ARMENIAN EGYPTOLOGY CENTRE - YEREVAN STATE UNIVERSITY

AEC NEWSLETTER

15 DECEMBER 2008 NO. 8

The Director's Edito -

Reconstructing the art of ancient Egyptian sarcophagus making!

Anyone can take some wood, some plaster, some oil or acrylic paint and some modern varnish to make a an "ancient Egyptian" sarcophagus. In the past many cabinet makers worldwide have produced good to very good looking ancient Egyptian objects, such as, for example, the replicas of the Tutankhamun objects just exhibited in Zürich. The material and techniques used for their manufacture however have very little to do with those employed by ancient Egyptian workers and artists - if not for a start because many of these are still debated or even unknown in certain cases.

Reconstructing an ancient Egyptian sarcophagus - such as we are employing ourselves within the frame of our "*Sarcophagus Project*" (see previous AEC-newsletters 2 to 4 on our website) is in fact no less difficult than replaying a partition of classic music of which some parts need rediscovery. The wood cannot be any wood but one used in ancient Egypt for such purpose, the gessoes - that is the surfaces applied over the wood prior to its painting - must consist of the matter which ancient Egyptian "plasterers" used, the pigments need to be those used by ancient Egyptian artists, hence natural pigments, the varnishes equally. Moreover the tools used should be those once employed and the artistic techniques near as much as can be those learnt s by ancient Egyptian craftsmen throughout their live.

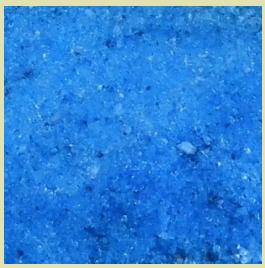
All in all an extremely difficult task, as even if the wood is easily found, the gessoes, pigments, techniques need to be reconstructed, whereas the entire exercise of reconstructing an ancient Egyptian sarcophagus from scratch has never been done before - if not for a start because ancient Egyptian varnishes so far retain a part of mystery. The arrival in Yerevan of my colleague Edward Loring (CESRAS) and his three weeks stay from November 12th to December 2nd allowed us to make leaps forward in our "*Sarcophagus Project*", hence in the art of ancient Egyptian sarcophagus making; these leaps being the subjects of this newsletter and the next.

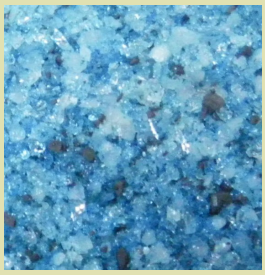
Most marking were our success, after several days of "hot" lab work, in reconstructing various shades of Egyptian blue (next page) as well as a first test experiment to use red ochre to draw a portion of an ancient Egyptian scene, with a twig as a stylus, under a time constraint, an operation which shall be detailed in the next newsletter.

Much remains to do concerning the reconstruction of the varnishes - a research in which we already have made many advances (see AEC-Newsletter No. 3) and which we shall renew as soon as possible, but it clear that our technical and artistic capabilities to reconstruct two ancient Egyptian sarcophagi in the "ancient way" is now within our reach.

The excitement of reconstructing such important ancient art, and identifying the economical aspects which ancient Egyptian artists faced in such task, is currently tamed by the responsibility in which we have to do it right. This, as we are simultaneously conscious that there were many ways to build a sarcophagi and that our two realizations will be but examples of many types which could be realized during the New Empire, and more precisely during the 21st dynasty, i.e. from circa 1069 to 945 B.C.

C. T. de V.





Type samples of various shades of ancient Egyptian blue just reconstructed by our team in Yerevan State University (photos C. T. de Vartavan).

INSIDE THIS ISSUE:

RECONSTRUCTION OF ANCIENT EGYPTIAN BLUE IN YEREVAN STATE UNIVERSITY

Reconstructing ancient Egyptian blue with raw malachite, quartz and natron by Edward Loring (CESRAS - above right) and Christian T. de Vartavan (idem) in the Archaeology Laboratory of the Faculty of History (with the kind authorisation of Prof. Haik Avetissyan, respectively director and dean of the afore mentioned institutions, to whom we are grateful for letting us use his facilities). Following a set of initially failed experimentations (bottom right - burnt sample), the right formulae and temperature were established allowing the production of various cakes of Egyptian blue. Note the green cake before firing (2nd row left) and after firing (2nd row right). Note also the block of green malachite (above left) and the cake of Egyptian blue obtained from it. Bottom left: E. Loring showing a pulverised cake of Egyptian blue, giving a basic pigment. Photos C. de Vartavan (save top right).

