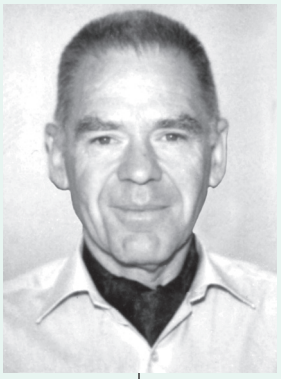
Association of Applied Geochemists

www.appliedgeochemists.org

OBITUARY FOR JOHN SOMERVILLE TOOMS (1927–2021)



The passing of one of the early pioneers of applied geochemistry in mineral exploration and in understanding the nature of undersea mineral resources on 2 December 2021, marks the end of an era.

John was born in 1927 at Darfield, near Christchurch, on the South Island of New Zealand, the second of four children of Irish-born John Douglas Tooms and his wife, Florence May Telfer. His father came from an engineering background and, since 1919, had served as an officer on cargo ships that travelled between England, Australia, and New Zealand. His parents emigrated to the South Island of New Zealand, where his father became an apiarist and farmer, selling the honey he produced to the New Zealand Shipping Company, which operated between New Zealand and the UK. John was born the next year and twins (Margaret Lucy and Patrick Telfer) followed in 1932. By 1935, New Zealand was beginning to emerge from the effects of the Great Depression, but his father's honey sales no longer brought in enough income and, in 1936, the family returned to England where, by 1939, his father was the works manager of a motor engineering company in Surrey. He eventually returned to sea and, in 1954, was lost overboard from the ship on which he was serving.

With the outbreak of war, John served in the Parachute Regiment and Infantry, during which time he was sent to Italy to guard Italian prisoners-of-war. Discharged in 1945, he subsequently attended the University of Wales, Cardiff, where he was awarded his BSc in geology and chemistry in 1951 and BSc (First Class Honours) in geology in 1952 and married Mary Elizabeth Vaughan Sweeting (1929–2019); they subsequently had two children, Elisabeth and Paul, but separated in 1972 and divorced in 1978.

Imperial College

Following his graduation, John wished to undertake a higher degree and was invited by Professor David Williams, Head of the Mining Geology department of the Royal School of Mines at the Imperial College of Science and Technology (ICST), London, to begin research in his Department. Supervised by (Professor) John Stuart Webb (1920–2007), a lecturer in the Mining Geology Department, who at that time was establishing the science of applied geochemistry in the UK, John's dissertation was on geochemical dispersion related to copper mineralization in northern Rhodesia. Two years later, the Geochemical Prospecting Research Centre (GPRC) was established within Mining Geology, with Webb as its Research Director. John's doctorate was awarded in 1955, and he was then appointed a Department of Scientific and Industrial Research Senior Research Fellow (1955–1958), an ICST Research Fellow (1958–1965), and Reader in Applied Geochemistry (1965–1972), acting as Webb's principal assistant throughout.

The transition from geochemistry applied to mineral exploration to regional geochemistry began in 1960 with a project to map the varying concentrations of copper, lead, zinc, cobalt, nickel, chromium, titanium, vanadium, manganese, and other elements in stream sediments over the 7,770 km^2 Livingstone-Namwala Concession area of northern Rhodesia (now Zambia). Marine geochemical exploration followed the next year, with an initial study (supervised by Webb) of the geochemical dispersion of copper and zinc from a pyritic ore body in the coastal environment of Vana Levu island, Fiji.

With the broadened scope of the GPRC's activities, it was renamed the Applied Geochemistry Research Group in 1963. John and another staff member were charged by Webb with dividing up the new areas of research between them. John graciously gave his colleague, Ian Nichol (1933–2018) first choice: he selected regional geochemistry and its implications for environmental problems; consequently, John ended up heading marine geochemistry more or less by default. Nevertheless, he threw himself into the new endeavour with his characteristic energy, initiating projects on placers, phosphorites, manganese nodules, and hydrothermal deposits that lasted into the early 1970s. As a result, his supervision of student dissertation topics changed in 1963 from mineral exploration to marine projects. The first of these was a study of the dispersion of tin in the bedrock, stream sediments, beach sands, and unconsolidated marine sediments of Mounts Bay, Cornwall. It was followed the next year by David Cronan's doctoral study of the geochemistry of pelagic manganese nodules from the Indian and Pacific oceans.

