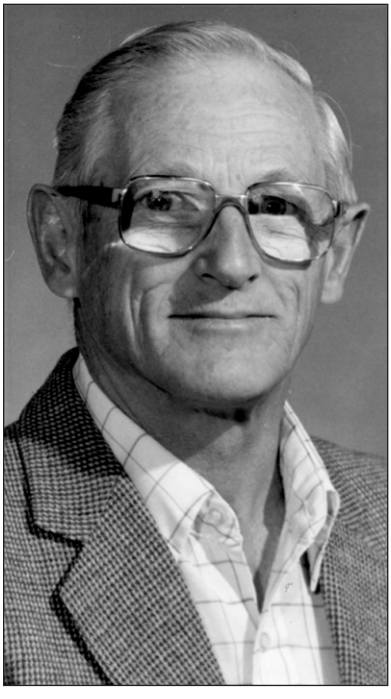
James Francis (Frank) McAlpine (25 September 1922 – 3 December 2019)



Frank McAlpine, Ottawa 1984.

Frank grew up in Maynooth, Ontario, a village not far from Bancroft, the eldest of five boys in a farmhouse with no electricity. After primary education in a one-room schoolhouse, he went to Kemptville Agricultural College in 1938, at age 16, graduating in 1940. From 1942 to 1946 he was an elementary school teacher in the Ontario Public School System. In 1950 he obtained a BSA degree from the Ontario Agricultural College (now part of the University of Guelph), where he specialized in entomology. Frank and his wife Naomi moved to Ottawa from Maynooth in 1950 so he could begin working at the Systematic Entomology Division, Canadian National Collection of Insects (CNC), Agriculture Canada.

From the start, he immersed himself in his chosen field of study, Acalyptratae – tiny drosophilid-like flies. His first paper on the group appeared the next year (McAlpine 1951). Although we suspect this choice of the acalypterates may have been suggested by his two new dipterist colleagues, Guy Shewell and Richard Vockeroth, Frank was soon publishing extensively on both Lonchaeidae and Chamaemyiidae, from areas as far afield as Chile, on his way to becoming a world specialist on these and related families.

Frank initially joined the Diptera Unit of the CNC as part of a recruitment program associated with the Northern Insect Survey. He was a member of four of the annual summer survey parties, in Gillam, Manitoba (1950), Hebron, Labrador (1954), Isachsen, Nunavut (1960) and Hazen Camp, Nunavut (1962) (Riegert 1999).

Frank's initial field assignment was to Gillam in northern Manitoba, the second last stop on the railway south of Churchill. The railway was the only connection to the outside world, meaning that habitats would have to be located on foot, a tough assignment for a neophyte collector on his own. The blackflies required specialised equipment and were not well known then, and even the mosquitoes were disappointing. Enter the horseflies in July and August! To his credit, he learned to identify this material, first to appear as a list of species and later as a revision of the *Hybomitra frontaliis* complex (McAlpine 1961).

As if to test his mettle, the CNC's second choice for Frank's summer expedition was Hebron, Labrador. Hebron, in spite of its beauty, is probably near the bottom of most entomologists' wish lists. In those days, it was customary to send summer students and new recruits into the field alone. Nevertheless, in spite of the fact that Hebron is in the remote mountainous spine of northern Labrador, where the only contact in those days was an occasional supply vessel, Frank made it there and back.

With all this Northern experience under his belt, Frank was ready for anything that came his way, and it did in 1960. If Hebron wasn't cold enough, Isachsen certainly was. Sometimes called the "biological north pole", Isachsen was a weather station on Ellef Ringness Island, one of the

small islands on the northwestern flank of the Canadian Arctic Archipego. Frank was about to find out how difficult it would be to find anything in a place where the temperature was in the single digits for almost the entire 'summer'. Again he rose to the challenge, compiling a surprising list of insects and mites (McAlpine 1962, 1964, 1965). His summaries provide us with important base lines against which to compare changes in the Arctic fauna that may be accompanying global warming.

Frank was destined to fulfill one last ordeal in the Arctic. In 1962, Frank arrived for a summer's field work at the Defence Research Board of Canada's research camp on the northwestern shore of Lake Hazen, near the northern end of Ellesmere Island. While Hazen was farther north than Isachsen it was more centrally located – on a much larger island and away from the coast. Summer days could even be pleasant. Unfortunately, no one told him about the piles of reindeer hides that were stored in all the tents, and he didn't know that his old allergy to cow hides would kick in, in the presence of these reindeer hides. Frank managed to cope, however, by living apart from all the hides, but a good night's sleep was a luxury. To add insult to injury, or perhaps to get back at those who had brought so much destruction on its fellow ungulates, a bull muskox chased Frank up a hill – his most vivid memory of the experience was just how close those two sharp points were to his backside! Eventually, Frank's asthma prevailed, and he was flown out of Ellesmere Island, but not before he had added significantly to our understanding of the fauna of the High Arctic.

