1971)

Manitoba

Born: 18 March 1911

Teulon, Manitoba

Retired: March 1976

Address: 211 Carpathia Road

Winnipeg, Manitoba R3N 1T1

Because he was raised in the rural district near Teulon, Manitoba, Bill had an early introduction to nature; the butterflies were his choice of entomological subjects. As a local school teacher he assisted the medical doctor, A.J. Hunter, in organizing insect collecting parties for school children thus enriching their nature studies. Bill taught introductory entomology and apiculture in Rural Youth Training Schools, was an apiary regulatory inspector (1932-1936), a Plant Protection District Inspector (1936-1945), and a plant nursery manager (1945-1955). He joined the Research Station in Morden in 1955, headed the Ornamentals Section in 1958, and remained there until he retired. Although his entomological activities were subordinate to his widely acclaimed success in the breeding of new varieties of horticultural and ornamental plants, his interest in insects never waned. He was awarded an Honorary D.Sc. degree by the University of Manitoba in 1971 for his outstanding contributions to horticulture in Manitoba.



**DeBOO, Robert Ford**  
 B.Sc. (1960) U.N.B.; M.Sc. (1962)  
 Maine; Ph.D. (1966) Cornell  
 Born: 31 August 1936  
 Quebec, P.Q.  
 Address: Protection Branch  
 B.C. Forest Service  
 31 Bastion Square  
 Victoria, B.C. V8W 3E7

Robert, with his interest in forestry and entomology, naturally gravitated towards a research position with the Canadian Forestry Service. He joined the staff in Winnipeg (1966), transferred to Ottawa (1970), then to Sault Ste. Marie (1979), investigating and publishing papers on the biology and control of a variety of insect pests of parks, plantations, and high value stands of timber, shelter belts or ornamentals. Bob has developed some very satisfactory sampling techniques, and was involved in forest insect pest control and in the registration of pesticides. He joined the British Columbia Forest Service in 1980, accepting responsibility for policy development, establishing operational guidelines, and program application. Forest pest management practices in B.C. - Bob describes these as pest detection; damage appraisal, prevention, and suppression; information base for planning and general referral - have been developed and accepted as basic forestry practices. Bob has been a Director-at-Large and Chairman of the Finance Committee of the E.S.C.



**DEMIANYK, Colin John**  
 B.Sc. (1977), B.S.A. (1979), M.Sc.  
 (1987) Manitoba  
 Born: 4 April 1956  
 Winnipeg, Manitoba  
 Address: Research Station  
 Agriculture Canada  
 195 Dafoe Road  
 Winnipeg, Manitoba R3T 2M9

After obtaining a degree in Agriculture in 1979, Colin was appointed to a technical position with Agriculture Canada in Winnipeg, working with R.N. Sinha. Here he has been involved in experimental scientific programs encompassing the interrelations of climate, physical, chemical, bioenergetic, and biotic variables, and the deterioration of stored cereal products and oilseeds. He has also worked with stored-product insects and mites; their propensities to deteriorate stored grain, and determined the means required to control such qualitative and quantitative deterioration and losses. In a recently completed Master's program he has investigated energy losses to cereals caused by a major tropical storage insect pest. Colin was a member of the Finance Committee of the E.S.M. in 1985-1986.



**DIXON, Donald Peter**  
 B.Sc.(Hon.)(1976), M.Sc. (1979) Manitoba  
 Born: 7 March 1950  
 Toronto, Ontario  
 Address: 911 Norquay Building  
 401 York Avenue  
 Winnipeg, Manitoba R3C 0P8

Don joined Manitoba Agriculture as Provincial Apiarist in 1978. He had just completed his Master's program and the thesis research on honey-bee queen production. As the new Provincial Apiarist he has been responsible for the administration of the Manitoba Bee Act, for extension and regulatory work in apiculture for the Province of Manitoba, and for management of the provincial bee research program. Don has attempted to improve the overwintering capacity and capabilities of bees, encourage better queen-bee production, and implement better extension programs. He is acutely aware of and monitors the effects of insecticides - such as are used in mosquito control programs - on honey bees. He also identifies and keeps close watch on the occurrence and control of honey bee diseases. Don served as President of the E.S.M. in 1989.



**DROUIN, James Albert**  
 Born: 1 June 1925  
 St. Boniface, Manitoba  
 Retired: 15 May 1986  
 Address: 11520 - 41 Avenue  
 Edmonton, Alberta T6J 0V1

Jim began his entomological career as a Forest Insect Ranger with the Forest Entomology Laboratory, Winnipeg, in 1946. For fifteen years he worked with the Forest Insect and Disease Survey unit, surveying for the incidence of these pests in the three Prairie Provinces and the N.W.T., assessing their impact and making control recommendations. Then, as a Senior Technician, he investigated the larch sawfly (1961-1972), compiled annual life tables, directed the operation and analyses of data, and was Director of the Whiteshell Field Station. In 1970 he transferred to Edmonton where, until 1978, he implemented a working pest control unit, conducted efficacy trials on pesticides/ herbicides for label expansion/registration for Canadian use. Jim has in the past 40 years had experience with most phases of chemical control of forest pests, and has taken part in pheromone and biological research on these noxious insects. More than 80 papers attest to his contribution to entomology in western Canada. He was President of the Entomological Society of Alberta in 1985.



**ELLIS, Roy Arthur**  
 B.Sc. (Hon.) (1967), M.Sc. (1969)  
 Simon Fraser; Ph.D. (1972) Manitoba  
 Born: 6 May 1944  
 Toronto, Ontario  
 Address: Prairie Pest Management  
 207 Cullen Drive  
 Winnipeg, Manitoba R3R 1P5

Following his University education and thesis research - the latter on taxonomy, ecology, and physiology of mosquitoes - Roy accepted a two-year post-doctoral Fellowship tenurable at Carleton University in Ottawa. Here he investigated the biosystematics of Canadian mosquitoes. In 1974 he was appointed the City Entomologist for the City of Winnipeg. For the next 14 years he conducted applied entomological research on the biology and control of urban insect pests including mosquitoes, tree pests, cockroaches, and noxious insects of greenhouses and nurseries. He has aided in the development of conventional and biological insecticides for pesticide manufacturers; investigated subarctic mosquitoes for the United Nations Development Program; and has been a consultant for C.I.D.A. on the use of aircraft in tsetse fly control. In 1988 he resigned his position with the City of Winnipeg and now operates his own pest management consulting business.



**FINDLAY, Glen Marshall M.L.A.**  
 B.S.A.(Hon.)(1963), M.Sc. (1964)  
 Manitoba; Ph.D. (1968) Illinois  
 Born: 15 July 1940  
 Shoal Lake, Manitoba  
 Address: Manitoba Legislature  
 165 - 450 Broadway  
 Winnipeg, Manitoba R3C 0V8

After Glen had completed his doctoral program at Illinois, during which time he was also a Research Assistant, he accepted a post-doctoral position on pesticide metabolism in animals at the National Research Council in Ottawa. In 1970 he was appointed to the staff of the Entomology Department of the University of Manitoba. His interest was in pesticide toxicology and nutritional biochemistry along with concerns about the environment. His research involved toxicological studies on pesticide residues in animals and birds. He resigned his position with the University in 1977, and returned to farming (grain and cattle) at Shoal Lake, Manitoba, until 1986 when he entered politics, and was duly elected a Member of the Legislative Assembly of Manitoba, where he now is the Minister of Agriculture.



**FINGLER, Barry Gordon**  
 B.S.A. (1976), M.Sc. (1980) Manitoba  
 Born: 9 June 1954  
 Winnipeg, Manitoba  
 Address: Manitoba Agriculture  
 Entomology Section  
 911 - 401 York Avenue  
 Winnipeg, Manitoba R3C 0V8

Barry has had an interest in biology since his formative years; bees were of particular interest to him. Following his graduation he was employed by Alberta Agriculture in 1978 as a Research Technician to work on the Alberta Bee Breeding Program. His duties included the selection and evaluation of honey bee breeding stock for their desirable honey-gathering qualities. During this time he completed his Master's program which included studies of the indoor wintering of honey bees. In 1981 he resigned to take a position with Manitoba Agriculture as an Extension Apiarist. From then, and up to the present time, he has been responsible for the administration of the Manitoba Bee Act and providing beekeepers with current technical information on beekeeping, including honey bees and leafcutter bees.



**FLANNAGAN, John Fullan**  
 H.N.C. (1966) Paisley Coll.; C. Biol. M.I. Biol. (1974)  
 Instit. Biol. Engl.; M.Sc. (1982) Manitoba.  
 Born: 10 January 1940  
 Glasgow, Scotland  
 Address: Freshwater Institute  
 Can. Dept. Fish. & Oceans  
 501 University Crescent  
 Winnipeg, Manitoba R3T 3C9

Before and during his years at Paisley College, John worked summers as a technician for staff of the University of Glasgow who were engaged in research on the fish, benthos, plankton, and water chemistry of Loch Lomond. After coming to Canada in 1966 he worked for a year on the Canada Land Inventory Project and in 1967 joined the Freshwater Institute in Winnipeg. Here he has worked on various projects including invertebrate culture and toxicology. His interests centre on the emergence, distribution and ecology of aquatic insects and their use as indicators of environmental perturbations. John has published on methods of sampling and handling benthic invertebrates; the impact of insecticides on, and the biology and distribution of aquatic insects. He is currently a leader of a group involved in developing methods of rehabilitating fisheries. John has served on numerous committees of the E.S.M. and taken an active part in national and provincial meetings.



**FRIESEN, Margaret Katherine**  
 B.Sc.(Hon.)(1972), M.Sc. (1982)  
 Manitoba  
 Born: 14 March 1950  
 Winnipeg, Manitoba  
 Address: Freshwater Institute  
 Can. Dept. Fish. & Oceans  
 501 University Crescent  
 Winnipeg, Manitoba R3T 2N6

Margaret joined the Freshwater Institute in 1973. Her work then dealt mainly with the culture of a variety of invertebrates for use as toxicity test organisms. She later concentrated on developing culture and toxicity test methods for one of these invertebrates, the burrowing mayfly, *Hexagenia rigida*. Other work included studies on the emergence patterns of Ephemeroptera and Plecoptera from Manitoba streams. Her work has had a different focus since 1985 when she began studying the role of zooplankton as important food items for young walleye fish. Margaret has represented the E.S.M. on the Manitoba Environment Council.



