GEOLOGIC CHARACTERISTICS OF THE SANTORINI CALDERA AND THE SURROUNDING AREA

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The Santorini Caldera and the surrounding area was extensively studied during the last years by the Marine Geology department of IGME. Following are the main conclusions.

Within the Santorini Caldera four basins can be dinstinguished one north of Kammenni (northern basin) and three south of it (western, southern and eastern basins). All basins have flat bottoms, with maximum depth ranging form 280 to 390m, and are filled by coarse grained loose sediments having thickness from 120m at the northern basin to less than 30 m et the basins south of the Kammenis. The stratification of the loose sediments in the basins is subhorizontal and a number of elternating opeque and trensparrent sets of reflectors was distinguished.

The subhorizontal structure of the basin floor sediments is locally disrupted by piercing domes that are from 5 to 12m high and from 200 to 700 m wide, giving the impression of intrusions that were eflected after the formation of the basins. Four such domes were mapped three of which are located at the northern and one at the western basin. Apparently these "intrusions" postdate the sediments which were deposites during the Minoan eruption.

Petrographic study carried out at the coarse fraction of the surface sediments revealed abundance of authigenic iron oxides at the northeastern sector of the northern basin, attributed probably to local hydrothermal action. Considerable presence of iron oxides was also noted in the cores taken on the domes.

Outside the caldera the prominent feature is the Columbus Volcano a 300 to 400 m cone-shaped NE-SW oriented feature lying at about 7 km northeast of Thira. According to historical sources it was formed in 1650 during an eruption, after which the top of the volcano rose a few meters above sea level. Subsequent erosion lowered the tone top to 18 m below sea level today. Petrographic description carried out at boulders retrieved there indicate that the Columbus Volcano is in fact an very recent extrusive body cooled in the sea water, with abundant volatiles.

Thus the volcanic activity in the Santorini area is manifested not only in the Kammenis but also in the doming of the basin floors and at the Columbus Volcano.