OBSERVATIONS ON THE PARTHENON SCULPTURE IN THE BRITISH MUSEUM[1]

A. Mantis

This communication sums up observations made during an examination of Parthenon sculpture in the British Museum, conducted by a team from the Greek Ministry of Culture from October 28th to November 3, 1999.

During our research we took into account the documents concerning the cleaning of the marbles in 1937/1938, the statements contained in the 24th controversial chapter by St. Clair[2] as well as the documents from the archives made known to the participants in the conference by Mr. Jenkins. We owe additional information about the effects of the cleaning on certain sculptures to W. St. Clair.

Although we are fully aware that the intervention carried out in 1937/1938 is a much regretted matter of past history, we agree with the organizers of the conference for deeming it advisable to make a scientific record of the full extent of the damage, in accordance with the intentions of the museum authorities in charge at the time, as state in the correspondence.[3]

Our inspection included studying the surface of the sculptures with the naked eye and under magnification (to the 10th and 30th power); examination by touch; comparing the present state of preservation with the old plaster casts of 1837[4] and with photographs made by Boissonas-Collignon and Smith in 1908-1910; measurements with special instruments (chromatometry); and photographic documentation by Sokratis Mavrommatis, the photographer of the Acropolis Ephorate. In many ways our examination confirmed the conclusions of earlier observers, for example those made by C. Brandi[5] whose observations

apparently did not receive the attention they deserve.[6]

The results of the examination reveal the full extent of the damage. All of the south metopes, the greater part of the frieze and at least four east pediment figures have been subjected to the gruesome “cleaning”. Systematic correlation of previous information concerning the cleaning with present first-hand observations has brought to light, to a greater degree than heretofore, the rationale, the scope, and the methods of that intervention.

The aim of the operation was, unquestionably, to enhance the appearance of the Parthenon sculptures as they were in the 1930s, acting under the influence of certain aesthetic preconceptions of the time, analyzed in detail by W. St. Clair.[7] The intervention was intended to impart to the sculptures the desired whiteness and gloss. The fact that this initiative originated exclusively with Lord Duveen,[8] the private donor, with an ambiguous degree of participation by officialdom and the museum authorities, played a dramatic role in the fate of the sculptures.

In the course of treating the statues to whiten them, the tawny yellow patina, wherever preserved was removed.[9] Since this “patina” was not considered to be a genuinely original component of the sculpture[10] but rather a hindrance to aesthetic appreciation, it was therefore systematically obliterated. The patina on Acropolis monuments is 100-200 micrometres thick and is in excellent condition wherever the marble surface has been preserved. It bonds perfectly with the marble, penetrating into the crystals. Consequently, scraping away the patina has at times had bad effects, as is to be expected, not only in respect to the preservation of the surface but also on the very substance of the marble itself. The scraping created variegated surfaces which, according to the aesthetic requirements of the time, ought to have a uniform appearance.

The process of smoothing over the irregularities on the background and on the figures themselves intensified the catastrophe.

In spite of the original intention of carrying out the intervention on consistent principles, the end result was affected by various limiting factors, altering the scope of the intervention. For example, some of the relief surfaces were in a dangerously precarious state and the places where the marble tended to flake off obliged the technicians to work more carefully. In other cases, however, the technicians showed an excess of zeal, for example with certain metopes or with Selene's horse, resulting in actual changes in the modelling.

High-power magnification proved to be specially illuminating in regard to the type of tools used, confirming some of the information given in the sources. Traces of bronze tools used for scraping off patina or for smoothing surfaces were observed both on the frieze and on the metopes.[11] Oxidation of the bronze produced strikingly large accumulations of green rust on some of the metopes, occurring mostly in the crevices where the relief joins the background, where not only tool marks made by underlining the contours of the figures can easily be distinguished, but also the damage done to the marble as the tool struck it. The final smoothing of the surface was done with an abrasive, in all probability carborundum, a substance processed as bars, sheets or powder.[12]

Pediment sculptures

The archives are much richer in information concerning some of the east pediment sculpture than they are for the metopes and frieze. This is due to the fact that work on these sculptures was abruptly halted at

the moment when the museum authorities realised what the cleaning was doing to the marble. These examples naturally elicited more detailed reports. Thus the cases of the pediment sculpture subjected to cleaning are particularly useful for understanding the course of the work. In the four cases where the intervention was left half-finished one may clearly distinguish the different stages of the operation. All cases provide representative examples of surfaces before and after the intervention, helping us to visualize the original appearance of those sculptures that were subjected to complete “cleaning”.

