

## Überblick über einige italienische Sammlungen von alten Büchern und Handschriften

### A Review of Some Italian Collections of Old Books and Manuscripts Related to Earth Sciences

Von

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mit 4 Abb. / with 4 Fig.

Schlüsselworte:

*Bergbauschulen  
Bibliotheken  
Geowissenschaften  
Handschriften  
Historischer Buchbestand  
Italien  
Museen  
Universitäten*

#### Abstract

Books and manuscripts relating to the History of Earth Sciences are often contained in the libraries of old Italian institutions such as Academies of Science, Natural History Museums and Mining Schools. Also in many Institutes and Departments of Geology, Paleontology, Mineralogy, Geophysics etc. are spread numerous small precious collections of old books which were either purchased by the universities or donated by various professors down through the years. The aim of this paper is not only to begin to compile a provisional directory of the location and contents of relevant collections of old books and manuscripts, especially within Italian Universities and scientific Institutes, but also to indicate the great need for a central reference library for the History of Earth Sciences and Mining in Italy.

The historian of Earth Sciences and Mining in Italy may use for his research a considerable amount of unexplored primary sources which are potentially available in numerous Italian libraries and archives. It is important to specify "potentially" because the location of these sources is still a major problem which must be resolved. Research in history of Italian geosciences can not only be limited to the old collections kept in main libraries and scientific institutions, even if they are often very rich or significant and sometimes well catalogued. Very often it can be

indispensable to explore the old collections of small but very specialized libraries, such as those of Institutes of Geology, Mineralogy, Paleontology as well as those of Museums of Natural History and, of course, Mining Schools.

In fact, despite the long standing tradition of mining and of geological, mineralogical and paleontological studies in Italy (see an outline in N. MORELLO, 1989) a specialized library to house particular collections of old books and manuscripts related to these subjects does not exist. This situation has been caused by the lack of an important national or regional institution (both scientific and technical), that is to say a mining academy like for example the *Bergakademie of Freiberg* or the *École des Mines* in Paris, established by the governments in the late 18<sup>th</sup> century also for the specific purpose of teaching mineralogy and geology. The libraries of these institutions started very early to collect volumes and periodicals concerning geological sciences, mineralogy and mining, both for teaching and research purposes. So now they are precious and indispensable reference sources for studies in history of geology and mining (about Freiberg see P. SCHMIDT, 1977 and 1987).

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1 - MINING SCHOOLS

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2 - UNIVERSITARIAN  
INSTITUTES

Geology  
Paleontology  
Mineralogy  
Geophysics  
Geography

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3 - MUSEUMS

Natural History  
Geology  
Paleontology  
Mineralogy

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4 - ACADEMIES OF SCIENCE  
SCIENTIFIC SOCIETIES

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5 - OTHER INSTITUTES

Geological Survey  
Geographical Military Institute  
Seismological Stations  
Volcanological Observatories  
Institutes of History of Science

Fig. 1: Libraries in Italy

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To date, we may only suppose the birth of specialized libraries such as these in the Italian 18<sup>th</sup> century states. An interesting example is that of the kingdom of Sardinia, where king CARLO EMANUELE the third supported the studies of mineralogy, metallurgy and mining in the Royal School of Artillery in Turin, which was founded in 1739 (V. FERRONE, 1984, p. 445 - 470). Some years later a special school of mineralogy and mining, only for the cadets of Artillery, was established after 1752 by the minister BOGINO (L. BULFERETTI, 1980, p. 528 - 529; V. FERRONE, 1984, p. 489 - 490). Unfortunately the whereabouts of the original libraries of these institutions, if they existed, still need to be investigated, but it is known that most of the papers concerning their activities are still kept in the State Archive, the Academy of Science, the Royal Library and the Library of Artillery Technical School ("*Arsenale Militare*") in Turin.

After the unification of Italy, completed between 1860 and 1871, the trend of the new government was to ignore the possibility to create an universitarian degree in mining engineering, because it was considered more advantageous and less expensive to send the best students abroad, especially to the distinguished mining academies in Germany or France. Italian mining had been suffering for a long time a sort of "*inferiority complex*" above all toward German techniques. A leading figure of the reorganization of the Italian technical-scholastic system, Quintino SELLA, who was a mining engineer, stated in 1871 that the industrial and mining situation in Italy was backward compared to the other european countries (U. CHIARAMONTE, 1992, p. 98).