**GALLAWAY, William John**  
 B.Sc. (1979) Brandon; M.Sc. (1983)  
 Manitoba  
 Born: 18 August 1954  
 Winnipeg, Manitoba  
 Address: Department of Zoology  
 Brandon University  
 Brandon, Manitoba R7A 6A9

Bill got his first good taste of professional entomology as the Field Manager of the mosquito abatement program for the City of Brandon in 1978. Experience in practical control of pest insects was helpful when he next worked for the City of Winnipeg in 1983 as a laboratory technician identifying mosquitoes and operating a "bug-line" inquiry service. In 1983 he returned to Brandon where he supervised the seasonal mosquito control operation. After completing his Master's program he was appointed an Instructional Associate at the University of Brandon where he currently is responsible for the preparation and supervision of the undergraduate laboratories in Zoology. However, that does not lessen his interest in the biology, host preferences, and overwintering capabilities of *Culex*, *Culiseta* and *Anopheles* mosquitoes.



**GADAWSKI, Randy Mark**  
 B.Sc. (1978), M.Sc. (1981) Waterloo  
 Born: 27 December 1955  
 Waterloo, Ontario  
 Address: The City of Winnipeg  
 Insect Control Branch  
 2799 Roblin Blvd.  
 Winnipeg, Manitoba R3R 0B8

Randy grew up in Waterloo where he was introduced at an early age to the wonders of the biological world. After his University education he remained at Waterloo for a year as a Research Assistant investigating the ecology of biting flies. He then went to Guelph (1982-1984) where he assisted the staff of the Department of Environmental Biology in their studies of pollination ecology and I.P.M. programs of forage crop insects. In 1984 he accepted a position as Research Associate with the Canada Biting Fly Centre, University of Manitoba, investigating the ecology and control of biting flies especially that of mosquitoes and black flies using *B.t.* Randy joined the Insect Control Branch of the City of Winnipeg in 1987 and in 1988 became the City Entomologist. His job is to manage the research and operations activities involved in keeping insect pest populations at acceptable levels. Randy has served the E.S.M. from 1985-1988 as Chairman of their Finance, Endowment Fund, Publicity, and Annual Meeting Committees.



**GALLOWAY, Mary MacCrimmon**  
 B.Sc.(Hon.)(1965) McGill; M.Sc.(1969)  
 Ph.D. (1977) Alberta  
 Born: 14 January 1945  
 York, England  
 Address: Department of Entomology  
 University of Manitoba  
 Winnipeg, Manitoba R3T 2N2

Mary spent her early years in England, arriving in Canada in 1956. She elected a career in biology and when she had completed her Master's program, she remained with the University of Alberta for her doctorate, continuing her research on black flies. She was also the extension entomologist at the University of Alberta (1971-1973). Because her interest was in medical-veterinary entomology, especially in biology, ecology and control of biting flies, she joined the Department of Biology, University of Waterloo, (1974-1975), as one of a four-member team to prepare a report on mosquitoes and their control for the Ontario Government. She then returned to Montreal and became a lecturer at John Abbott College (1976-1977) and Vanier College (1977-1979). The following year, as a Research Associate at the University of Manitoba, she began a feasibility study on the establishment of a Canada centre on biting flies. In 1980 she was appointed to the Faculty of the Department of Entomology as Director of the Canada Biting Fly Centre. Mary has been President of the E.S.M. (1985-1986) and a member of the E.S.C. Scholarship Committee.



**GALLOWAY, Terry Don**  
 B.S.A. (1973) Guelph; Ph.D. (1977)  
 Manitoba  
 Born: 12 October 1950  
 Leamington, Ontario  
 Address: Department of Entomology  
 University of Manitoba  
 Winnipeg, Manitoba R3T 2N2

Terry was introduced to entomology as a summer student at the Canada Agriculture Research Station, Harrow, Ontario, (1970-1971) and in the Department of Environmental Biology, Guelph, Ontario (1972). He joined the Department of Entomology, University of Manitoba, in 1977 and is currently a full Professor. His interests lie in veterinary and aquatic entomology, host-parasite relationships, and aculeate Hymenoptera. His research in these areas has enabled him to successfully apply the nematode *Romanomermis* to aquatic habitats for the control of mosquito larvae. Terry is also engaged in the application of control practices to curb livestock pests in Manitoba. He has been a member of the E.S.C. Board of Governors; the E.S.C. Science Policy, Publications, and Annual Meeting Committees; the E.S.M. Youth and Public Education, Publicity, Membership, and Program Committees.



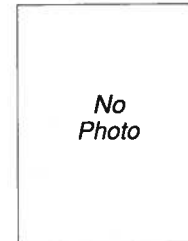
**GERBER, George Hilton**  
 B.S.A. (1964), Ph.D. (1969) Sask.  
 Born: 19 March 1942  
 St. Walburg, Saskatchewan  
 Address: Agriculture Canada  
 Research Station  
 195 Dafoe Road  
 Winnipeg, Manitoba R3T 2M9

George received excellent instruction and guidance in insect anatomy from J.G. Rempel and N.S. Church. Three summers of work with soil insects at the federal Research Station in Saskatoon encouraged him to stay in entomology. He joined the Agriculture Canada Research Institute, Belleville, Ontario, to conduct research on the reproductive physiology and behaviour of insects. In 1972 George was transferred to Winnipeg to take part in the development of IPM programs of field crop insects. His detailed ecological-physiological research on the red turnip beetle and its life stages, have led to more effective control of this insect in rapeseed fields. He served as Secretary and Director of the E.S.C., Treasurer of the E.S.M., and served on numerous committees of both Societies. George received the C. Gordon Hewitt Award of the E.S.C. in 1981.



**GUTHRIE, John Erskine**  
 B.Sc.(Hon.)(1950), M.Sc. (1955)  
 McGill; Ph.D. (1969) Manitoba  
 Born: 25 September 1926  
 Montreal, Quebec  
 Retired: 1983, now self employed  
 Address: 8 McDiarmid Road  
 P.O. Box No 41  
 Pinawa, Manitoba R0E 1L0

As a member of the Canadian Army (1944-1959) and receiving a University education in biochemistry, John combined the two when he served as Officer-in-Charge of the mobile radiological field laboratory of No. 1 Radiation Detection Unit. His interest in radiation ecology, the transport of radionuclides through the insect component of ecological communities, and the physiological effects of chronic exposure to low dose-rates of ionizing radiation on aquatic insects, led him to a civilian life with the Whiteshell Nuclear Research Establishment of A.E.C.L. at Pinawa, Manitoba. While at Pinawa he was Head of the establishment's Environmental Research Branch. Here he studied the uptake by, and the fate of radiocesium and radiostrontium in aquatic insects, as well as the application of beta radiation for radio-sterilization of mosquitoes. After retirement from Whiteshell in 1983, John formed his own company, Scott-Guthrie Associates, specializing in natural resources and environment consulting. He has served as President and Secretary of the E.S.M.



**HAMILTON, Andrew Lloyd**  
 B.A. (1959) Hon. (1960), M.A. (1961)  
 Sask.; Ph.D. (1966) U.B.C.  
 Born: 13 November 1937  
 Nipawin, Saskatchewan  
 Address: International Joint Commission  
 100 Metcalfe Street  
 Ottawa, Ontario K1P 5M1

After serving a year as a post-doctoral fellow at the Entomology Research Institute in Ottawa (1965-66), Andrew joined the Freshwater Institute in Winnipeg. He worked in the Eutrophication Section (1966-70), then headed the Section (1972-74) and advanced to Acting Director of the Institute (1975-76). He transferred to Pinawa, Manitoba to become the Environmental Advisor with Atomic Energy of Canada (1977-79), and in late 1979 advanced to the position of Advisor and then as Biologist with the International Joint Commission in Ottawa. Andrew's entomological concerns include the composition of the bottom fauna of the Great Lakes and the St. Lawrence River system; the production, classification, and ecology of midges; and insect deformities as indicators of toxic stress.



**HANEC, William**

B.S.A. (1955), M.Sc. (1956) Manitoba;  
Ph.D. (1959) Wisconsin  
Born: 3 October 1930  
Winnipeg, Manitoba  
Died: 8 May 1980

Upon completion of his doctorate, Bill joined the staff of the Entomology Department, University of Manitoba. He relinquished his professorial position in 1976 due to health problems. He taught courses in insect anatomy and physiology, and in insect diseases. Bill's interests and research included the cold hardiness of the European corn borer and the forest tent caterpillar; temperature effects of the German cockroach; and the biology of the cabbage maggot and of cutworms in Manitoba. He served as President of the E.S.M. (1965-66) and as Editor of the Manitoba Entomologist (1960-61).



**HEGDEKAR, Baburao Manjunheh**

B.Sc.(Hon.)(1955) Karnatak Univ.;  
M.Sc. (1957) Bombay; Ph.D. (1963)  
Univ. Baroda.  
Born: 28 January 1934  
Honavar, India  
Address: 1142 Rue des Trappistes  
Winnipeg, Manitoba R3V 1B8

After completing his doctorate, Baburao worked for the C.S.I.R. Laboratory in Hyderabad and as a Research Associate at Oregon State University before filling a post-doctoral position with B.N. Smallman at Queen's University in 1965. In 1967 he joined the Research Institute, Belleville, Ontario, to study the effects of antimetabolites on insect enzyme systems. When the Institute closed in 1972, he transferred to the Research Station, Winnipeg, to work on the factors affecting winter survival of bertha armyworm. His research interests were in fundamental studies in insect enzymology and metabolism, resulting in a series of research papers on insect physiology, including diapause and cold hardiness in flea beetles and the bertha armyworm. He left Canada Agriculture on 4 May 1984 to enter private business.



**HERON, Robert John**

B.Sc.(Hons.)(1945) Manitoba; M.Sc.  
(1949) Minn.; Ph.D.(1962) Manitoba  
Born: 22 November 1919  
Winnipeg, Manitoba  
Retired: 1971  
Died: 25 February 1987  
Victoria, B.C.

