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Coloured marble

The splendour and power of imperial Rome

ROLF MICHAEL SCHNEIDER

As far as the Elder Pliny was concerned, all Numidia had to offer were two luxury items: exotic beasts and *marmor Numidicum*, an imperial polychrome marble of an unrivalled yellow.[1] A little later the Latin poet Martial compared the mane of a Numidian lion shown in the newly-opened Colosseum with the delicate colours of the yellow marble of the beast's homeland:

He was but one, but one before whose rule the very lions would tremble,
To whom marble-painted Numidia would give a diadem.
When his curving mane stood erect, what beauty, what dignity
Did its golden shadow shed over his neck![2]

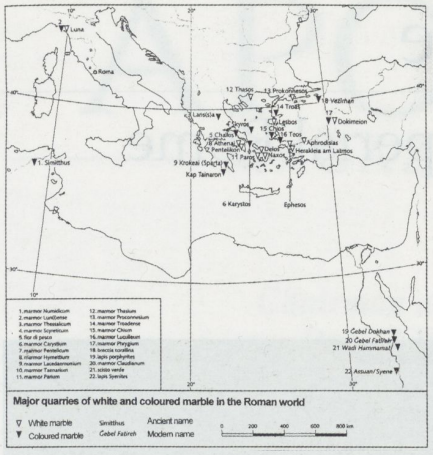
This powerful rhetoric was complemented by an equally powerful image: a splendid sculpture of a lion dating from the first century AD and carved out of *marmor Numidicum* (Fig. 1).[3]

Marble is one of the most fascinating, significant and lasting materials of classical Rome, and the repository of a rich but still largely unwritten history of the city's culture, ideology and power.[4] Even the different meanings of the Latin word *marmor* point to the cultural complexities associated with marble: stones capable of being polished, including polychromes, granites and porphyries; anything made of marble such as slabs, pavements, buildings, statues, mile-stones and dust; a quality of hardness; the bright surface of the sea; and colour.[5] The specific properties of marble made it a particularly suitable material for architecture and sculpture. Marble was widely found throughout the Mediterranean (Fig. 2).[6] Marble provided blocks of (nearly) all dimensions, supplied manifold qualities and colours, offered subtle varieties of translucent surface, allowed extreme precision in detail and polish, and had a reasonable load-bearing capacity. Marble is also very heavy. A cubic metre of 'ordinary' white marble weighs about 2.75 tonnes, polychromes, granite and porphyry often more. Polychromes are the most informative marbles since most of them can be easily identified, and were quarried from sources known to and discussed by ancient writers.[7] Furthermore, polychromes colour in the imagery of ancient Rome, a coloured imagery which even in current publications is still predominantly approached in black and white.[8] Finally, polychromes contribute to a broader understanding of specialisation of workmanship and engineering, measures of infrastructure, patterns of distribution and trade, social and economic status, the shaping of architectural landscapes and the symbolism of marble in terms of colour and power.

1 *Lion*, 1st century AD. *Marmor Numidicum*, length 120 cm.
Sala degli Animali, Musei Vaticani, Rome.
Photo: Musei Vaticani, Rome

The use of coloured marble goes back to the old cultures of ancient Egypt and the Near East, and was later adopted by Hellenistic kings.[9] The first use of polychromes in Rome started late, not before the early first century BC (especially *marmor Numidicum*, *marmor Luculleum* and *marmor Carystium*). In Republican Rome the first polychromes were used in the domestic domain of rich Roman villas (pavements, thresholds, columns) and the public centre of the city (ephemeral theatre buildings, political monuments).[10] One function of these polychromes, displayed as one of the most exotic and prestigious materials available, was to distinguish the personal power of ambitious Romans competing for the highest offices of state. In Rome (coloured) marble was from its beginnings related to discourses of ideology, policy and power. The occasional and exclusive use of a few polychromes only, however, shows that Republican Rome had not started to exploit these distant quarries on a systematic scale.

This situation changed radically under the first Roman emperor, Augustus. Marble was now regularly imported to Rome in quantities and qualities unheard of before. This was particularly true of the abundant use of polychromes.[11] The Augustan marble revolution far outstripped anything seen in the classical world before. In contrast to the rare display of a few polychromes in Late Republican Rome, coloured marble was now widely used for grand public buildings, such as the new temples of Apollo Palatinus, Apollo in Circo, Mars Ultor and Concordia, the Basilica Paul(l)i (Fig.



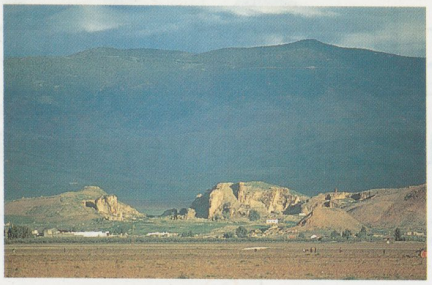
2 Map of marble quarries in the Roman world. Photo: *Der Neue Pauly vol. VII*, Stuttgart and Weimar, 1999, pp. 929-30.

10), the House of Augustus, the new imperial Forum of Augustus, and for new public sculptures like the portrayals of Orientals (Figs. 11-14) – all placed in the very heart of the city.[12] In conjunction with other radical urban measures, the exotic polychromes transformed the old Republican city into the new imperial Rome, both *aurea* and *aeterna*.[13] These changes are addressed in a famous statement handed down by Suetonius:

> Rome was originally not decorated *pro maiestate imperii*, but was improved by Augustus so fundamentally that he could rightly praise himself: he found her brick but left her marble.[14]

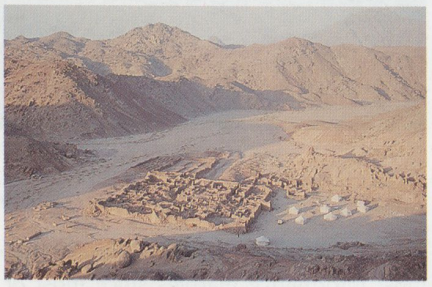
The Augustan marble revolution, based on the extensive use of both white and coloured marble, soon spread throughout the Roman empire. The new display and systematic employment of polychromes imported from the edges of the Roman world became perhaps the most explicit symbol of imperial power marking paramount availability and cultural supremacy as crucial elements of Roman identity.