However, during the second half of the 19<sup>th</sup> century, the Italian government, through the Ministry of Agriculture, Industry and Trade, started to establish some new mining schools. In Palermo and Turin two special schools were established in mineralogy for engineering graduates but they existed for only about ten years from 1875 to about 1887 (U. CHIARAMONTE, 1992, p. 93 - 96). The governments main concern was with the secondary schools of mining: the aim of these schools was to create a class of chief-miners and technicians who undertook a three year course which included practical training in the mines. Most of these schools still exist and are ranked on the same level as the secondary technical or industrial schools: today however, they no longer possess their former importance, but they still have preserved documents and books related to their past activities. The main problem, unfortunately common to the majority of these schools, is the lack of a specialized complete catalogue concerning the old material. In some cases a new classification system is in operation, but usually only a general inventory exists where some listed books are missing. The lack of permanently employed librarians is another major problem for these institutions: all the libraries are still accessible principally thanks to the help of voluntary teachers. (Tab. 2)

The mining school of Caltanissetta in Sicily was the first one to be founded, in 1862, in an area renowned for the mining of sulphur (U. CHIARAMONTE, 1992, p. 104 - 111). Unfortunately the archive was destroyed during the second world war, but the library houses about 5,000

volumes with a small old collection oriented also towards chemistry, in particular the French literature (works of LAVOISIER and many issues of the "*Annales des Mines*"). Also some 19<sup>th</sup> century German books, now missing, about the geology of Sicily and other subjects, were included in the original library of the school. The main part of the old collection is represented by the "*Bollettini*" (Bulletins) of Sicilian mining published at the end of the 19<sup>th</sup> century.

	City	Date	Potential sources
1.	CALTANISSETTA	1862	library catalogue in progress
2.	AGORDO	1869	archive, library inventory
3.	IGLESIAS	1871	archive, library inventory
4.	CARRARA	1871	?
5.	MASSA MARITTIMA	1919	archive, library catalogue in progress

Fig. 2: Mining Schools in Italy

The school of Agordo, near Belluno in the Venetian region, was established in 1867 for improving the iron and copper mining tradition, dating from the 12<sup>th</sup> century in the Imperina Valley (R. VERGANI, 1975; U. GIUFFRÉ, 1939; F. TAMIS, 1967; U. CHIARAMONTE 1992, p. 112 - 115). However, the lack of collaboration between the school and the mines, together with intermittent closures of the school due to a lack of constant financial support had an adverse influence on the formation of the library. This now consists of about 5 000 books, mostly acquired after the 1940s: the old collection is not particularly relevant and makes up only about 5% of the total.

Instead, the school of Iglesias, established in 1871 near Cagliari in Sardinia, was strongly connected with the local iron mining activities and made a substantial contribution to the technical development of the area (U. CHIARAMONTE, 1992, p. 122 - 127). Thanks to a wide range of financial contributions, the school had already in 1883 a complete laboratory, specialized machines, a mineralogical museum and above all a good library. This still exists and includes an old collection of 18<sup>th</sup> and 19<sup>th</sup> century books on mineralogy and mining. The archive of the school contains documents of the history of the mining activity in the area. These collections are complemented by the old collection of the library of the Mineral Association of Sardinia, founded before the school and which still operates in Iglesias.

Finally the situation in Tuscany, another important Italian mining area in the 18<sup>th</sup> and 19<sup>th</sup> century (A. RIPARBELLI, 1989; T. ARRIGONI, 1989; I. TOGNARINI, 1984; G. MORI, 1966), is less significant for this review: in fact the school of Carrara, established in 1871 for supporting the local marble industry was closed 24 years later and the library, if it existed, is probably lost or dispersed (U. CHIARAMONTE, 1992, p. 115 - 120). The school of Massa Marittima, planned since 1857 by the Grand Duke of Tuscany, LEOPOLDO II, was eventually established in 1919 (M. SOZZI, 1993; U. CHIARAMONTE, 1992, p. 120 - 122). The content of the library is mostly concerned with the 20<sup>th</sup> century and the oldest books are some publications dating from 1887 by the Mining Survey about mines and caves in the area. The archive of the school contains material dating from 1905.