Jack began his career in entomology with the Canadian Forestry Service, Entomology Laboratory, Winnipeg, in 1945. He continued there until 1970 then transferred to the Laboratory in Sault Ste. Marie, Ontario, where he continued his research work until 1971. Jack studied and published on the ecology and physiology of the larch sawfly, and the spruce budworm; especially their adaptive behaviour and feeding habits. From 1974 to 1976, as a Research Associate of the Entomology Department, University of Manitoba, he collected and studied the skippers and butterflies of Riding Mountain National Park for Parks Canada. He was also an ardent naturalist, interested in birds and marine biology. He served a Editor and President of the E.S.M.



**HOLLIDAY, Neil John**

B.Sc.(Hon.)(1971) London; Ph.D.  
(1976) Bristol  
Born: 2 July 1950  
Stourbridge, England.  
Address: Department of Entomology  
University of Manitoba  
Winnipeg, Manitoba. R3T 2N2

After graduating from the University of Bristol with a doctoral degree in agriculture and horticulture, Neil was awarded a post-doctoral fellowship tenable at the federal Research Station in Vineland, Ontario. Here he worked on the use of carabid beetles in the biological control of orchard pests. Neil joined the staff of the Entomology Department, University of Manitoba, in 1977; his interests remain centered on the ecology and distribution of carabid beetle populations, especially under pest management conditions. This interest was augmented by studies of the prediction of crop insect outbreaks and the control of insects on horticultural crops. As well as teaching classes in insect control and insect ecology at the University, Neil's work on the evolution of apterous Geometridae, and his studies of the population dynamics of carabid beetles, are significant contributions to the field of entomology. He has served as President and several other positions of the E.S.M., and has chaired several committees of the E.S.C.



**HOLDER, David**

2 years (Univ. Man.)  
Born: 10 August 1957  
Winnipeg, Manitoba  
Address: 1212 Dominion Street  
Winnipeg, Manitoba R3E 2P8

After completing High School, David enrolled at the University of Manitoba to pursue studies in science and agriculture with an emphasis on entomology. He attended the University for two years and then obtained employment as a technician in the Department of Entomology. He has assisted P.A. McKay in her aphid work; R.A. Brust in autogeny experiments with mosquitoes; R.A. Roughley in distribution mapping of dytiscids; and is currently working with N.J. Holliday on carabid ecology. David is responsible for maintaining stock cultures of insects and plants used in the department.



**HUEBNER, Erwin**

B.Sc. (1965) Alberta; Ph.D. (1970)  
Mass.  
Born: 14 July 1943  
Berlin, Germany  
Address: Department of Zoology  
University of Manitoba  
Winnipeg, Manitoba R3T 2N2

After two years as a post-doctoral fellow with K.G. Davey at McGill (1970-1972), Erwin joined the Zoology Department of the University of Manitoba in 1972. As well as teaching histology and microtechnique, he is actively engaged in researching the basic mechanisms that contribute to and regulate insect oogenesis. He has defined the ultra-structure of the telotrophic ovariole and the electrophysiology of insect ovaries. Erwin was the first to describe the distribution of actin in the germ tissue of ovaries. He is currently engaged in an analysis of the structure and function of the telotrophic ovariole.



**IVES, William George Herbert**

B.S.A. (1951) Manitoba; M.Sc. (1953)  
Iowa St. Coll.  
Born: 30 September 1922  
Mulvihill, Manitoba  
Retired: 30 March 1989  
Address: 11459 - 42 Ave.  
Edmonton, Alberta T6J 0W2

Bill started his long career as a forest entomologist in Winnipeg. He began work at the Forest Insect Laboratory in 1953, delving into the problems associated with the larch sawfly. In 1970 he was transferred to the Northern Forest Research Centre in Edmonton. Bill has been responsible for studies of the population dynamics of the larch sawfly (1956-1966); then was Head of the Forest Insect and Disease Survey (1966-1976); and Head of the Insect Management Systems (1976-1983). Since 1983 he has been working on the survival of juvenile pine and, together with H.R. Wong, has prepared a guide to tree and shrub insects of the Prairie Provinces. The latter includes more than 500 species of insects and will serve as a guide to Forest Rangers, and others, to the identification of forest insect pests. Bill served as President of the E.S.M. in 1963.



**JAY, Stanley Cameron**

Teacher's Cert.(1949) Hamilton, Ont.; B.A. (1955)  
McMaster; B.S.A. (1958) Man.; M.Sc. (1959) Toronto;  
Ph.D. (1961) London  
Born: 4 April 1929  
Lauder, Manitoba  
Address: Department of Entomology  
University of Manitoba  
Winnipeg, Manitoba R3T 2N2

After a six-year stint (1949-1955) as a Public School teacher in Hamilton, followed by an equal period of thorough University training (1955-1961), Cam joined the staff of the Entomology Department, University of Manitoba. Here he proceeded through the professional ranks, teaching classes in apiculture, general entomology and social insects, and guiding the research endeavours of more than 25 graduate students. He has also completed six years as Head of the Department (1981-1987). Cam has studied insect pollination of fruit and field crops, especially that involving honey and leafcutter bees. Much of his research has centered on the orientation behaviour of worker, queen and drone bees, and in the indoor and outdoor over-wintering of bee colonies. This research has been of significant use in furthering the apiculture industry in Manitoba. Cam has served as President of the E.S.M. and as Chairman of 11 of its committees; as a member of a committee of the E.S.C., and as a Director of the International Bee Research Association.



**KELLEHER, James Stewart F.E.S.C.**  
 B.Sc. (1952) Brandon Coll.; M.Sc.  
 (1955) Iowa St.; Ph.D. (1960) Minn.  
 Born: 6 November 1924  
 Canora, Saskatchewan  
 Address: Biosystematics Research Centre, C.E.F.  
 Agriculture Canada  
 Ottawa, Ontario K1A 0C6

Jim cut his "entomological teeth" as a Student Assistant at the Dominion Entomological Laboratory, Brandon, Manitoba, in 1946. From then until 1959 he was engaged in studies of the ecology and control of forage and vegetable crop insects. His interests veered towards biological control along with a transfer to the Entomology Research Institute, Belleville, Ontario in 1959, where until 1972, he was involved with the introduction of parasites into Canada as biological control agents. Since 1972 Jim has been in charge of the Biocontrol Unit in Ottawa, overseeing and managing the introduction of exotic insects species in the nation-wide biocontrol program. He has compiled and edited the Canadian Insect Pest Review (1973-1985) and the List of Laboratory Cultures of Insects in Canada (1971-1988). Jim has served as a Director and Committee Chairman of the E.S.C.



**KLASSEN, Paul**  
 Gr. 12, Manitoba  
 Born: 2 May 1923  
 Ohrloff, Ukraine  
 Address: Box 212  
 Elm Creek, Manitoba R0G 0N0

As a farmer and amateur entomologist, Paul has taken a professional stance where collecting is concerned. Not only has he collected widely in the province but he has also plotted the distribution of *Rhopalocera* butterflies in Manitoba and in the arctic regions. His interest lies in their geographic variation. He has compiled data on butterflies for the forthcoming book sponsored by the Manitoba Museum of Man and Nature. Paul has also completed and published (by the Lepidopterist's Society) a check list of Manitoba butterflies. In 1986 he received the Norman Criddle Award of the E.S.C. as the most meritorious amateur entomologist of the year.



**KOLACH, Andrew John**  
 B.S.A. (1961), M.Sc. (1964) Manitoba  
 Born: 17 October 1939  
 Stonewall, Manitoba  
 Address: Manitoba Agriculture  
 911 - 401 York Ave.  
 Winnipeg, Manitoba R3C 0V8

Andrew entered the field of professional entomology as a Plant Protection Officer with the federal Department of Agriculture, Vancouver, in 1963. Later that year when the need for further extension entomology became acute, he joined the Manitoba Department of Agriculture to alleviate some of that need. Andy has been involved in field surveys of abundance of insects, in experimental work with chemical control agents, and with extension entomology generally. His duties have included the training and licensing of pesticide dealers and commercial pesticide applicators; also the enforcement of the Pesticide Act in Manitoba. His ready advice and help to farmers and agriculturists has done much to lessen the effects of noxious insects on crop production in the province. Andy has held the position of Secretary and Publicity Chairman of the E.S.M.



**LAMB, Robert John**  
 B.Sc. (1967), M.Sc. (1970) Toronto;  
 Ph.D. (1974) U.B.C.  
 Born: 27 July 1945  
 Toronto, Ontario  
 Address: Research Station  
 Agriculture Canada  
 195 Dafoe Road  
 Winnipeg, Manitoba R3T 2M9

Having come up the ranks of the academic arena from Research Assistant and Laboratory Instructor (U. of T.), to Instructor (U.B.C.) and Post-Doctoral Fellow (Waterloo), to Adjunct Professor (U. of Windsor), Bob arrived in Winnipeg in 1978 to work in agricultural entomology. At U.B.C. he had unravelled the complexities of population fluctuations, polymorphism, behaviour, mating, and migration of earwigs. In fact he is considered an expert on the Dermaptera. Now he has turned his attention to the population dynamics and control of pea aphids, the host-plant relationships of flea beetles in canola, and the ecological aspects of temperature responses of insects.





**LEJEUNE, Raymond Rene**  
 B.S.A. (1937); M.Sc. (1939) Manitoba  
 Born: 30 March 1916  
 Makinok, Manitoba  
 Retired: 31 May 1971  
 Died: 7 November 1987  
 Victoria, B.C.

After graduating from the University in 1937, Ray began work with the Forest Insect Laboratory, Winnipeg. His research involved life history and control studies of the jack pine budworm; then the larch sawfly. In 1946 he became Officer-in-Charge of the Laboratory to direct a program of research on forest insect pests. He transferred to Victoria in 1956 to direct the entomological research of the Pacific Forest Research Centre, which work he performed until 1969. Ray was then appointed as Co-ordinator of Environmental Forestry in Ottawa, a position he held until retirement. Not only did Ray contribute to a knowledge of the biology and control of some important forest insect pests, but his dedicated work in training young entomologists, and the development and direction of sound research programs in forest insect control, are sound testimonies to his contribution to entomology in Canada. He served as President of the E.S.M. in 1947-1948.