From the reign of Augustus onwards the most important quarries producing large quantities of white and coloured marble came into imperial ownership (*patrimonium Caesaris*).[15] Starting, consolidating and continuing the exploitation of these quarries, often situated in rough and isolated environments, required enormous effort. Two quarry sites can highlight the complex problems involved: the quarries of *marmor Numidicum* at Simitthus in Africa *proconsularis* and the quarries of *mons Claudianus*, a granodiorite found in the eastern desert of imperial



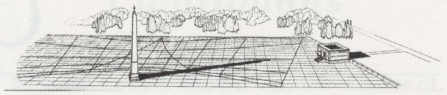
3 Site of the *marmor Numidicum* quarries, Simitthus, Tunisia. Photo: F. Rakob

4 Section VII of the *marmor Numidicum* quarries (ht of the exploited walls over 20 m), Simitthus, Tunisia. Photo: F. Rakob



5 Site of the *mons Claudianus* quarries, Eastern Desert, Egypt. Photo: V.A. Maxfield

6 Obelisk, Egyptian, Piazza di Montecitorio, Rome. Pink-rose granite from Aswan, re-used in 9 BC for the sundial of Augustus in Rome. Photo: R.M. Schneider



7 Reconstruction of the sundial of Augustus, 9 BC, Campus Martius, Rome. Photo: E. Büchner, *Die Sonnenuhr des Augustus*, Mainz am Rhein, 1982, fig. 13

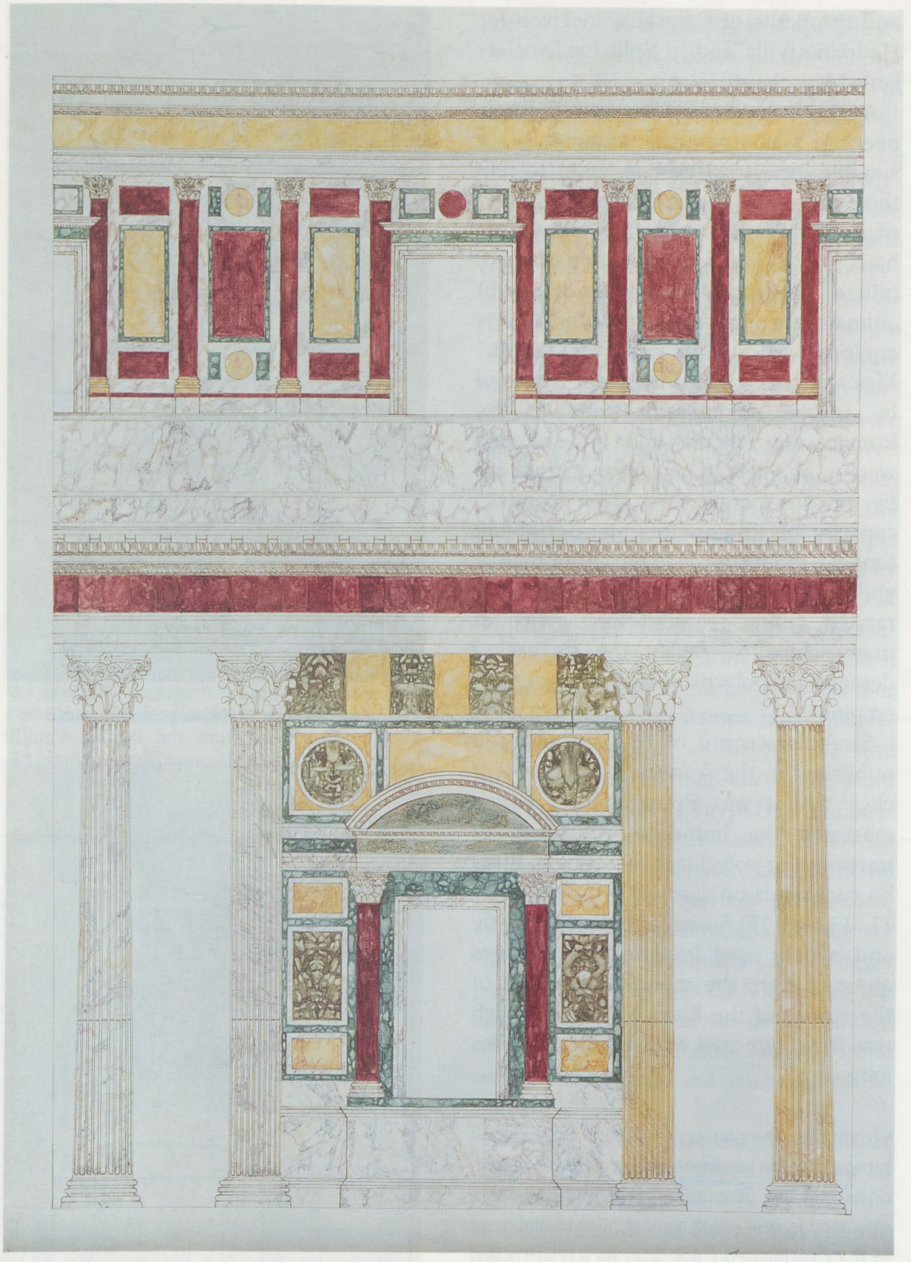
Egypt.

