

AS FOR THE SCIENTIFIC RESULTS, THEY ARE THE FOLLOWINGS:

In Terceira the characterization of shelf depositional bodies similar to those rimming Italian insular volcanoes and in neighbour Faial Island in the Azores was only partially accomplished because the high-resolution seismic system taken aboard did not work properly. However, multibeam and Chirp acquisition all along Terceira Island allowed to map the shelf extension and morphological characteristics. It has also been possible to define the distribution of rocky outcrops and areas covered with sediment. Some of the profiles also penetrated the depositional bodies, sometimes revealing a complex inner structure. A more detailed seismostratigraphical analysis of these data may improve the understanding of genetical processes and be the base for further surveys with smaller vessels. A core was taken on the south-western shelf of the island in order to study the lithological and stratigraphical characteristics of one of the depositional bodies. Five more cores were collected in key sites in Faial island, where the detailed seismic stratigraphy was known

Regarding the records of the 1998-2001 eruptive crisis, very peculiar products ("floating lava balloons") were emitted and have been observed floating on the sea in the Serreta ridge area (Gaspar et al. 1999a, 1999b, 2000, 2003) by researchers of the CVARG-Azores involved in the project. Data acquired in previous surveys provided the first indication for locating the 1998-2001 eruptive vent and sample the products present at the seafloor. Based on geomorphological features and seafloor sampling the vent was identified as a half-cone, some 150 m high and with a diameter of 700 m. Its top is located at 251 m water depth at 38°47,66'N and 28°28,67'W. A great number of samples were collected through rock- and gravity- coring, grabbing and dredging, enabling us to characterize different products related to the Serreta eruption. In general samplings recovered a large amount of fresh, basaltic highly vesiculated scoria, including fragments with the typical stratified vesicularity observed in the lava balloon crust.

The surveys allowed to reconstruct with great detail the morphology of the Serreta ridge and of surrounding areas, where a strong interaction between active tectonic features and volcanic processes produced complex morphologies, ranging from extremely elongated and rifted bulges in deep water to volcanic ridges produced by fissural eruption, to volcanic cones of different dimensions. These latter if in shallow water have been flattened by wave erosion during Pleistocene lowstands of the sea level.

As far as the comparison with the Pantelleria 1891 eruption that also produced lava balloons, the following points can be highlighted:

- 1) Despite the very different geodynamic setting, the geomorphology and macroscopic characters of volcanic products are surprisingly similar. High vesiculated, scoriaceous lavas were found, in fact, in both sites close to the vents, while fine sand rich in glass shards is present in the surrounding areas;
- 2) Both the presumed vent sources of the two eruptions are conical in shape (even if in Serreta half of the cone is missing as it likely collapsed on the slope), without any signs of summit craters or lava flows on the flanks;
- 3) The volume of such conical vents, although very different (100,000 m³ in Pantelleria; 36,000,000 m³ in Serreta) were found to be proportional to the duration of the respective eruptions, in both cases inferred by the observation of lava balloons floating on the sea surface.

As for the IOZOC project, it was aimed primarily to investigate what governs the distribution of animals on the seabed, and how they reproduce, grow and disperse. The participation of researchers of the IOZOC project in the cruise was an opportunity to make

the final collection and analysis of 8 settlement panels from 4 stations in the Faial-Pico channel. Unfortunately, major technical problems were encountered during the first ROV dive, and since repairs could not be undertaken onboard this breakage effectively ended the IOZOC work onboard. However, some tissue samples were taken from all octocorals collected during dredge and box core activities onboard. These samples will enhance the geographic distribution of specimens used in population genetics studies.