**LISCOMBE, Ernest Arthur Ray**  
 B.S.A. (1949) Manitoba; M.Sc. (1957)  
 Minn.; Ph.D. (1964) Manitoba  
 Born: 10 March 1928  
 Winnipeg, Manitoba  
 Address: 1531 Loma Road  
 Montebello, California  
 U.S.A. 90640

During and after completing his Master's work, Ray was engaged as an entomologist with Pillsbury Mills Inc. in Minnesota. He returned to Canadian entomology in 1957 as a member of the Stored Products Insect Laboratory in Winnipeg, which that year joined other federal research units to form the Winnipeg Research Station. From 1957 to 1965 he was involved in the control of insects in flour mills and warehouses. He also conducted surveys, with F.L. Watters, of empty granaries which provided information on pest species of mites and insects that remain as infestation foci in such storage sites. In 1965 Ray resigned to accept a position as Entomologist with the Board of Grain Commissioners in Winnipeg. In 1969 he returned to the commercial arena, becoming Vice President and Technical Director of Phostoxin Sales Inc. in the U.S.A.



**LOSCHIAVO, Samuel Ralph F.E.S.C.**  
 B.Sc. (1946), M.Sc. (1950), Ph.D.  
 (1964) Manitoba  
 Born: 28 June 1924  
 Transcona, Manitoba  
 Retired: 31 October 1987  
 Winnipeg, Manitoba  
 Address: 112 Linacre Road  
 Winnipeg, Manitoba R3T 3G6

Sam's career in entomology began in 1946 as a summer student assisting in the grasshopper survey and chemical control experiments in southern Saskatchewan. Except for his research at the University of Wisconsin on behavioural responses of the smaller European elm bark beetle, he has concentrated on stored product entomology: food preferences, feeding behaviour, and control of stored product insects; insect bioassays to assess the nutritional adequacy of cereals; use of anti-feeding compounds, attractants, and pheromones; and the development of sampling devices and methods to detect insects in stored grain. His research has been instrumental in improving the storage capability and quality of prairie cereals used domestically or in foreign markets. Sam served as President of the E.S.M. (1966) and the E.S.C. (1980), and was elected an Honorary Member of both Societies in 1988.



**MacKAY, Patricia Ann**  
 B.Sc. (1967), M.Sc. (1971) Toronto;  
 Ph.D. (1974) U.B.C.  
 Born: 1 November 1945  
 Toronto, Ontario  
 Address: Department of Entomology  
 University of Manitoba  
 Winnipeg, Manitoba R3T 2N2

Pat has been an aphidologist throughout her professional entomological career. Following her University education she held a post-doc Fellowship at the University of Waterloo (1974-1976) working with R.G.H. Downer on development, growth, and juvenile hormone effects of aphids. Then as an Assistant Professor at the University of Windsor (1976-1978), she taught physiology and physiological ecology and studied the population dynamics and polymorphism of aphids. Since joining the University of Manitoba in 1978 she has taught insect anatomy and physiology, and pesticide toxicology. She continues her former research interests in aphid polymorphism, population dynamics, population genetics, and host plant responses, as well as the biology of recently-arrived aphid species in Australia and Canada. Pat has served as President and Scholarship Committee Chairman of the E.S.M. and also as a member of several committees of the E.S.C.



**MADRID, Francisco Javier**

B.Sc. (1971) Univ. Austral, Chile;  
Ph.D. (1979) McGill  
Born: 12 February 1945  
Chile

Address: AGRO-BIO-TECH International  
35 Mount Allison Bay  
Winnipeg, Manitoba  
R3T 3L4

While serving as an Associate Professor at the Universidad Austral, in his native Chile (1971-1974), Francisco planned and directed forest extension protection programs to sawmill workers in the Province of Valdivia, and developed a new forest entomology curriculum for forest engineering students. He received a Ford Foundation Scholarship to study at McGill and following graduation was awarded a post-doctoral Fellowship tenurable at the Winnipeg Research Station to work with R.N. Sinha on the ecology of stored product insects. While at McGill he evaluated the status of gypsy moth parasites, five were found to be in Canada, and two were later introduced into Quebec. In 1983 he formed his own company to develop and market cheap insect detection traps for stored grain. He also conducted surveys in Manitoba to detect insect pests in stored grain and developed methods to control grain insects by drying and heating.



**McCULLOUGH, Jay**

B.S.A. (1970) Manitoba  
Born: 17 June 1941  
Carman, Manitoba

Address: Manitoba Agriculture  
911 - 401 York Ave.  
Winnipeg, Manitoba R3C 0V8

After graduating from University, Jay was employed in a variety of contract positions related to farm economic surveys. In 1972 he joined the Rural Water Services Program of Manitoba Agriculture as a technician. In 1974 he was appointed an extension entomologist with Manitoba Agriculture. Present duties in this position include crop and forest protection entomology, the training of pesticide dealers, entomological field research, and the production of extension material.



**McGINNIS, Arthur James (Bud) F.E.S.C.**

B.Sc. (1946) Alberta; M.Sc. (1950)  
Mont. St. Univ.; Ph.D. (1955)  
Oregon St. Univ.

Born: 28 December 1921  
Edmonton, Alberta

Retired: 1982

Address: 21 - 120 Walnut Court  
Ottawa, Ontario K1R 7W2

Bud began his entomological career at Lethbridge in 1946 as a member of a research team at the Dominion Entomological Laboratory, studying the biology of the wheat stem sawfly and the pale western cutworm. During and after his University training he worked on the nutritional aspects of food consumed by phytophagous insects; developed, with R. Kasting, the chromic oxide indicator method of food utilization and a method of rearing the larvae of the wheat stem sawfly. He was appointed Head of the Crop Protection Section of the Research Station, Winnipeg, in 1966, where, together with S.R. Loschiavo, he assessed the adequacy of cereals as feeds by using an insect assay procedure and studied the repellency to insects of wheat germ extracts containing peroxides. He was appointed Director, Research Station, Vineland, Ontario, in 1972 and was the Team Leader of the CIDA Dryland Project in Pakistan (1983-1985).



**McGUFFIN, Clayton**

B.A. (1936), M.A. (1937) Univ. West.  
Ont.; Ph.D. (1954) Minnesota  
Born: 14 February 1913  
London, Ontario

Retired: 31 December 1977

Address: Biosystematics Research Centre, C.E.F.,  
K.W. Neatby Bldg.  
Ottawa, Ontario K1A 0C6

When the Forest Insect Survey was first inaugurated, Clayton was hired in 1938 by the Forest Insect Investigations Unit, Ottawa, and assigned to study lepidopterous larvae, particularly the Geometridae. He was transferred to Winnipeg in 1944 to head the Forest Insect Survey there. In 1954 he was assigned full-time research on the Geometridae which work was continued in Ottawa from 1962 to date. His systematic work on this family of Lepidoptera has resulted in the publication of one handbook, and five E.S.C. Memoirs. He has also published on the Rheumaptera of Canada. Clayton is a charter member of the E.S.A., E.S.M., and the E.S.C.



**McKILLOP, William Brian**

B.Sc.(Hon.)(1968), M.Sc. (1970),  
Ph.D. (1975) Waterloo  
Born: 7 April 1944  
Halifax, Nova Scotia  
Address: Manitoba Museum of Man and Nature,  
190 Rupert Avenue  
Winnipeg, Manitoba R3B 0N2

Brian's interest in biology was augmented when working as an assistant in physical limnology for the Great Lakes Institute, University of Toronto (1964-1968). After graduating with a Master's degree he was engaged in schistosomiasis research in St. Lucia for the Rockefeller Foundation (1970-1973). He joined the Museum staff in Winnipeg in 1976 as Assistant Curator, advanced to Chairman of the Department of Natural History (1981), and to Curator of the Museum since 1983. His entomological interest lies within the Lepidoptera and has co-authored a book on the butterflies of Manitoba. Brian has researched colour measurement, degreasing of specimens, and colour fading of museum specimens. He is expanding the insect collections of the Museum and has prepared several temporary and travelling exhibitions of insects. He has served as President and as a member of several committees of the E.S.M.



**McLEOD, William Stirling**

B.Sc. (1939) Alberta; M.Sc. (1943)  
McGill  
Born: 15 December 1912  
Calgary, Alberta  
Retired:  
Address: unknown

Stirling began his entomological career as a summer student at the Dominion Parasite Laboratory, Belleville, Ontario (1941-1942). After graduating from Macdonald College he joined the staff of the Entomology Department, University of Manitoba, as an Assistant Professor, remaining there until 1948. Here he taught economic entomology and conducted research on the biology and control of onion maggots. He joined Green Cross Chemicals to direct their insecticide research, development, and sales (1948-1949), and then was appointed Officer-in-Charge of the Pesticide Testing Laboratory, Canada Agriculture, in Ottawa. Here he was responsible for the critical examination of data submitted by pesticide companies, and testing of chemicals offered for registration. He remained in Ottawa until 1954, then joined Chemagro Corporation in the U.S.A. remaining with them until his retirement. Sterling served as Treasurer of the E.S.C. (1959) and Sec.-Treasurer of the E.S.M. (1945-1947).



**McRORY, Douglas**

B.Sc. (1968) Guelph  
Born: 3 December 1943  
Kingston, Ontario  
Address: 107 Kortright Road  
Guelph, Ontario N1G 3B3

After graduating from the University of Guelph, Doug joined the Manitoba Department of Agriculture in 1968 as the Provincial Apiarist. He held this position for four years (1968-1972) after which he resigned to become a commercial beekeeper at Benito, Manitoba. In 1983 he quit the business and became a real estate agent in Owen Sound, Ontario (1984) and then returned to apiculture as the Provincial Apiculture Specialist for the Department of Agriculture of Ontario. His work in apiculture has dealt with all aspects of the beekeeping industry, from licensing, examination of colonies, brood inspections, and enforcing the Apiculture Act, to studying the effects of insecticides on bees.