East pediment

Fig. A (Helios)

The old photographs, especially those taken by Smith, Boissonas and Photo Braun, document the existence of patina not only on the neck but also on the left shoulder and left arm of Helios.[13] The “cleaning” as the present condition of the sculpture reveals, began on the inside proceeding outward and stopped at about the middle of the neck.[14] The whole left arm and shoulder were stripped bare of the patina and smoothed.[15] Remains of the patina are preserved on the inside of the arm (Fig. 1a-c).

Fig. B (Helios’ horses)

The old photographs also tell us that the inside of the outer pair of horse heads originally had patina.[16] Here too the work began on the inside and the present condition of the horse heads demonstrates just how the patina that had extended over large areas of the necks and heads of the two horses and also on the plinth has been removed except for the roughly worked surface on the inside of the inner horsehead. The removal

of the patina was followed by grinding down and smoothing the surface, so that the horses' manes have lost their original crispness as seen in the old photographs (Fig. 2).[17]

Fig. G. ("Iris")

Ian Jenkins has pointed out to the members of the team aspects of the intervention on Figure G (fig. 3a), not supplied by the archival sources.[18] The entire lower part of the figure from about mid-thigh has been abraded and smoothed. The boundary line between the darker original surface and the smoothed over whiter surface stands out unmistakably (Fig. 3b). The smoothing and rubbing was not limited to the wider furrows of the drapery folds but also appears in the narrow recesses.

The traces of patina on the original supper surface of the figure are easily visible and have been left untouched by comparison with the virtually complete absence of patina spots in the "cleaned" area. Remains of the patina can still be made out today on the front of the left leg, the outside of the left foot and the edges of the fold around the left foot (Fig.3c). Boissonas' photographs made in 1908 show the patinated surfaces as they were before the cleaning.[19]

The entire lower part of the figure has been "cleaned" with the exception of the two central folds in back, where traces of patina that has not been scraped away can be made out. It should be noted that the surface has been smoothed not only in the flat and curved drapery furrows but also on the breaks in the ridges.

The differences between the upper and lower part of the figure can be observed in three different ways: 1) the difference in colour above and below the boundary line of the intervention. 2) the texture of the surface

above and below, as determined by touch. 3) comparison of the present surface of the left leg of the figure with a cast deriving from the old cast of 1837. The surface of the cast is rough and crisp by comparison with the smooth surface of the original which has lost its uneven texture, especially on the weathered surfaces. This example is particularly instructive because it reveals the magnitude of the difference in the two areas of the figure. Cleaning has obliterated the irregularities caused by the weathering, well visible at the time the cast was taken.

Figure O (Selene's horse head)

Selene's horsehead (Urpferd) is an extreme example of the damage caused by the intervention of 1938. The statement in the archives that the cleaning had made the head look "white and skinned" is all too true. The intervention on the inside of the head was drastic (Fig. 4a). The surface has been highly smoothed, removing all traces of the original "skin" of the marble. The distortion on the inside of the head is so extreme, that it gives the impression of being a Roman work. My colleague Ian Jenkins also came to this conclusion.[20]

The old photographs show remains of patina around the right ear, very few of which survived the intervention. The same holds true of the preserved side of the cutting at the top of the head, the patina in the area of the mane and neck and above the break where the peg for anchoring the head to the pediment was placed. The horse's mane (Fig. 4b) has lost its original crispness as seen in old photograph.[21]

The top and front of the head have been smoothed to a lesser degree. This smoothing has obliterated or diminished the irregularities of the weathered surface in front. On Boissonas' photo made in 1908 this surface is rougher and remains of patina show up inside the nostrils. As

to the outer side of the head, it is now clear how far the intervention went (Fig. 4c). The outer side does preserve some of the original roughness and sharpness, not smoothed away as on the inner side. It is not out of the question that here the intervention was limited to washing and cleaning.[22]

According to the report made by the Committee of Enquiry in December 1938, the intervention on the east pediment would not have lasted more than ten days, from the 17th to the 26th of December, 1938. Thus we can easily imagine what happened to the metopes and frieze where the work lasted for months.

The south metopes

The fifteen south metopes of the Parthenon in the BM have also been subjected to cleaning as noted by Brandi.[23] The archives are not especially illuminating concerning the extent and the degree of the intervention in the metopes. According to Jenkins[24] some metopes, as well as the column of the Erechtheum and the Caryatid, were subjected to Faraday's experimental cleaning in 1857, but no sources give information about the extent of the cleaning.[25]

The patina on the south metopes was abundantly preserved at the time they were removed from the building. Evidence for this is provided not only by South Metope X in the Louvre,[26] removed from the Parthenon only a few years earlier (by Choiseul-Gouffier in 1788), but also by the preserved patinated surfaces on the east and north metopes which remained on the building about two hundred years longer.[27] The best evidence is provided by the old photographs of Mansel, Smith and Boissonas.