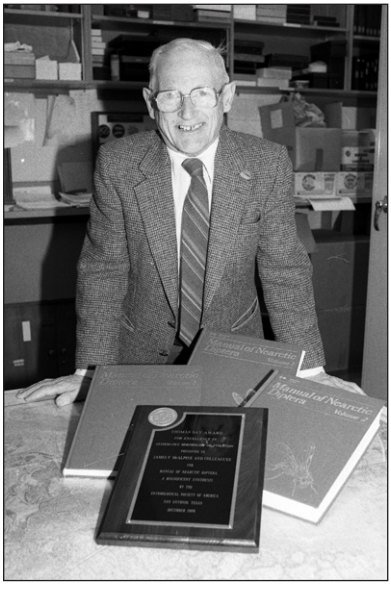
While employed at the CNC, Frank took educational leave to complete graduate work at the University of Illinois, Urbana, under the supervision of Herbert H. Ross, receiving an MSc in 1954, and a PhD in 1962 on the evolution and phylogeny of the Lonchaeidae of the world. A great advantage of working with Dr Ross was the opportunity for Frank to become familiar with Willi Hennig's Phylogenetic Systematics, and he made full use of this methodology. Although largely eclipsed by molecular systematics today, Hennig's method is still useful in understanding relationships between taxa, especially if genetic tools are not available or are inconclusive. In Urbana, Frank also found time to depart from the Diptera to take part in an analysis of postglacial distributional changes in winter stoneflies (Ross et al. 1967) and to initiate a study of the caddisflies of the genus Leptonema, which was eventually published years later (Flint et al. 1987).

Midway through his career, Frank discovered how to collect Canadian Cretaceous amber (McAlpine and Martin, 1969). Insect fragments had long been known from amber deposits, and many interesting fossils had been described, but Canadian amber was amongst the oldest and richest, formerly known from nodules collected in Western Canada, and from the shores of the Saskatchewan River in Manitoba. This river enters Lake Winnipeg via Cedar Lake, and the river's current is evidently just strong enough to carry amber nodules all the way to Cedar Lake where at that time they could be harvested from the shoreline debris. Frank made at least two expeditions to Cedar Lake, as well as one to Grassy Lake, near Medicine Hat, Alberta, returning with bushels of nodules. After much pollishing the nodules were examined for inclusions. This work resulted in several papers on fossil Diptera by Frank, one of which described a new genus and species from the family Ironomyiidae, previously known only from Australia.

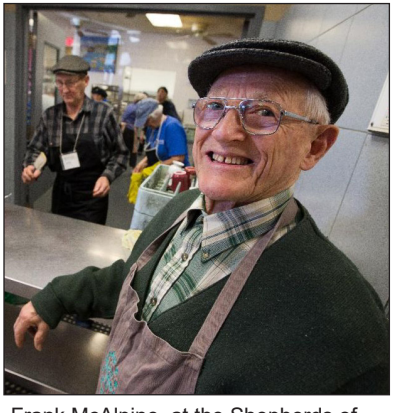
Frank published a total of 90 scientific papers during his prolific career, primarily on families of acalyptrate Diptera (see list in Cumming et al. 2011, Appendix A). Included were his significant contributions, 18 chapters in total, in the Manual of Nearctic Diptera. This three volume series (McAlpine et al. 1981, 1987; McAlpine and Wood 1989; available online at https://esc-sec.ca/publications/aafc/) remains as one of the most outstanding systematic treatments of any order of insects. As scientific editor of the Manual and one of six CNC Coordinators, Frank was essentially the leader of this 24-year multi-authored project. He wrote two of the important introductory chapters, one comprising a family key to adults and the other reviewing adult morphology and

terminology. Until very recently, Frank's morphology chapter was the standard adopted by virtually all dipterists worldwide, which provided a uniform homology-based terminology for Diptera that was clearly laid out and consistent with the rest of the insect orders. In the last volume, Frank finished his contributions to the Manual with publication of his phylogenetic synthesis of Cyclorrhapha (as Muscomorpha), in which he provided a cladistic classification of this huge lineage of flies. In 1989 the Manual was awarded the first Thomas Say Award for excellence in systematics, morphology and evolution by the Entomological Society of America (ESA). Frank accepted this prestigious award at the 1989 Annual ESA Meeting in San Antonio, Texas, on behalf of the other Coordinators and all 53 included chapter authors, referring to it as the highlight of his entomological career.

Frank participated in numerous insect collecting expeditions to the United States, Mexico, Australia and New Caledonia, as well as those within Canada. In total he published 251 new Diptera taxa (7 family group names, 9 genus group names, 235 species group names) and was honoured with 26 scientific patronyms attributed to him by other taxonomists in recognition of his scientific achievements (see http://www.canacoll.org/Diptera/Staff/McAlpine/McAlpine_Patronyms.pdf). He was also a regular visiting lecturer at the Lyman Entomological Museum of McGill University. For many years, Frank served as a Director of the Entomological Societies of Canada and Ontario, and as a Director of the Society of Systematic Zoology. Frank retired, after 35 years' service, in July 1985, but continued his research studies for several years at the CNC as an Honourary Research Associate until publication of the final volume of the Manual in 1989. Throughout his retirement, he kept busy with his large family, making maple syrup at his cottage each spring and volunteering once a week at the Shepherds of Good Hope kitchen in downtown Ottawa. He is survived by five of his children, eight grandchildren, six great-grandchildren, one brother and three nieces.



Frank McAlpine with the Thomas Say Award and Volumes 1–3 of the Manual of Nearctic Diptera, Ottawa 1990.



Frank McAlpine, at the Shepherds of Good Hope kitchen, Ottawa, in 2014 at the age of 92.

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