This short review shows that the Italian mining schools were more technical than scientific and the contents of their libraries reflect this situation. Also the small quantity of old books kept in these schools demonstrates that relevant 18<sup>th</sup> and 19<sup>th</sup> century collections for the study of the history of Earth Sciences were spread in several more general scientific institutions and libraries.

However, because geology and paleontology are probably the more "historical" of the sciences, by consequence the interest of the Earth Scientists in the specialized literature of the past has always been high. Therefore it is not surprising that among the many Institutes and Departments of Geology, Paleontology, Mineralogy, Geophysics are spread numerous small collections of old books and manuscripts which were either part of their original library (many of them founded during the 19<sup>th</sup> century), purchased by the universities, donated or assembled by various professors down through the years.

A very significant example of the latter case exists in the antiquarian library of the Department of Earth Sciences in the University of Rome "La Sapienza". This unique library devoted to the History of the Geological Sciences was assembled mainly by Prof. Bruno ACCORDI (1916 - 1986) (Fig. 3) who towards the end of a long geological career developed an interest in this subject until the time of his death (see a biography of ACCORDI by G. DEVOTO, 1991).

The Institute of Geology of the University of Rome was first established in 1873 as "Gabinetto di Geologia" by Giuseppe PONZI (1805 - 1885), who was professor of geology in the University of Rome since 1864 (M. PAROTTO, 1984, p. 41 - 43; a short biography of PONZI is also in B. ACCORDI, 1984, p. 78 - 79). He donated his private collections of rocks, fossils and books to the museum and to the library of the Institute but above all he realized in 1875 the acquisition of the geological and paleontological collections of the Kircherianum Museum (formerly called "Galleria del Collegio Romano" and founded by Athanasius KIRCHER in 1652). The Kircherianum Museum also included a precious scientific library and the books related to geology, paleontology and mineralogy formed the first unit of the antiquarian library of the present Department of Earth Sciences of the University of Rome (A. BERZI BOSI & M. PAROTTO, 1993). Bruno ACCORDI

worked to increase the old collection during the years that he spent as professor of geology from 1959 to 1986. The antiquarian library consists of about 750 books, according to the alphabetic card file, prepared by ACCORDI himself but which today needs a complete revision.

The collection includes books from the 16<sup>th</sup> to 19<sup>th</sup> century with rare volumes by Athanasius KIRCHER, Ulisse ALDROVANDI, Filippo BONANNI, Ferrante IMPERATO, Nicolò GUALTIERI, Michele MERCATI, Martin LISTER, Agostino SCILLA and also a copy of *Lithographiae Wirceburgensis* by Johann BERINGER. Some books exist in the form of xerocopy and later editions. ACCORDI also accumulated a unique collection of approximately 1 000 offprints and recent books on the History of the Earth Sciences, which is located in the antiquarian library and which is catalogued alphabetically but which also includes a separate biographical index of the geologists mentioned in the offprints. Finally a small group of very interesting old books, especially German (including some works of Ignatz von BORN) are still kept in the library of the former Institute of Mineralogy and hopefully these books will soon join the antiquarian collection of the Department.



Fig. 3: Prof. Bruno ACCORDI (1916 - 1986) (from G. DEVOTO, 1991)

The antiquarian geological library of the University "La Sapienza", with its location and card indexes both separated from the rest of the main library of geology, is probably a rare case among the Italian Departments and Institutes of Earth Sciences.

The library of the Institute of Geology and Paleontology of the University of Florence, founded in 1965 but based on an old section probably from the 18<sup>th</sup> century Museum of Physics and Natural History (like the present Museum of Geology and Paleontology: see C. CIPRIANI, 1989, p. 44), also had its old geological collection. This was donated, together with other books of historical scientific interest, to the Institute and Museum of History of Science of Florence, established in 1927 (M.L. RIGHINI BONELLI, 1976, p. 7 - 46; F. ADORNO, 1983, p. 223 - 225). This collection is presently known as "Fondo Geologia": it consists of 370 volumes from the 16<sup>th</sup> to 19<sup>th</sup> century, mainly about geology, paleontology and mineralogy but also meteorology, hydraulics, volcanology and seismology. It has been included in the old collection of the Institute (called "Biblioteca Antica", which has about 4,000 volumes dating from the 16<sup>th</sup> to the end of 19<sup>th</sup> century), but a special card catalogue, not alphabetical, gives easy reference to all the volumes of the "Fondo Geologia", which includes books by Thomas BURNET, Niels STEENSEN (STENO), Vitaliano DONATI, Johann Jacob SCHEUCHZER, Vannuccio BIRINGUCCIO and many others. This catalogue is also available on-line in the main library of the Institute.

