’Roman Rock’

Marble and other decorative rock in the Roman World

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This little guide to the marbles and other stones used by the Romans to decorate their villas, temples and public buildings arose out of my own needs in connection with my research into the type of pavement termed *opus sectile* used by the Romans. I needed an overview of the most frequently occurring stones, and the books available were a) in Italian, and b) too bulky to be easily put in a rucsac and used 'in the field'. Hopefully this guidebook fulfils this requirement, and will provide an aid to those interested in the raw materials behind the glorious designs and colours used in the pavements, veneer and sculptures of Italy and indeed of the Roman Empire.

Having said that, I am the first to acknowledge my debt to the authors and publishers of the standard works on Roman marble – Gnoli's *Marmora Romana* and Borghini's *Marmi Antichi*.[1] Both provide a rich fund of knowledge on this vast subject and are highly recommended. Without the painstaking research by these and other Italian workers this little book would never have seen the light of day.

As regards terminology, I have tried to follow the naming convention used by Gnoli and Borghini, i.e. the marbles and other stones[2] are named in modern Italian with the name used in antiquity (where known) given in parenthesis. I have avoided any attempt to anglify the names.

The selection of marbles is limited to those which the visitor will come across in the various museums and sites in Rome and its vicinity. In fact, only 23 exampless are listed in the guide, whereas Gnoli and Borghini list some …. I apologise for omissions and welcome both suggestions for inclusion, as well as corrections, in any future edition of the guide.

In addition, I have restricted the selection to the Roman period – though as the visitor to Italy will realise, many of the marbles used by the Romans continued to be right up to modern times and saw their most magnificent flowering during the Baroque.

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[1] A list of references is provided at the back of the book.
[2] To avoid repetition, I will hereafter follow the convention used by Italian (and Roman) writers and use the term "marble" to describe all the decorative stones (true marbles, limestones, sandstones, igneous rocks and others) used in Roman times.

A brief overview of the marble trade in Roman times

Quarrying of decorative stone for building purposes and sculptural work has a long history prior to Roman times. In the 2nd millenium BC the Minoans were using marble at Knossos and the Egyptians extracted large quantities of granites in the Eastern Desert. It was not until the 7th century BC, however, that large-scale quarrying of white marble was developed by the Greeks to supply the needs for building materials for the Acropolis and in the Agora.

The first documented use of marble for architectural purposes in Rome was in the Temple of Jupiter Stator, built in 145 BC. By around 100 BC, however, the use of marble was becoming widespread in the villas and town houses of the rich upper classes. Initially all the marble was supplied by the quarries in Greece, but under Julius Caesar the exploitation of the huge deposits of white marble near Luna (Carrara) in northern Italy was initiated. By the time of Augustus this material was being used in large quantities - for examples, the Temple of Apollo Palatinus from 35-28 BC was built in Luna marble.

At first only white or grey marbles were utilised. During the 1st century AD the more exotic, brightly-coloured varieties of marble (from Greece, North Africa and Asia Minor) along with igneous rocks (granites, and porphyry lavas) became more popular in the imperial building programme as well as in private houses.