Around 27 BC the Roman town *Colonia Iulia Augusta Numidica Simitthus* was founded near a range of mountains providing *marmor Numidicum* (Figs. 3-4).[16] Major routes linked Simitthus to the sea: a road to the port of Thabraca about forty miles away, and the River Medjerda to the port of Utica about ninety miles away. Imperial quarrying on a significant scale is attested from the time of Augustus up to the third century AD.[17] From the early second century AD the exploitation was controlled by a *procurator marmorum Numidicorum*, an imperial freedman, who inscribed on every block the name of the emperor, the consul for the year, the section and subdivision where the block was quarried, and the current number of the yearly production. Around 140 AD an enclosed camp was constructed with prison-like barracks to house and guard the slave-powered workforce of the quarries.[18] This camp, including rooms for administration and storage, two baths, a sophisticated water supply and a military detachment, was set up on a scale that no other imperial quarry in the ancient world seems to have equalled. In the earlier third century AD, after the end of the imperial administration of Simitthus, the abandoned slave barracks were converted into a probably privately owned workshop, a *fabrica*, which manufactured, over the period of two generations and for regional use, small artefacts made of the prestigious Numidian stone – mainly delicate bowls and plates often only two to three millimetres thick. The quarries produced a marble highly admired for its unique variety of different yellows, usually enriched by veins ranging from brown to violet in colour, and used for both architecture and sculpture. The total exploitation of *marmor Numidicum* in Roman times is calculated at about 250,000 cubic meters, which is equivalent to roughly 700,000 tonnes by weight. This was complemented by at least the same amount of rubble.

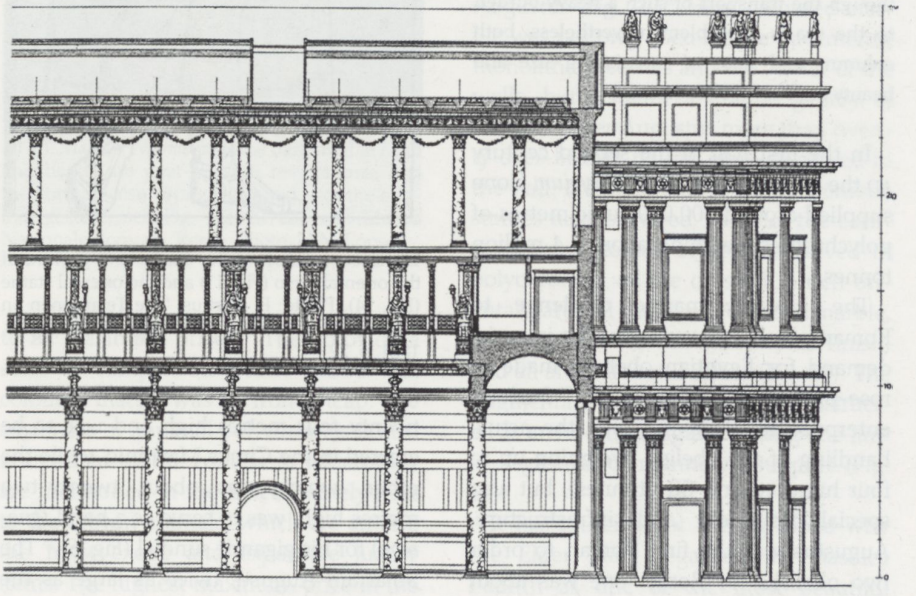
The Roman quarries of granodiorite from *mons Claudianus* are situated in the

8 Fragment of a spiral-fluted column, 2nd or 3rd century AD. *Marmor Scyreticum*, ht 30 cm. Depot of the British School, Knossos. Photo: S. Paton

heart of the Red Sea mountains as part of the eastern desert of Egypt, some three hundred miles south of Cairo as the crow flies (Fig. 5).[19] Both supply and transport, however, took much longer, firstly overland from *mons Claudianus* to the Nile for about seventy-five miles, and then on the river all the way down to the port of Alexandria for a further five hundred-odd miles. Roman exploitation started in the first century AD and continued into Late Antiquity. In time the desert base comprised a fort with a complex of streets and buildings, and storage facilities, water cisterns, baths, a temple of Serapis, and stables for the beasts of burden outside the fort. Inscriptions mention highly specialised professions, including stonemasons, smiths, bellowsmakers, steel hardeners, guards, foremen, hammer men, adze-men, water carriers, wedge-men and sawyers. The outcrops produced a fine but extremely hard granodiorite of white quartz, grey feldspar, and black mica. This stone was quarried for huge baths, basins and especially monolithic columns up to sixty feet high, designed – as it now seems – for imperial use only: in Rome for Trajan's Basilica Ulpia, the Pantheon



9 Reconstruction of the interior order decorated with various imperial polychromes, *c.* 117-125 AD, Pantheon, Rome. Photo: Coloured drawing M. Heilmeyer



10 Reconstruction of the longitudinal section (the gesture and attribute of the oriental statues are wrong, their position is questionable), probably after 14 BC, Basilica Paul(l)i Aemilia, Rome. Photo: E.M. Steinby (ed.), *Lexicon Topographicum Urbis Romae I*, Rome, 1993, p. 414, fig. 107

and the Baths of Caracalla, in Tivoli for Hadrian's Villa and in Split for Diocletian's Mausoleum.

A great challenge for imperial engineering was the development of a suitable infrastructure,[20] in order to link the quarries on the provincial periphery with the imperial centre in Rome. Roads had to be laid out and maintained, bridges constructed, vehicles and draught animals for transport provided, ports equipped and ships built or found.[21] Many of these measures were achieved by special engineering units of the Roman army, whereas trade and shipping were more likely to have been carried out by private contractors. The standard capacity of Roman freighters (100-450 tonnes), the heavy dead weight of marble and the seasonal restrictions of Mediterranean sailing required the service of many ships to satisfy the increasing demand for polychromes throughout the empire.

Strabo's account of the marble trade published in the Augustan age makes it clear that it was Roman power which mastered the immense difficulties of transporting polychromes to Rome. Strabo comments on *marmor Phrygium* (Figs. 11, 13 and 15),[22] one of the most costly and widely used imperial polychromes quarried from the mountainside east of the source of the River Meander, which was three hundred and sixty-three miles long:

> Originally the quarry yielded only small lumps, but on account of the present splendour of the Romans, great columns are extracted in one piece, very similar to alabaster in their variegated colouring. As a result, even though the transport of such a heavy burden to the sea is a problem, nevertheless, both columns and slabs of astonishing size and beauty are conveyed to Rome.[23]

In the first half of the second century AD the quarries of *marmor Phrygium* alone supplied around 500,000 cubic metres of polychromes weighing about 1.4 million tonnes.