**MITCHENER, Alvin Valentine**

B.A. (1914) McMaster; B.S.A. (1918)  
O.A.C.; M.Sc. (1927) Manitoba  
Born: 14 February 1888  
Port Rowan, Ontario  
Retired: 1954  
Died: 19 June 1962  
Winnipeg, Manitoba

Following two years of teaching in public schools (1918-1920) Prof. Mitchener devoted his working days to entomology at the University of Manitoba. He was a student of Prof. Caesar's at the Ontario Agricultural College, and taught his own students the importance of meticulous, detailed experimentation and observation. Though not a taxonomist he stressed the usefulness of recognizing and knowing the insect; propounded the importance of the systematics of nature, the relevance of physiology, and the necessity for the economic control of insects. He ran a one-man Department of Entomology at the University of Manitoba for almost 20 years, excelling in research involving the control of insects, especially grasshoppers and garden pests. He was a very capable administrator serving as Dean of the Faculty of Agriculture from 1938 to 1946.



**MOORE, Herman William**  
 B.S.A. (1934), M.Sc. (1936) Manitoba  
 Born: 15 July 1912  
 Winnipeg, Manitoba  
 Died: 30 December 1950  
 Saskatoon, Saskatchewan

Herman joined the staff of the Dominion Entomological Laboratory, Brandon, Manitoba, in 1934. He was involved in investigations concerning the ecology of grasshoppers, studying the interrelationships of abiotic and biotic factors in a field Study Centre at Arnaud, Manitoba. He also participated in grasshopper control experiments using arsenical baits. Herman transferred to the Saskatoon Laboratory in 1944 where he was responsible for the grasshopper abundance surveys in that province. He succeeded R.H. Handford in 1946 as Co-ordinator of Grasshopper Research; standardized the grasshopper survey methods and instituted a research program to determine the incidence of grasshopper parasites in western Canada.



**MORRIS, Oswald Nathaniel**  
 B.Sc. (1954) Tufts; M.A. (1956);  
 Boston; Ph.D. (1960) Rutgers  
 Born: Jamaica, West Indies  
 Address: Research Station  
 Agriculture Canada  
 195 Dafoe Road  
 Winnipeg, Manitoba R3T 2M9

Having received training in entomology, parasitology, and microbiology, it was natural for Ozzie to seek employment where his expertise could be used to control pest insects by non-chemical means. At Victoria, Ottawa, and Sault Ste. Marie with the Canadian Forestry Service (1960-1982), and later at Winnipeg (1982-1988), he pioneered the research and development of *Bacillus thuringiensis* for forest and agricultural applications. He established technical guidelines for operational use of *B.t.* against the spruce budworm; described the pathological process of insect virus infections; studied the interaction of entomopathogenic micro-organisms with the environment, and developed techniques to measure the effectiveness of microbial insecticides. Ozzie chaired the Canada/U.S.A. *B.t.* Project from 1979 to 1984.



**NAIRN, Lawrence (Lawrie) Daniel**  
 B.Sc. (1953) U.N.B.  
 Born: 26 September 1921  
 Kilmarnock, Scotland  
 Retired: 1979  
 Address: 1313 Waller Ave.  
 Winnipeg, Manitoba R3T 1P4

Lawrie came to Winnipeg in 1953 to work at the Dominion Forest Insect Laboratory. He participated in many aspects of the study of the biology, bionomics, distribution and control of the larch sawfly. When work on this project declined he turned his attention to the control of white grubs that were attacking newly-planted seedlings of pine in the Sandilands Forest Reserve. When the Laboratory was closed in 1970, Lawrie remained in Winnipeg as a member of a small group that formed a sub-office of the Northern Forestry Centre, Canadian Forestry Service, Edmonton. He continued his work on problems of forest regeneration, white grubs, forest fertilization studies, and general forestry liaison. In 1979 the sub-office was closed and the staff disbanded; Lawrie resigned. He served as President of the E.S.M. in 1976.



**OSGOOD, Charles Edgar**  
 B.Sc. (1961) Maryland; M.Sc. (1964),  
 Ph.D. (1968) Oregon St.  
 Born: 1 February 1938  
 Washington, D.C.  
 Address: 11134 Chickadee Drive  
 Boise, Idaho  
 U.S.A. 83705

After his University training in 1968, Charles was employed by Canada Agriculture Research Institute, Belleville, Ontario, beginning in April 1968. Here he studied the oviposition attractants of mosquitoes. In 1972 he was transferred to the Research Station, Winnipeg, Manitoba, where he developed experimental approaches and techniques for flea beetle pest management. Such methods included damage and population assessments, use of trap crops, traps, and attractants, canola varietal preferences, and rearing procedures. In 1976 he left Agriculture Canada to work with the Diamond Shamrock Co. of Boise, Idaho, as a Special Research Project Supervisor for the northwestern United States. Charles served as Program Chairman for an Annual Meeting of the E.S.M.



**PRESTON, William Burton**

B.Sc. (1961), M.Sc. (1964) U.B.C.;

Ph.D. (1970) Oklahoma

Born: 6 March 1937

Penticton, B.C.

Address: Manitoba Museum of Man and Nature

190 Rupert Avenue

Winnipeg, Manitoba R3B 0N2

Bill had developed an intense interest in the flora and fauna of the sunny Okanagan Valley during his boyhood years. This interest continued throughout his college years and landed him within the walls of the Manitoba Museum in 1970. Here, as Acting Curator of Invertebrates (1970-1976), and as Curator of Reptiles, Amphibians, and Fishes (since 1970), he had ample scope to exploit his interests. Although he admits he is only an amateur entomologist, Bill has shown a remarkable ability to organize, compile, and arrange for insect exhibits to catch the interest of the public. In 1974 he initiated shopping mall exhibits of insects, an undertaking that has been very successful and has served as a model for other organizations. He has co-authored the book "*Butterflies of Manitoba*" to be published in 1989. Bill has served as President (1980) and Chairman of several Committees of the E.S.M., as Chairman of one Committee of the E.S.C., and has won several awards for insect photography.



**QUELCH, Christopher Stephen**

B.A. (1936), B.Ed.(1937) Manitoba

Born: 12 July 1898

Cook's Creek, Manitoba

Retired: 1965

Died: 11 June 1986

Toronto, Ontario

Stephen was not only a teacher and principal in many communities in Manitoba (Birtle, Matlock, Transcona) during the years 1936 to 1965, but also an enthusiastic amateur entomologist. He grew up on a farm in western Manitoba but his entomological interests were influenced by such early collectors as Jack Dennis and Shirley Brooks. He assembled a worthy collection of Lepidoptera, most of which wound up in the possession of James King; some went to Paul Klassen. He traded specimens with collectors from the United States, Europe, and South America. Data collected on the Monarch butterfly was included in Urquhart's book. Stephen was a charter member of the Lepidopterist Society, served on many community service committees and was a member of the Reserve Army during World War II. His wife Kathleen accompanied him on most of his collecting trips and is acknowledged as a collector of many of his specimens.



**REEKS, Wilfred A.**

B.Sc. (1931), M.Sc. (1932) MacDonald College

Born: 8 November 1906

Round Hill, Annapolis Co., N.S.

Retired: 5 November 1971

Address: 1190 Richmond Road

Ottawa, Ontario K2B 8J3

"Ed" spent a lifetime investigating problems caused by forest insects. When stationed in Fredericton (1933-1955) he actively pursued the brown tail moth in the apple orchards of the Annapolis Valley, scouting out infestations, rearing them for their parasites, and burning their nests. His investigations of the European spruce sawfly in the Gaspé and the Maritimes, led to their control through the use of parasites. He transferred to the Forest Insect Laboratory, Winnipeg, where from 1955-1960 he served as Director, initiating and supervising a comprehensive program of finding, identifying, and controlling forest insect pests in the Prairie Provinces. Ed moved to Sault Ste. Marie, again as Director of the Laboratory (1960-1965), and then transferred to Ottawa as National Co-ordinator of Forest Pest Problems (1965-1971). After retirement he held a short-term contract with Dow Chemical Co. observing the effectiveness of chemical sprays; he was convinced that biological agents were the answer to insect control. He served as President of the E.S.M. in 1957.



**RICHARDSON, Howard Percival**

B.S.A. (1947) Manitoba; M.Sc. (1952)

McGill; Ph.D. (1966) Manitoba

Born: 5 December 1924

Bagot, Manitoba

Address: unknown

Howard began his entomological career in 1947 when he joined the staff of the Dominion Entomological Laboratory, Brandon, Manitoba. He investigated the biology and control of forage and garden insects until 1949 when he was placed in charge of work on pest insects of small fruits and tree fruits at Morden, Manitoba. Many of his findings on the control of the current fruit fly, apple seed chalcid, and many minor pests of garden crops are still in use today. When the Research Branch was formed in 1959 and all research on fruit insects was consolidated in Ontario, Howard turned to studies of field crop insect pests. He investigated the relationships between aster yellows virus and its vector, the six-spotted leafhopper. He resigned in 1966 to teach High School in southern Ontario. Howard served as Secretary of the E.S.M. from 1956-1957 and from 1960-1963.



**ROBERTSON, Donald Ralph**  
 B.S.A. (1949) O.A.C.; M.Sc. (1960)  
 Manitoba  
 Born: 28 July 1927  
 Hornby, Ontario  
 Address B.J. Kennedy Export Corp.  
 1140 McDermot Avenue  
 Winnipeg, Manitoba R3E 0V1

Don's interest centred on bees and economic entomology. After graduation from college he found a job as the Assistant Provincial Apiarist in Alberta. This he held until 1951 when he was appointed Manitoba's first Provincial Entomologist. His extension work involved solving all the production, marketing, and supervisory problems associated with pest insects on field crops, gardens, forage, and small fruits in Manitoba. He was also the Provincial Apiculturist (1951-1957) and as such was involved in supervising inspection of bee apiaries and colonies, marketing, disease problems, and enforcement of the Bee Act. Don also lectured on apiculture at the University of Manitoba (1951-1967). He was Assistant Manager, then Manager of the Manitoba Co-operative Honey Producers Ltd. (1967-1981). From 1969-1985 Don was the General Manager, then President, of Bee Maid Honey Ltd. In 1986 he joined his present Company as General Manager. Not only did he conduct the first pollination field trials in Manitoba to demonstrate the effectiveness of leafcutter bees but he is proud to have built a strong and viable beekeeping industry in the province. Don served as President of the E.S.M. in 1964.



