

ARTICLES



Heritage Lecture

Manitoba Six-Legged Pests and Two-Legged Pioneers

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PIONEERS

Our tour of entomology in Manitoba contains some wit, some wisdom, some history and some human interest. It begins with the remarkable Criddle family. Percy and Alice Criddle and their four children, Norman, Evelyn, Stuart and Beatrice emigrated from England in 1875 and settled in Aweme near Treesbank, Manitoba. They later had four more children Maida, Julia, Talbot and Alma. Although the parents were well-educated and intelligent, they had no experience or aptitude for farming, especially in the prairies in the 1870's. They suffered many hardships - cold, heat, drought, insects, scurvy and semi-starvation. One year they could afford only flour swept up from the floor of a mill. Sometimes while ploughing, the boys would catch and roast gophers because they had nothing else.

In better times they enjoyed many outdoor activities, cricket, soccer, hockey and golf all played with home-made equipment. Once, while playing golf, Stuart hit a ball into the pig pen where an old sow picked up the ball. The ball had to be played where it landed. Stuart climbed over the fence into ankle-deep muck and chased the sow around the pen whacking it with his club to persuade it to drop the ball. Meanwhile, the other players sat on the fence enjoying the spectacle and calling a stroke every time Stuart whacked the sow.

One of the first but non-scientific references to Entomology in the Criddle diary was Percy's criterion for feminine beauty. He admired small feet. Ladies with what he considered to be large feet he referred to as "beetle squashers". Percy was an early environmentalist. Those who were careless and allowed fires to destroy trees, he would describe as "fools, beggars, infernal idiots and damned asses". Norman had similar concerns about tree-burning, over-cutting, and poaching. He did not appreciate insect collectors who visited at Aweme, and who were not careful about leaving the collecting area undisturbed. About 1897 he said of log-cutters all over the country, "They cut everything that comes in their way, like savages, destroying what they cannot take away". What would they say about environmental issues if they were living today?

The Criddle children were educated at home by their mother who had a profound influence on their lives. Alice taught all eight to observe closely and pay attention to details. She loved nature-flowers, birds and insects. Norman helped her rear caterpillars, and thereby learned their names, food plants, and adult stages of moths and butterflies that emerged. He learned the names of plants and how to recognize their seeds.

This early training proved invaluable to Norman in his later years of research in entomology, botany, ornithology and meteorology. In 1898 Norman sent water colours of wildflowers to Ottawa where Dr. Fletcher, the weed and bug man noticed them. The paintings were so accurate and detailed that Fletcher could name each species. He was so impressed that, in 1900 he sought out Norman and thus began a life long association and friendship.

On one of the Fletcher's visits, the Criddle children thought to play a trick on him. With straight faces they asked him to identify an insect they had put together with body parts from different species. Dr. Fletcher studied it for a while and then solemnly declared with an equally straight face, "It's a humbug".

In the early 1900's Norman joined the federal Department of Agriculture to work on the life histories, control and identifications of grasshoppers. He and a half brother Harry Vane developed the Criddle mixture of Paris green, salt and horse manure mixed with water and spread around the edge of the field. This mixture was so effective that it became the department's official method of control for grasshoppers. Norman and Fletcher published "Farm Weeds" featuring Norman's water colours. Norman became seed collector and field entomologist. A small laboratory was built for him on the farm in 1915. He maintained records of bird migration and weather started by his father and sister Maida and made collections of Lepidoptera. He wrote articles for the Canadian Field Naturalist, Canadian Entomologist, The Auk and The Nor' West Farmer. He wrote 69 articles in entomology, 31 in ornithology, 7 in botany, and 11 in mammalogy and general wild life. He also became a surrogate father to four orphaned crows.

Norman Criddle had a very human side. One day while he and a friend were assessing a wheat crop, a man came by and informed them that the insects flying overhead were wheat stem sawflies. Norman thanked him and after the man left, Norman's friend asked why he hadn't corrected him. Norman replied, "We know that, but the man was sincere and wanted to help. Why should we spoil his desire to do a good deed"? At monthly staff meetings at his laboratory, Norman had a rule that junior members speak first to give them confidence and encourage them to make suggestions before remarks by more experienced seniors might have made them hesitant to speak.

Norman was also modest. In his diary at age 22 his first reference to his already recognized paintings was simply, "I did some painting". He wrote that the paintings were to be exhibited at the Brandon fair, but didn't add later that they had won first prize. His creed was to love justice, freedom, honour, kindness, charity, tolerance, truth and hope. He once said "I don't know who my grandfather was. I am more concerned with who his grandson will be". He hoped that his life was worthwhile and that he would leave this world better than he found it. Norman Criddle died in 1933 having done just that.

