

Translation of Original Stockholm Papyrus Reveals Surprises

To The Editor:

I. Amato presented in his Historical Note (*MRS Bulletin*, October 1995, p. 84) an overview of two ancient Egyptian papyri. Since I have done extended research in this area, your readers may be interested in some further details and some minor corrections. My own work involved the Stockholm Papyrus (P Holm) and specifically the 75 recipes relating to gemstones.

The English translation of Caley which Amato cited is in fact merely a secondary translation from the German one of O. Lagercrantz, *Papyrus Graecus Holmiensis*, (A.B. Akademiska Bokhandeln, Uppsala, Sweden, 1913). The only other translation is the one in French of R. Halleux, *Les Alchimistes Grecs*, vol. 1, (Societe D'edition "les Belles Lettres," Paris, 1981). These translations were, however, performed by classicists who were not fully familiar with the technical aspects of the subject matter. Accordingly, I persuaded Professor A.E. Hanson of the Classics Department of Princeton University to return to the original text and we found many surprises when my knowledge of the current and recent technology—see K.

Nassau, *Gemstone Enhancement*, 2nd ed., (Butterworth Heinemann, Boston, 1994)—was applied to a difficult text.

It is now generally accepted that the author of the text (of which Leyden Papyrus X, and P Holm were later copies made about 300 AD) was a chemist by the name of Bolos of the town of Mendes, Egypt, writing about 200 BC under the title *Baphika* ("Dyeing"). Unlike most other alchemical or magical recipes, those of Bolos deal in a very simple factual manner with technical processes, some of which are still in use today. Incidentally, the mystical two-sentence item which Amato described in his last paragraph is not relevant since it was on a separate, different-sized sheet, in a different handwriting, and probably of a later date.

One area of particular interest to me were the 10 recipes involving pearls; two of these, dealing with the cleaning of pearls via a chicken, were mentioned by Amato. To investigate their validity, I performed experiments using both test tubes and chickens (incidentally, the original text does not mention "cocks" but only the gender nonspecific term; it also does not say "immediately" but only "thereupon"). The process of Recipe 25 does indeed work if the timing is right, but that of Recipe 60, where the cleaned pearl was recovered from the chicken excrement, does not

work (chickens use gizzard stones to grind up their food and do not void them, as confirmed experimentally with pearls). Details on all of this have been published in K. Nassau and A.E. Hanson, "The Pearl in the Chicken," *Lapidary Journal* 42 (3) (June 1988) pp. 43-53.

Research on early texts is fraught with traps for the unwary. Consider a citation from J. Bostock and H.T. Riley's famous *Natural History of Pliny*, vol. 6, (G. Bell, London, 1898) p. 407. Written in the first century AD, the Roman compiler says about diamond: "Adamas... is made to yield before the blood of a he-goat. The blood, however, must be no otherwise than fresh and still warm...." Much amusement has been derived over the centuries about this as a technique of cutting diamond. However, P Holm contains recipes that have led me to recognize that there is in this statement of Pliny a much deeper meaning than the superficial one. In fact, the process described is, with some modification, still in use today! The interested reader may consult my article, "Two Types of Historical Traps: On 'Diamond Softening' and the 'Antiquity of Emerald Oiling'", *Journal of Gemmology* (London, 1991) 22 (7) pp. 340-403, or the historical section in my *Gemstone Enhancement*.

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