**ROBERTSON, John Turton**  
 Junior Matric. (1931) Brandon  
 Born: 27 July 1914  
 Brandon, Manitoba  
 Retired: 26 July 1979  
 Address: 416 Rosedale Avenue  
 Winnipeg, Manitoba

"Joker" joined the staff of the Dominion Entomological Laboratory, Brandon, Manitoba, as a technician in 1945. He provided technical assistance in studies on the biology and control of vegetable and sunflower insects. In addition, he worked on the biology of pollinators and developed methods for the propagation of *Bombus* colonies. Being an ardent photographer he developed specialized techniques to photograph insects, both indoors and outdoors. In 1960 he was transferred to the Research Station, Winnipeg, where he participated in research programs dealing with stored product insects, insect-transmitted diseases in cereals, grasshopper abundance surveys, and the ecology and population dynamics of economically important grasshopper species in Manitoba. He assisted in the evaluation of insecticides used for the control of field crop insects.



**ROBINSON, Arthur Grant F.E.S.C.**  
 B.S.A. (1950) Manitoba; M.Sc. (1952)  
 McGill; Ph.D. (1961) Manitoba  
 Born: 7 July 1916  
 Wadena, Saskatchewan  
 Retired: 31 August 1981  
 Address: C109 - 3281 Pembina Highway  
 Winnipeg, Manitoba R3V 1T7

Grant's entry into entomology began at the Dominion Entomological Laboratory, Brandon, Manitoba (1948-1952). It was here he became familiar with, and contributed to the control of horticultural and small-fruit insect pests. After a year spent with the Fruit Insect Laboratory, Vineland, Ontario, he settled for an academic life at the University of Manitoba, remaining with the Department of Entomology until his retirement; the last five years as Head. His research, although primarily aphid taxonomy, also included the biology and physiology of aphids; effects of plant growth regulators and herbicides; resistance of barley cultivars to aphid attack; and population dynamics of aphids. Grant has identified at least 60 species of aphids new to science and is continuing his studies of aphid systematics after retirement. He served as President of the E.S.M. in 1960 and 1981, and is an Honorary Member of both, the E.S.M. and the E.S.C.



**ROMANOW, Walter**  
 B.S.A. (1948), M.Sc. (1952) Manitoba  
 Born: 8 August 1926  
 Winnipeg, Manitoba  
 Retired: 31 October 1987  
 Address: 786 Lansdowne Ave.  
 Winnipeg, Manitoba R2X 1R9

Wally joined the staff of the Dominion Entomological Laboratory, Brandon, Manitoba, in 1949 after working there as a Student Assistant the previous two summers. He was responsible for conducting annual grasshopper abundance surveys and preparing the forecasts of outbreaks in Manitoba from 1949 to 1983. He participated in experiments to evaluate the chemical control of grasshoppers and investigated the parasites of grasshoppers indigenous to Manitoba. After transferring to the Research Station, Winnipeg, in 1957, he was appointed and served as the Scientific Liaison Officer of the Station from 1965 to 1981. Wally was also a member of the group, formed in 1973, to evaluate insecticides. He was responsible for that program until his retirement. He served as President of the E.S.M. in 1968.



**ROSENBERG, David M.**  
 B.Sc.(Hon.)(1965), Ph.D. (1973) Alberta  
 Born: 24 August 1943  
 Edmonton, Alberta  
 Address: Freshwater Institute  
 501 University Crescent  
 Winnipeg, Manitoba R3T 2N6

David joined the staff of the Freshwater Institute in 1971 and completed his doctoral dissertation while on the job. Until 1975 he was engaged in assessing the environmental impact of proposed Mackenzie Valley gas and oil pipelines on aquatic ecosystems. Since 1975 he has studied ecological aspects of the Churchill-Nelson River diversion and the flooding of Southern Indian Lake. David has studied the effects of environmental disturbances such as sedimentation, reservoir formation and acidification on aquatic insects, and has encouraged the use of insects in environmental impact assessment. His co-edited textbook "*The Ecology of Aquatic Insects*" is a notable achievement, as is his co-edited Memoir, "*Aquatic Insects of Peatlands and Marshes in Canada*".



**ROUGHLEY, Robert Edward**  
 B.Sc.(Agr.)(1974), M.Sc. (1976)  
 Guelph; Ph.D. (1983) Alberta  
 Born: 14 May 1950  
 Limehouse, Ontario  
 Address: Department of Entomology  
 University of Manitoba  
 Winnipeg, Manitoba R3T 2N2

Rob Roughley was born in Ontario and it was while he studied entomology in the Department of Environmental Biology at the University of Guelph that he developed his passion for the classification and systematics of insects, notably beetles. After completing his post-graduate training he accepted an appointment as systematist in the Department of Entomology, University of Manitoba. Rob has specialized in the study of the Hydradephaga, especially the dytiscids, but as Curator of the J.B. Wallis Museum of Entomology applies his expertise to many groups of insects. He is internationally recognized for his work with the Dytiscidae and has travelled widely in both the Nearctic and Palaearctic, collecting and visiting various museums and researchers. Rob served as Associate Editor and Editor of the Proceedings of the E.S.M. from 1982 to 1987.



**SAETHER, Ole Anton**  
 Cand. Mag.(1960), Cand. Real.(1963) Oslo Univ.  
 Born: 9 December 1936  
 Kristiansand, Norway  
 Address: Dept. Systematic Zoology  
 University of Bergen  
 Museplass 3, N-5007  
 Bergen, Norway

Ole has had an interesting career in freshwater biology and limnology. While at the University of Oslo he worked as an assistant in the Department of Limnology helping graduate students and being responsible for field and laboratory equipment (1961-1963). He remained at the University as a lecturer, teaching freshwater biology (1963-1969). Ole then came to the Freshwater Institute, Winnipeg, as a Visiting Scientist in 1967 and stayed on in research for the next 10 years. In 1977 he returned to Oslo as Head of the Department of Systematic Zoology having distinguished himself as an eminent systematist. He described about 180 species, 34 genera, and two subfamilies of mainly Nearctic chironomids; some water mites, chaoborids, and other aquatic insects as well. He has contributed to phylogenetic systematics, systematic theory, comparative morphology, and compiled a glossary of morphological terminology of the Chironomidae. His contribution to the systematics of aquatic insects has been of material aid in understanding and dealing with eutrophication and pollution.



**SERGER, John**  
 Incomplete High School  
 Born: 28 July 1921  
 Wolmirstedt, Germany  
 Retired: September 1986  
 Address: 716 Pasadena Ave.  
 Winnipeg, Manitoba R3T 2T3

John emigrated to Canada from Germany in 1952. Although a bricklayer by trade, he had a compelling desire to work with plants and animals. He was an active member of the Winnipeg Aquarium Society and introduced the practice of using live crustacea and insect larvae - as found in all Manitoba freshwater habitats - as food for aquarium fish. In the early 1960s he displayed game fish for the Manitoba Fisheries Branch, in large aquaria at the Red River Exhibition. John accepted employment as a technician with the Department of Entomology on 14 April 1967. In the Department, John was responsible for the operation of the greenhouses; insect pests being an ongoing and continuous problem. He became quite proficient in controlling insect outbreaks within the glass houses, and is highly regarded for his understanding of the behaviour of the target insect and the physical environment, thereby promoting improved cleansing and more efficient greenhouse operations.



**SINHA, Ranendra Nath**  
 B.Sc. (1950) Calcutta; Ph.D. (1956) Kansas  
 Born: 25 January 1930  
 Calcutta, India  
 Address: Research Station  
 Agriculture Canada  
 195 Dafoe Road  
 Winnipeg, Manitoba R3T 2M9

Since arriving in Canada in 1956, followed by a year as a Post-Doctoral Fellow at McGill, Ranendra has compiled an enviable record of ecological research of stored product insects at the Winnipeg Research Station. He has developed an ecosystem concept of protecting stored cereal and oilseed crops by identifying, detailing, and controlling all biotic and abiotic factors that cause product deterioration. The management program that has evolved from these studies is now being implemented in many countries. Further, his expertise in statistical methods using principal component, discriminate function, canonical correlation, and likelihood factors, have all been used to solve practical problems. These studies, together with continued research on the interrelations of climatic, physical, chemical, and biotic variables that cause deterioration of stored grains have earned him the Gold Medal of the E.S.C. in 1985. He has published more than 160 scientific papers, 55 popular articles, and eight book chapters. He has co-authored two books on grain storage problems and on insect pests and their control. He served as President of the E.S.M. in 1974.



**SMALLMAN, Beverley Northcott** F.R.S.C.  
 B.A. (1936) Queens; M.A. (1938)  
 Western; Ph.D. (1940) Edinburgh; LL.D. (Trent) 1982  
 Born: 11 December 1913  
 Port Perry, Ontario  
 Retired: 11 December 1978  
 Address: R.R. 2  
 Yarker, Ontario K0K 3N0

Bev was hired, in 1941, by the Board of Grain Commissioners, Winnipeg, to monitor, investigate, and control insects and mites in stored grain on the prairies and in lakehead terminals. In 1945 he established and headed the new Stored Products Insect Laboratory, Winnipeg; directed the research on the biology and control of stored grain pests until 1950, then left to head the Entomology Section of the Science Service Laboratory, London, Ontario. Here he gave leadership to studies of fundamental biology, neurophysiology, and intermediary metabolism of insects. He was appointed Dominion Entomologist in 1957 and Director of Entomology and Plant Pathology of the Research Branch in 1959. In 1963 Bev left the federal service to head the Department of Biology, Queen's University; a position he held until 1973, then remained as Professor of Biology until retirement. He authored several books, including **Good-Bye Bugs**, more than 80 research papers, was a founding President of the E.S.M. (1945), President of the E.S.C. (1964) and the recipient of its Gold Medal in 1967.