By the time of Augustus( ), marble was being used for columns, facings (veneer), *opus sectile* as well as for whole buildings. Whereas the Greeks had relied mainly on local quarries for their buildings stones, the increased demand under the Empire lead to the exploitation of more distant sources all round the Mediterranean basin (see Map). The need for secure supplies for the public and private building programmes also saw a move away from a trade carried out by private quarry-owners, shippers and stone masons. In AD 17, according to Suetonius (div. Tib. 49.2), the Emperor Tiberius initiated the move towards imperial ownersip of at least the more famous quarries as well as the transport routes and marble yards at Rome. By the middle of the 1st century AD production and supply was overwhelmingly in the hands of the Emperor and his staff.
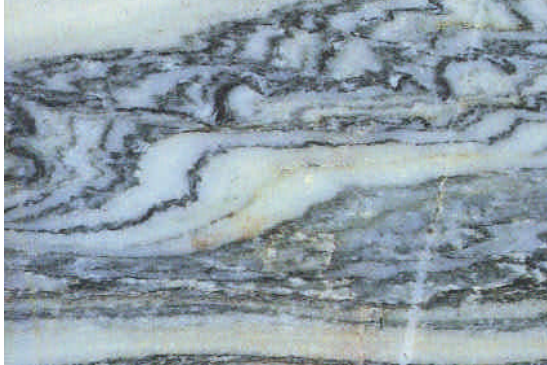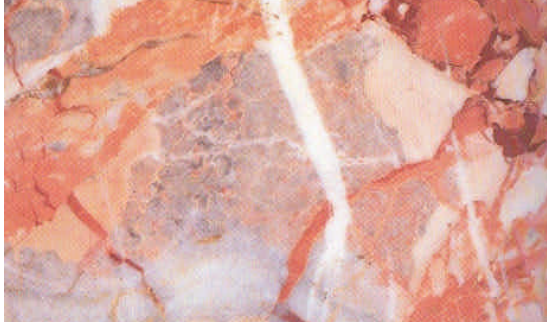
The efforts required to supply the demand for marble staggering the imagination. The granite columns lining the portico of the Pantheon, each weighing many hundred tons, were quarried in the Eastern Desert of
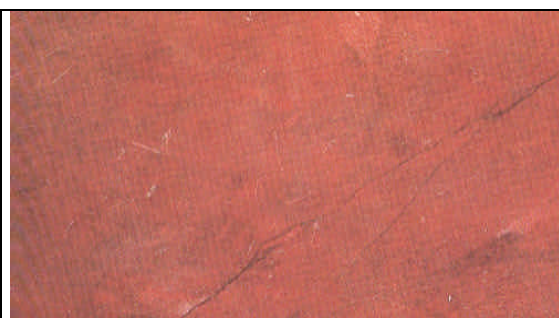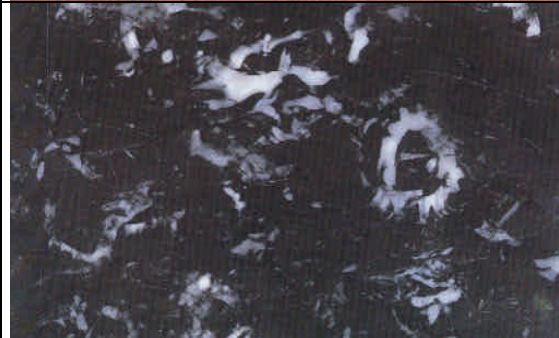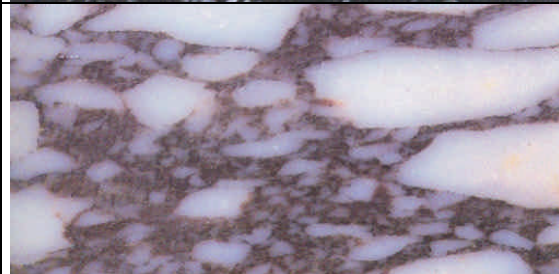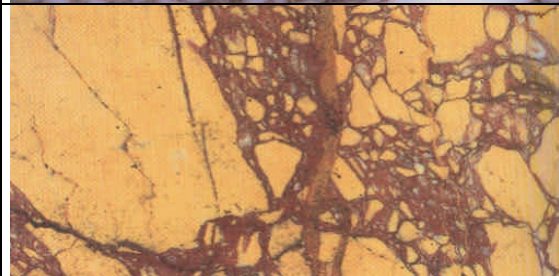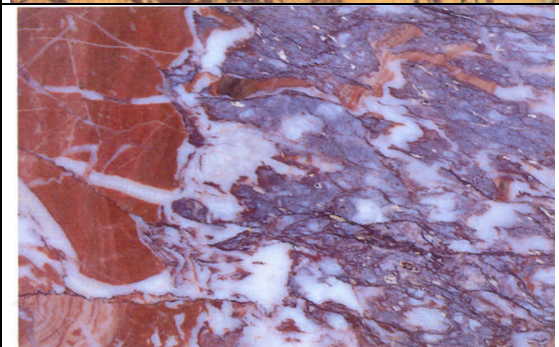