The greatest marble challenge to Roman power, however, was the imperial demand for Egyptian obelisks made of rose-pink granite from Aswan.[24] Such an enterprise involved not only the actual handling of the obelisk (weighing up to four hundred and fifty tonnes), but also special freighters and infrastructure. Augustus was the first Roman to order two obelisks for Rome: one was about twenty-four metres high and was to be erected in the Circus Maximus, while the other, which was about twenty-two metres high, was to serve as a hand (*gnomon*) for his gigantic sundial (Fig. 6).[25] The Solarium Augusti, twice as large as the Piazza di S Pietro in Rome, was a unique construction set up to measure the (golden) time of the new Golden Age heralded in by Augustus (Fig. 7).[26] This spectacular instrument of imperial power was also related to discourses of military might as it was built *after* the people of Rome had subdued Egypt (30 AD) – a reading given by the Augustan inscriptions on the bases of the two obelisks.[27] Ever since, real and imitation Egyptian obelisks have been erected by a whole variety of patrons as symbols of supreme power. However, no other city can begin to rival Rome's total of thirteen obelisks, all taken by her when Egypt was an imperial province.

11 *Torso of an oriental statue*, probably after 14 BC. *Marmor Phrygium*. From the Basilica Paul(l)i (Aemilia). Antiquario Forense, Rome. Photo: I.E. Grady

12 Reconstruction of the stance and gesture of the oriental torso (Fig. 11) and the oriental statue (Fig. 14). Photo: E. Curtius, 'Die Telamonen an der Erztafel von Anisa', *Archäologische Zeitung 39*, 1881, p. 22

One of the most drastic and critical accounts of the Roman enterprise of quarrying, trading and using marble is given by the Elder Pliny, prominently placed in the prologue to the book devoted to stones and marbles in his *Natural History*:

> For everything that we have invested up to the present volume may be deemed to have been created for the benefit of mankind. Mountains, however, were made by nature for herself to serve as a kind of framework for holding firmly together the inner parts of the earth, and at the same time to enable her to subdue the violence of rivers, to break the force of heavy seas and so to curb with her most restless elements the hardest material of which she is made. We smash these mountains and haul them away for no other reason than that our pleasure dictates it; and yet there was a time when it seemed remarkable even to have succeeded in crossing them…Headlands are laid open to the sea, and nature is flattened. We remove the barriers created to serve as the boundaries of nations, and ships are built specially for marble. And so, over the waves of the sea, nature's wildest element, mountain ranges are transported to and fro…Oh that men should do such things, or rather endure them for no other purpose or pleasure than to recline amid coloured marbles…[28]

Not only the extreme narrative but also the aggressive idioms used by Pliny are revealing: to subdue (*domare*) the violence of rivers, to break (*frangere*) the force of the sea, to smash (*caedere*) the mountains. Other imperial writers use similar martial terms to describe the brutal occupation of the landscape by Roman engineers and architects: these texts read like accounts of military victories achieved by the supreme power of Rome.[29] The exploitation of numerous marble quarries throughout the Mediter-

ranean and the empire-wide trade of many millions of tonnes of coloured marble was one of Rome's greatest technological and cultural achievements, in a sense an achievement that has remained unequalled.

Stockpiling coloured marble in abundant quantities, qualities and varieties is another specifically Roman achievement. The first, largest and most important marble depots were established at the centre of the empire. It was probably under Augustus that Ostia, the sea port of Rome, and the capital itself started to house the entire range of imported white and coloured marbles.[30] These depots constituted both a unique treasure-chest at the disposal of the Roman emperor and a unique material 'map' of the Roman empire symbolising the infinite power of Rome over virtually everything, even over the most inaccessible resources of the world. Marble surveys of Roman Britain and Roman Crete now indicate that imperial polychromes were not an imperial privilege redistributed by the centre but were quickly available to the provincial élite throughout the Roman world, a process starting in the first century AD.[31]

Mechanisms of power are also reflected in the specialisation of working techniques.[32] The carving of polychromes required the presence of professional stonemasons, to finish the detail on capitals, friezes, sarcophagi and sculptures, and to carve the numerous columns which were fluted, spiral-fluted (Fig. 8) or half-fluted and half-reeded (Fig. 9). Since the complex process of fluting was done *in situ*, specialist marble workers must have been available to do this work wherever it was ordered. The same applies for veneer. Marble blocks were sawn on site into slabs which were then polished, with the thicker ones – which were about three centimetres thick – being used as tiles or as *opus sectile* for flooring, and the thinner ones – which were about a centimetre thick – being used for panelling on walls. The exact levelling of veneer to a perfectly flat surface demanded particular skills. One of the most labour-intensive works was the final polishing, especially of polychromes. Trained *politores* developed sophisticated methods to achieve subtle finishes of all shades and for all varieties of coloured marble.

The costs of the polychromes are only known from an Edict published under the Roman emperor Diocletian (284-305 AD)

13 *Supporting statue of a kneeling Oriental*, after 20 BC. *Marmor Phrygium* (the dark marble head and hands are post-classical restorations), ht 162 cm. From a lost triumphal monument in Rome, Museo Archeologico Nazionale, Naples. Photo: H.N. Loose

14 *Supporting statue of a standing Oriental*, c. 30-50 AD. *Marmor Numidicum* (the dark marble head and hands are post-classical restorations, and the arms are also wrongly restored – for the original gesture, see Fig. 12), ht 230 cm. Museo Nazionale Romano, Rome. Photo: H.N. Loose

to fix maximum prices.[33] They provide a scale of comparison which shows that coloured marble was far from cheap. The costliness of imperial polychromes is also underlined by the context in which they are mentioned in the Edict, namely next to the Libyan animals, which are among the most exotic and expensive luxury items. The highest maximum price in the Edict (150,000 *denarii*) is that for a first-class lion, which comes in the chapter after the marbles. This price is equalled in the Edict only once, for a pound of double-dyed purple silk from China.

