The Botanical Aspects of Ancient Egyptian Embalming and Burial

The ancient Egyptian art of embalming, a highly developed process, involved many plants and plant products. Thirty-one genera of plants have been mentioned by various writers in the operations of embalming, cosmetic application, wrapping and coffin construction. The materials employed and methods of use have interested scholars of all periods. Herodotus gave the earliest account of the various aspects of embalming.

BILL B. BAUMANN

Introduction

The purpose of this paper is to emphasize the dominant role played by plant products in the preparation for burial of mummies and to include the name of any plant thought to have been employed in that capacity. Part I establishes the species of plants used in the preparation of the dead for burial. Part II considers some of the historical, commercial and botanical aspects of these plants as they applied to the ancient Egyptians.

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PART I. Embalming

Predynastic. The origin of Egyptian embalming dates back about 5200 years to the first dynasty. Before the first dynasty, it had been the custom to bury the dead in a pre-natal position in a shallow, sandy grave after evisceration and wrapping with matting, linen or skins. The warmth and dryness of the Egyptian climate seemed adequate to desiccate the body quickly and thus maintain it, in some cases, in a fair state of preservation. The body may have been dried in the sun or with the heat of a fire, however.

Classical. The most ancient (and quite accurate) account of the processes of mummification is to be found in the writings of Herodotus. Herodotus describes in some detail three cost-categories of embalming. He tells of drawing “out the brain through the nostrils” with a “crooked iron,” after which the skull is rinsed with “drugs.” Next the body is eviscerated through an incision in the flank and the cavity cleansed with “palm wine” and an “infusion of pounded aromatics.” “After this they will fill the body with bruised myrrh, with cassia and every sort of spicery except frankincense, and sew up the opening.” This was followed, according to Herodotus, by 70 days of soaking the body in a natrum solution. It was then washed, wrapped in “cloth” and “smeared over with gum.” In a less expensive preparation, “oil from the cedar tree” was injected into the bowel, the passage stopped and the body placed in natrum for the prescribed time. The pas-

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1Prepared for the course in economic botany, Harvard University, under the direction of Dr. Albert F. Hill.
2Present address: Washington Univ. Sch. of Medicine, St. Louis 10, Mo.

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1See the appendix for a chronology.
2Natrum (or natron) is a naturally occurring mixture of sodium salts and may be obtained in a crude, solid form in several areas in Egypt, among them the Wadi-el-Natrun about 50 miles NW of Cairo.
sage was then unstopped and "such is its power (the cedar oil) that it brings with it the whole stomach and intestines in a liquid state." In the cheapest preparation, the intestines were merely cleared out with a "purge."

Diodorus Siculus (13) also discusses embalming. He mentions that the body is treated with "cedar oil and certain other preparations, and then the body is treated with myrrh, cinnamon and such spices . . . that will preserve it and give it a fragrant odor." Diodorus states that such care is taken that even the hairs of the eyelids and eyebrows remain intact after embalming.

Although the accounts given by Herodotus and Diodorus are largely accurate, there are, apparently, some errors. One of these in Herodotus is in the period (70 days) he says was required for embalming. Probably the actual embalming took only 30 days (as reported by Diodorus); the additional 40 days constituted the remainder of the mourning period.

After the viscera were removed through an incision in the flank, they were carefully embalmed with various substances. Natrum was employed as a desiccant. Coarse sawdust of "aromatic woods," (52) and sandalwood (supposedly) were sprinkled on, or stuffed into, them. It is unlikely that sandalwood was used, however, since Egypt established trade with India, the source of sandalwood, only in about the third century B.C.—long after the art of embalming had waned. The viscera were next moulded and wrapped in separate linen packets and placed in one of several places: between the legs, (50) in four canopic jars placed in the tomb, or in the thoracic and/or abdominal cavities. Budge (7) and others believe that the viscera were commonly stuffed with bitumen, but the point is made by Mendelsohn (34) that the black material found in and on mummies is in all likelihood aged resin and gum-resin. Wood pitch may have been used on some occasions.

The brain was customarily removed—via a hole chipped in the ethmoid bone—through the nostrils. The skull was then rinsed with some substance, supposedly a product of cedar or juniper trees, about which there is great discussion. Lucas (29) feels that the "cedar oil" of Herodotus and Diodorus and the "cedrium" mentioned by Pliny as having been used in Egyptian embalming are actually concoctions of turpentine, pyroligneous acid and wood tar. According to the Rhind Papyri, after the skull was cleansed . . . "Anubis as embalmer filled thy skull with resin, corn of the Gods . . . cedar oil, mild ox fat, cinnamon oil and myrrh is to all thy members."

The exact identities of "corn of the Gods" and "ox fat" are obscure. As for cinnamon, it is extremely doubtful that it could have been employed in embalming before 300 B.C. (see Part II). There is abundant evidence that resins and resin-soaked linen rags were used to stuff the cranial cavity (perhaps, also, bitumen and/or wood pitch in some cases).

Other refinements included: packing the empty orbits with linen balls or onions painted to resemble eyeballs; stuffing resin-soaked linen under the skin and subsequent moulding of the physical features (54); stuffing the ears with resin plugs (51) or onions (52).

Until recently, it was universally believed that, immediately following evisceration, the body was soaked in a natrum solution. But Lucas (29) argues against 1Bitumen is a black asphaltous material probably obtained near the Asphaltites Lake (near the Dead Sea) in Palestine. The word mummy itself is derived from the Arabic "mumia" which was given to the pitch-like bitumen (or, at least, what was thought to be bitumen) from Egyptian mummy remains. "Mummy" (that is, the "bitumen" from mummies) was, until three or four centuries ago, a standard medication for bruises and wounds.