'Although John's sojourn in the field of marine minerals was brief in terms of his career as a whole, it was marked by a realism that was in sharp contrast to the mindless optimism that characterised much of the field at that time, and provided a foundation for continuing marine minerals work which lasted until the Group's demise in 1988, when it continued within the ICST Geology Department' (D. Cronan, pers. comm.). John left the AGRG in 1972 for personal reasons, and Cronan took over the marine work from him.

During his time with GPRC and AGRG, John supervised 28 doctoral and 6 masters dissertations. The majority of these were concerned with mineral exploration, but 12 with marine geochemistry. He was also involved as a consultant or contractor to the United Nations, governments, and mining companies in North and South America, Europe, Australasia, Oceania, Africa, and Asia.

The United Nations

From 1970 to 1980, John acted as a Technical Adviser to the UN Headquarters, advising on, and developing, projects with the national staff of developing countries. On leaving the ICST in 1972, he joined the United Nations Development Programme (UNDP) as a Project Manager, initially to 'strengthen' the Ethiopian Geological Survey (1973–1975). When he finished this project in 1975, he was posted to Nepal, but as he had never been able to take any leave in Ethiopia (because one of his UN appointed geologists had been captured by the Eritrean Liberation Front and he was involved in negotiating for his release), it was decided that he should take a long holiday. With his second wife, Efrosini, and their children, Alexis and Therese, they drove to his next posting in Nepal, travelling to Kathmandu via a challenging 42-day journey from England, through Europe, Pakistan, Afghanistan, and India. He then became responsible for mineral exploration in Nepal, a task made more difficult because 'for much of the period he also acted as his own Economic Geologist and Applied Geochemist' as a result of the UNDP financial crisis in 1975–1978. From 1978 to 1986, he was Operations Manager and Technical Manager of the UN Revolving Fund for Natural Resources Exploration, at the UN Headquarters in New York, responsible for all aspects of its work, and living in Chappaqua in New York State.

Cont'd on page 420

Mineralogical Society of America

www.minsocam.org

LETTER FROM THE PRESIDENT

As I look towards my retirement after 39 years at the Smithsonian's National Museum of Natural History, I clearly recall being hired as a research mineralogist—and "curator." Prior to my joining the Department of Mineral Sciences, my background had been conventionally academic, as a graduate student and postdoc. When applying for the Smithsonian job, I had some notion of the skills required as a research mineralogist, but curatorial work was not an experience offered by most academic graduate programs. Looking back, my career as a curator has turned out to be unexpectedly fascinating; not surprisingly, museum mineral collections are critical to broad areas of mineralogical research.

A typical dictionary definition of "curator" is "a keeper or custodian of a museum or other collection," adding "their role is to acquire, care for and develop a collection, and to interpret the collection to inform and inspire the public." The Smithsonian's mineral collection consists of ~375,000 specimens, including about 10,000 gems. The bulk of the minerals make up our reference collection and are primarily used for research. One of the huge benefits for me and my colleagues is direct and daily access to this incredible mineralogical resource; one truly feels like a kid in a candy store. A major part of my job, however, and that of my many skilled colleagues, is to facilitate access to the collection as a resource for the international scientific community. Specimens are available on loan to scientists at any recognized research facility in the world. As resident mineralogist and curator, I have served as an interface between the collection and researchers needing specimens—to interpret their needs, identify the most suitable samples, and negotiate the minimum quantity required for their study. Fortunately, most experiments these days require only a small amount of material, so most "loans" are as chips-to-be-consumed, <1 gram, and we assume that the sample will be used up during the study and not returned. We ask in return that the specimens be acknowledged in publications and that we receive copies of data collected from them.