Most of the metopes have suffered substantial losses caused by abrading, regularizing and smoothing mainly weathered surfaces from which the patina had already been worn off by the action of rain. The scale of the metopes and their figures virtually carved in the round offer ampler opportunities for more drastic interventions than the shallow planes of the frieze. The intervention has severely damaged some of the metopes where one can see and even measure the losses (South 30, 32). In certain cases comparing details on old casts with those of the originals documents the loss (South 2, 6, Figure G of the east pediment).

South metope 2: The old photographs, especially Smith's, [28] show that South Metope 2 originally had a great deal of patina especially on the himation drapery falling down onto the centaur's back in back of the Lapith's right shoulder, much of the surface of his chest and body, the left wrist and hand, along with the centaur's head, his right shoulder and part of his chest, the folds of the himation gathered in back of the centaur's head, the centaur's upper left arm and probably the underside of his belly; the areas where the patina has been washed over show as whiter in the photograph.[29] The patina has been rubbed off from all the areas mentioned above (Fig. 5a).

Rubbing or abrading has been done on the background of this metope and especially on the upper body of the Lapith, on the outside of his right thigh and his left thigh. The original weathered pitted surfaces have lost their sharpness, as the old photographs show. It is interesting to compare a section of the old cast of 1837 showing the rump of the centaur and part of the Lapith's right thigh with the sculpture as it is now; the weathered part of the centaur's body has lost its original surface (Fig. 5b).

South metope 3: This metope has been highly smoothed, the

background as much as the figures. There are traces of patina on the centaur's back and on the background. The Lapith has been very much smoothed (Fig. 6a).

In examining South Metope 3 we noticed that a little piece of the lower edge of the animal skin wrapped around the left arm of the centaur has broken off. The fragment had actually broken off at an earlier time and had been glued back on and fastened with a small bronze pin, part of which is still visible on the surface of the break together with the white binding agent. The old photographs (Smith, Boissonas) show that the missing piece had already been glued back on at the time the photographs were taken. In Boissonas' photograph one can even seen an irregular white lump below the piece (most probably plasticine), to keep the fragment in place.[30]

Going back to a still earlier time, one sees that the missing piece appears on the old cast of 1837 and still earlier in a drawing of Pars done in 1765 when the metope was still on the building (Fig. 6b).[31] When did it break off? It is not possible to fix the time with any accuracy. A photograph by E. M. Czako published in 1967 (Brommer PM, Taf. 169-171) is the first one to show the break. In any case there is a fifty year interval between 1912 when the fragment was still in place and the photo of 1967 (most illustrations of the metope made during that half century reproduced older photographs). It remains to be determined when exactly the attached fragment broke off. In any event one cannot rule out the possibility that this piece was broken off or perished during the controversial "cleaning", given that this metope was subjected to the intervention.

South Metope 4: More or less similar phenomena are observable in the remaining metopes. A comparison of photographs of South Metope 4

taken by Boissonas[32] with those taken by Brommer[33] reveals the extent to which the patina has been removed, and especially how all the features of the weathering have been scrubbed away.

South Metope 6: The extent to which the surface has been flattened out and partly lost is made clear by a comparison of an old cast of the belly of the centaur with the original as it is today (Fig. 7a).[34]

According to C. Brandi slight remains of plaster can be seen in the furrows in the lower part of the tail and the drapery was violently abraded.[35]

The loss of surface due to abrasion is particularly noticeable on the centaur's chest and belly. Moreover, the corroded surfaces which up until the intervention preserved much of the freshness and sharpness of the original carving, now became dull, vague and meaningless.

Part of the centaur's belly, as it appears on a fragment of the old cast made in 1837, may be instructively compared with the original in its present state. The corroded surface as seen on the cast preserves much more of the original modelling than the smoothed surface of the marble (Fig. 7b); the difference is also perceptible by touch.