From Augustan times onwards polychromes were used both for architecture and sculpture, and in public and domestic contexts. This colourful evidence, however, has been reduced to monochrome by two powerful enemies: black and white photography and the notion of white marble classicism. Although the interiors of many Roman public buildings were furnished, often lavishly, with coloured marble, reconstructions showing such coloured interiors are rare. One of the few exceptions is the Pantheon, a temple for all the gods in Rome perhaps built by Apollodorus of Damascus between 117 and 125 AD.[34] The interior of this spectacular building was decorated by the most costly and most colourful polychromes (Fig. 9): from Asia Minor both purple-veined *marmor Phrygium* and multi-coloured *marmor Luculleum*, from the eastern desert of Egypt both red *lapis porphyrites* and green-speckled *breccia verde di Wadi Hammamat*, from mainland Greece blue-green *marmor Thessalicum*, and from Tunisia yellow-shaded *marmor Numidicum*. The unlimited use of highly polished polychromes demonstrated the immeasurable power of a civilisation which was able to produce architecture of such cosmic scale and such dreamlike splendour.

Another exceptional but much earlier interior richly ornamented in coloured marble is that of the Basilica Paul(l)i situated in the centre of Rome, and entirely rebuilt with money given by Caesar and Augustus (Fig. 10).[35] Here, coloured marble was not only used for the pavements, monolithic columns and the veneer of the walls, but also for a unique gallery of statues; under Augustus more than twenty over-lifesize figures were displayed in the hall. Fragments of at least seventeen statues have survived, some of the earliest known Roman sculptures carved in polychromes: all are dressed in rich oriental garb, all made of coloured marble, all are worked to an exceptional finish, and all are still unpublished (Fig. 11). The fragmentary Orientals can be reconstructed as architectural figures raising one arm in a gesture of mannered support (Fig. 12).

It has hitherto not been grasped why the Elder Pliny regarded the Basilica Paul(l)i as one of the most beautiful

buildings of the world: it was because of its speckled columns made of *marmor Luculleum* and its colourful statues of Orientals made of *marmor Phrygium* (Fig. 11) and *marmor Numidicum*, two of the most expensive and exclusive marbles.[36] Both marbles are direct counterparts, both are criss-crossed by veins ranging in colour from crimson to violet. They reflected the exotic colouring of rich oriental costumes and gave the distant dream world of the Orient a new material presence, embodying Western perceptions of the luxury, fascination and 'otherness' of the East.[37] Quarried on the edges of the Roman world, the marbles were also a spectacular symbol of power, of the utter supremacy of Roman culture. The oriental statues made of coloured marble represented exotic spoils of exceptional splendour, the likes of which had never before been witnessed in Rome.

Supporting figures not only of standing but also of kneeling Orientals made of coloured marble – of *marmor Phrygium* (Figs. 11 and 13) and *marmor Numidicum* (Fig. 14) – were introduced into Rome after the triumph over Parthia in 20 BC, the most celebrated success of Augustan foreign policy.[38] The visual power of these coloured sculptures stimulated new histories and ideologies, also in post-classical Rome. In the sixteenth and seventeenth centuries, in the context of a new exoticism focusing on black people, some of the orientals statues were restored with heads and hands made of dark marble (Figs. 13-14).[39] Originally, however, these parts of the oriental statues were made of white marble in accordance with their white ethnicity. Furthermore, the original heads were characterised by youthful faces of desirable beauty complemented by long hair (Fig. 12).[40]

The statues of Orientals made of exotic polychromes were of central importance in the use of coloured marble in Roman sculpture, but they also constituted one of the most striking symbols of Roman power. A new peak was reached under Trajan (98-117 AD), when a new image and a wider variety of polychromes was introduced into the portrayals of non-Romans. Now statues of the recently subdued Dacians were set up, depicted with barbaric faces and in actual submission but not, like the Orientals, with beautiful faces and in attitudes of virtual support.[41] The coloured statues of Dacians were often sculpted on a colossal scale – up to over three metres in height, mostly

15 *Torso of a colossal statue of a Dacian*, probably from Trajan's Forum in Rome, *c.* 106-113 AD. *Marmor Phrygium* (head and arms of white marble), ht 150 cm. Orti Farnesiani, Rome. Photo: R. M. Schneider

16 *Lower part of torso of a colossal statue of a Dacian*, probably from Trajan's Forum in Rome, *c.* 106-113 AD. *Lapis porphyrites*, ht 130 cm. Museo dell'Opificio delle Pietre Dure, Florence. Photo: R.M. Schneider

displayed in the imperial Forum of Trajan (106-13 AD) and made of either purple-veined *marmor Phrygium* (Fig. 15), dark *bigio morato*, red *lapis porphyrites* (Fig. 16) or green *marmor Lacedaemonium* (Fig. 17).[42] The latter in particular added a further dimension to the Roman ideology of coloured marble and imperial power: it was the most costly marble on the market, only available in small quantities, and entirely unsuitable for colossal sculpture on that scale, since the largest extractable blocks did not exceed 1.0 x 0.5 x 0.5 m in size.[43]

The use of polychromes in Roman sculpture was widespread, included the whole range of its thematic spectrum and opened up more discourses concerning marble, colour and power. In many cases, a specific semantic relation between the colour or colours of the marble selected and the theme of the figures portrayed can be established.[44] The dark *scisto verde di Wadi Hammamat* from Egypt, for example, was often favoured for imitating classical Greek sculptures, probably to allude to – and surpass – old weathered bronze. A fine specimen is the head of the so-called *Idolino* (Fig. 18) sculpted in the classicist age of Augustus; the head was later probably owned by J.J. Winckelmann.[45] The specific colours of the polychromes used for a colossal statue of *Minerva* (Fig. 19), again made in the time of Augustus or a little later, were chosen to relate this figure to the most highly regarded classical cult statues solely decorated with ivory and gold (chryselephantine).[46]

