85° Congresso Nazionale
Pisa 6-8 Settembre 2010

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VOLUME DEI RIASSUNTI
VOLUME II

Editori: Michele Marroni & Mauro Rosi

Con il patrocinio di:

Presidenza della Repubblica
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Realizzazione volume dei riassunti a cura di:
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Società Geologica Italiana
Settembre 2010
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The opening of the natural harbour of Ischia (Italy)

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Key words: Ischia harbour, Ischia history, Bourbon Ferdinand II, Lago del Bagno, crater lake.

We examine recent and historical sources with a view to reconstructing the circumstances leading in 1854 to the opening of the natural harbour of Ischia, the execution phases of the works and the morphological changes arising. Since the late 17th century Ischia, an active volcanic island, has been a major European destination for spa treatment. It underwent a period of change after the harbour was opened up, which represented not only an outlet towards the mainland but also an important factor of social and cultural aggregation for the island. Our analysis also accounts of the geology of Ischia Harbour, the observations of the current state of the island and issues concerning the increase in volcanic and seismic risk resulting from urban expansion and the increase in tourism since the first half of the 20th century.

On 17 September 1854, under the initiative of the Bourbon Ferdinand II (1830-1859), King of the Two Sicilies, the opening of the new harbour of Ischia was celebrated. It has since become a major maritime port and marina in the Bay of Naples. The port constituted the fundamental element connecting the island and the mainland, providing easier access to the island and promoting the progressive growth of the local economy.

The future harbour area, a lacustrine basin (Fig.1), just like the rest of the island, was the product of volcanic activity which has been distinguished by alternating explosive and effusive eruptions. Small to moderate volcanic eruptions occurred in the last 10,000 years, and also intense seismic activity in the past 800 years. The most recent eruption occurred in 1302, with lava flow affected partly the east area of the harbour (VEZZOLI 1988; VEZZOLI et alii, 2009; CARLINO et alii, 2006, 2010). The crater of Ischia Harbour was formed several centuries BC. The volcanic products in the eastern sector (San Pietro Hill) overlie a palaeosol developed on top of an older trachyte containing pottery remains from the 5th century BC and roof tiles of the 6th-5th centuries BC (BUCHNER, 1986; VEZZOLI et alii, 2009) The Ischia Harbour crater was formed by a phreatomagmatic eruption, during which the explosive energy increased, followed by a magmatic phase with a strombolian activity. A small positive gravity Bouguer anomaly, close to the harbour, highlights the presence of a shallow dense mass which can be interpreted as due to the solidified lava lake formed during the last phase of the eruption. This interpretation is supported by the presence of a rock block emerging from the lake surface (CARLINO et alii., 2010).

The works for the harbour opening involved the removal of part of the sandbank separating the lake from the sea to the north, with an entrance of about 500 palms (130 m). A jetty was also to be constructed to protect the harbour mouth from the strong NNW winter winds, about 700 palms long (182 m) consisting of about 541 cubic canne (10,000 m³) of rock obtained from a cliff beyond the small river mouth to the west, and the bed was to be dredged to allow access for large vessels as well (QUARANTA, 1855). The whole lake-bed was excavated, removing material about one metre deep, amounting to 115,000 m³.

The opening of Ischia Harbour in 1854 was undoubtedly an intervention which radically changed the hierarchical relations between the island and the mainland. It is also a fine example of the art of 19th-century engineering (DELZIA, 1990; RISPOLI 2007). It was an operation which, in terms of techniques and
execution times, was certainly ahead of its time. Although the reasons that drove King Ferdinand II to open up the pre-existing Bagno Lake, to make it the island’s main port, were chiefly personal, what lay behind the choice was the spirit of renewal in regional policies, which was one of the hallmarks of the Bourbon government. At that time the island was already well known for treatments with its thermal waters, especially in Casamicciola, where since the late 16th century many visitors had gone to enjoy their therapeutic effects. However, the lack of safe harbours throughout the island made access difficult, especially in winter months when the frequency of sea storms increases considerably.

With the opening-up of Ischia Harbour, the situation radically changed: maritime traffic and the flow of visitors shifted towards the eastern side of the island which thus became easily accessible, also for large steamships (Fig. 2). This produced a population increase in the Ischia municipality, rather than elsewhere on the island, and lead to new urban settlements.

The natural features of the harbour, obtained from an ancient crater lake, are certainly singular. However, its so well-defined shape has prevented its expansion (RISPOLI, 2007), which would seem necessary to handle the substantial increase in maritime traffic. During the peak tourist season, over 20 large vessels dock and sail daily, handling about 15,000 passengers, and over 35 fast craft handling 8,000 passengers, making a total flow of 23,000 passengers per day. It is some surprise that, in 1853, the Provincial Council of Naples failed to approve the construction of the new harbour of Ischia, which it considered a site “unsusceptible to development”. Clearly, for such areas endowed with natural, landscape and cultural attractions, interventions resulting in better accessibility and fruition produce not only an increase in tourist flows, but also in the resident population. Moreover, as the economy’s organisational centre, the harbour brings about the transition from settlement of coastal areas to that of more inland areas. The trade taking place in the market-harbour promotes a deep-rooted reconversion of production, from a closed, self-consumption economy to a trade economy. In this sense, Ischia harbour represented not only a window looking to the mainland but also a key factor in the island’s social and cultural aggregation.

Although in recent times our knowledge of the island’s geological phenomena has improved, and special attention has been laid on the effects of their most intense manifestations and related risks, regrettably among the unwary communities exposed to environmental risk few people have adopted the culture of preventive action. In light of this fact, the level of attention to extreme geological phenomena apparently only grows in concomitance with catastrophic events, while political decision-makers limit themselves to intervening only in the emergency phase, without any long-term programming of responsible land-use management policies to ensure the future reduction of geological risk.

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