Old photographs show that the patina has been scraped away on the horse's belly and on the male figure's drapery; see for example, the Boissonas photograph showing the area of the folded cloth behind the Lapith's legs, on the centaur's tail and under its hindlegs.[36]

Traces of toolmarks are noticeable in the area at the end of the centaur's right foreleg, about where the centaur's right front hoof is detached from the background. To the left of the fracture is an "islet" of intensively dark-coloured patina (as Boissonas' photograph shows), which appears to have been removed by a sharply pointed tool that left traces of irregular grooves at a great depth. Some of these traces are

also visible on the bottom of the hoof's fracture surface which appears darker on Boissonas' photograph.

The background of the relief has been levelled and smoothed by rubbing, especially noticeable wherever rubbing brought the marble below the level of the numerous harder veins of quartz.

Well-preserved remains of patina appear on the inside of the centaur's tail and right thigh, and also on the left shin where it adjoins the background where rasping traces can be seen.

Quite a few remains of patina are preserved on the back of the centaur's left hand on the Lapith's shoulder, an area which has also been smoothed (also observed by Brandi).

Traces of the sharp tool mentioned above are also found in the two vertical furrows on the right side of the himation. The fragmentarily preserved background has been ground down and heavily smoothed to obliterate the irregularities and ridges caused by the weathering.

South Metope 7: Here too the old photograph documents the earlier state of the sculpture.[37] Brandi refers to this metope too in his article.[38]

South Metope 8: As Brandi noted, the metope is badly abraded and the white specks are due to remains of plaster.[39]

The fragmentarily preserved background has been drastically ground down and smoothed, especially on the left edge of the slab which is on a lower level than the corroded surface around the figures. The black spots on the background, visible on the left edge of Boissonas' photograph,[40] have been removed by smoothing. The holes caused by corrosion on the right edge of the slab have become shallower due to grinding and smoothing. The bodies of the figures have also been distinctly smoothed. The old cast clearly shows that the missing chip from above the Lapith's right knee is an old break, i.e. the damage was not due

to the intervention.

The patina, visible in the old photographs has been removed especially on the area of the tail, carved in relief on the background. The surface of the tail has been entirely ground away, so that the wear caused by corrosion is scarcely visible. Considerable remains of patina are preserved on the inside of the centaur's right hind leg which has obviously been scraped, as well as on the lower side of the left foreleg. Fewer traces of scraping are to be seen on the underside of the horse's belly and on the Lapith's drapery between the centaur's legs.

The breaks at the Lapith's right arm and neck, as well as the centaur's body have been ground and abraded. The preserved part of the Lapith's right arm above the armpit originally had patina no longer preserved today.

South Metope 26: The background and the figures have been smoothed but not in the same way as S 30 and S 32. Traces of scraped patina are visible in the lower right background on either side of the centaur's tail (it cannot be determined if there was any patina on the tail itself) and on the puntello in the middle of the left edge. Remains of patina are visible on the inside of the Lapith's left leg and on the inside of the centaur's bent right forearm. Indistinct spots which could possibly be the remains of patina are on the outside of the area where the centaur's equine and human bodies merge.[41]

Apart from the damage caused by the "cleaning" this metope has been injured more recently.[42]

South Metope 27: Comparison of photographs taken by Smith and Boissonas indicate that well-preserved patina has been removed from the visible drapery furrows of the Lapith's himation.[43] Photographs attest sporadic remains of patina on the knee and hoof of the centaur's left

foreleg. Patina has not been removed from the back of the Lapith and from the himation drapery concealed by the figure.

Southe Metope 27 provides an example of a surface left almost untouched except for the scraping of the patina. The corroded surfaces are almost intact and the greater part of the figures has been left untouched. Comparison with S 30 and S 32 (and to a lesser degree with S 26) is instructive in revealing the various gradations of the intervention, the treatment varying from drastic shading off to light handling. The background of S 27 has not even been smoothed as it was in the other metopes.[44]

The patina visible on the himation and in back of the torso conveys the impression that an effort had been made to remove it. Traces of a sharp tool used to scrape off the patina have been observed at the following places: on the centaur's clavicle; in the furrows of the himation below the Lapith's left arm; on the vertical folds below the Lapith's right arm, visible for a considerable length. During our preliminary investigation no traces of copper oxidation were observed, possibly because the intervention on this metope was fairly light.

South Metope 29: The old photos, especially the one taken by Smith, document the presence of a rich patina, particularly on the drapery of the Lapith woman and on the head of the centaur.[45] This metope appears to have been subjected to drastic treatment; not only the background but also the figures have been smoothed,[46] to such an extent that only tiny traces of patina remain in the deepest furrows of the female figure's drapery.

Linear traces made by a sharp tool can be observed on the female figure's left shoulder and in the drapery furrows to the right of the centaur's chest.