For buildings with any pretensions to imperial grandeur and public attention most cities in the Roman empire were obliged to import decorative marble, both white and coloured, from overseas. The coloured marble style of decoration, used throughout the empire in temples, fora, theatres, baths, nymphaea and administrative buildings, and (although less often) also for sculpture, altered the setting of public life, giving it a specifically Roman appearance and character. Altogether it was a most powerful and ubiquitous expression of what Roman culture and ideology was able to achieve. In the late first century AD the Latin poet Statius praises the innumerable columns of Domitian's palace as distinctive symbols of imperial power:

> Awesome and vast is the edifice, distinguished not by a hundred columns but by as many as could shoulder the gods and the sky if Atlas were let off.[47]

According to the poet's rhetoric polychromes from imperial quarries in Greece, Asia Minor, Egypt and Africa

17 *Right shoulder of a colossal statue of a Dacian,* probably from Trajan's Forum in Rome, *c.* 106-113 AD. *Marmor Lacedaemonium,* ht 56 cm. Museo Archeologico Frederico Zeri, Mentana. Photo: Deutsches Archäologisches Institut Rom, no. F.86.202

were abundantly used, whereas 'ordinary' white marble from the Italic quarries near Luna was only supplied to form the base for the columns of more precious varieties.[48]

Great monolithic shafts of polished polychromes, transported from the ends of the earth regardless of difficulty, cost and distance and finished to a state of uniform perfection, stood in almost every Roman city, proclaiming not only the economic wealth, political loyalty and cultural identity of the (re-)urbanised provinces but also Rome's paramount power over all conditions of life, including commerce, industry and expertise. This ideological aspect of the marble revolution was explicitly emphasised from the reign of Hadrian onwards, when monolithic columns of coloured marble began to play a crucial part in an imperial gift economy which interrelated the local élites in the provinces more directly to the emperor in Rome.[49] In following the fashion set by the capital the cities of the provinces were not just displaying their prosperity; they were transforming their own urban surroundings more and more into a Roman landscape. Perfect shape, functional use and public display made coloured marble a most distinctive symbol to determine Roman architecture as a space of Roman demands, values and power, and as a specific construction of Roman splendour, culture and atmosphere.

For my friends in Cambridge
Many people helped supply the illustrations for this article. I am particularly grateful to the institutions and individuals acknowledged in the captions, but above all to I.E. Grady, M. & W.-D. Heilmeyer, P. Liverani, H.N. Loose, V.A. Maxfield, S. Paton and F. Rakob.

18 *Head of the 'Idolino',* late 1st century BC/early 1st century AD. Egyptian *scisto verde di Wadi Hammamat,* ht 18 cm. Museo Gregoriano Profano, Musei Vaticani, Rome. Probably in the possession of Johann Joachim Winckelmann (1717-68). Photo: R.M. Schneider

[1] The Elder Pliny, *Natural History,* Book V, Chapter 2.

[2] Martial, *Epigrams,* Book VIII, Epigram 55, lines 6-10.

[3] W. Amelung, *Die Sculpturen des Vaticanischen Museums II,* Berlin, 1908, p. 353, no. 149, plate 36 (which he dubbed 'unbedeutend'); *du: Die Kunstzeitschrift,* no. 3, 1979, front cover; R.M. Schneider, *Bunte Barbaren: Orientalenstatuen in der römischen Repräsentationskunst,* Worms, 1986, pp. 155-56. The specific rendering of the lion's mane suggests a date in the first century AD, possibly towards the latter part of it.

[4] Schneider, op. cit., pp. 139-60; J.C. Fant, 'Ideology, Gift, and Trade: A Distribution Model for the Roman Imperial Marbles', in W.V. Harris (ed.), *The Inscribed Economy: Production and Distribution in the Roman Empire in the Light of Instrumentum Domesticum (Journal of Roman Archaeology, Supplement no. 6),* 1993, pp. 145-70; M. Maischberger, *Marmor in Rom: Anlieferung, Lager- und Werkplätze in der Kaiserzeit,* Wiesbaden, 1997; R.M.J. Isserlin, 'A spirit of improvement? Marble and the culture of Roman Britain', in R. Laurence and J. Berry (eds.), *Cultural Identity in the Roman Empire,* London and New York, 1998, pp. 125-55; M.L. Fisher, *Marble Studies: Roman Palestine and the Marble Trade (Xenia: Konstanzer Althistorische Vorträge und Forschungen, no. 40),* Konstanz, 1999; S. Paton and R.M. Schneider, 'Imperial Splendour in the Province: Imported Marble on Roman Crete', in A. Chaniotis (ed.), *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete,* Stuttgart, 1999, pp. 292-304.

[5] C.T. Lewis and C. Short, *A Latin Dictionary,* Oxford, 1879, p. 1115, s.v. Marmor.

[6] For a recent overview with bibliography, see *Der Neue Pauly,* vol. VII, Stuttgart and Weimar, 1999, pp. 928-38, s. v. Marmor (entry by R.M. Schneider).

[7] For the fundamental literature, with colour illustrations, see R. Gnoli, *Marmora Romana,* Rome, 1971; H. Mielsch, *Buntmarmore aus Rom im Antikenmuseum Berlin,* Berlin, 1985; Schneider, op. cit. in n. 3 above, pp. 139-60; H. Dodge and B. Ward-Perkins, *Marble in Antiquity: Collected Papers of J.B. Ward-Perkins (Archaeological Monographs of the British School at Rome),* London, 1992; P. Pensabene, *Marmi antichi II. Cave e tecnica di lavorazione: Provenienze e distribuzione (Studi Miscellanei no. 31, 1993-1995),* Rome, 1998.