Another early entomologist was John Brathwaite Wallis, one of the best taxonomists and amateur entomologists in Manitoba. He came from England in 1893. He taught school but his avocation was

collecting insects. He wrote a thorough monograph on the tiger beetles (Cicandelidae). Wallis was a friend of the Criddles and shared common interests with them including playing the violin accompanied by Percy on the organ. After Percy died, the Criddles has a problem with how to address Mr. Wallis. John Brathwaite sounded too intimidating and Mr. Wallis too formal. Maida Criddle hit upon J.B. and that name came to be used by everyone who knew him or about him. Once, when one of Norman's pet crows was looking for a place to hide the remains of a mouse, it chose the back of J.B.'s neck inside his shirt collar. History does not record J.B.'s comments. He died in 1962. He gave his insect collection to the Department of Entomology, University of Manitoba which honoured him by naming it the J.B. Wallis Museum of Entomology.

DEPARTMENT OF ENTOMOLOGY, UNIVERSITY OF MANITOBA

Entomology at the Manitoba Agricultural College began in 1918 with some lectures in the Department of Horticulture and Forestry. About 1921, Entomology became a separate Department with A.V. Mitchener as head. Between 1924 and 1955, Apiculture, Insect Morphology, Forest Entomology, General Entomology, Insect Physiology, Pesticides and Equipment, Insect Taxonomy, and Insect Ecology were added to the curriculum. Graduate programs were established in 1951.

A.J. Thorsteinson became head in 1954 serving until 1975. During his term the Department expanded, and in 1962 moved into the Animal Science Building. Thor earned international recognition for his work on host plant selection by phytophagous insects.

A.G. Robinson joined the staff in 1953, succeeded Thorsteinson in 1975, and continued as head until he retired in 1981. Grant continued his labour of love on aphid taxonomy until nearly the end of his life in 1992. S.C. Jay came to the Department in 1961, and served as head from 1981 to 1987. He retired in 1991. Cam is best known for his work on the biology of honey bees and pollination by leaf cutter bees and honey bees. R.R. Brust joined the staff in 1964. His work on biting flies is widely known and respected. In 1987 Reiny became head and served until this year. He was succeeded by N.J. Holliday.

The current academic staff do teaching and research in biting flies; livestock insects; crop protection entomology; ecology; polymorphism, host plant selection and population dynamics in aphids; taxonomy of larvae and adults of predacious water beetles; and insect pollinators. Up to 1993, the Department has granted 118 Masters degrees and 49 Doctorates. these graduates have fanned out all over Canada and the world and have enhanced the influence and reputation of the Department. Entomologists from many countries, as well as adjunct and honorary professors from various departments and agencies of government, for example, Agriculture Canada, Atomic Energy Canada, Freshwater Institute, and other departments of the University have worked in or with the Department.

The Canadian Biting Fly Centre under M. Galloway was quartered in the Department and operated from 1981 to 1989. Its principal role was the dissemination of information on biting flies.

ENTOMOLOGY, UNIVERSITY OF WINNIPEG

A course in Entomology is offered as part of the undergraduate program in Biology at the University of Winnipeg. The Department of Biology first offered a General Entomology course in 1978, and since then it has been available every second year. J.C. Conroy gives the course and sends students wishing to continue in Entomology at the graduate level to the University of Manitoba or other

universities in Canada. Conroy's research interest is on the taxonomy and ecology of water mites (Acari, Hydrachnellae) and on their host parasite associations with freshwater sponges, bivalves, chironomids and odonata.

ENTOMOLOGICAL SOCIETY OF MANITOBA

In 1943, entomologists in Manitoba recognized a need to bring together various entomological interests into a forum for the intercommunication of discoveries and ideas. At a charter meeting in March 1945, they decided to organize as the Entomological Society of Manitoba. Its objects were then, as they are today - to foster the exchange of information on Entomology and to further the dissemination of entomological knowledge. Membership was open to anyone interested in Entomology. The meetings were to be informal, informative and inexpensive. B.N. Smallman was elected as the first President, H.A. Richmond as Vice-President and W.S. McLeod as Secretary-Treasurer. The charter members were: W.R. Allen, Ruth Barker, B. Berck, R.D. Bird, W.A. Cumming, R.H. Handford, W.C. McGuffin, J. McLintock, D.J. Petty, L.G. Putman, C.A.S. Smith, D.S. Smith, J.B. Wallis, L.T. White, W.M. Whiteway, and T.H. Williams.

The 1945 minutes contained an item that the Society had arranged for a meeting and luncheon with the distinguished British insect physiologist V.B. Wigglesworth. The minutes also indicated that the fifty cents levied upon the membership for the luncheon had been rather irregular though justified under the circumstances. The first general meeting in September 1945 approved a motion that the Society prepare an annual report to be called the Proceedings of the Entomological Society of Manitoba. A special meeting was held in December to discuss a proposal from the Entomological Society of Ontario regarding the formation of a national society. The Manitoba Society supported the proposal but wanted to retain its entity within a national body rather than as part of a regional prairie branch. In its early years the Society held an informal spring meeting dealing with on-going work in the province, and a fall meeting consisting of invitational reviews of wider entomological interest. In 1946, there were 24 members and the annual dues, \$1.00. In 1947, the diversity of the program was reflected in such papers as the importance of insects in fish production, modern methods of storing and preserving insects, entomology as seen by a plant pathologist, insect diapause, and the species concept. Also in 1947, the Society informed the provincial Minister of Agriculture of a proposal to establish a national entomological society, and to solicit provincial support.