Reconstructing ancient Egyptian natural pigments

The process of reconstructing Egyptian blue from malachite and crushed quartz is a truly spectacular one, and one is bewildered that ancient Egyptians succeeded in achieving the fusion of this synthetic compound in their ovens. Crushed malachite (above) gives the wadj-green of the ancient Egyptian, although the same "Egyptian blue" fusion can produce a green frit if controlled. We were also able to reconstruct black from crushed wood charcoal leading us to understand why ancient Egyptian artists preferred to make their preparatory outlines in red/orange rather than black. Wood charcoal made black or pigment is an extremely dirty material to use, adhering immediately to any support encountered - particularly the hands. The opposite is true for red ochre, which we found a beautiful material to draw with, although it seems to us that the red for preparation and outlines is plant based (see next issues for theses issues) and we are currently recovering madder, alkanet, safflower and other dye producing plants to conduct similar experiments. White was easily obtained using gypsum, and grey no less by mixing it with the black charcoal pigment mentioned above. We also created rarer colors such as brown by using raw steatite, although for the time being no yellow ochre could be obtained in Armenia - a product as easily obtainable in Egypt or Europe as gum-Arabic which we currently also lack. In the meantime and while receiving some, we used cherry gum to created a binder for our pigments - which applied successfully on paper and wall.

Vivid Egyptian blue color we obtained after several experiments.

Reconstructing an ancient Egyptian gesso for sarcophagi's background layer

The operation of reconstructing the "mud" layer of the sarcophagus was no doubt presided by Hathor, patron goddess of our centre, as we used cow dung - together with earth and straw. Not very appetizing to mix - although Edward Loring grew up in a ranch in Arizona and tried to convince us that is "clean" material - but certainly effective as a first layer to make adhere the next main layer, i.e. gypsum. The "mud" was then spread over a board of wood 2 x 0.80 meters. The idea behind this experiment was also to have feeling of the future volumes of such materials needed for the forthcoming sarcophagi, as well as testing the plasticity and adherence of these. We found that the "cow-dung, earth and straw mix" responded to our expectations. We do not as yet know of evidence for the use of cow-dung for what is also referred to as the sarcophagi's "background layer", but an organic binder was needed and according to E. Loring's original suggestion, cow dung is a material fit for this purpose and of which the ancient Egyptians would have had plenty. This "organic binder" is however suspected by various authors who have recently been involved in the study of this layer, although chemistry has - save an omission on our part - failed to identify it precisely. Should you know better, please contact us.

Should you wish to help us...

Should you have small or large pieces of raw malachite or quartz lying around in your home - such as sometimes included in children's geological games or brought back from holidays we would be very happy to receive them as they shall be crushed for pigment making and testing (please do not forget to indicate place of provenance and whether you collected it in the field or if it was bought on the market). Just send them to our director at the address indicated on the back of this newsletter indicating "sample(s) for scientific testing" on your envelope. We would also appreciate receiving ochres - red or yellow - existing in your area of living; small bags of 200 grams being quite adequate. Obviously should you spear some lapis lazuli or azurite for us to make pigments we would be as happy as any ancient Egyptian artist was when he could obtain some.

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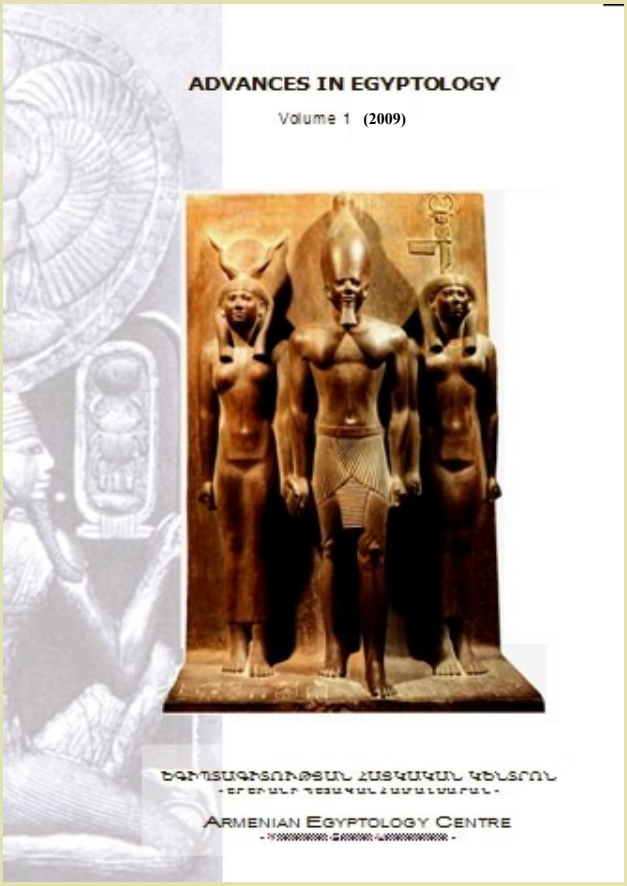
Contributions to the newsletter are welcome (pages can be added)

Mummy board of Nsi-Khonsu (Dyn. 21 - Cairo Museum). Note the various gesso layers on the wood - one probably two thin white layers above a grey one. The latter glued directly on the wood with something like rabbit or fish glue, traces of which are still apparent (notice the different shades of brown on the wood) - a technique still in use today (Photo E. Loring - 2007).

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.

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