Egypt, drawn on carts to the Nile and barged down the Nile to Alexandria. Then they were transferred to special ships to carry them across the Mediterrranean to the harbour at the mouth of the Tiber, put on barges for the passage up the Tiber and then drawn on rollers to the building site. It has been estimated that some 50,000 tons of marble went to built the Forum of Trajan with individual blocks weighing up to 50 tons.
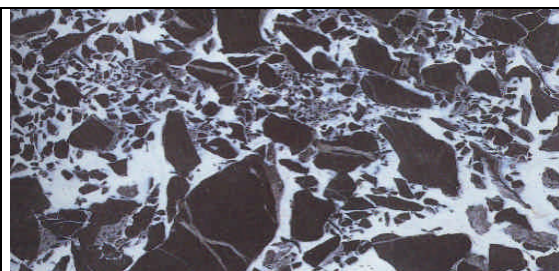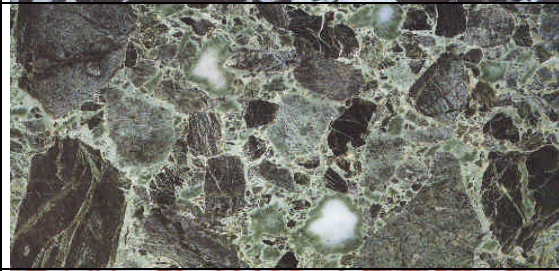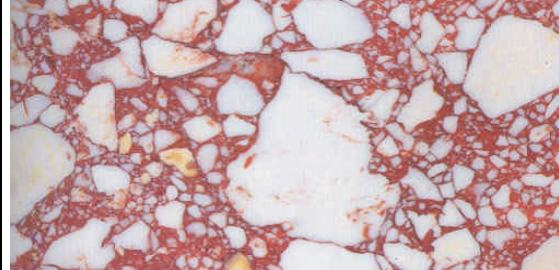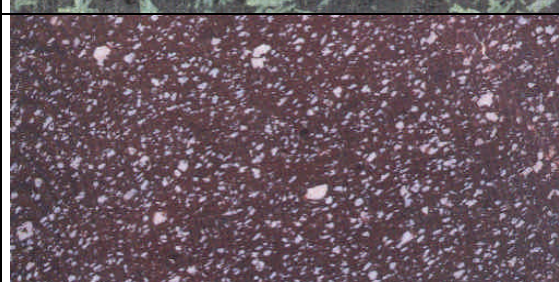
Huge stockpiles of the more common varieties of stone were built up in the marble yards at Rome and Ostia. Skilled workmen carried out the quarrying of the raw material and the initial shaping of the blocks or columns. Architectural elements were either transported as rough blocks of given a preliminary shaping in the quarries. Final dressing of the individual pieces was done either in the marble yards or on site.
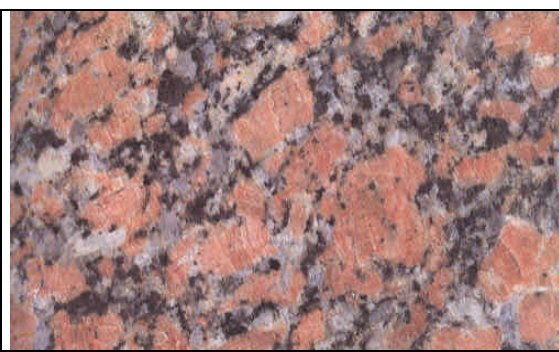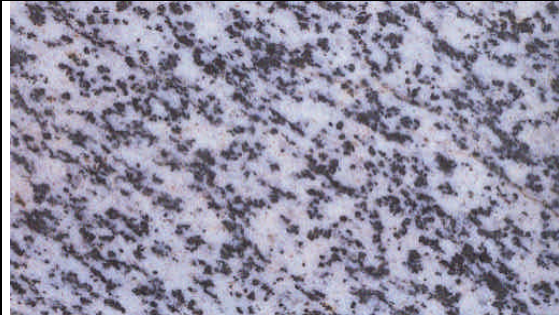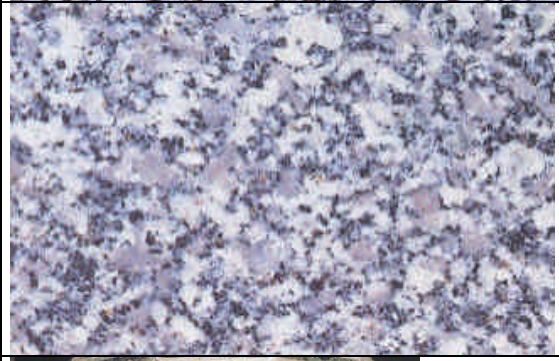
White marbles

