

*The Director's Editio -****Not only "Imperial varnishes", but also "Imperial pigments", and thus clearly "Imperial art and technology"***

The necessities of our research compelled us these past weeks to cross the border separating organic from inorganic pigments – with the aim to list the latter minerals, establish their chemical nature and well as their history, before obtaining them for our *Sarcophagus Project* (see previous issues of the present newsletter).

First stupefied, thereafter most pleased, were we to see that the pattern of appearance and disappearance of some of these mineral pigments coincides perfectly with that which we established for the New Kingdom "complex" "imperial" varnishes used from the reigns of Hatchepsut and Tuthmoses the IIIrd, until the 21st dynasty (see AEC- Newsletter No. 7***).

Analysing, for example, El Goressy's* (1997) extensive survey of 1500 ancient Egyptian pigments issued from 126 well dated sites of all periods of pharaonic history, we discovered that huntite - a mineral not found in Egypt and producing a purer white pigment than gypsum or calcite (to the point that texts indicate that pharaohs reserved it for royal use or to paint some of the gods' flesh on sarcophagi) entered in use during the reigns of Hatchepsut and Tuthmoses the IIIrd, this is to say, precisely at the time when complex multipartite varnishes made of *snTr* foreign-resins appear; leading El Goressy to state: "*I interpret this as a strong indication that huntite is an imported material, perhaps first encountered by the ancient Egyptians during the campaigns of Tuthmosis III in the upper Euphrates*". Huntite, reveals the same study, is thereafter increasingly used up to the 20th dynasty - when its use, in royal tombs, suddenly ends during the reign of Ramses VI (1143-1136 B.C.).

The appearance and disappearance of orpiment - a yellow pigment equally not found on Egyptian soil - is equally similar to the traced history of complex varnishes since it appears in the decoration of the red sandstone sarcophagus of Tuthmoses the IIIrd in his tomb (Thebes) for the first time, and vanishes from royal use towards the end of the 20th dynasty - having been long reserved for the sarcophagi

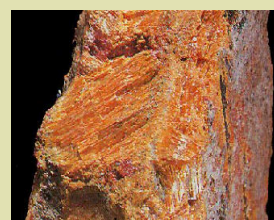
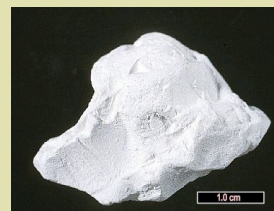
and tombs of the pharaohs; although it is found on commoners' during later period.

As to a third yellow producing mineral - realgar - equally imported - El Goressy states: "*So far, it has been found only in the wall decorations of the royal tomb of Tuthmosis IV and never reappears in later periods of ancient Egypt*". It would not be surprising that this pigment was also brought back to Egypt following Tuthmoses the III's campaign and that future New Empire occurrences will be discovered in the years to come (if this has not already been done); however it is also predictable, should new occurrences be discovered, that this foreign mineral will be less present from the end of the 21st dynasty onwards - in view of the same rupture in the trade of commodities which affected the import of the precious resins following the Egyptian empire's recessions.

It thus becomes clearer every day that the expeditions ordered by Queen Hatchepsut and even more the campaign of Tuthmoses the IIIrd in Asia were not only, as is widely known, major events in the political and trade history of the Ancient Egyptian civilisation, but also a turning point for the improvement of Egypt's technological and "scientific" knowledge - which in turn triggered a major page of ancient Egyptian art.

In fact, the appearance of these pigments and varnishes, or even of compound pigments which according to Jaksch & al. (1983)** also appear during the same reign of Tuthmosis III (1479-1425 BC), is accompanied by the equal appearance of technological innovations, such as in glass making with the core-formed method, or architecture with a first instance of a basilica in this pharaoh's Jubilee Hall.