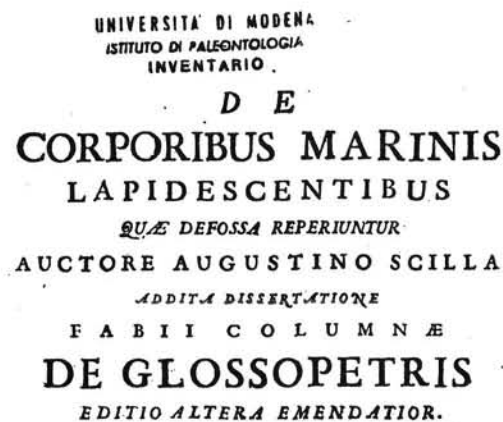
Usually only small sections containing old books and sometimes manuscripts are to be found within the libraries of the institutes and departments of Earth Sciences. Unfortunately the location of these volumes always remains the main problem because of their inclusion in the general alphabetic card indexes together with all the modern books. In spite of this, it is possible to mention some interesting collections: for example in the present Department of Geology, Paleontology and Geophysics of the University of Padua are kept the books of the former "Gabinetto di Mineralogia e Geologia", established in 1869 and directed by Giovanni OMBONI (1829 - 1910), first professor of geology and mineralogy in Padua (G. DAL PIAZ, 1971, p. 20 - 29; G. PICCOLI & L. SITRAN REA, 1988, p. 15 - 19). He enriched the library with his own books and after 1892 initiated the purchase of the rich private library of the prominent geologist Achille DE ZIGNO (1813 - 1892: a short biography of DE ZIGNO is in B. ACCORDI, 1984, p. 76). OMBONI also left to the Institute a small collection of manuscripts by some distinguished 18<sup>th</sup> - 19<sup>th</sup> century venetian geologists, such as Giovanni ARDUINO, Tommaso Antonio CATULLO and others (G. DAL PIAZ, 1971, p. 35 - 36). After 1932 professor Giorgio DAL PIAZ (1872 - 1962), who was very interested in the history of the geological sciences, further increased and reorganized the library.

There also exists in the Institute of Geology and Mineralogy of the University of Ferrara an antiquarian section, including precious letters by Charles DARWIN, Étienne Geoffroy DE SAINT-HILAIRE, Giovanni ARDUINO, Alberto FORTIS, Scipione BREISLACK, Antonio STOPPANI, Tommaso Antonio CATULLO and others. Some of them were

published by Piero LEONARDI, who was professor of geology in that Institute (see for example P. LEONARDI, 1959 and P. LEONARDI, 1971).

In the Department of Earth Sciences of the University of Genoa may be found the significant collection of 19<sup>th</sup> century books left by professor Gaetano ROVERETO (1870 - 1952) who also donated his own manuscripts. An interesting small collection of old books, probably belonging to the Geophysical Observatory established in 1832, is now housed, but not catalogued, in the old Institute of Geophysics of the same University.

Among the few libraries specialized in paleontology, the Institute of Paleontology of the University of Modena, established in 1961, has an interesting old collection of about 70 volumes from the 18<sup>th</sup> to 19<sup>th</sup> century, catalogued separately. They come mostly from the library of the former Museum of Natural History founded in 1839 from which developed the first institute of Geology and Mineralogy in 1877 (E. MONTANARO GALLITELLI, 1966). The most precious books are probably a *Thesaurus Subterraneus* (1728) by Franz Ernest BRÜCKMANN, the 28 volumes of the *Silurian System of Bohemia* (1872 - 1902) by Joachim BARRANDE and the *De Corporibus Marinis Lapidescensibus* (1752 edition) by Agostino SCILLA, including the famous *De Glossopetris* by Fabio COLONNA. (Fig. 4)



ROMÆ, MDCCCLII.  
Sumptibus Venantii Monaldini Bibliopolæ in via Curfus.  
EX TYPOGRAPHIA LINGUARUM ORIENTALIUM  
ANGELI ROTILII, ET PHILIPPI BACCHELLARII  
IN ÆDIBUS MAXIMORUM.  
SUPERIORUM PERMISSO.