Name: carrara (Marmor lunense) **Description:** fine grain white marble, sometimes with bluish tinge **Source**: Carrara quarries, Apua, Italy **Major use**: sculpture, architecture, quarried from 5th C BC **References**: Fant 1993, Borghini 2001, p. 248.	
Name: lychnites (Marmor parium) **Description**: translucent medium grain marble **Source**: island of Paros, Greece **Major use**: sculptural **References**: Fant 1993, Borghini 2001, p. 250	
Name: Marmor proconnesium **Description**: coarse grain white marble, often veined with grey/blue **Source**: island of Marmara, Greece **Major use**: worked from 6th C BC, used for architecture **Examples**: columns in interior of S. Apollinare in Classe, Ravenna. **References**: Borghini 2001, p. 252	

Name: Marmor hymettium **Description**: fine grain bluish white marble, often banded **Source**: Hymettos, near Athens **Major use**: mainly architectural **References**: Borghini 2001, p. 249	
Name: Marmor thasium **Description**: white, often with large crystals **Source**: island of Thasos, Greece Borghini 2001, **Major use:** architectural **References**: Borghini 2001, p. 253	
In addition to the above, there were a large number of white marble quarries in the Aegean and in Asia Minor.	

Coloured marbles and limestones

Name: cipollino (Marmor carystium) **Description**: light-coloured marble striped with grey or greenish mica (hence Italian name, little onion) **Source**: central chain of island of Euboea, Greece **Major use**: widespread use from early Imperial times in architecture (columns, veneer), paving, opus sectile **Examples:** columns in the pronaos of Temple of Antonius and Faustina, Forum, Rome, also as columns in building near Via Colonnata, Leptis Magna, Libya. **References**: Borghini 2001, p. 202, Gnoli 1988, Fig. 204,205	
Name: portasanta (Marmor chium) **Description**: fine pale pink and grey brecciated and veined limestone **Source**: Latomi, island of Chios, Greece **Major use**: architectural, opus sectile **Examples**: fountain in Piazza Colonna, Rome (Gnoli 1988). **References**: Borghini 2001, p. 285 Gnoli 1988, Fig. 128,129.	
Name: africano (Marmor luculleum) **Description**: brecciated limestone, variegated white, pink, grey, black **Source**: Seferihisar(Teos), 45 km SW of Izmir, Turkey, possibly also Chios, Greece **Major use**: architectural, opus sectile, many imperial buildings up to 2nd C AD **Examples**: the four conches in the fountain of Tartarughe, G. della Porta e T. Landini, Rome References: Ward Perkins 1966, Borghini 2001, p. 133 Gnoli 1988, Fig. 132, 133.	

Name: rosso antico (Marmor taenarium) **Description**: fine grain bloodred limestone, sometimes with white veins **Source**: Cape Taenarium, Mani peninsula, Greece **Major use**: architectural elements, opus sectile **Examples**: large basin in National Museum, Naples, also two toilets from Roman baths, used in Middle Ages for Papal coronations, from S. Giovanni in Laterano, now in Vatican Museum (Gnoli 1988). **References:** Borghini 2001, p. 288 Gnoli 1988, Fig. 198.	
Name: bigio morato **Description:** black fine grain marble with white shell fragments **Source**: Cape Taenarium, Mani peninsula, Greece Major use: sculptural **Examples**: centaurs from Hadrian's Villa, 2nd C, now in Capitol Museum, Rome. **References**: Fant 1993, Borghini, 2001, p.160, Gnoli 1988, Fig. 200. (Note: other black limestones/marbles were quarried at Chios, Tunisia, Italy, and were widely used in Roman times (Fornaseri et al, 1996).	
Name: pavonazzetto (Marmor phrygium, synnadicum, docimenium) **Description:** light-coloured marble veined with purple and grey, also translucent white **Source**: near Iscehisar, Phrygia, Turkey **Major use**: from imperial times, sculpture, veneer, opus sectile **Examples**: pulpit in S. Maria in Cosmedin, Rome, also as (trapezoforo), Farnese collection, National Museum, Naples. References: Fant 1993, Borghini 2001, p264, Gnoli 1988, Fig. 125.	
Name: giallo antico (Marmor numidicum) **Description**: brecciated limestone, yellow, orange, pink and purple tones **Source**: Chemtou (Simmithus), Tunisia **Major use**: architecture, veneer, opus sectile, from 1st C BC Examples: columns in the interior of the Pantheon, Rome, (Gnoli 1988). **References**: Fant, 1993. Borghini 2001, p. 214, Gnoli 1988, Fig. 122-124.	
Name: fior de pesco (Marmor chalcidicum) **Description:** brecciated marble, red, white, purple shades **Source**: near town of Calcide, Euboea, Greece **Major use**: architecture, opus sectile **References**: Borghini 2001, p. 212, Gnoli 1988, Fig. 127.	
Name: broccatello di Spagna **Description**: reddish/yellow marble with shell fragments **Source**: near Tortosa, Catalonia, Spain **Major use**: opus sectile, 'lastre de rivestimento', small columns **References**: Borghini 2001, p. 198 Gnoli 1988, Fig. 215.	

