

The “Crystals Collection” of the Museum of Mineralogy and Petrography of the University of Turin

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ABSTRACT

The “Crystals Collection” represents one of the most important and unusual thematic collections of the Museum of Mineralogy and Petrography of the University, it is currently in loan for use to the Regional Museum of Natural Science of Turin (MRSN). This collection is composed of 270 isolated crystals. The specimens are fastened with pitch on a metallic support, a small nail and put on a wooden base with the relative cover tag. The Catalogue of the mineralogical collection and the single cover tags give some generic information. Probably the “Crystals Collection” is connected first to the intense activity of Johann Strüver, that worked at the Museum from 1870 to 1873, and at a later stage, to Giorgio Spezia, director of the institution from 1878 to 1911. The collection was prepared especially for didactic purposes in the “School of Mineralogy” of the Museum, even if some possible interesting specimens are included in this collection for additional studies. In the later years, the collection has been restored and partially shown in several mineralogical exhibitions in Italy and in Europe.

Key words:

mineralogy, museological collection, Turin, Regional Museum of Natural Science; Crystals Collection.

RIASSUNTO

La “Collezione Cristalli” del Museo di Mineralogia e Petrografia dell’Università di Torino.

Tra le raccolte tematiche presenti nella collezione del Museo di Mineralogia e Petrografia dell’Università, attualmente in comodato d’uso al Museo Regionale di Scienze Naturali di Torino (MRSN), è di particolare rilevanza la cosiddetta “Collezione Cristalli”. La raccolta è costituita attualmente da 270 esemplari di cristalli isolati, montati con pece su un supporto metallico a forma di “testa di chiodo”, a sua volta piantato in una basetta di legno verniciata con il relativo cartellino di accompagnamento. Ad oggi non è stata reperita alcuna documentazione storica in merito alla costituzione della raccolta, ma sulla base di varie brevi note riportate sui singoli cartellini si può collegare la collezione all’opera di Johann Strüver, che operò al Museo dal 1870 al 1873, e successivamente a quella di Giorgio Spezia, che dal 1878 al 1911 fu direttore dell’istituzione torinese. La raccolta venne allestita prevalentemente con finalità didattiche nell’ambito della “Scuola di Mineralogia” annessa al Museo, anche se in alcuni casi sono stati inseriti in questa collezione esemplari studiati o ritenuti essere interessanti per possibili ulteriori ricerche.

Recentemente restaurata, la collezione è stata parzialmente presentata negli ultimi anni in diverse mostre mineralogiche in Italia ed in Europa.

Parole chiave:

mineralogia, collezioni museologiche, Torino, Museo Regionale di Scienze Naturali, Collezioni Cristalli.

INTRODUCTION

The mineralogical and geological collections of the Regional Museum of Natural Science of Turin, (MRSN) consist of samples acquired by Piedmont Region since 1980 and collections belonging to the Museum of Mineralogy and Petrography of the

University of Turin (currently in loan for use to the MRSN).

The collections consist in a total amount of approximately 36000 mineral specimens and 35000 rocks, including 95 meteorites. Because of the considerable number of specimens, it is one of the



Fig. 1. The former (a) and the recent reorganized (b) mineralogical warehouse at MRSN.

largest and most exhaustive geo-mineralogical collections among national naturalistic museums.

An important restoring of the mineralogical collection started in the last decade, the specimens were reorganized in thematic sub-collections and stored into appropriate cabinets (fig. 1).

The thematic sub-collections are listed below:

- systematic collection - minerals are grouped into classes based on the Strunz classification (Strunz, 1982);
- type-mineral collection - holotypes, co-types or meta-types materials;
- geographic collection: specimens arranged according to geographic parameters; it is divided into four areas representing Italian mines or mineralogical localities (Pian della Mussa, Vesuvio, Baveno, Brosso-Traversella);
- radioactive minerals collection - 260 radioactive minerals organized into adequate screening closed compartments;
- gems and craftworks - 580 samples of gems, ornamental craftworks composed of precious minerals, ceramic and glass;
- crystal collection - a historic collection composed of 270 isolated crystals.

The purpose of this paper is to introduce the unusual and little known "Crystals Collection" of the Museum of Mineralogy and Petrography of the University of Turin that represents a first step for crystallographic educational activities and academic research in Turin and in Italy.