[8] Mark Bradley (Faculty of Classics, University of Cambridge) is writing a PhD dissertation on 'Colouring in: Concepts of colour in ancient Rome.'

[9] R. and D. Klemm, *Die Steine der Pharaonen (Staatliche Sammlung Ägyptischer Kunst München),* München, 1981; U.-W. Gans, 'Hellenistische Architekturteile aus Hartgestein in Alexandria', *Archäologischer Anzeiger,* 1994, pp. 433-53.

[10] Schneider, op. cit. in n. 3 above, pp. 144-48; Maisch-berger, op. cit., pp. 17-18.

[11] Schneider, op. cit. in n. 3 above.

[12] For these buildings, see ibid., p. 148; E.M. Steinby (ed.), *Lexicon Topographicum Urbis Romae,* vol. I, Rome, 1993, pp. 49-54, s.v. Apollo, aedes in circo (entry by A. Viscogliosi); pp. 54-57, s.v. Apollo Palatinus (entry by P. Gros); pp. 183-87, s.v. Basilica Paul(l)i (entry by H. Bauer); pp. 316-20, s.v. Concordia, aedes (entry by A.M. Ferroni); Steinby, op. cit., vol. II, 1995, pp. 289-95, s.v. Forum Augustum (entry by V. Kockel); P. Pensabene, 'Elementi architettonici dalla Casa di Augusto sul Palatino', *Mitteilungen des Deutschen Archäologischen Instituts, Römische Abteilung,* vol. CIV, 1997, pp. 151-92, plate 27; A. Claridge, *Rome (Oxford Archaeological Guides),* Oxford, 1998; J. Ganzert, *Im Allerheiligsten des Augustusforums: Fokus 'oikumenischer Akkulturation',* Mainz am Rhein, 2000, pp. 50-53, 97-110. For early imperial sculpture made of coloured marble, see Schneider, op. cit. in n. 3 above; R. Belli Pasqua, *Sculture di età romana in 'basalto',* Rome, 1995, pp. 52-54; R.M. Schneider, 'Die Faszination des Feindes: Bilder der Parther und des Orients in Rom', in J. Wiesehöfer (ed.), *Das Partherreich und seine Zeugnisse (Historia-Einzelschrift, no. 122),* Stuttgart, 1998, pp. 104, 108-12 and 116; C. Landwehr, *Die römischen Skulpturen von Caesarea Mauretaniae II. Idealplastik: Männliche Figuren,* Mainz am Rhein, 2000, pp. 69-83 (with new evidence but some problematic conclusions).

[13] R.M. Schneider, 'Roma Aeterna – Aurea Roma: Der Himmelsglobus als Zeitzeichen und Machtsymbol', in J. Assmann and W.B. Hess-Lüttich (eds.), *Kult, Kalender und Geschichte: Semiotisierung von Zeit als kulturelle Konstruktion (Kodikas/Code. An International Journal of*

19 Statue of Minerva, early 1st century AD. Various polychromes, ht *c.* 250 cm. Found in 1923 in Piazza dell'Emporio, Rome (near the imperial depot of coloured marble). Museo Nazionale Romano, Rome

Semiotics, vol. XX, nos. 1-2, Special Issue), 1997, pp. 110-11.

[14] Suetonius, *Vita Augusti*, Chapter 28.

[15] Maischberger, op. cit., pp. 18-25.

[16] F. Rakob (ed.), *Simitthus I: Die Steinbrüche und die antike Stadt*, Mainz am Rhein, 1993, pp. 1-16.

[17] Ibid., pp. 17-64.

[18] Idem, *Simitthus II. Der Tempelberg und das römische Lager*, Mainz am Rhein, 1994, pp. 51-139.

[19] M.J. Klein, *Untersuchungen zu den kaiserlichen Steinbrüchen an Mons Porphyrites und Mons Claudianus in der östlichen Wüste Ägyptens*, Bonn, 1988; D.P.S. Peacock, 'Mons Claudianus and the problem of the granito del foro', in R. Francovich (ed.), *Archeologia delle attività estrattive e metallurgiche*, Florence, 1993, pp. 49-69; H. Cuvigny, 'The Amount of Wages to the Quarry-Workers at Mons Claudianus', in *Journal of Roman Studies*, vol. LXXXVI, 1996, pp. 139-45; A. Bülow-Jacobsen, 'On Smiths and Quarries', in B. Kramer *et al.* (eds.), *Akten des 21. Internationalen Papyrologenkongresses (Archiv für Papyrusforschung und verwandte Gebiete, Beiheft no. 3)*, Stuttgart/Leipzig, 1997, pp. 139-45; D.P.S. Peacock and V.A. Maxfield, *Survey and excavation. Mons Claudianus 1987-1993, vol. I. Topography and quarries (Institut Français d'Archéologie Orientale, Le Caire)*, Paris, 1997; M. Van der Veen, 'A Life of Luxury in the Desert? The Food and Fodder Supply to Mons Claudianus', in: *Journal of Roman Archaeology*, vol. XI, 1998, pp. 101-16.

[20] See H. Schneider, 'Infrastruktur und politische Legitimation im frühen Principat', *Opus: Rivista internazionale per la storia economica e sociale dell'antichità*, vol. V, 1986, pp. 23-51; *Der Neue Pauly*, vol. V, Stuttgart and Weimar, 1998, pp. 993-98, s. v. Infrastruktur (entry by U. Walter).

[21] W.V. Harris, 'Between Archaic and Modern: Problems in Roman Economic History', in Harris, op. cit., pp. 27-28; T. Kozelj and M. Wurch Kozelj, 'Les transports dans l'antiquité', in R. Francovich (ed.), *Archeologia delle attività estrattive e metallurgiche*, Florence, 1993, pp. 97-142; Maischberger, op. cit., pp. 25-31.

[22] J.C. Fant, 'Cavum Antrum Phrygiae: The Organization and Operations of the Roman Imperial Marble Quarries in Phrygia', *British Archaeological Reports, International Series*, no. 482, Oxford, 1989.

