

ACADEMY LECTURES

EDUARD SUESS LECTURE



THE SCIENTIFIC MARVELS OF THE FRASASSI CAVES IN CENTRAL ITALY

ALESSANDRO MONTANARI

Osservatorio Geologico di Coldigioco, Italy



Alessandro Montanari, aka “Sandro” (born in Ancona, July 25, 1954), obtained his Laurea degree in geology at the University of Urbino in 1979, just before moving to the United States where, in 1986, he received his Ph.D. at the University of California in Berkeley. He did pioneering research related to the cause of the end-Cretaceous mass extinction. In 1992, he returned with his family to Italy, settling near the town of Apiro in the Marche region of central Italy, in a semi-abandoned hilltop hamlet called Coldigioco. Here he founded the Geological Observatory of Coldigioco, a private scientific-cultural center, which since then has drawn students and researchers from various European and American institutions and universities. Sandro joined the Marche Speleological Group GSM-CAI of Ancona in 1968 at age 14, and participated in expeditions at Frasassi and in other karstic localities of the Umbria-Marche Apennines,

where he conducted research in the fields of stratigraphic geology, paleoclimate, and neotectonics. Sandro Montanari has published over 150 peer-reviewed scientific papers, written, edited, or co-edited several books, and has received several distinctions, including the EGU Jan Baptiste Lamark Medal, 2007; Fellow of the Geological Society of America, 2010; Marie Curie Fellowship 2010 from the European Commission. In 2010 he was elected a Corresponding Member of the Austrian Academy of Sciences.

The picturesque Frasassi Gorge, in the Marche Apennine of central Italy, is famous for its giant, hypogenic cave complex that includes the Grotta Grande del Vento (the big cave of the wind), which is now a popular show cave since 1974, three years after its discovery by the Speleological Group of Marche (GSM-CAI) from the city of Ancona. Every year, the show cave is visited by ~350,000 tourists who remain astonished by the breath-taking beauty of this vast underground environment enchantingly decorated by alabaster speleothems of all sizes and shapes. Yet, the Frasassi caves are not just a touristic attraction but they represent a rare if not unique object of scientific research in the fields of geology, biology, and archaeology, which caught the attention of researchers from all over the world. In this lecture, research by the speaker and other colleagues is described about the geotectonic history of this part of the world, the reconstruction of climate changes through the past 100,000 years, the study of a unique and extremely complex underground extremophile, sulfur bacteria-based chemosynthetic ecosystem counting hundreds of animal species, many of which are new to science, and the history of humans that, since the Late Paleolithic and all the way to modern times, have been using these caves as shelters or worship places.

PROGRAM

WELCOME AND INTRODUCTION

Christian Köberl | University of Vienna and Head of the Commission for Geosciences of the Austrian Academy of Sciences

EDUARD SUESS LECTURE

Alessandro Montanari | *Osservatorio Geologico di Coldigioco, Italy*
The scientific marvels of the Frasassi caves in central Italy

The event will be followed by a drinks reception.

Current research topics from the geosciences are the focus of the lecture series named after the Austrian scientist and politician Eduard Suess. He served as president of the Austrian Academy of Sciences from 1898-1912.

ORGANIZATION:

Commission for Geosciences of the Austrian Academy of Sciences

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