

IN MEMORIAM Gregor William Yeates (1944–2012)

Dr. Gregor Yeates, a distinguished soil biologist, ecologist and systematist, died in his home town of Palmerston North, New Zealand, on 6 August 2012 after a brief illness.

Gregor obtained his BSc (with first class honours) in 1966 and PhD in 1968, at the Department of Zoology at the University of Canterbury. After his PhD he carried out postdoctoral research at the Rothamsted Experimental Station in England in 1968–69, and at the Aarhus Museum of Natural History in Denmark in 1969–70, focusing on nematode community ecology, energetics and production in a Danish beech forest (e.g. Yeates 1972). On returning to New Zealand in 1970 he worked for the Department of Scientific and Industrial Research (DSIR) and in 1985 he was awarded a DSc from the University of Canterbury for his work on soil nematode populations. Following replacement of the DSIR by Crown Research Institutes in 1992, he worked with Landcare Research first in Lower Hutt, and from 1994 until his retirement in 2009 in Palmerston North, the city of his childhood. After retirement he continued his scientific work as an Honorary Research Associate in the Soil and Earth Science Group at Massey University until shortly before his death.

During his 39 years with DSIR and Landcare Research, he applied his skills tirelessly to a very broad range of topics and projects, the majority involving the ecology and systematics of soil nematodes, but many also involving other groups of fauna ranging from earthworms, flatworms, grass grubs, and even Adélie penguins. Gregor's contributions to soil biology were considerable in New Zealand and internationally. He, with four overseas colleagues, prepared an exhaustive and much needed synthesis on nematode feeding groups (Yeates et al. 1993) that was published in this journal and has subsequently been very widely used as the definitive guide by ecologists; it has now been cited >900 times.

His work, with colleagues, on a long-term CO₂ enrichment ('FACE') experiment in a pasture near Palmerston North, demonstrated one of the first clear examples of the indirect effects of increasing CO₂ on soil food webs (e.g. Yeates et al. 2003; Yeates & Newton 2009), which highlighted the pervasive pathways through which enhanced CO₂ can alter communities through complex interactions.



Gregor's publications have also focused on the potential of nematodes as bioindicators for human-induced environmental disturbance (e.g. Yeates 2003), including those caused by agricultural intensification (e.g. Yeates et al. 1997). He has also written a number of influential review and synthesis articles that highlight the ecological role nematodes play in driving plant communities and ecosystem processes (e.g. Yeates 1987, 1999).

Gregor conducted invaluable work on the ecology of the invasive New Zealand flatworm *Arthurdendyus triangulatus*, an invasive predator of resident burrowing earthworm species in the northern UK (Boag & Yeates 2001). This serves as one of the earliest and most compelling examples of the indirect effect of an invasive predator on community and ecosystem processes resulting from its removal of prey species, a topic that has

since attracted considerable attention. He was instrumental in bringing to New Zealand the OECD workshop on Terrestrial Flatworms which was held in Christchurch in 1998, culminating in a special issue of *Pedobiologia* published later that year with Gregor as Editor (*Pedobiologia* Vol 42 Parts 5-6). Another example of Gregor's interdisciplinary approach was when he investigated the relationship between earthworms and nematodes in New Zealand pastures, resulting in a frequently cited paper in *Pedobiologia* on this topic (Yeates, 1981).

In addition to Gregor's contribution to ecology, he also wore a second hat as a systematist. As such, Gregor proposed 106 nematode species (81 alone, 25 jointly), with the holotypes of 77 species being deposited in the National Nematode Collection of NZ (out of a total of 197 holotypes), as well as helping with several others.

The breadth of Gregor's interests is apparent even through the last two published papers that he authored; one an assessment of the conservation status of New Zealand's nematode species (Yeates et al. 2012), the other an account of the above- and below-ground consequences of long-term loss of *Carmichaelia* on a floodplain in central Westland (St. John et al. 2012).

Gregor was a highly valued collaborator in projects ranging from studying ecological impacts of invasive plants and animals, to understanding the below-ground community consequences of plant and foliar herbivore diversity and composition, to island geographical principles of treetop epiphytes, to the environmental impacts of land management and intensification. He enjoyed editorial and reviewing work, and served on the editorial boards of several journals. Gregor's commitment to soil biology meant that he had a reputation for hard work; often starting before 8.00 am in the laboratory and finishing after midnight at home. Field work was also often only curtailed by the number of daylight hours available.

Throughout his career he dedicated himself to understanding the ecology and systematics of soil organisms, and at the time of his death was an author of approximately 300 journal publications spanning 45 years. He was a member of the Editorial Board of *Journal of Nematology*, *Pedobiologia*, *Nematology*, *Biology and Fertility of Soils*, *The Russian Journal of Nematology*, *Soil Biology and Biochemistry*, *Applied Soil Ecology* and *the New Zealand Journal of Zoology*.

Gregor's contribution to science, both in New Zealand and abroad, was recognised by a number of honours. He was made a Fellow of the New Zealand Society of Soil Science (NZSSS) in 1995; a Fellow of the Royal Society of New Zealand (RSNZ; New Zealand's academy of the sciences) in 1998; and a Fellow of the Society of Nematologists (USA) in 2007. He was also chosen as the NZSSS Norman Taylor Memorial Lecturer for 2006, an honour awarded each year to one outstanding

New Zealand soil scientist. In addition he performed a number of tasks for New Zealand's science community, many through the RSNZ and the local branches on which he actively served. Gregor was also the New Zealand representative on the European Society of Nematologists from 2005 and had several roles in the Society of Nematologists, USA, between 1976 and 2008.

In his most recent years, he remained involved in a number of activities that served to communicate science to a broader population than just his scientific peers. As such he recently co-published *Plains Science 1* on scientific achievements in the Manawatu region of New Zealand with Prof. Vince Neall. He also judged at Manawatu Science Fairs and mentored students in both Science Fair and CREST projects. Not long before his death he was assisting Bunnythorpe Primary School with their Science Fair projects, which led to the memorable quote from one of the students: 'Dr Yeates, you are so COOL'.

Gregor will be remembered not only as an extraordinary scientist, but also as a mentor and friend to many. He had a considerable and infectious enthusiasm for everything he worked on, which inevitably has a lasting impact on those who interacted with him. His contribution will be missed. He is survived by wife Judy; Peter, Stephanie, and Alexandra; Stuart and Jacqui.

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