Fig. 4: *De Glossopetris* by Fabio COLONNA, 1752

This is only the beginning of a very extended research project, as many other universitarian specialized libraries may give us some more interesting surprises (an initial source of information for further investigations may be ANNUARIO, 1969 - 1981). In Bologna, for example, the Institute of Geology and Paleontology has a library which was established in 1861 and an annexed Museum of Geology and Paleontology which was based on the 18<sup>th</sup> century collections of the "Museo e Istituto delle Scienze" founded in 1714 (see C. SARTI, 1987). Also the library of the Institute of Mineralogy may prove to be very interesting, as it was established in 1852, the same year of the inauguration of the "New Museum of Natural History" in Bologna.

We must also remember that collections of old books relating to the history of earth sciences are still contained in older Italian institutions such as the Academies of Science founded between 17<sup>th</sup> and 18<sup>th</sup> century in Rome (the "Accademia dei Lincei" in 1603), Siena (the "Accademia dei Fisiocritici" in 1691), Bologna (the "Istituto delle Scienze" in 1714), Naples (the "R. Accademia di Scienze e Belle Lettere" in 1778), Turin (the "Accademia delle Scienze" in 1783). Among these academies the "Istituto delle Scienze" of Bologna has a particularly rich library, now called "Biblioteca Universitaria", (see L. FRATTAROLO ORLANDI & I. VENTURA FOLLI, 1979) which also contains the manuscripts and books of two very distinguished Italian scientists from the early history of Earth Sciences, Luigi Ferdinando MARSIGLI (1658 - 1730) and Ulisse ALDROVANDI (1522 - 1605): the latter is also known because he used for the first time, at the beginning of the 17<sup>th</sup> century, the word 'geology' with the modern meaning (F.D. ADAMS, 1954, p. 165 - 166).

Other possible sources are the libraries of the Museums of Natural History, like those established for example in Milan, Pisa, Bologna, Bergamo, Brescia, Genova, Trento, Trieste, Udine, Ferrara, Venezia and Verona. The Museum of Natural History of Milan, founded in 1838, is the oldest in Italy not connected to an University. Its former library included the rich collections of books donated by the two main supporters of the Museum, the naturalists Giorgio JAN (1791 - 1866) and Giuseppe DE CRISTOFORIS (1803 - 1837): unfortunately this collection was almost destroyed during a fire when the Museum was bombed in 1943 (C. CONCI, 1967, p. 10; 32).

As you can see, this short review examined only some examples from north and central Italy: several institutions have still to be explored, particularly in the south of Italy, such as Naples where for example early in the 19<sup>th</sup> century two important institutes were active: the Royal Museum of Mineralogy, established in 1801, and the Vesuvian Observatory, founded by the seismologist Luigi PALMIERI (1807 - 1896) in 1841 (R. DE SANTIS, 1986, p. 69 - 78; 119 - 125).

Finally some other institutions may be quoted: the Geological Survey of Italy, based in Rome, the cartographical collection of which has still to be historically studied; the national Geographical Military Institute, established in 1872 and based in Florence, which has a rich specialized library of more than 200,000 volumes, booklets and above

all maps (F. ADORNO, 1983, p. 184 - 186); the "Osservatorio Ximeniano" (Ximenian Observatory) of Florence, founded in 1786, which has a library of about 24 000 volumes specialized in astronomy, geodesy, hydraulics, meteorology and seismology, including an old collection of about 4 000 books from the 17<sup>th</sup> to the 19<sup>th</sup> century (F. ADORNO, 1983, p. 252 - 253).

The aim of this paper is not only to begin to compile a provisional directory of the location and contents of relevant collections of old books and manuscripts especially within Italian Universities and scientific Institutes but also to indicate the great need for a central reference library for the History of Earth Sciences and Mining in Italy. For realizing this target it is indispensable to be aware of all the available bibliographical resources: the diagram in Fig. 1, page 353, shows a provisional outline of a project for the location and inventory of old collections of books and manuscripts related to earth sciences in some selected groups of Italian scientific institutions.

To date the national, public and general universitarian libraries have been excluded. They represent an enormous area of investigation and it is to be hoped that at least some of their very rich old collections will soon be the object of further research in this direction.

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