Name: bianco e nero antico **Description:** white marble with black streaks **Source**: St. Girons, Pyrenees, France **Major use**: sarcophagi, architecture **References**: Borghini, p. 154, Gnoli 1988, Fig. 203.	
Name: verde antico (Marmor thessalicum) **Description:** brecciated greenish marble with serpentine inclusions **Source**: Thessaly, Greece **Major use**: architecture, sarcophagi **Examples**: columns bordering the statues of the 12 apostles in S. Giovanni in Laterano, Rome, also columns lining interior of S. Sofia, Istanbul and in large altar in S. Agnese in Piazza Navona, Rome. **References**: Borghini 2001, p. 292, Gnoli 1988, Fig. 118.	
Name: breccia corallina **Description:** brecciated marble, pinkish matrix, light coloured fragments **Source**: Verzirken, Turkey **Major use**: architecture **References**: Borghini 2001, p. 166, Gnoli 1988, Fig. 251.	
Name: nero antico **Description**: fine grain dark grey/black compact marble **Source**: Djebel Aziza, Tunisia, Djebel Filfila, Algeria **Major use:** columns, veneer **Examples**: as pair of columns in the Museum Borghese, Rome **References**: Borghini 2001, p. 254, Gnoli 1988, Fig. 199.	
Igneous rocks and others	
Name: porfido verde o serpentino (Marmor lacedaemonium) **Description**: dark green porphyry with light-coloured feldspar phenocrysts (inclusions) **Source**: Krokeai, Mani peninsula, Greece **Major use**: opus sectile **References**: Borghini 2001, p. 279, Gnoli 1988, Fig. 141.	
Name: porfido rosso (porphyrites) **Description**: dense purple porphyry with white phenocrysts **Source**: Gebel Dokhan, eastern desert, Egypt **Major use**: opus sectile, sarcophagi, columns, 1st-5th C AD **Examples**: tetrarch sculpture (4th C AD in Constantinople) Piazza S. Marco, Venice, also columns lining font in S. Giovanni in Fonte, Rome. **References**: Borghini 2001, p. 274, Gnoli 1988, Fig. 90,91.	

Name: granito rosso (syenites) **Description**: reddish medium grain granite, (quartz, pink felspar, black mica) **Source**: Aswan, southern Egypt **Major use**: columns, 1st-5th C AD **Examples**: obelisk of Thutmosis III, erected by Emperor Costanzo in 357 AD in Piazza S. Giovanni in Laterano, Rome, some columns in the portico of the Pantheon, Rome. **References**: Borghini 2001, p. 225, Gnoli 1988, Fig. 111.	
Name: granito del Foro (claudianum) **Description:** greyish granodiorite. Source: Gebel Fatireh (Mons Claudianus), Eastern desert, Egypt **Major use**: columns **Examples**: large bath, probably from Baths of Caracalla, now as fountain in Piazza Farnese, Rome, also as fountain in Piazza del Quirinale, Rome, majority of columns in portico of the Pantheon, Rome. **References**: Borghini 2001, p. 222, Gnoli 1988, Fig. 112.	
Name: granito violetto (troadense) **Description:** greyish granite with violet tinge **Source**: Troad, NW Turkey **Major use**: columns, 2nd- 6th C AD. **Examples**: columns in the theatre at Arles (France), also Forum Vecchio at Leptis Magna, Libya **References**: Borghini 2001, p. 236, Gnoli 1988, Fig. 103	
Name: pietra bekhen (Lapis basanites or Bekhen stone) **Description**: compact, dark grey/bronze sandstone (greywacke) **Source**: Wadi Hammamat (Mons Basanites), Eastern desert, Egypt **Examples**: bust of Livia, Louvre, Paris, Efebo*from the Palatine, Museo delle Terme, Rome **Major use**: sculpture, from Augustan times onwards **References**: Borghini 2001, p. 266, Gnoli 1988, Fig. 88	
(Note: other granites used in Roman times include those from Kozak Dag (NW Turkey) and from Elba).	