

John Frederick Doane quietly passed away on 21 May 2020, in his home in Saskatoon, at the age of 90 years. Born in Newmarket, John grew up on a farm near Bradford, Ontario, north of Toronto. John, and his older brother Charles (Chuck), developed an interest in entomology at a young age and became amateur insect collectors in southern Ontario. After high school, John enrolled in a Bachelor's program at the Ontario Agricultural College, now the University of Guelph; specializing in entomology, he graduated with a BSA in 1954. During the early years at university, John was introduced to two athletic pursuits, soccer and boxing. Unfortunately, he developed polio during his undergraduate tenure, and spent several months in isolation. But with his interest in insects now enhanced, John pursued graduate studies at the University of Wisconsin, completing both his MSc (1956) and his PhD (1958). Shortly after graduating, he began a research career in agricultural entomology, receiving a research scientist position at the Dominion Entomological Laboratory in Saskatoon that same year (now the AAFC Saskatoon Research and Development Centre).

John adapted very quickly to life in Saskatchewan, and became an avid hunter of wild game, waterfowl, and errant golf balls, together with his fellow colleagues. A few years later, one of his more solitary talents was the ability to successfully source morel mushrooms in the forests of northern Saskatchewan. His first research assignment was to quantify the ecology and behaviour of wireworms, a major pest of field crops in western Canada. John's approach to the assignment was to investigate the ovipositional behaviour and fecundity of adults, and the effects of soil moisture and temperature on egg survival. Further studies related to the response of the larval stage to carbon dioxide levels resulted in the development of methods for the trapping and monitoring of larval populations. With the unexpected outbreak of wheat midge (*Sitodiplosis mosellana*) in Saskatchewan in the early 1980s, John assembled a multidisciplinary research team to determine the biology and ecology of this new threat to wheat production on the prairies. His research promptly yielded important contributions with the discovery of a significant biological control insect (*Macroglanes penetrans*), and the development of a sound population monitoring protocol. Through the successful implementation of conservation techniques, this parasitoid now controls an average of >30% of the wheat midge across Saskatchewan annually. A study in the 1990s showed that in Saskatchewan alone the dollar value of the parasitoid to the agriculture industry over 10 years, due to reduction in insecticide costs, was in excess of \$248.3 million (equivalent of \$422.5 million today). The second highlight, a special larval soil extraction protocol, provided a unique population density and distribution monitoring tool for both the pest wheat midge and its biological control agent. This tool is still utilized today to forecast the risk to wheat production in map format for producers on an annual basis. Given the success of biological control using *M. penetrans*, John collaborated with international colleagues at CABI in Switzerland, to assess the viability of importing a second agent for biocontrol of wheat midge. This resulted in the successful introduction and establishment of *Platygaster tuberosula*. To minimize the economic and ecological impact of *S. mosellana* today, wheat producers in western Canada have access to one of the most comprehensive management programs of any insect pest of field crops.

John was appointed Head of the Integrated Pest Management Section of the Saskatoon



John Frederick Doane
(14 April 1930 – 21 May 2020)

Research Station in 1982, and the Head of the amalgamated Cereals Protection Section in 1989. His leadership style was low key but effective, frequently having to manage situations where the egos of associates sought to dominate the current agenda. As a result, John was highly respected by staff. He dealt with management issues and staff like a true diplomat, and where there was conflict, John would listen to all sides and quietly find the appropriate compromise. John served as Entomological Society of Saskatchewan President in 1967 and 1978, and served a term as a member of the Entomological Society of Canada Governing Board. He will also be remembered as a founding member of the national AAFC Biological Control Working Group, a group that is still very active in 2020. He retired in 1993, taking an extended self-guided tour of southeast Asia, including India and Malaysia. Upon his return, John remained active in retirement, co-authoring several scientific articles, most recently a bio-climate modelling paper on wheat midge in 2020.

Owen Olfert (Saskatoon) and Peter Mason (Ottawa)