Art, which hence and in view of the sum of its incorporated products - pigments and varnishes - or new techniques, as well as the precise political time-frame during which these were used, may equally reasonably be called: "*Imperial art*"***. **C. T. de V.**



From top to bottom: Huntite, orpiment and realgar (Photos 1: © Jeff Weissman - Photographic Guide to Mineral Species; 2 & 3 : Wikipedia)

*El Goressy, A. [Max-Planck-Institut für Chemie, Joachim-Becker-Weg 27, D-55128 Mainz, Germany], A. Polychromatic Wall Painting Decorations in Monuments of Pharaonic Egypt: Compositions, Chronology and Painting Technique. In: *The Wall Paintings of Thera: Proceedings of the First International Symposium* I - Proceedings of the First International Symposium, Petros M. Nomikos Conference Centre, Thera, Hellas. (30 August - 4 September) : 49 - 70; 1997 [Online at <http://www.therafoundation.org/articles/art/polychromaticwallpaintingdecorationinmonumentsofpharaonicegyptcomposit ionschronologyandpaintingtechniques>]

** Jaksch, H., Seipel, W., Weiner, K.L., El Goressy, A. Egyptian Blue - Cuprorivaite: A Window to Ancient Egyptian Technology. *Naturwissenschaften* 70: 525-535; 1983

*** See the Editio of AEC-Newsletter No. 7: "*Labelling ancient Egyptian Complex Varnishes as « Imperial »*".

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FIRST TESTS EXPERIMENTS WITH FERROUS OXIDE (OCHRE) AND TWIGS FOR
ANCIENT EGYPTIAN DRAUGHTSMANSHIP



On November 20th last, ferrous oxide (Fe_2O_3), otherwise known as red ochre, was first put to the test in our centre in relation to ancient Egyptian draughtsmanship. As common reeds (next page) had not yet been collected, simple plant twigs previously gathered from one of our botanical expedition were used as stylus. Following an experiment on paper (top right) and in the presence of E. Loring (CESRAS) - our centre's director (C. T. de V.) reproduced one of the sailors painted in ochre found in Userhat's tomb (Thebes - New Kingdom - Photo next page - top-left) on one of our walls (in process of renovation) and under the constraints of less than 5 minutes for execution and free hand (as would have been performed by an ancient Egyptian draughtsman). Photos N. Garibian & E. Loring.



*Further experiments with common reed pens (*Phragmites communis* L.)*



Sailors in the tomb of Userhat

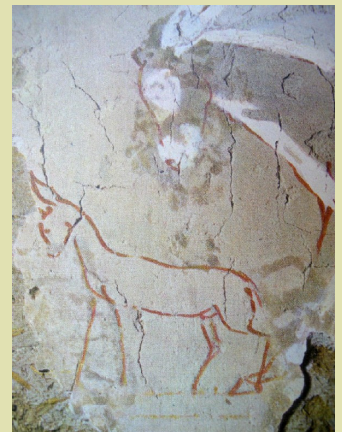
The aim of our drawing exercises was not only to test the plasticity of ochre once mixed with water, but to see how it combined with a knife-sharpened stem. The stems used for the first experiment, (left page), not only lacked precision but were not issued from the "Common Reed" (*Phragmites communis* L. - Photo bottom right) as used

by ancient Egyptians. Fortunately, this species is growing together with its parent species the "Giant Reed" (*Arundo donax* L.) along Yerevan's river, we collected a series of stems there (photo right), so that sharpened reed pens could be made (below). So as to test the fineness of draughtsmanship obtainable, an equally fine detail of a small donkey painted on a

wall of Tomb 101 (Thebes - New Kingdom) was reproduced. The experiment demonstrated that very fine lines could be obtained with these reed pens (photo below). Hence, the common reed would have provided ancient Egyptian draughtsmen with an unlimited supply of drawing pens - as the species was even more widely distributed in the Nile Valley then, than it is today.



Left: drawing by C. T. de V. with red ochre and reed pen of the small donkey from Theban tomb No. 101 (Photo right). Constraints: Less than two minutes and free hand.



Experiments with gum as a pigment binder of Egyptian blue and steatite

While waiting to receive gum Arabic, first experiments were made to bind a natural gum - we used cherry gum - with the natural pigments we have started to produce. Grinded Egyptian blue and steatite - a talc schist of white to brown color - were mixed with this gum to reproduce two of the colors found in the same scene of Userhat's tomb. The pigments blended very well with the gum and adhered perfectly to our center's gypsum wall (right). Such test experiments will soon be renewed with all the pigments we have so far produced, including some more complex ones we reconstructed such as the charcoal and lime based blue-grey, sometimes found on tomb walls.



They talk about us and Should you wish to help...

