



## Obituary: Nicholas Neocles Ambraseys 1929-2012

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### **Nicholas Neocles Ambraseys 1929-2012**

Nicholas (Nick) Ambraseys was born in Athens (Greece) on 19<sup>th</sup> January 1929 and died peacefully at his home in Putney (United Kingdom) on 28<sup>th</sup> December 2012 at the age of 83.

Nick Ambraseys attended the National Technical University of Athens, receiving his diploma in Rural Engineering in 1952. Following this and service in the Royal Hellenic Navy he moved to Imperial College in London to study for his Diploma of Imperial College and later his PhD, which he was awarded in 1958. Following a few years at universities in Greece and in the United States of America (working with Nathan Newmark, one of the fathers of earthquake engineering) he returned to Imperial College and remained there until his death. He became Professor of Engineering Seismology in 1974. In 1968 he established the Engineering Seismology Section in the Department of Civil Engineering and from 1971 to 1994 he led this section. In 1994 he officially retired from this position but he remained very active as an Emeritus Professor. Even during the last few months of his life he continued working and collaborating on various research topics, including the stability of ancient Greek columns.

His research covered many problems connected with earthquakes and their effects on the ground, structures and populations. His PhD and early articles were concerned with the response of earth dams to earthquakes, in connection with the construction of large dams in the Himalayas (e.g. at Mangla). However, early on in his career he began studying historical accounts of earthquakes, particularly those occurring in the eastern Mediterranean region, and it is in this field where he arguably made his greatest contributions. His meticulous study of historical documents on earthquakes that occurred in the eastern Mediterranean and elsewhere (e.g. Central America) is second-to-none and he published many dozens of articles and books on this painstaking work. In 2009 his *magnum opus* on eastern Mediterranean seismicity (entitled 'Earthquakes in the Mediterranean and Middle East: a multidisciplinary study of seismicity up to 1900'), comprising almost 1000 pages, was published by Cambridge University Press.

Since he remained, at heart, an engineer he continued to work in geotechnical earthquake engineering, the assessment of earthquake ground motions and various other topics, in addition to his historical research. For example, he made significant advances in the collection and analysis of strong-motion (accelerometric) data. He started the routine collection, processing and assessment of these data and associated parameters (metadata) in 1971. In those days collection and use of strong-motion data was difficult, time consuming and, in Europe, uncommon due to analogue instruments and the lack of electronic communications to facilitate data transfer but through Nick's contacts and tenacity the collection of data grew.

This task continued through various projects and initiatives from the 1970s to early 2000s and culminated with the publications in 2000 and 2004 of freely-available CD ROMs of strong-motion data and their reassessed parameters and in 2002 the establishment of the [Internet Site for European Strong-motion Data](#). This work was conducted within the frameworks of the Strong-Motion Working Groups of the European Seismological Commission and the European Association of Earthquake Engineering, which Nick led for much of the past forty years. These strong-motion archives remain important resources for research and engineering practice and significantly help seismic hazard assessments in Europe and the Middle East.

All of Nick's publications were infused with wisdom, learning and wit, making them a joy to read. For those who are not familiar with his work, his 1988 Earthquake Engineering & Structural Dynamics article entitled simply 'Engineering Seismology' is recommended as a good place to start. In all his works he sought to act as a bridge between earth sciences and engineering and between research and practice. These studies were enlightened by the knowledge and insights he gained during dozens of post-earthquake field missions in various parts of the world, many of which were under the aegis of UNESCO. These missions led to a series of reports that had an impact on the reconstruction of the cities affected (e.g. Skopje and Managua). He was awarded in 1998 the Freedom of the City of Skopje in recognition of the field work that he undertook in the aftermath of the devastating 1963 Skopje earthquake and the advice that he provided to the local authorities. His great ability with languages (fluent in three or four and comprehension of many others) helped all of these works and to sustain good contacts with people of many nationalities. As well as conducting research himself, he supervised many masters and PhD students and he collaborated with numerous workers worldwide. His vast experience of practical earthquake problems was put to good use through consultancy for large-scale engineering projects, such as dams and bridges in seismically active regions.

In recognition of his lifetime of achievements he was given numerous awards and fellowships from prestigious institutions, for example: Busk Medal for Scientific Discovery from the Royal Geographical Society (1975), Mercenary Award of the European Association of Earthquake Engineering (1975), Fellowship of the Royal Academy of Engineering (1985), Honorary Fellowship of the Society of Earthquake Engineering & Structural Dynamics (1986), Honorary Fellowship of the International Association of Earthquake Engineering (1992), Honoris Causa from University of Athens (1993), Member of the European Academy (1997), Award of the Freedom of the City of Skopje (1998), Harry Fielding Reid Medal of the Seismological Society of America (2006), Fellowship of the Institution of Civil Engineers, Fellowship of the Geological Society and Fellowship of the Royal Geographical Society. From his election in 2003, he was an active member of the First Section of the Academy of Athens and he divided his time between London and Athens.

His great scholarship, practical insight and wisdom were best demonstrated during relaxed discussions in small groups, often accompanied by him cleaning and refilling his pipe. He peppered his conversation with interesting and amusing asides, anecdotes and observations. He had a great ability to simplify scientific and engineering problems with the use of enlightening analogies. Two that come to mind are: when he used the permanent vertical displacement (or lack of) at a canal north of Athens to constrain the fault slip in the 1999 earthquake and he compared the canal to photographic trays used in darkroom development; and when he compared the behaviour of particles undergoing soil dilatancy to the behaviour of commuters trying to get off a packed Tube (London Underground) train.

Nick Ambraseys contributions to engineering seismology and earthquake engineering were immense, wide-ranging and spanned almost 60 years. The worldwide community in these fields owe him a great debt and he will be greatly missed. He is survived by his wife, Xeni.