

## **Enrico Franco in the hystorical frame of the Institute of Mineralogy, University of Naples (Italy)**

The invitation from one of my dearest alumni, Maurizio de Gennaro, to introduce this Special Issue in memory of Enrico Franco, Professor of Mineralogy at the University of Naples, gives me the opportunity to illustrate his figure in the frame of the history of the renowned Institute of Geology, in the years between 1960 and 2000. During this long period, the Institute of Geology was first merged with those of Palaeontology and Geophysics, and in the eighties the current Department of Earth Sciences was established. With great humility, I would like to say that my former colleagues and myself belonged to the small group that - in difficult years and precarious conditions - helped to maintain the prestige of this institution, where many old and famous scientists had worked in the field of Mineralogy (i.e. Arcangelo Scacchi, Ferruccio Zambonini).

I was always convinced that high level scientific research needs both financial support and modern technological equipment: in the case of Mineralogy this is really crucial. As a matter of fact, in the last decades mineralogical studies evolved from a purely descriptive approach to a crystal-chemical, structural and minerogenetic one. Furthermore, the mineralogy has increasingly assumed applicative characteristics (study of ore and industrial minerals), in order to contribute to the economic and social development of the country. I have to say that the economic factor has been lacking for a long time among the “politics” of the past Institute of Mineralogy. Even the three giants in the history of the Mineralogy in the University of Naples, Arcangelo Scacchi (1810-1893), Ferruccio Zambonini (1880 - 1934) and Emanuele Quercigh (1885-1939) remarked this aspect in many circumstances (such as in the congresses of 1844, 1911 and 1934): “...an important scientific discipline, like Mineralogy, is worthy of more consideration by supplying research funds and widening its academic staff ...”.

With these preliminary remarks, we can define “heroic” the work of those scientists who contributed over time to keep and even increase the scientific value of the Neapolitan Institute, after the Second World War. In 1945, Antonio Scherillo became full professor of Mineralogy in Naples. The scientific equipment of the Institute was extremely poor and obsolete, and in the chemical laboratory also the glassware was damaged. All the educational microscopes had been destroyed by the devastating fury of the German soldiers first and then by the Americans. The University building itself had also suffered extensive damages caused by Anglo-Americans bombs. At that time, the academic team consisted only of Antonio Scherillo, Antonio Parascandola, and starting from 1947, myself. The reconstruction of the Institute of Mineralogy, and of the adjoining Mineralogical Museum, slowly started from the ruins. As regards to the Museum, its “resurrection” took place only thanks to a lot of hard

and solitary work, until Enrico Franco joined our group in 1960.

During the period 1945-1965, the most important and profitable for the Mineralogy in Naples, the Mineralogical Institute was modernized and Antonio Scherillo founded the so-called “Neapolitan school”, which successfully studied the mineralogy and petrography of the tuff formations in Southern Italy (i.e. Phlegraean Fields and Latium). These studies were mainly focused on the pyroclastic stratigraphy, as well as on the crystal chemistry and minerogenesis of zeolites. Other mineralogical studies concerned the characterization of primary and alteration minerals from Somma-Vesuvius and Phlegraean Fields (Ti-augite, eagirine, montmorillonite, kaolinite) and the minerogenesis of the bauxite in the Mediterranean area. For these studies we had been allocated several research grants from the Italian government, that enabled us to purchase several scientific instruments (thermal analyzer, X-ray diffractometer and scanning electron microscope), thus offering the neapolitan Mineralogy group a new approach for modern scientific investigations. These favourable conditions continued until 1955, when the new four-year degree course in Geology was created in Naples, following the strong driving force given to the Italian geological sciences and oil exploration by the ENI of Enrico Mattei.

Enrico Franco graduated *cum laude* in Geology in 1959, with a thesis in Mineralogy. His career began as University assistant and he was immediately appreciated for his bright intelligence and particular skills in the instrumental work. He can be considered the first of a new generation of “Neapolitan” geologists, which progressively contributed to the growth of Mineralogy, Geology, Economic Geology, Palaeontology, Volcanology and Geophysics in our institution. Meanwhile, following the third industrial revolution, Mineralogy revealed itself as a growing science in the field of applied research. Enrico’s career advanced toward the full Professorship in 1985, and for him teaching was a fundamental part of his professional life.

I think that nobody better than me - I was his professor of Mineralogy in the academic year 1955-56, his degree thesis supervisor and later his colleague, collaborator and friend - may depict his personality. His behaviour was always elegant and measured in all circumstances. His nature was patient and calm also in the most difficult situations, that may have occurred over a long career. He never showed his resentment, while my blood was boiling, being my temper diametrically the opposite! He maintained this same prudence in the researches in collaboration, sometimes leading to some delay in the publication of the results, with a widely shared sorrow.

In his scientific activity, he studied the minerals from Phlegraean tuffs and highlighted the presence of new species at the Somma-Vesuvius (i.e. K-chabazite and panunzite), until his definitive retirement (in 1998). In X-ray diffraction analysis and data interpretation Enrico was really superb, and this extraordinary ability was widely acknowledged. Together with Antonio Scherillo, he studied the genesis of some clay minerals in the Phlegraean Fields,

such as kaolinite and montmorillonite. Then, with the evolution of applied mineralogy, Enrico's scientific interests were mainly devoted to the characterization, minerogenesis and technological uses of natural and synthetic zeolites. Meanwhile, he became coordinator of several research projects of CNR and MIUR. As regards the zeolite topic, I must remember his fruitful collaboration with Prof. Rosario Aiello, Department of Chemical Engineering and Materials of Cosenza.

Member of the Italian Society of Mineralogy and Petrography, the Italian Association of Crystallography, the Society of Naturalists of Naples and, since its establishment, member of the Italian Society of Zeolites, Enrico - shy and discreet - has always refused honorary positions, preferring to stay in the X-ray diffraction laboratories. While he was immersed in his readings, being our rooms separated by a door only, I could hear low-tuned Beethoven symphonies, that Enrico greatly appreciated and often listened to. He loved photography and to construct high-precision mechanic and electronic devices by himself (many of those are still used in the Naples laboratory).

As an exception to the laws of nature and with my regret, I have the privilege to remember here my alumnus Enrico. I hope I was able to illustrate his figure in the best way, framed in the history of our old Institute of Mineralogy. At this point of my life, I can be considered the "oldest witness" of Mineralogy in Naples. Then, let me put Enrico Franco beside my old Masters Giuseppe De Lorenzo, Antonio Scherillo and Antonio Parascandola. I am increasingly grateful to the Lord that the memory of certain figures, among which I include Enrico Franco, now helps me to forget the disappointments of my professional life. Anyway, I was always accompanied by the statement of the Greek philosopher Socrates: "A life without research is not worth living."

I know that my friend Enrico would agree with these words.

*Renato Sinno*