Accumulations of green rust produced by oxidized remains of a bronze tool are visible on the inner outline of the centaur's left thigh and lengthwise along his belly.

South Metope 29 has had its patina systematically removed, particularly in the drapery folds of the female figure, as one sees from the photograph by Boissonas.[47]

South Metope 30: Both the background and the figures have been subjected to an extraordinary amount of smoothing.[48] Attempts were made to even up the surface; the projections on the weathered areas on the chests of both figures have been levelled out. Both heads have also been rubbed. The black spots and remains of patina appearing on the background in the photo by Boissonas have been taken away.[49] Remains of patina can be seen here and there on the backs of the heads and on the drapery.

Accumulations of green oxidized bronze deposit from a tool can be seen at the right edge of the slab where the Lapith's himation adjoins the background and also, clearly visible to the naked eye, below the centaur's belly where the relief adjoins the background.

South Metope 32: constitutes an extreme example of "cleaning" with many traces of copper oxidation beneath the centaur's belly.[50]

The patina, which has even been removed from the most inconspicuous places, has left minor traces at the back of the Lapith's right thigh, on the inside of the upper part of the centaur's tail, on the inside of the right hand leg, on the plinth and in the area of the puntello on the lower right corner of the background.

Tiny little fragments of some non-rusting metal are scattered in the background below the belly of the centaur (a single one above the horse's rump); they appear to have been violently wedged into the marble by use

of great force.[51]

Here and there extensive rubbing and smoothing have either obscured or entirely obliterated anatomical details such as veins, creases, and wrinkles. Scouring has erased the weathering on the centaur's belly above the vein, seen in photos taken by both Smith and Boissonas.[52]

The Oxford casts of the south metopes

Casts of nine Parthenon metopes are in the collection of casts at Oxford; south metope 1 and north metope 32, still in situ on the Parthenon, and south metopes 3, 4, 7, 27-30.

A short examination of these casts, made during a quick visit after the conference, revealed that at lest some of them are not related to the series of casts made in 1837, the second known series of casts of Parthenon sculpture in the BM, which is also in the cast collection of the Center for Acropolis Studies in Athens.

This conclusion is based on two facts. With one exception these casts lack the lead seal present on the 1837 casts in Athens. Furthermore the cast of south metope 3 does not have the left arm of the centaur with the animal skin wrapped around him, present in the 1837 casts. Consequently, the Oxford cast was taken before the left arm fragment had been joined.

Notes

[1]A. Mantis, E. Papakonstantinou, K. Kouzeli and E. Korka were members of the team supervised by Prof. Th. Skoulikidis. We extend our warmest thanks to the Direction of the British Museum for officially granting permission and in particular to Ian Jenkins in the Department of Greek and Roman Antiquities for facilitating our work in so many ways and for the discussions we had together during our investigations.

[2]W. St. Clair, Lord Elgin and the marbles (1998), p. 281 ff. (hereafter, St Clair); idem, Ο Λόρδος Ελγιν και τα μη ρμαρα (1999), σ. 333 κεξ.; idem, `The Elgin Marbles: Questions of Stewardship and Accountability', IJCP, vol.8, No. 2 (1999), p. 415 ff. See also: W. St. Clair, The Parthenon Marbles: Questions of Authenticity, in *The Destiny of the Parthenon Marbles (Proceedings from a Seminar sponsored by the Society for the Preservation of the Greek Heritage),* Washington 1999, p. 24 ff.

[3]Appendix 10: Correspondence: Letter from Harlech to Forsdyke, 1.12.38 `Sooner or later it will have to come out which are the individual pieces which have damaged and I would greatly prefer more frankness and definition...' and 3.12.38 `...there will be a long and slow investigation by the expert world as you say'. The Director to the Archbishop of Canterbury, Chairman of Trustees, (manuscript copy, no date [1938]'....In the first place we are not yet able to say what the effect of these improper processes has been, and an incomplete statement would serve no purpose. There is no question of repairs, these could not even be attempted. It will take us a long time to make an accurate report of the pieces which were improperly cleaned, and we regard the making of this record as our real duty. When it is made the Trustees may be asked to consider its publication in an archaeological Journal, but I do not agree with Sir William Brag that we should find any kind of condonation among the experts, least of all from the Greeks. We can

offer no excuse for what has happened...' And letter from Sir Charles Peers [archaeologist, trustee and member of the Board of Enquiry] to Forsdyke.3.12.38 `..It seems to me that what is principally entailed on the Trustees is to order the preparation of a careful report on each piece of sculpture which has suffered, so that any student studying these marbles in the future may be safeguarded against mistakes arising from the condition of the damaged carvings. This is our real duty to knowledge...'