[23] Strabo, *Geographia*, Book XII, Chapter 8, paragraph 14.

[24] E. Iversen, *Obelisks in Exile I: The Obelisks of Rome*, Copenhagen and Gad, 1968; Steinby, op. cit., vol. III, 1996, pp. 355-59, s.v. Obeliscus/Obelisci (entry by J.-C. Grenier); L. Habachi, *Die unsterblichen Obelisken Ägptens*, new edition, Mainz am Rhein, 2000.

[25] He may even have ordered two further obelisks, both about fifteen metres high and placed in front of the Mausoleum of Augustus; for which, see E. Buchner, 'Ein Kanal für Obelisken: Neues vom Mausoleum des Augustus in Rom', *Antike Welt*, vol. XXVII, 1996, pp. 161-68; Steinby, op. cit., vol. III, p. 359, s.v. Obelisci Mausolei Augusti (entry by J.-C. Grenier).

[26] E. Buchner, *Die Sonnenuhr des Augustus*, Mainz am Rhein, 1982; M. Schütz, 'Zur Sonnenuhr des Augustus auf dem Marsfeld', *Gymnasium*, vol. XCVII, 1990, pp. 432-57: Schneider, op. cit. in n. 13 above, pp. 109-11; Steinby, op. cit., pp. 35-37, s.v. Horologium Augusti (entry by E. Buchner) with some corrections of his reconstruction, here illustrated as Fig. 7.

[27] *Corpus Inscriptionum Latinarum*, vol. VI, nos. 701 (Circus Maximus), 702 (Solarium Augusti).

[28] The Elder Pliny, *Natural History*, Book XXXVI, Chapters 1-3.

[29] Schneider, op. cit. in n. 3 above, pp. 137-38 and 150-52.

[30] P. Pensabene, *Le vie del marmo. I blocchi di cava di Roma e di Ostia: Il fenomeno del marmo nella Roma antica (Itinerari Ostiensi, VII)*, Rome, 1995; Maischberger, op. cit..

[31] Isserlin, op. cit., pp. 125-55; Paton and Schneider, op. cit., pp. 279-304.

[32] *Der Neue Pauly*, vol. VII, Stuttgart and Weimar, 1999, p. 934, s. v. Marmor (entry by R.M. Schneider); Paton and Schneider, op. cit., pp. 295-96.

[33] Ibid., pp. 294-95.

[34] K. De Fine Licht, *The Rotunda in Rome: A Study of Hadrian's Pantheon*, Copenhagen, 1968, pp. 100-102 and 108-112, and fig. 118, for a detail of the rich ornament of one of the columns made of *marmor Numidicum* placed in the main niche; W.-D. Heilmeyer, 'Apollodorus von Damaskus, der Architekt des Pantheon', *Jahrbuch des Deutschen Archäologischen Instituts*, 1975, pp. 332-37, fig. 16; D. and G. Gruben, 'Die Türe des Pantheon', *Mitteilungen des Deutschen Archäologischen Instituts, Römische Abteilung*, vol. CIV, 1997, pp. 3-74; Steinby, op. cit., vol. IV, 1999, pp. 54-61, s.v. Pantheon (entry by A. Ziolkowski).

[35] Schneider, op. cit. in n. 3 above, pp. 115-25; Steinby, op. cit., vol. I, 1993, pp. 183-87, s.v. Basilica Paul(l)i (entry by H. Bauer); Landwehr, op. cit., pp. 75-79 (with comments on the oriental statues which are frequently misleading).

[36] The Elder Pliny, *Natural History*, Book XXXVI, Chapter 102 '...basilicam Pauli columnis et Phrygibus mirabilem...'. The conventional reading of 'et' as 'e(x)' is erroneous; see Schneider, op. cit. in n. 3 above, pp. 120-24.

[37] Idem, op. cit. in n. 12 above, pp. 94-146.

[38] Idem, op. cit. in n. 3 above, pp. 18-138.

[39] Ibid., pp. 166-86.

[40] For Western perceptions of Oriental beauty, see idem, op. cit. in n. 12 above, pp. 107-109.

[41] Idem, op. cit. in n. 3 above, pp. 162-65.

[42] Steinby, op. cit., vol. II, 1995, pp. 348-56, s.v. Forum Traiani (entry by J. Packer).

[43] R.M. Schneider, 'Kolossale Dakerstatuen aus grünem Porphyr', *Mitteilungen des Deutschen Archäologischen Instituts, Römische Abteilung*, vol. XCVII, 1990, pp. 235-260; see also P. Warren, 'Lapis Lacedaemonius', in J.M. Sanders (ed.), *PHILOLAKON: Laconian Studies in honour of Hector Catling*, Athens and Exeter, 1992, pp. 285-96.

[44] Schneider, op. cit. in n. 3 above, pp. 153-60.

[45] Belli Pasqua, op. cit. in n. 12 above, pp. 80-81, no. 23, plates 30-31.

[46] Schneider, op. cit. in n. 3 above, p. 159, with footnote 1190; A. La Regina (ed.), *Palazzo Massimo alle Terme*, Milan, 1998, pp. 20-21, with colour illustration (B. Germini).

[47] Statius, *Silvae*, Book IV, Poem 2, lines 18-20.

[48] Ibid, Book IV, Poem 2, lines 26-29.

[49] Schneider, op. cit. in n. 3 above, p. 150; Fant, op. cit., pp. 155-57; Harris, op. cit., p. 17. For an exemplary discussion of the symbolic semantics of imperial gifts in Rome, see E. Flaig, 'Geschichte ist kein Text: "Reflexive Anthropologie" am Beispiel der symbolischen Gaben im römischen Reich', in H.W. Blanke, F. Jaeger, and T. Sandkühler (eds.), *Dimensionen der Historik: Geschichtstheorie, Wissenschaftsgeschichte und Geschichtskultur heute. Jörn Rüsen zum 60. Geburtstag*, Cologne, Weimar, and Vienna, 1998, pp. 345-60.