Our previous AEC-Newsletter No. 8 - where we presented our successful reconstruction of ancient Egyptian Blue - not only attracted considerable interest from our colleagues worldwide but allowed us also to receive many compliments - something always encouraging and welcome. We were also pleased to discover that Madrid University Computense's Institute for the Study of Ancient Egypt (Spain) as well as the widely read Egyptology News (links below), like previously Paris University, decided of their own initiatives to include this same issue No. 8 on their websites for direct PDF download - together with a short introductory text. We wish to express our thanks to them for this, as well as for calling help to assist us in obtaining basic raw materials such as malachite, quart, lapis-lazuli or azurite. In this respect we would also appreciate obtaining minerals such as huntite, orpiment, realgar, anhydrite, goethite, lepidocrite, hematite (despite the fact that we already have red ochre), pyrolusite and cobalt. Please note that we are still missing a number of basic books, the list of which can be found on our website in the section "I want to help" (http://a-egyptology.atspace.com/index_files/Page967.htm). To contact us never hesitate to e-mail us at: Egyptology@ysu.am

To download AEC-Newsletter No. 8 from Madrid University: <http://www.institutoestudiosantiguoegeo.com/>

Or from Egyptology News : <http://egyptology.blogspot.com/> or http://www.egyptomania.com/asade/aec_newsletter_08.pdf



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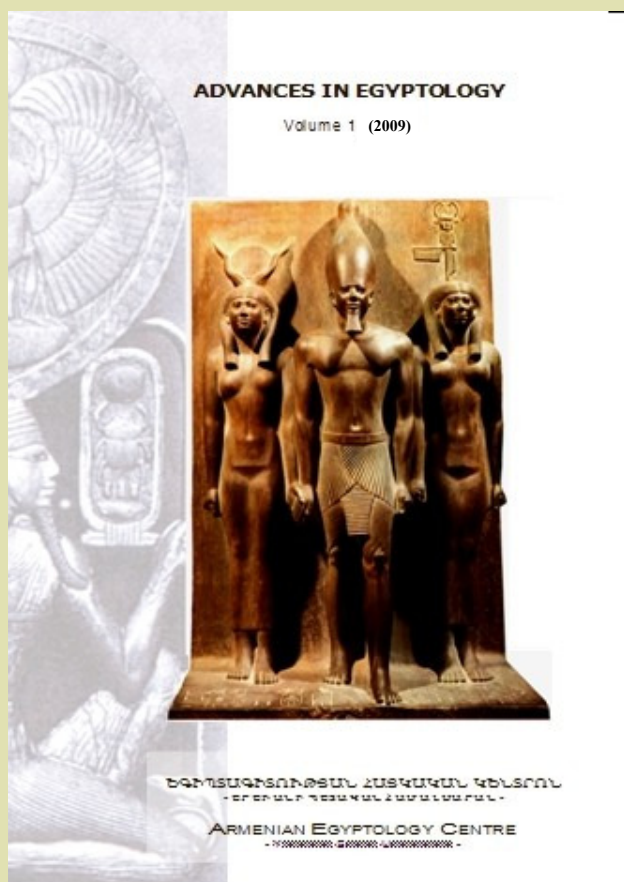
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Contributions to the newsletter are welcome (pages
can be added)



Although not found in Egypt, but in Arizona in 1890, we thought that this extraordinary azurite stone - a mineral from which a blue pigment is often made - was worth a gift for our readers. This is the occasion to wish them and our colleagues worldwide a very Happy New Year and many discoveries in 2009! (Photo Wikipedia).

***Advances in Egyptology* No. 1 (2009) - CALL FOR CONTRIBUTIONS!**



Advances in Egyptology (AinE) is the new bulletin of Egyptology of Yerevan State University's Armenian Egyptology Centre, under the general editorship of its director.

AinE accepts articles which clearly contribute to the advance of Egyptological knowledge and make a step forward into the unknown.

Please send contributions to egyptology@ysu.am or by post at the above address before May 1, 2009.

Format of presentation is indifferent provided sources may be easily and precisely retrieved (*op. cit.*, *idem*, *ibidem*, etc.. are forbidden). Contributions will thereafter be re-formatted according to the bulletin's presentation & standards.

Black and white photographs may be inserted at will; color photographs or plates are also accepted in reasonable numbers if justified.

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