[4]The casts taken into consideration are the old casts of 1837 (the casts of the British Museum sent to Greece in 1846), which are exhibited in the Center of the Acropolis Studies in Athens. Details of the south metopes, frieze and pedimental sculptures (figs A and G from the east pediment) were taken during 1999 from these old casts.
For the oldest plaster casts of Parthenon sculptures, before their removal from the building S. Ph. E. Legrand, RA 30 (1897), 50,53,65; D. Willers, Parthenon Kongress Basel (1984), 343 ff. The question as to how many molds were taken directly from the Parthenon sculptures while they were still in Elgin's possession, before they were taken to the British Museum, cannot be answered with certainty. W. St. Clair, in the third edition of his book, refers to the moldings made for Haydon in 1815 (St. Clair, p. 286), as well as to a manuscript "List of Moulds taken from the Elgin Marbles", undated and unsigned but on paper watermarked 1812 (W. St. Clair, "The Elgin Marbles: Questions of Stewardship and Accountability", IJCP, vol. 8, No 2, 1999, p. 507, note 69). This manuscript contains a list of pieces molded and of customers who have bought some or all of the resulting casts, but W. St Clair doesn't conclude if these molds were the same as those of the first official set of 1817, a year after the arrival of the sculptures in the British Museum.
See also I. Jenkins, "Acquisition and Supply of casts of the Parthenon Sculptures by the British Museum 1835-1939", BSA 85 (1990), p. 89 ff.

[5]C. Brandi, *Nota sui marmi del Partenone,* BRest 3/4, 1950, 3-8 fgs 1-3; *Sugli*

intonaci del Partenone, ibid., 5/6, 1951, p. 3.

[6]Simply mentioned by K. Κουζη λι - N. Μπελογιαννης - Γ. Δογη νη και Χ. Τόλιας, in "Μελη τη
των εγχρη μων στρωμη των που διακρη νονται στις επιφη νειες του Παρθενη να", σ.8 [Archive of the Committee for the Conservation of Akropolis Monuments]. See also, Kouzeli, K. et al, *Ancient and Byzantine Treatments on the Parthenon*, in Proceedings of the 6th International Congress on Deterioration and Conservation of Stones, pp. 687-694 Torùn 1988. See also K. Zambas, "Εκθεση για την τεκμηρη ωση του κιονοκρη νου και του σπονδη λου του Παρθενη νος στο Βρετανικό Μουσει ο", 2 note 11 (19.11.1997 CCAM archive). For further reference to Brandi see A. Giuliano, *Cesare Brandi e i marmi del Partenone a Londra,* in Convegno di Studei, Cesare Brandi, Teoria e esperienza dell'arte. Siena - Santa maria della scala, 12-14 Novembre 1998 (not yet published).

[7]W. St Clair, The Parthenon Marbles: Questions of Authenticity, in *The Destiny of the Parthenon Marbles (Proceedings from a Seminar sponsored by the Society for the Preservation of the Greek Heritage),* Washington 1999, p. 12 ff.

[8]For aspects of the personality and the character of Lord Duveen see J. Vincent, *The Crawford papers* (Manchester University Press 1994).

[9]The systematic removal of the patina from many Parthenon sculptures in the BM during the "cleaning" in 1937/38 was not mentioned by I. D. Jenkins and A. P. Middleton, "Paint on the Parthenon Sculptures", BSA 83, 1988, 183-207.

[10]This patina was occasionally thought to be the remains of ancient varnish because of the evidence of paint underneath: D. E. L. Haynes, "A Question of Polish", *Wandlungen. E. Homman-Wedeking gewidmet* (Waldsassen 1975), 131 pl. 28; see also Jenkins and Middleton op. cit. note 9 above; Kouzeli, K. et al,

"Monochromatic layers with and without oxalates on the Parthenon", in Proceedings of International Symposium "The Oxalate Films: origin and significance in the conservation of works of art", Milan 1989, pp. 327-335; Kouzeli, K. et al, "Study of remaining colour on the architectural surfaces of the Parthenon", in Superfici dell-architecture, Le Finiture, Bressanone, June 1990, pp. 241-250. The patina is identified with the ancient ganosis described by Vitruvius by A. Galanos and G. Dogani in this volume.