THE "CRYSTALS COLLECTION"

The "Crystals Collection" is one of the most important thematic collections of the Museum of Mineralogy and Petrography of the University of Turin and it is currently in loan for use to the MRSN. The collection is composed by 270 isolated and well-shaped crystals. Each specimen is fastened with pitch on a metallic nail shaped specimen support fixed on a wooden base with its relative cover tag (fig. 2a). In the handwritten original labels are reported information

as the name of the mineralogical species, the catalogue number, the crystal forms (indicated as Miller-Bravais Indices hkl) and the recovery place (fig. 2b).

The collection comprises several types of minerals, both common and rarer species. The majority of the specimens comes from Europe and in particular from Italy and Piedmont. Table 1 shows the relative abundances in the collection, and it is clear that calcite, pyrite, quartz, vesuvianite and "garnet" represent the greatest number of samples in the collection.

At the moment historical data on the origin and on the early stages of the collection are not exhaustive. Nevertheless, the historical Catalogue of Mineralogical Collections and the single cover tags can give some generic information as: "taken from the drawers of professor Giorgio Spezia's workroom", "given by prof. Spezia 1887", "specimen stored and/or studied by Strüver" or "sample used for exercises". Therefore, it is probable that the "Crystals Collection" is connected to the intense activity of Johann Strüver,



Fig. 2. a) Some samples of the "Crystals Collection".
b) a detail of an original label of vesuvianite from Mussa Alp (Ala Valley, Piedmont) probably manuscript by Strüver.

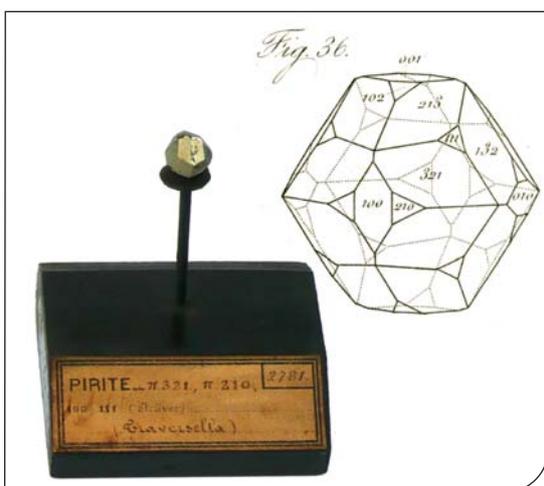


Fig. 3. Pyrite sample studied by Strüver (as reported by the catalogue and the cover tag) and his drawing of the same crystal as illustrated in the monograph of Traversella (Tav. II Fig. 36) (Strüver, 1868).

who worked at the Turin Museum from 1870 to 1873. At a later stage, Giorgio Spezia, Director of the institution from 1878 to 1911, managed the collection. It was prepared especially for the didactic purposes of the "School of Mineralogy" of the Museum, although some possible interesting specimens were included in this collection for additional studies.

These two influent mineralogists were involved in the development of the mineralogical and museological field. They carried out their intense activity at the Museum of Mineralogy of the University of Turin.

JOHANN STRÜVER

In 1870, Johann Strüver (1842-1915) has been convoked by Quintino Sella as Assistant at the School for Engineers in Turin, and from 1871 to 1873 he was Professor of mineralogy at the University. Even if he stayed at the University of Turin for few years, he always showed a strong interest for the mineralogy of Piedmont, in particular for Traversella Mine and the mineralizations of Ala and Vigizzo Valley (Gallo, 2007). Furthermore, he published deepened petrographic studies of granites of Valsesia Valley and he described, for the first time, the mineral sellaite, that he named after Quintino Sella. In those years his fundamental work was focused on pyrite of Traversella and Brosso Mines in Piedmont (Strüver, 1868). In the monograph "Studii sulla mineralogia italiana: Pirite del Piemonte e dell'Elba" he well-described around 5000 specimens of pyrite, measuring many crystallographic forms and drawing almost 200 crystal projections.

Quintino Sella wrote about this research: "Strüver describes all the forms, combinations, twinings and

deformations (notable crystals with a peculiar shape due to the anomalous growth of several faces) of some crystals of the collections of the School for Engineers and Museum: he notes well the physical features of different shapes, and he gives an idea about the characteristics of Brosso and Traversella Mines, less known than the ones in Elba Island. [...] So, the new shapes increasing the crystallography knowledge are no less than 24" (Sella, 1869).

All the samples closely examined by Strüver belong to both the collections of the Museum of Mineralogy of the University of Turin and the School for Engineers (now Museum of Mineralogy and Geology of the Polytechnic Institute of Turin). Several sketches of the "Crystals Collection" samples have been drawn in the monograph on pyrite of Traversella Mine (Strüver, 1868) (fig. 3).