**SMITH, David Lorne**  
 B.S.A. (1957), M.Sc. (1959) Manitoba  
 Born: 18 March 1933  
 Brandon, Manitoba  
 Address: Manitoba Agriculture  
 911 - 401 York Ave.  
 Winnipeg, Manitoba R3C 0V8

David joined Manitoba Agriculture as Assistant Apiarist and Entomologist after completing his post-graduate training in 1959. His extension duties included the development of insect control recommendations in the province, demonstration of control methods, and advising farmers on use of insecticides. While serving as Chief of the Entomology Section since 1967, he also held the position of Provincial Apiarist for the year 1967-1968. He is now responsible for developing and co-ordinating extension activities of the Section, including insect pest abundance surveys, insect outbreak forecasts, and establishing provincial pest control recommendations. His contribution to entomology in Manitoba is the development of information related to the economic significance of pests such as cattle grubs, cattle lice, and the wheat midge in the province. David has served as Secretary (1965-1967) and as President (1972) of the E.S.M.



**SMITH, Lawrie Booth**  
 B.Sc. (1952) McMaster; M.Sc. (1955)  
 Toronto; Ph.D. (1960) Nottingham  
 Born: 6 June 1930  
 Oakville, Ontario  
 Retired: 28 November 1986  
 Died: 29 January 1987  
 Winnipeg, Manitoba

Lawrie's introduction to entomology began at the federal Entomological Laboratories at Harrow and Chatham where he learned the biology and control of several insect pests of peaches. In 1955 he conducted insect abundance surveys in port elevators in the Great Lakes region for the Stored Products Insect Unit, Ottawa, and evaluated pyrethrin sprays used to control the Indian meal moth. He joined the Winnipeg Research Station in 1960 to engage in long-term research on the biology and population dynamics of stored products insects. Lawrie's findings included: rate of increase of rusty grain beetles and their failure to initiate heating of grain; cold tolerance levels of many insect species; infestation foci in boxcars and farm granaries; and ecological studies of stored products beetles that led to more timely and effective non-chemical control of insects in stored grain. Laurie was an Honorary Professor at the University of Manitoba and an Adjunct Professor at Simon Fraser University. He served the E.S.M. as President (1962), Editor (1965-1967), and Regional Director (1965-1967).





**THORSTEINSON, Asgeir Jonas**  
 B.Sc. (1941) Manitoba; Ph.D. (1946) London  
 Born: 2 September 1917  
 Winnipeg, Manitoba  
 Retired: 1976  
 Address: 328 W. 48th Avenue  
 Vancouver, B.C. V5Y 2Z1

Thor's Ph.D. thesis comprised the experimental identification of chemosensory cues, mediated by oviposition and larval feeding behaviour, that determine food plant selection by the diamond back moth. Subsequent analogous studies of root maggot flies, sweet clover weevils, and Colorado potato beetles, broadened the basis for a holistic interpretation of host plant selection by insects. This thesis was eventually recognized as a "Citation Classic" by the Institute of Scientific Information. A widely used trap for horseflies evolved from studies of visual orientation of tabanids. Critiques of adulticidal mosquito abatement programs presented at public hearings stressed distinction between natural attrition and superficial appearance of efficacy. He has recently completed a study of erratic fluctuations in mosquito densities in urban areas, regardless of adulticidal operations, that has resulted in a meteorological interpretation in terms of the urban heat island wind. Thor was Professor of Entomology and Department Head, University of Manitoba (1959-1976) and a Consultant on mosquito abatement for the Manitoba government (1983-1985). He served as President of the E.S.M. in 1953 and 1954.



**TURNOCK, William James F.E.S.C.**  
 B.S.A. (1949) Manitoba; M.Sc. (1951),  
 Ph.D. (1959) Minnesota  
 Born: 17 May 1929  
 Winnipeg, Manitoba  
 Address: Research Station  
 Agriculture Canada  
 195 Dafoe Road  
 Winnipeg, Manitoba R3T 2M9

Bill wet his entomological feet with the Canadian Forest Insect Survey in 1949, then investigated the feeding damage of the pitch nodule maker and the population dynamics and control of the larch sawfly. He instituted reliable insect population sampling procedures, studied ecological factors, and collaborated with J. Muldrew in the introduction, evaluation, and establishment of a parasite to control the larch sawfly. Bill then became a science advisor in the Ministry of Science and Technology (1970-1972) evaluating science programs and developing Canadian policy for a UNESCO program. Returning to Winnipeg and to agricultural entomology, he planned, participated in, and developed pest management programs for insects attacking canola. Through his expertise in insect population dynamics, the use of sex pheromone monitoring, and the diversification of ecological parameters, Bill has made a valuable contribution to economic insect control. Bill has served as President of the E.S.M. (1969) and the E.S.C. (1980).



**VAN LOON, John**  
 Dipl. Agr. (1954) Deventer, Holland;  
 B.Sc. (1958), M.Sc. (1961) McGill  
 Born: 11 April 1931  
 Tilburg, The Netherlands  
 Address: Grain Inspection Division  
 Canadian Grain Commission  
 844 - 303 Main Street  
 Winnipeg, Manitoba R3C 3G8

After graduating with a diploma in agriculture in 1954, John emigrated to Canada and enrolled at MacDonald College. Here he obtained two post-graduate degrees, then joined Agriculture Canada's Plant Quarantine Division to work on general plant quarantine of imported and exported products. John, stationed in Lethbridge (1961-1964), Vancouver (1964-1969) and Thunder Bay (1969-1974), was engaged in specialized work involving ship, mill, and elevator inspection for stored product pests. In 1974 he was appointed as Entomologist for the Canadian Grain Commission, Winnipeg. This placed him in charge of sanitation and insect control of all Canadian terminal and primary elevators. It involved extension work on grain storage problems for managers and farmers from coast to coast, supervising and evaluating chemical and alternate control procedures, and updating grain storage practices and insect control methods.



**WALLIS, John Braithwaite**  
 B.A. (1927), M.A. (1929) Manitoba  
 Born: 26 December 1877  
 Erith, England  
 Retired: 1945  
 Died: 14 December 1962

"J.B." emigrated to Canada in 1893, worked on farms, attended Normal School at Portage la Prairie, and taught in Public Schools until 1903. He moved to Winnipeg to organize nature studies for the Winnipeg schools, stayed on as a teacher, principal, and superintendant until retirement. As an entomologist by avocation, "J.B." ranked with the best as a systematist and taxonomist, being partial to the beetles, butterflies, and dragonflies. His monographic publication on the tiger beetles of Canada is a classic in entomology. Following retirement he continued his taxonomic work on insect collections at Brandon and the University of Manitoba; also collected insects for the Northern Insect Survey project from 1949-1952. His radiating enthusiasm and love of nature stimulated many to take up entomology as a life's vocation.



**WARWICK, William Frank**  
 B.Sc.(1964), B.Sc. (Hon.)(1965),  
 M.Sc. (1967) Sask.; Ph.D. (1978) Manitoba  
 Born: 20 August 1943  
 Wynyard, Saskatchewan  
 Address: Nat. Hydrology Res. Instit.  
 Aquatic Ecology Division  
 11 Innovation Blvd.  
 Saskatoon, Saskatchewan S7N 3H5

Bill's interest in freshwater biology was encouraged by U.T. Hammer at the University of Saskatchewan. In 1967 he joined Environment Canada and two years later, as part of the limnological work on the Great Lakes, started a doctoral program on the paleolimnology of the Bay of Quinte, Lake Ontario, initially under J.R. Valentyne and subsequently D.W. Schindler. Combining his interests in entomology and history, he was able to closely monitor the impact European colonization and the development of modern society had on the water quality of the bay using subfossil chironomid remains. He was able to show that, subsequent to colonization, chironomid communities have been reduced from 152 taxa to only 18 through the changes in sedimentation, eutrophication and contamination processes in the bay environment. His current research in Saskatoon involves the use of morphological deformities in chironomid larvae to assess the impact of contaminants on freshwater ecosystems.



**WATTERS, Frederick Lewis**  
 B.Sc. (1947), M.Sc. (1949), Ph.D. (1964) Manitoba  
 Born: 19 July 1917  
 Lethbridge, Alberta  
 Retired: 30 December 1981  
 59 Caton Place  
 Victoria, B.C. V9B 1L1

Fred started in entomology in 1946 as a Student Assistant in the Stored Products Insect Laboratory, Winnipeg, headed by B.N. Smallman. When the latter was transferred to London, Ontario in 1951, Fred was appointed Officer-in-Charge. He later became Section Head of the Research Station (1966-1982), except for two years (1969-1971) when he served as a consultant to FAO in Rome. He pioneered the control of insects in mills and warehouses; the use of high frequency electric fields and gamma radiation; the inclusion of synergists, spot fumigants, and the toxicity and persistence of insecticides. Biological studies included the effects of temperature on insecticidal activity, and of environmental factors on populations of the hairy spider beetle and the larger grain borer. Fred initiated and promoted the use of organo-phosphate compounds to control malathion-resistant red flour beetles. He was President of the E.S.M. in 1955 and 1956.



**WEBB, Frank Ernest**  
 B.Sc.F. (1949) U.N.B.; M.F. (1950),  
 Ph.D. (1953) Michigan  
 Born: 20 September 1918  
 North Battleford, Sask.  
 Retired: 1985  
 Address: 835 Churchill Row, Apt. 11  
 Fredricton, N.B. E3B 1R1

Frank was recruited to the Forest Entomology Laboratory, Fredericton, N.B. to study the ecology of the larch casebearer. In 1951 he was made responsible for assessments, methodologies and related research to protect the province's forest resource against spruce budworm (1951-1960). In charge of forest insect investigations in Manitoba-Saskatchewan at Winnipeg (1960-1965) he addressed program relevance in the face of consolidation of forest entomology with other forestry disciplines. He returned to Fredericton to continue the consolidation/redirection of the Canadian Forestry Service, Maritimes Region, as Associate Director and Director (1965-1973). He was co-opted to Ottawa to represent the C.F.S. in Federal Environmental Impact Assessment development (1973-1974) and resigned to become contract advisor to the New Brunswick Department of Natural Resources (1975-1985). Here he helped the province develop its own competence to improve technical management of the budworm problem (1975-1985). Throughout his career Frank found himself at the forefront of pressing, publicly-sensitive forestry problems and major beaurocratic restructuring at both federal and provincial levels.



