

## Obituary

### Georges VALLADAS

(January 1920 – February 2004)



Georges VALLADAS was born into a very modest family, a situation which limited his educational opportunities. Nevertheless, at the age of 17 he entered the prestigious laboratory of Paul Langevin in College de France as a technician. While there he was able to pursue his studies and obtain an engineering degree.

At the end of the second world war, he was one of the first engineers recruited by the new CEA (French Atomic Energy Commission) in 1946. The Commission was responsible for the construction of the first French Atomic Reactor, Zoe, and later for the development of nuclear research, both fundamental and applied. Georges' first task was to design and construct boron fluoride ionization chambers to measure the neutron flux near the core of Zoe. These chambers monitored the start of the reactor on December 15, 1948.

Soon after, Georges became interested in fundamental physics and moved into the Nuclear Physics Department where he developed an impulsion ionization chamber designed to study the alpha fine structure of some heavy nuclei. In 1954, he defended his Ph.D. dissertation on the spectrometry of alpha rays and its applications. He briefly left France in 1956 to work in Liverpool, at the synchrotron Laboratory, and, subsequently stayed a number of times at the CERN Laboratory in Geneva to develop detectors in the very high energy range.

In 1972, he joined the Centre des Faibles Radioactivités in Gif/Yvette, near Paris. At that time, as there were no commercial TL readers, Georges designed and built his own TL readers of high performance, accuracy and sensitivity for multiple

grain studies. He also developed a special equipment dedicated to single grain measurements. Some of his apparatus is still being used in the Gif Laboratory. Busy as he was with his own research Georges nevertheless found time to offer advice, plans, and even complete equipment for others. Quite a few TL laboratories in France (Univ. Paris VI, Clermont-Ferrand, Fontenay-aux-Roses, Strasbourg...), whether in the field of Archeological or Geological Dating, or in the field of Radioprotection benefited from his help.

Not content with building the equipment Georges pursued miscellaneous dosimetric studies and applications of TL. He became interested in the dating of meteorites, lunar samples and volcanic activity. He and G. Guérin got around the problem of anomalous fading in feldspars, by measuring the high temperature (>600 °C) TL emission of plagioclases. He also worked on quartz samples which enabled him to date the Laschamp lava flow (Chaîne-des-Puys), contemporaneous with the terrestrial magnetic field excursion of the same name.

During the two decades preceding his retirement, Georges became interested in the TL dating of Palaeolithic and developed a protocol which allowed for burnt flints from prehistoric hearths to provide dates for sites beyond the reach of radiocarbon techniques. Burnt flints from several key-sites have yielded ages which have radically modified the accepted chronology for the presence of Neanderthal and Moderns Humans in the Near East and Europe.

Georges Valladas maintained full scientific activity well beyond retirement age, until health problems forced him to slow down in 1995. His long professional life has been the life of a very talented physicist, a builder of high quality equipment, a great experimentalist. In recognition of his work he was awarded the Silver Medal of CNRS. He was held in great esteem internationally, particularly in the small world of Thermoluminescence, where he was ranked among the pioneers of TL Dating.

As a scientist, Georges was a hardworking person noted for his helpfulness, generosity, modesty, and unselfish devotion to Science.

*Raphaël Visocekas*

*Jean Fain*

*Didier Miallier*

*Gilles Guérin*

*Norbert Mercier*

*Serge Sanzelle*