Lorenzo Casertano†
(1921 - 2004)

On July 23, 2004, the distinguished volcanologist Lorenzo Casertano left us peacefully at his home in Italy, surrounded by his family. He made important contributions, not only in his native territory, but also in Chile and Costa Rica. This sad event happened few months before the November 2004 Chile IAVCEI General Assembly. Efforts were made through the Italian Embassy in Chile to invite him to this meeting and give him an acknowledgment and express him our gratitude for his important contribution, but because of his age and health this was not possible. He is survived by his wife Assuntina, three sons Stefano, Angelo and Carlo, and his daughter Lalla.

Lorenzo Casertano was born on January 18, 1921, in 'Sicignano degli Alburni' a small town located in the Salerno Province of the Campania Region, Southern Italy. He received his degree in Physics from the Università di Napoli in 1948 and was nominated as researcher at the Osservatorio Vesuviano (Naples) in January 1, 1951. In May 1956, he joined the academic staff of the Università di Napoli with the Earths Physics lecture in the Agricultural Faculty. Later, he joined the Science Faculty with the Volcanology senior lecture and was nominated Associate Professor on August 1, 1983. Finally, he retired from the Università di Napoli 'Federico II' on November 1, 1993.

Although he was a Physicist, early along his career (around 1950) he was attracted by volcanoes and enjoyed and got fascinated trying to understand their activity. As a professor of Volcanology he was very formal and respectful, pleasant and cheerful always showing his great experience with joy and extraordinary passion that involved all aspects of life.

In 1959 he worked for the University of Chile in Santiago for three main objectives: to teach Volcanology, study Chilean active volcanoes and look for a particular active volcano adequate to build an observatory, similar to the Vesuviano. After studying tens of active volcanoes among the thousand of the Chilean Andean Cordillera, first flying over them and through field excursions, he presented a proposal on 1960 to build a volcano observatory on one of the two most active volcanoes of Chile´s lake region: Llaima or Villarrica. Unfortunately, there were no economic resources to build such observatory,

Lorenzo Casertano at the edge of El Agrio crater, Copahue volcano, Southern Andes.

even though in 1963 Villarrica developed an explosive eruption that ended in 1964 with the destruction of Coñaripe village. At that time, Casertano was already in Italy. Anyhow, he made excellent descriptions of the Villarrica eruptive cycle of 1963 and published them in two Bulletins of the University of Chile. Also, he had the opportunity to visit Calbuco volcano in eruption during 1961.

During his stay in Chile, the 1960 earthquake took place on May 22 and triggered the 'Las Azufreras' eruption (Puyehue area) two days later. He studied and published many features of the earthquake, associated tsunami and volcanic activity, mainly in the Seismological Society of America Bulletin, University of Chile and Osservatorio Vesuviano. He also did the first systematic study of Lascar volcano in the Central Andes and published a special Bulletin of the University of Chile together with the Chilean geologist Rolando Barozzi (1961). Chile's Government also requested from him a detailed study of the Copahue volcano located in the boundary line with Argentina, and a geothermal research on Deception Island (Antarctica) for energy supply to the Chilean Base of that time.

While he was in Chile, the International Association on Volcanology requested him to prepare the first Chilean Catalogue of Active Volcanoes, that was published in 1963 '*Catalogue of the Active Volcanoes of the World Including Solfatara Fields, Part XV: Chile*. Edited by the International Volcanological Association, UNESCO, Rome'.

Although there was no funding for the Volcano Observatory in 1960, his encouragements and effort were still in the mind of Chilean Geologists Volcanologists 30 years later, that belong to the University of Chile and the Servicio Nacional de Geología y Minería. Thus, and because of the frequent eruptions in the Southern Andes (Villarrica, Mirador, Llaima, Lonquimay and Copahue) together with the increasing population of the area, at the beginning of the nineties the Servicio Nacional de Minería y Geología together with the Gobierno Regional de la Araucanía, built the Observatorio Volcanológico de los Andes del Sur in Temuco, in front of Llaima and Villarrica volcanoes. As a modest acknowledgement to the efforts of Lorenzo Casertano, the small Observatory Library keeps a photograph frame of him and a bronze dedication that says 'Pionero de la Volcanología en Chile' ('Chile's pioneer on Volcanology').

Years later, after numerous studies in Italy, mainly on Vesuvio, Stromboli and the Phlegrean Fields (Campi Flegrei), in 1979 he went to Costa Rica joining a commission together with Andrea Borgia and Corrado Cigolini as a seismic-volcanology cooperation with the National University (1979-1980) and afterwards with the Rodrigo Facio University (1982-1983). Also he was the volcanology professor at the Escuela Centroamericana de Geología of the University of Costa Rica (1983).

One of his major contribution was on the 'Hydrodynamics and geodynamics of the Phlegrean area of Italy' (published in 1976). Here, he and his coworkers showed the direct connection between sea-motion (induced by earth-tides) and seismicity, due to microfracturing of highly porous-permeable media typical of the lower part of this 'restless' caldera. On these bases, he focussed his research on the role of fluids and pore-pressure perturbations in volcanic, geothermal and seismic areas. These topics are some of the most promising issues in modern geophysiscs and volcanology.

Lorenzo had two main sayings: 'what exists, exists' in the sense that data obtained from nature are there because they clearly mean something, and the other one was 'without knowledge of the healthy condition, no doctor can diagnose an illness, nor volcanologist an eruption' (taken in some way from his friend Andrea Borgia, who published it in the JGR, 1994).

His studies in Costa Rica were focused mainly on eruptive activity, geophysics, dynamics and geochemistry of the Poas volcano hydrothermal crater lake, which were published in the Revista Geofisica Internacional and in the Bulletin of Volcanology (1983-1987). He also studied Arenal volcano intra-crater activity and lava flow dynamics, which were published in the Journal of Volcanology and Geothermal Research (1984). All of his work was done in co-authorship with his friends Borgia and Cigolini, together with some colleagues from Costa Rica.

One of his most remarkable contributions for earthquake and volcano science was '*Vulcani e Terremoti: conoscenze fondamentali e principali problemi*' printed in 1996, an almost complete summary of his nearly 50 years of life work.

Lorenzo Casertano will be missed not only by his family, but also by his many friends in all the volcanological community, mainly from Italy, Chile and Costa Rica.

Hugo Moreno Roa
OVDAS-Sernageomin
Chile

with the kind improvement of:

Guillermo Alvarado, Andrea Borgia, Roberto Carniel, Corrado Cigolini