**WEBSTER, Godfrey Robin Barrie**  
 B.Sc. (Hons.)(1963), M.Sc. (1965)  
 U.B.C.; Ph.D. (1968) Melbourne  
 Born: 4 June 1942  
 North Vancouver, B.C.  
 Address: Pesticide Research Lab.  
 Department of Soil Science  
 University of Manitoba  
 Winnipeg, Manitoba R3T 2N2

With a doctorate in hand, Barrie spent two years as a Post Doctoral Fellow at the Universities of Leeds and Liverpool (1969-1971) before joining the University of Manitoba as an Assistant Professor in 1971. Two years were spent as a Visiting Professor: in the Netherlands (1978-1979) and in France (1985-1986). Barrie's work, as it relates to entomology, has been in environmental pesticide chemistry. He has investigated the efficacy and fate of synthetic pyrethroids in stored grain and in outdoor ponds; the detection and accumulation of pesticides in sediments and groundwater; photochemical fate of pesticides in water; and the transformations and fate of herbicides in soils. He has also been involved in developing methodologies for determining quantitative measurements of pesticides. In all, Barrie's studies have given us a better understanding of the relevance, dangers, and fate of many insecticides in use today. He was President of the E.S.M. in 1983.



**WELCH, Harold Edward**  
 B.A. (Hons.)(1951), M.A. (1952)  
 Toronto; Ph.D. (1956) London  
 Born: 2 August 1928  
 Toronto, Ontario  
 Disability Leave: 1 July 1985  
 Address: Department of Zoology  
 University of Manitoba  
 Winnipeg, Manitoba R3T 2N2

Harold's interest in parasitology landed him a job with the Dominion Parasite Laboratory, Belleville, Ontario, in 1952. Here, until 1965, he was engaged in studies of insect parasites, especially those of the mosquitoes at Churchill, Manitoba. He collected parasites of the winter moth in West Germany for the control of the moth in Nova Scotia. In 1965 he was appointed Head of the Department of Zoology, University of Manitoba, where, in succeeding years he increased the staff from six to 22, had a new building built, lectured in general zoology as well as graduate classes in zoology. Harold was one of the first to recognize nematodes as potential biological control agents and has described many of their life cycles and clarified their taxonomic relationships. He has described the mass production of nematodes and their manipulation in the field as control agents. More recently he has worked on the parasitism of bark beetles by nematodes. He has won international acclaim for his work in nematology and has served as a representative of Canada on the International Commission of Zoological Nomenclature.



**WESTDAL, Paul Harold Adalsteinn Neil**  
 B.Sc. (1947), M.Sc.(1950), Ph.D.  
 (1969) Manitoba  
 Born: 5 November 1921  
 Wynyard, Saskatchewan  
 Retired: 1981  
 Address: Westdal Agri Consultants  
 40 Garnet Bay  
 Winnipeg, Manitoba R3T 0L6

Harold joined the staff of the Dominion Entomological Laboratory, Brandon, in 1946; since then he has established a reputation as an entomologist with broad expertise in several sub-disciplines. Prior to 1949 he worked on insect pests of vegetables concentrating mainly on the biology of the crucifer flea beetle. For the next nine years his research was centered on the biology and control of insect pests of sunflowers and the role of insects in sunflower pollination. After transferring to the Research Station, Winnipeg, in 1957, he made significant contributions concerning aster yellows disease on vegetables, wheat striate mosaic on wheat, and aster yellows and oat blue dwarf virus on cereals. From 1973 until retirement he was the project leader of the insecticide evaluation program, where much of the work involved the development of control measures for the crucifer flea beetle. Since retirement he has become actively involved in farming and, in addition, has set up a consulting business where he dispenses his entomological expertise. Harold served as President of the E.S.M. in 1959.



**WESTWOOD, A. Richard**  
 B.S.A. (1977), M.Sc. (1979) Manitoba;  
 Ph.D. (1983) Guelph  
 Born: 20 December 1954  
 Winnipeg, Manitoba  
 Address: Rohm and Haas Canada Ltd.  
 830 King Edward Street  
 Winnipeg, Manitoba R3H 0P5

In 1983 Richard found employment with Rohm and Haas as their Western Canada Director of Research and Development. Here he was responsible for the development of crop protection chemicals. Current projects include the development of insect growth regulators, sterile inhibitor fungicides, and various broadleaf and grass herbicides. Richard is also interested in the use of plant phenology in a control strategy for spring mosquitoes, in a taxonomic survey and investigation of the biology of black flies in southern Manitoba, and in the spread of the European skipper into western Canada. His further interests lie in the collection and identification of Lepidoptera, Culicidae, and Simuliidae. Together with several authors he has recently completed the writing of a comprehensive book on the butterflies of Manitoba.



**WHITE, Noel David George**  
 B.S.A. (1974), M.Sc. (1976) Guelph;  
 Ph.D. (1979) Manitoba  
 Born: 16 December 1951  
 Simcoe, Ontario  
 Address: Research Station  
 Agriculture Canada  
 195 Dafoe Road  
 Winnipeg, Manitoba R3T 2M9

Noel acquired his interest in entomology while working as a student for Bill Elliott at Harrow, Ontario, and for Freeman McEwen at Guelph. He nurtured that interest with studies of ecological factors affecting predator and prey mite populations in orchards, then came to Winnipeg in 1976 to investigate the ecological relationships in stored-grain ecosystems. After completing his doctorate he served for two years as a Research Associate in the Department of Agricultural Engineering, University of Manitoba, conducting a study on the feasibility of detecting carbon dioxide emission as a sign of stored grain deterioration. He then joined the Agriculture Canada Research Station, Winnipeg, where he is conducting research on methods of physical and chemical control of stored products insects and mites, insecticide resistance, and the ecological impact of control practices. Noel has served as Secretary of the E.S.M. since 1982.



**WIENS, Allen Peter**

B.Sc. (1967), M.Sc. (1972) Manitoba  
Born: 23 June 1944

Winnipeg, Manitoba

Address: Freshwater Institute  
University of Manitoba  
501 University Crescent  
Winnipeg, Manitoba R3T 2N6

Allen joined the Freshwater Institute of the Canada Department of Fisheries and Oceans in 1971 as a biologist to work on benthic organisms. He studied the effects of oil pollution and sedimentation on benthic organisms in tributaries of the MacKenzie River, N.W.T. In 1976 he began work on the effects of flooding and diversion of the Churchill River on benthic organisms in Southern Indian Lake, Manitoba; this work continues. Allen commenced studies, in 1984, on the effects of acid rain on the Chironomidae emerging from a fen near Kenora, Ontario. This study is supplemented by investigations of the natural variability of benthic populations in lakes. His general interest in aquatic insects is mirrored by his concern over changes in invertebrate populations as a result of environmental disturbance. Allen has served the E.S.M. as Chairman of the Student Awards Committee, Member-at-Large, and is currently the Assistant Editor of the Proceedings.



**WONG, Horne Richard**

B.S.A. (1947) Manitoba; M.S. (1950)  
Mich. St.; Ph.D. (1960) Illinois  
Born: 9 January 1923

Hong Kong

Retired: 30 December 1988  
Address: Northern Forestry Centre  
5320-122 Street  
Edmonton, Alberta T6H 3S5

Dick's interest in insects, especially those of the forest, has remained unabated for more than 40 years of his professional life. He started with Agriculture Canada, Forest Insect Unit, Winnipeg, in 1947, headed the Forest Insect Survey (1949-1952), then turned to taxonomic research of forest insect groups, which work he has continued since transferring to Edmonton in 1970. Dick was especially interested in, and worked on the systematics of sawflies, gaining world-wide recognition as an authority of several genera as well as of the insect sub-order Symphyta in North America. He has published a number of papers on the identification and biology of immature and mature insects attacking forest and shade trees on the Canadian prairies. His monographic descriptions of several new genera and species of Tenthredinidae attest to his expertise in entomological taxonomy.



**WRIGHT, Daryl Lenard**

B.S.A. (1988) Manitoba  
Born: 13 December 1954

Winnipeg, Manitoba

Address: Department of Entomology  
University of Manitoba  
Winnipeg, Manitoba R3T 2N2

Daryl's interest in biology was kindled when, during his High School days, he kept honey bees as a hobby. This soon became a commercial venture. He joined the Department of Entomology, University of Manitoba, in 1982 and while working as a technician, completed his Bachelor's degree. As a senior technician his duties include responsibility for the design and construction of research equipment. He also assists R.A. Brust and T.D. Galloway in their research on the ecology of mosquitoes and fleas, respectively. Daryl is especially interested in apiculture and pollination, the latter encompassing nectar quality and nectar attractiveness of plants. Therefore, during the summer he assists S.C. Jay in bee research. He was Chairman of the Manitoba Young Entomologists Group (1985) and served on the Local Arrangements Committee of the E.S.M. and E.S.C. (1986).



**WYLIE, Harold Glenn**

B.A. (1949) Toronto; Ph.D. (1953) Oxford  
Born: 15 October 1927

Wingham, Ontario

Retired: 30 January 1987  
Address: 643 Silverstone Ave.  
Winnipeg, Manitoba R3T 2V8

Glenn fashioned a career as an entomologist involved in the biological control of pest insects. While at the Dominion Parasite Laboratory, Belleville, Ontario (1948-1972), his work comprised the importation, evaluation, propagation, and release of parasites and predators for the control of the balsam woolly aphid and the winter moth. He was successful in establishing permanent economic control of the winter moth on hardwoods in the Maritimes. He also studied various aspects of host selection behaviour using parasites of cyclorrhaphous Diptera. Glenn continued this type of work after a transfer to Winnipeg in 1972; his efforts there were directed toward control of bertha armyworm, flea beetles, and pea aphids. He served as Secretary of the E.S.C. (1982-1984), was elected an Honourary Member (1987), and was President of the E.S.M. (1977).