One benefit of being a curator is the opportunity to interact with scientists working on myriads of important (since fascinating was used earlier) projects. My position at the Smithsonian has provided a unique overview of who is doing what with minerals. A sudden rush of interest in certain minerals or localities may highlight new topical areas, or perceived funding opportunities. In addition to mineralogists and petrologists, and, yes, geochemists and geomicrobiologists, we have provided specimens to meteorite scientists, chemists, physicists, environmental scientists, medical researchers, oceanographers, biologists of many flavors, etc. Of course, the common link among these researchers and projects is the essential role of minerals. Minerals are the building blocks of our Solar System, and their ubiquity in research should not be surprising. But I wonder, doesn't that make all of these scientists "mineralogists"?

Obviously, the Smithsonian collection is only one of many great museum mineral collections around the world that provide specimens for research. A critical role of these collections is not only to support science today, but to ensure continued access into the future. Inevitably, we will need to reinterrogate the same mineral specimens as they are approached with new techniques and different questions, and by smarter scientists. Well-curated and supported museum collections ensure that the mineral specimens used for seminal studies today will be available to future generations. Will all those well-studied minerals and rocks stored in your colleagues' offices be available for research in 5 or 50 years?

I am constantly amazed at the advances in instrumentation, computers, and software used to study minerals, just in my lifetime. It would be naïve to think this pace will abate. When I started my career, few mineral scientists would have anticipated the emergence of major research areas such as climate change, synchrotron-based science, nanomaterials, critical minerals, asteroid return missions, mineral evolution, etc. We routinely now receive requests not just for a specimen of a particular mineral, but rather for samples from various locations and deposits representing different ages in Earth's history, or from the generally unglamorous Critical Zone. These new directions inform curatorial priorities for growing the collection. Standards are being reanalyzed for more accurate and complete trace element information and in some cases, isotopic profiles. As studies are reported and databases grow, the mineral specimens remain the primary repository of all that, and future, information.

Every mineral specimen has a story. I anticipate an eternal partnership between museum mineral collections and researchers as they continue unraveling those tales. Long after I am gone, the mineral specimens will still be here.

Jeffrey Post
2023 President, Mineralogical Society of America

Cont'd from page 419

On his retirement to Cyprus in 1986, he grew olive and fruit trees, built many drystone walls, and became a member of an archaeological group and a wild-flower photographer, as well as remaining a consultant to the Revolving Fund and to the Cyprus Geological Survey.

In 2001, he and Efrosini travelled to Australia to visit their son. Intending to live there, they moved to Toowomba, near Brisbane, but in 2005 decided to return to Cyprus, buying an old house in the village of Prastio, which they then restored. However, in 2010, John's health deteriorated and they consequently returned to England in 2012 to live in York, where he died on 2 December 2021. He is survived by his wife, their children, and by his children from his previous marriage.

When John was being considered for the job in Nepal, the Assistant Administrator and Regional Representative for UNDP in Ethiopia, Richard B. Stedman (1920–2013; who eventually retired as Assistant Secretary-General of the UN), wrote to his counterpart in Nepal 'Tooms is hard-working, technically sound, and well motivated. He has done good work here. He is also a man of principle—he tells them the truth, whether they want to hear it or not. I have wished once or twice that he was a little more adept at "rolling with the punch," but I don't know many New Zealanders who are! I think he's a good, slightly tough supervisor. His staff is loyal to him. In short, if you want a good, technically sound, hard working character, and are prepared to accept slightly rough edges – which have shown themselves to be polishable in Ethiopia – you couldn't do better than John Tooms'.

The writer thanks Mrs. E. Tooms and Prof. D. Cronan for their assistance.

Richard J. Howarth