

Early Greek Chemistry.

It is generally recognised that chemistry began, as the "divine [or, perhaps, "sulphurous"] art" (*θεία τέχνη*) in Hellenistic Egypt, in Alexandria, during the first centuries of our era. The books of its practitioners have existed as copies in most European libraries for many centuries. Those in the King's Library at Paris were mentioned by Olaus Borrichius in the seventeenth century; parts of the most important were published and translated by Hoefler early in the nineteenth century, and the whole *corpus* was published, with a translation, by Berthelot and Ruelle as the "Collection des anciens alchimistes grecs," under the auspices of the French Minister of Public Instruction, in 1887-88, in four volumes. It is not a little surprising to find such an eminent writer on cognate subjects as Reitzenstein, as a result of admittedly hasty examination of the Paris MSS., offering rather severe criticism of the work of Berthelot and Ruelle, since the text of the latter is based on the collation of existing MSS., and not merely on those of Paris. The production of it and of the translation was a work of no small difficulty, as might have been anticipated from the place of origin and date of the original. A very large number of words have no place even in such exhaustive works as Du Cange's "Lexicon."

It is, therefore, particularly gratifying to find Prof. Stéphanidès, of the University of Athens, now undertaking a revision of the text and translation of the "Collection" in many places where they are obscure. His knowledge of chemistry, the literature of alchemy, and—particularly—of modern Greek, are brought into use. Mme. Hammer-Jensen, it is true, has recently attempted in her essay, "Die älteste Alchymie," Copenhagen, 1921, to reconstruct the theories underlying the Greek alchemical MSS., and to rearrange them in order of date. But her evident lack of broad chemical knowledge, and her approach from the way of the so-called "classical" philology, have noticeably hampered her contribution.

Prof. Stéphanidès' article, published in the *Revue des études grecques*, tome 35, No. 162, Paris, 1922, a copy of which he has just sent me, is one of great interest and value. The following may be mentioned as an indication of the type of emendation which he has been able to suggest—throughout with a full appreciation of Berthelot. Many words left untranslated are now given meanings, e.g. *χάρδρα* = "false pearl" in modern Greek. The explanation of the obscure passage given on p. 6 (206, 8) of Stéphanidès' paper is very ingenious. Some of Berthelot and Ruelle's translations read as nonsense, but in the hands of Prof. Stéphanidès the text reveals its meaning: "de la largeur d'un petit miroir très mince" becomes "en forme très mince de *pierre specularis* [mica]." The passage given by Berthelot and Ruelle as, "Quelques-uns après cela font boir un oiseau depuis le soir jusqu'à une heure, puis ils laissent mourir de soif le petit oiseau, en le privant de boisson," etc., is completely incorrect, and should read: "Quelques-uns donnent <les perles> à avaler à une poule <afin qu'elle les garde dans le gésier> depuis le soir jusqu'à une heure, en privant l'oiseau de boisson, et puis, en le sacrifiant, on trouve les espèces <les perles> brillantes." (Improvement of pearls by the action of the gastric juice: a well-known operation in ancient technology.)

There will be some criticism of such renderings as "νιτρέλαιον = acide azotique," and *Σαλόνητρον ἡγουν σκευοβότανον* as "βότανον pour la σκενή," because "les Byzantins appelaient βοτάνη la poudre à canon et σκενή le canon." *βοτάνιον* puzzled Hoefler; it has become

fashionable to render it "magic plant." Some obscurities are put down to assonance, and belief in "sympathy" (cf. the *κρῖνος* and *χρῖνος* of the Stoics).

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The Musk Ox in Arctic Islands.

DURING my various arctic expeditions I have learnt a good deal about the ovibos (musk ox) from conversation with the Eskimos, and perhaps more from actual observation. Especially when we were in Melville Island (1916-17) we were in almost continuous association with the animal. It has occurred to me that what we know of the present habits and distribution of ovibos throws a light on one of the geological problems of the American arctic.

All my inquiries from the Eskimos and all the observations of our own party indicate that both herds and single animals move slowly—no faster ordinarily than strictly required by the feed. This means that in fertile arctic grass lands, herds move less than five miles a month. But—more important—we have neither observed nor heard about their crossing sea ice. We have never seen ovibos tracks more than one or two hundred yards from shore. It seems that, if they "thoughtlessly" start out upon the ice, they pause within 200 yards, look around for land, and turn in a direction where land is visible.

This means that, through observation and hearsay, I have concluded that the ovibos never cross from one island to another, either by swimming the water or by walking across ice. If this has always been their nature, we can explain their presence on several of the arctic islands only by assuming that once upon a time these islands were connected land.

Some of the arctic islands have numerous raised beaches and other indications that they have been rising rapidly in recent times—the Ringnes Islands, Borden Island, King Christian Island, and Lougheed Island. In none of these have we found any evidence that ovibos were ever present.

Since the living ovibos or remains of the dead are found, so far as I know, in all the other arctic islands, we must conclude that these islands were once upon a time connected with each other, either directly or by way of the mainland of either North America or Asia. It seems clear that the islands where ovibos have never been were at that time either separated by water channels from the land mass which later became the main part of the Canadian Archipelago, or else, and more probably, that they were then beneath the sea.

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Scientific Names of Greek Derivation.

ON looking through some arrears of NATURE after the vacation I see, on August 18, p. 241, Dr. W. D. Matthew, in discussing the spelling of names derived from the Greek, asks if we should write "Deinosaur" or "Dinosaur"?

For the spelling it is no great matter, but it does matter for the pronunciation. For example, at one time it was customary, perhaps more or less may still be, to spell Pheidias "Phidias"; consequently, the unlovely pronunciation "Phiddias" was prevalent. So had we not better keep to Deinosaur?

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October 10.