[11]In the Daily Express of May 19, 1939 Mr. Arthur Holcome, the Head Cleaner of the British Museum, gave an interesting interview concerning the use of metal tools during the "cleaning": "I was told to begin cleaning the Elgin Marbles two years ago. As head man I was put in charge of six Museum Labourers. We were given a solution of soap and water and ammonia. First we brushed the dirt off the Marbles with a soft brush. Then we applied the solution with the same brush. After that we sponged them dry, then wiped them over with distilled water. That was all we were told to do. To get off some of the dirtier spots I rubbed the Marbles with a **blunt copper tool**. Some of them were as black as that grate, said Mr. Holcombe, pointing to his grate. As far as I know, all that had been done for years to clean them was to blow them with bellows. The other men borrowed my copper tools and rubbed the Marbles with them as I did. I knew it would not do them any harm, because the copper is softer than the stone. I have used the same tools for cleaning the marbles at the Museum under four Directors". See J. Epstein. *Let there be sculpture. An autobiography* (1940), p. 208 and papers circulated for the conference by Ian Jenkins.

[12]W. St. Clair, The Parthenon Marbles: Questions of Authenticity, in *The Destiny of the Parthenon Marbles (Proceedings from a Seminar sponsored by the Society for the Preservation of the Greek Heritage),* Washington 1999, p. 25.

[13]A. H. Smith, *The Sculptures of the Parthenon* (1910), p. 8-9, fig. 12, pl. 1

(hereafter, Smith); M. Collignon-Fr. Boissonas, *Le Parthénon*, (Paris) (hereafter, Boissonas), pl. 46 (A); J. Charbonneaux, *La sculpture Greque Classique,* Paris 1943, fig. 99.

[14]See also St. Clair, p. 311, fig. 12; W. St. Clair, Ο λόρδος Ελγιν και τα Μn μαρα, 1999, σ. 371 κεξ.: W. St. Clair, "The Elgin Marbles: Questions of Stewardship and Accountability", *IJCP*, vol. 8, No 2, 1999, p.426.
It is not quite clear if the left part of the back of the figure actually had the ancient tool marks which W. St Clair claims were obliterated by the "cleaning".

[15] Description of the preserved patina by Olga Palagia, *The Pediments of the Parthenon* (1993), p. 18: "The nape of his neck preserves its pristine polish, protected under the orange-brown patina of the original surface (fig. 25).", but without comments on the absence or obliteration of the patina from the left part of the figure.

[16]Smith, p. 8-9, figs. 13-14; Boissonas, pl. 46 (B). Also Palagia, op. cit. fig. 28.

[17]In the case of Helios, Plenderleith calculated the loss of marble surface at about 1/10 or 1/16 of an inch, without specifying if this refers to the figure itself or to the pair of horses heads.

[18]W. St. Clair (St Clair, p. 311-312) took mistakenly fig. H of the west Pediment, a figure which has not been subjected to "cleaning" as "Iris". In his Greek edition, "Ο λόρδος Ελγιν και τα Μn μαρα, (1999) he corrects the mistake. See I. Jenkins's critique in "What happened to the sculptures of the Parthenon in the 1930s?", Minerva, vol. 11, No 2 (March/April 2000), p. 10.

[19]Boissonas, pl. 49. Comp. Smith, p. 11, fig. 19. See also: Collignon, fig. 54.

[20]I. Jenkins, Minerva, vol. 11, No 2 (2000), p.13.

[21]Smith, p. 14, fig. 26, pl. 6 (fig.2); Boissonas, pl. 53 (1-3).

[22]Collignon, p. 157, fig. 58.

[23]See n. 5. C. Brandi, BRest. 3/4, 1950, p. 6-8.

[24]Minerva, vol. 10, No 6 (Nov./Dec. 1999), p. 43: “Faraday examined especially the Erechtheum Column and Caryatid and some metopes, but his comments seem to be applied to the general body of the Elgin Marbles”.

[25]In 1974 Burnett (q.v. Papers circulated by the BM) wrote a confidential letter to the director of the BM revealing the drastic treatment to which the metopes had been subjected; this letter, not taken into consideration by W. St. Clair (in the 3rd edition of his book), caused I. Jenkins to accept that “The metopes are more affected, but not all to the same degree and more on the backgrounds than on the figures and I would estimate their figure at about 60%” (Minerva, vol. 11, No 2, 2000, p. 15).

[26]F. Brommer, Die Metopen des Parthenon (Mainz 1967). Taf. 197 (1-2). 198 (1-3) (hereafter Brommer); Colour photo in Alain Pasquier, *Le Louvre. Les antiquités grecques, étrusques et romaines,* 1991, p. 37.

