

The mystery of Paleocene-Eocene boundary — examples from Austrian Alps

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Laporan (Report)

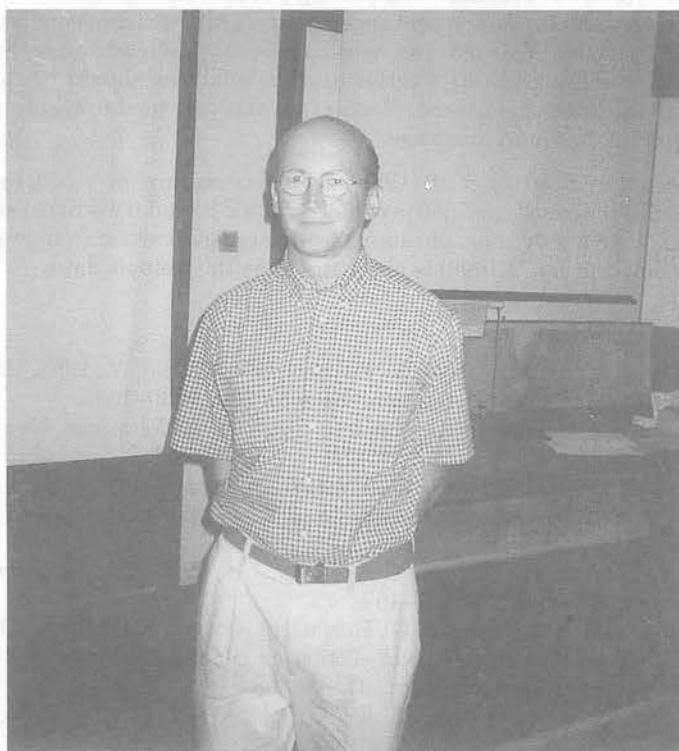
Dr. Hans Egger of the Geological Survey of Austria (and also Secretary General, Geological Society of Austria) gave the above talk at 5.30 pm on Friday 16 February 2001 at the Geology Department, University of Malaya.

The talk was attended by about 20 participants. Among the audience was His Excellency, the Ambassador of Austria to Malaysia.

Abstrak (Abstract)

The late Paleocene — early Eocene interval was a critical episode in Earth's history and of special interest for the geoscience community because a dramatic move to a "greenhouse world" took place at that time. Significant turnovers in marine and terrestrial biotas reflect major changes in ocean circulation and global climate. The most expanded upper Paleocene-lower Eocene sedimentary sequence known to date was found in Austria. It records several of the Paleocene-Eocene boundary events, including the negative carbon isotope excursion. This global geochemical event is interpreted to reflect a massive and abrupt input of ^{12}C -enriched carbon to the ocean-atmosphere reservoir, possibly as a result of catastrophic gas-hydrate dissociation. Associated high carbon dioxide release caused humid conditions even in high latitudes. Coeval acmes of diatoms, radiolaria and dinoflagellates indicate high surface water fertility, probably as a consequence of increased continental run-off. The associated high flux of organic carbon to the sea floor led to a mass extinction of benthic foraminifera. Further up in the section volcanic ash-layers occur which have been attributed to a major eruption event in the North Sea Basin. Obviously, these ashes were deposited over vast areas in Europe and represent unique and widespread correlation tools.

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