

The discovery of Daliuchong volcanic edifice in Tengchong, Yunnan province (China) and its significance

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Situated adjacent to the border area of western China and Myanmar, Tengchong volcanic field has long been experienced intense tectonic stress from the subduction of Indian plate to Eurasian plate and had strong volcanism as well as frequent earthquakes and geothermal activities in Cenozoic. Previous researches revealed that volcanism in Tengchong area started from Miocene, strengthened in Pliocene and prospered in Pleistocene.

Lying in a NS-stretched basin, a series of late Quaternary volcanoes and early Pleistocene volcanoes are included in Tengchong volcano group. Among them, Daliuchong volcano is located in the middle of the basin. Lithology of Daliuchong volcano consists of huge amount of thick-layered explosive volcanoclastic deposits and few effusive dacitic lava in the summit area, forming eruption products as vitric tuff, crystal tuff, lithic tuff etc., which covering more than 100 km² in the volcanic field. A volcanic conduit with its diameter over a hundred meters, located 100 meters south of its peak, was determined the first time through field investigations. It might be the primary eruption conduit in the early Pleistocene eruption episodes in Tengchong area. Volcanic plug, lava dome, volcanic dikes, explosive and effusive eruption products together formed the volcanic edifice. Daliuchong edifice and its landslide deposits not only account for the source of widely distributed volcanoclastic deposits in Tengchong volcanic field, but also give an early warning for the volcanic disaster prevention as well.