[27]Βλ. Ι. Τριαντη. Το Μουσειο Ακροπόλεως, Αθηνα 1998, σ. 260-263, Εικ.260-261, 262, 263, 264.

[28]Smith, pl. 16, fig. 2; Boissonas, pl. 27.

[29]Brommer PM, Taf. 165-167.

[30]Boissonas, pl. 27. See also Smith, pl. 17, fig.1.

[31]Brommer PM, Taf. 168.

[32]Boissonas, pl. 28. See also Smith, pl. 17, fig. 2.

[33]Brommer PM, Taf. 173-175.

[34]Brommer PM, Taf. 181-183.

[35]"Si vedono gli ultimi scarsi resti dell'intonaco nei solchi della coda in basso. Estremamente abraso il panno" (C. Brandi, BRest. 3/4, 1950, p.6).

[36]Boissonas, pl. 29; Smith, pl. 18, fig.2.

[37]Boissonas, pl. 30; Smith, pl. 19, fig. 1. Compare with Brommer PM, Taf. 187-188.

[38]"Anche qui si può controllare lo stato precedente nella fotografia esposta col completamento delle teste in calco" (C. Brandi, BRest. 3/4, 1950, p. 6).

[39]"Particolarmente abrasa. L'effetto che fa ora è di un marmo con le efelidi, perchè la patina è rimasta in fondo ai buchi e alle altre piccole depressioni delle superfici." (C. Brandi, BRest. 3/4, 1950, p.8). See also Brommer PM, Taf. 190-192.

[40]Boissonas, pl. 31. See also: Smith, pl. 19, fig. 2.

[41]Compare Boissonas, pl. 34 and Smith, pl. 21, fig. 2 with Brommer PM, Taf. 212-215.

[42]South Metope XXVI. The following minute was transcribed from British Museum files to which W. St Clair was given access in 19 November 1999. Minute by D. E. L. Haynes Confidential. 7 March 1974: “The routine daily check of sculptures on exhibition disclosed today that South Metope XXVI had been damaged by some person attempting to remove lead from a dowel-hole in the centaur’s hoof. One side of the dowel-hole was abraded and a series of scratches was evidently caused by the tool slipping. The actual damage is negligible but the fact that it could happen at all suggests that steps should be taken to improve the standard of warding in the Duveen Gallery”. Apart from a brief note about the warding arrangements, the file records no action as having been taken.

[43]Boissonas, pl. 34; Smith, p. 36, fig 63, pl. 22, fig. 1.

[44]Brommer PM, Taf. 217-220.

[45]Smith, pl. 23, fig. 1; Boissonas, pl. 35.

[46] Brommer PM, Taf. 224-228.

[47]Boissonas, pl. 35. For the extent of the damage to SM XXIX, see also I. Jenkins, Minerva, vol. 11, No 2 (2000), p. 13, fig. 11.

[48]Brommer PM, Taf. 229-232.

[49]Boissonas, pl. 36; Smith, pl. 23, fig. 2.

[50]Brommer PM, Taf. 236-239.

[51]The scouring subsequently done during the Duveen intervention smoothed these metal filings, giving them a high shiny polish. The metal has yet to be analyzed and

its origin determined. These ring scraps of metal are more likely to be filings from a projectile than remains of metal instruments used during the “cleaning”.

[52]Smith, pl. 24, fig. 2; Boissonas, pl. 36.

Abbreviations

The titles of the more frequently cited works and periodicals are abbreviated according to the system of Archäologischer Anzeiger.

Boissonas : M Collignon - Fr. Boissonas, *Le Parthénon* (Paris)

BRest : Bollettino dell'Istituto centrale del restauro

Brommer PG : F. Brommer, *Die Skulpturen der Parthenon-Giebel* (Mainz 1963)

Brommer PM :F. Brommer, *Die Metopen des Parthenon* (Mainz 1967)

Collignon : M. Collignon, *Le Parthénon* (Paris 1914)

IJCP : International Journal of Cultural Property

Smith : A. H. Smith, *The Sculptures of the Parthenon* (London 1910)

St Clair : W. St Clair, *Lord Elgin and the Marbles* (London 1998)

Fig. 1a

Fig. 1b

Fig. 1c

Fig. 2

Fig. 3a

Fig. 3b

Fig. 3c

Fig. 4a

Fig. 4b

Fig. 4c

Fig. 5a

Fig. 5b

Fig. 6a

Fig. 6b

(F. Brommer, Die Metopen des Parthenon, Mainz 1967, Tafel 168).

Fig. 7a

Fig. 7b