In 1948, the Society met jointly with the International Great Plains Conference of Entomologists (IGPCE) at Riding Mountain National Park. To help finance that joint meeting the Society received \$409.00. The actual cost was \$400.15. Our recent governments could learn something about budgeting from those old-timer entomologists.

In 1949, the Society approved affiliation with the Ontario Society, the objective being that a national group could be promoted better within a framework of a loose affiliation of existing organizations. That year, the Society hosted the Entomological Society of Ontario meeting with the object of promoting a truly national group in name and in scope. Finally a national body was organized and had its first annual meeting in November 1950 in Ottawa.

In 1953, the Society had \$47.79 in the bank including 8 cents interest. If not rich in money it was rich in spirit and enthusiasm. It was supporting publication of the Canadian Entomologist and distributing its Proceedings to libraries and research laboratories in North America. The position of

provincial entomologist was finally created in 1957 thanks to a brief prepared by W.A. Reeks, president of the Society, and to lobbying efforts by others. Circa 1962 the Society considered an award for the best insect collection by a girl or boy in Manitoba. The purpose was to stimulate public awareness, knowledge, and appreciation of insects and their benefits, and not as creatures to be stomped on. In 1962, the Society hosted the national society which presented the first Gold Medal to R.J. Morris of Fredericton.

Starting in 1967, scientific papers were placed separately in the *Manitoba Entomologist*. A year later the Society moved to establish the Endowment Fund. The earned income was earmarked for defraying the costs of publishing the *Manitoba Entomologist*. This foresight bore fruit in 1973 when the Society had to pay for most of the cost of printing this journal.

When the Forest Insect Laboratory closed in 1970, the Society lost nine members, but in 1972 membership expanded with the transfer to Winnipeg from Belleville of several entomologists and technicians. In 1973 the Youth Encouragement Committee made up kits for junior insect collectors, and arranged for seminars at school science symposia. The first Newsletter appeared in 1974 providing news of members and their activities, items of current interest and announcements of meetings and events. The editors have been H.G. Wylie in 1974 followed by S.C. Jay, A. Kolack, L.B. Smith, G.L. Ayre, T.D. Galloway, R. Ellis, R.M. Gadawsky, M. Henderson-Smith, B. Golka, G. Fortney, V. Converse, and A. Robbie-Draward with L. Glowacki. Also in 1974, the Society was represented on a city Advisory Board on Insect Control, and on the Manitoba Environmental Council to address concerns about the impact of large-scale spraying on mammals and aquatic organisms. In the late 1970's and early 1980's, the members became concerned about inadequate funding for research and the decline of jobs in government, and stressed the need for public relations on the worth of entomology.

Two more firsts marked the joint meetings with the national society in 1986, namely, a scholarship of \$1000 and a student paper award. In 1989 the Society provided a small grant toward the publication of the "Butterflies of Manitoba" by Klassen, McKillop, Preston and Westwood - all active members of the Society. Also published in 1989 was "Manitoba Entomologists", one of a series under the title of "Profiles of Entomologists" compiled by P.W. Riegert. A new committee, Endangered Species, formed in 1990 reflected the increasing awareness of the threat that a changing world poses to its flora and fauna.

Presidents of the Society have been: B.N. Smallman, 1945-46, R.R. Lejeune 1947-48, C.A.S. Smith 1949-50, W.R. Allen 1951-52, A.J. Thorsteinson 1953-54, F.L. Watters 1955-56, W.A. Reeks 1957, R.M. Prentice 1958, P.H. Westdal 1959, A.G. Robinson 1960, R.J. Heron 1961, L.B. Smith 1962, W.G. Ives 1963, D.R. Roberston 1964, R.D. Bird 1965, W. Hanec 1966, S.R. Loschiavo 1967, W. Romanow 1968, W.J. Turnock 1969, P.S. Barker 1970, S.C. Jay 1971, D.L. Smith 1972, V. Hildahl 1973, R.N. Sinha 1974, G.L. Ayre 1975, L.D. Nairn 1976, H.G. Wylie 1977, J.C. Conroy 1978, J.E. Guthrie 1979, W.B. Preston 1980, A.G. Robinson 1981, W.B. McKillop 1982, G.R.B. Webster 1983, G.K. Bracken 1984, R.A. Ellis 1985, M.M. Galloway 1986, P.A. MacKay 1987, N.J. Holliday 1988, D.P. Dixon 1989, R.J. Lamb 1990, A.R. Westwood 1991, N.D.G. White 1992, R.M. Gadawski 1993, R.E. Roughtley 1994.

The Society started with 22 members in 1945, and reached a peak of 167 between 1983 and 1985. In 1994 it had 134 members. During the past 50 years the members have shown initiative, imagination and industry. With its current strength and enthusiasm there is every reason to expect continued progress during the next 50 years.