

JOHN FRENEY MEMORIAL SESSION

John Freney
1928–2015

“Dr John Freney was a world leader in the fields of efficiency of use of nitrogen fertilizer, greenhouse gas production, climate change, and environmental research.”

Deli Chen, James N. Galloway, Susan Greenwood, Arvin Mosier
E-mail address: sgreenwood@scopenvironment.org (S. Greenwood)



A tribute to John Raymond Freney
(December 7, 1928–January 2, 2015)



Dr. John Raymond Freney was a world leader in the fields of efficiency of use of nitrogen fertilizer, greenhouse gas production, climate change, and environmental research.





Highlights of Dr John Freney's N Research

- 1st measurement of N₂O emission from flooded rice fields; showed that little is lost if the soil is flooded before fertilizer application.
- Discovery of a new pathway for the emission of N₂O from aerated soils, namely considerable N₂O is produced during nitrification.
- 1st demonstration of substantial (as much as 100 kg N ha⁻¹) NH₃ loss to the atmosphere from unfertilized grazed pastures each year.
- Development of micrometeorological methods for the direct measurement of NH₃ from fertilized fields, now adopted as international methodology.
- Construction of a sampler for measuring atmospheric NH₃ fluxes; an enormous improvement in technique allowing measurements to be made in remote locations.
- Development of models of NH₃ volatilization from flooded rice fields leading to simplified emission measurement techniques.
- Assessment of the fate of fertilizer nitrogen applied to cotton, showing that up to 92% of the nitrogen applied was lost in gaseous form by denitrification; use of a new nitrification inhibitor, wax coated calcium carbide, reduced nitrogen loss by 52%.

DEVELOPMENTS IN PLANT AND SOIL SCIENCES
VOLUME 9

GASEOUS LOSS OF NITROGEN FROM PLANT-SOIL SYSTEMS

J.R. FRENEY & R. SIMPSON
(EDITORS)

SPRINGER-SCIENCE+BUSINESS MEDIA, B.V.

Changes in the Human-Monsoon System of East Asia in the Context of Global Change



Congbin Fu
J.R. Freney
J.W.B. Stewart

 World Scientific

Cycling of Carbon, Nitrogen, Sulfur and Phosphorus in Terrestrial and Aquatic Ecosystems

Edited by
J.R. Freney and L.V. Galloway



Springer-Verlag Berlin Heidelberg New York 1992

SCOPE

65

AGRICULTURE AND THE NITROGEN CYCLE

Assessing
the Impacts of Fertilizer Use
on Food Production
and the Environment

EDITED BY ARVIN R. MOBER
L. KEITH SYERS AND JOHN R. FRENEY

Selected list of John's awards

- Founding member for the UN's Scientific Committee on Problems of the Environment (SCOPE)
- Adjunct Professor of many prestigious institutions/universities, including the Chinese Academy of Sciences and the University of Melbourne
- Fellow of the Soil Science Society of America
- Fellow of the American Society of Agronomy
- Fellow of the Australian Academy of Technological Sciences and Engineering
- Centenary Medal by the Australian Government
- SCOPE–Zhongyu Environmental Lifetime Achievement Award
- Doctor of Agricultural Science, The University of Melbourne, the highest degree in Science of the University (one of only 25 awarded since the degree was initiated 50 years ago in 1964)
- Appointment as an officer of the order of Australia (AO), in January 2015, but unfortunately John didn't live to receive the award







山西省农业科学院聘任澳大利亚专家为客座研究员签约仪式

Appointment Ceremony of Adjunct Professor of Shanxi Academy of Agricultural Sciences



SCOPE-ZHONGYU

New Tools and Instruments for the Globe SCOPE-ZHONGYU环境论坛(2012)暨环

October 11-14, 2012 Taiyuan

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Scientific Committee on Problems of the Environment
United Nations Educational, Scientific and Cultural Organization (UNESCO)

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1928-2015

Message sent to me from the SCOPE Secretariat

- *“Through his long and distinguished career, John Freney informed, inspired and encouraged scientists and practitioners throughout the world. His research made significant impacts on environmental and agronomic research worldwide; his powerful influence as a mentor influences scientists today and will continue to do so in the future.*
- *His SCOPE colleagues and friends remember with gratitude the perception and rigour in his scientific endeavours, and generosity in all his doings. John was a gentle man and a gentleman, he made a difference and changed lives”.*