GIORGIO SPEZIA

Giorgio Spezia (1842-1911) was the inventor of the hydrothermal method and of the relative device for the growth of synthetic quartz developed at the



Fig. 4. Showcase in which some samples belonging to the "Crystals Collection" are exhibited. a) The Munich Show (2010); b) "Accademia delle Scienze" (Turin, 2014); c) Bologna Mineral Show (2014).

Mineral	Number of specimens	Mineral	Number of specimens
albite	2	hanksite	1
anglesite	6	ilvaite	2
anhydrite	1	leucite	2
"apatite"	4	magnesite	1
apophyllite	1	magnetite	3
aragonite	3	manganite	1
arsenopyrite	1	mellite	2
augite	6	natrolite	1
axinite	1	"hornblende"	6
baryte	6	orthoclase	7
berill	3	perovskite	3
borax	5	pyrite	24
calcite	31	"pyroxene"	3
chalcocite	1	quartz	19
celestine	3	rutile	2
clinochlore	1	scheelite	3
cobaltite	8	senarmontite	1
cuprite	4	sphalerite	1
diopside	6	sylvite	1
dolomite	4	spinel	4
hedenbergite	3	staurolite	3
hematite	2	stibnite	1
epidote	7	thenardite	1
euclase	1	titanite	2
augite var.fassaite	3	topaz	6
fluorite	2	"tourmaline"	7
gahnite	2	vesuvianite	13
galena	1	scapolite var.wernerite	1
gypsum	5	zircon	9
glauberite	1	sulphur	1
"garnet"	15	TOTAL	270

Table 1. Mineral list of the "Crystals Collection".

beginning of 20th century. He is considered the predecessor of experimental mineralogy in Italy and, from 1878 to 1911, he was Director of the Museum of Mineralogy of the University of Turin. He focused his studies on Ossola Valley, his birthplace, and on melanophlogite, anydrite and sulphur from Sicily. Furthermore, he dedicated his activity to the improvement of Museum's mineralogical collection, therefore also of the "Crystals Collection". He organized many mineralogical temporary exhibitions especially for didactic purposes.

THE "CRYSTALS COLLECTION" IN MINERALOGICAL EXHIBITIONS: PAST AND FUTURE

In the last decades, MRSN developed new communication approaches based on temporary exhibitions of its collections. In particular, the Department of Earth Science, whose collections are

still under-represented in the permanent exhibitions of the Museum, has carried out specific out-reach initiatives within the context of minerals trade shows. In the later years, the Collection has been restored and partially shown in several mineralogical exhibitions in Italy and in Europe (Bittarello et al., 2011) (fig. 4).

Some specimens of the "Crystals Collection" have been presented in 2007-2008 during the temporary exhibition "Mineralia: Storie di minerali e riflessi di cristalli" at MRSN to disclose one of the most important and little known thematic collections (Costa & Gallo, 2010). This exhibition was organized into the project "planetearth 2008" promoted by the United Nations General Assembly that declared "2008" as the International Year of Planet Earth to increase awareness of the importance of Earth sciences.

In 2010, some samples of the "Crystals Collection" were exposed at the 47th Mineralientage München. The Munich Show is the largest and most important

trade fair for nature's treasures in Europe and it gains international reputation for its special exhibitions. In this event, MRSN organized the thematic exhibition "Im schatten des Mont Blanc" ("In the shadow of Mont Blanc"). Alpine minerals, in particular from Piedmont, were exposed, and the showcase dedicated to historical specimens included pyrite crystals from Traversella Mine studied and illustrated by Strüver. The year 2014 marks the centennial of the birth of X-ray crystallography and the United Nations General Assembly (UNGA) proclaimed it as the International Year of Crystallography (IYCr2014). UNESCO with the International Union of Crystallography (IUCr) coordinate the organization and the implementation of crystallography educational activities during the year. Promoting education and divulgation in crystallography and its links to other sciences, MRSN carries out specific out-reach initiatives within the context of minerals trade shows and thematic events as for instance "Bologna Mineral Show 2014", "Euromineralexpo" and the conference "Impact of Crystallography on Modern Science" at the Accademia delle Scienze (Turin) (fig. 4). Historical documents and samples belonging to the "Crystals Collection" have been displayed in thematic exhibitions connected to the discovery of X-Ray and the global importance of crystallography.

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