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Translated from French By Daniela Bruneau

MEDICINE. Ancient Egyptian medicine can be traced from the origin of the civilization until Coptic times. Knowledge of ancient medicinal practices derives from a variety of sources, including artistic representations; surviving medical treatises and instruments; references in the historical, social, and literary records; botanical information; and not least through paleopathology, the study of the preserved bodies of the Egyptians. From all these resources, it is possible to obtain a fairly accurate picture of the general health and diet of the Egyptian population, the ailments from which they suffered, and the theories and treatment strategies that they devised. While the wealthier classes in all times had access to a complex diet of grains, vegetables, fruit, fish, fowl, cattle, milk, beer, and wine, the basic source of calories for the broader population was grain, received as rations to be made into bread and beer or bartered for other products. Except in times of famine, the nutritional state of the country was healthy, with the average farm laborer producing sufficient kilocalories per year to sustain about twenty adults. Average life expectancy has been estimated at thirty to thirty-six years, although a number of individuals are recorded as reaching the age of sixty, and several octogenarians are known, including kings Pepy II and Ramesses II. The ideal Egyptian age was considered 110 years, as recorded in popular wishes and literature (Papyrus Westcar) and as adopted in the Joseph tale of *Genesis* 50.23.

Mediating between the ideal and real worlds of health was the Egyptian doctor and his many divine patrons: Thoth, deity of healing and science; Sekhmet, goddess of disease; Selqet, goddess of scorpions; Isis, goddess of magic; Horus, the divine physician; and Imhotep and Amenhotep, son of Hapu, two divinized sages and healing saints. The physician was likely trained within a temple

setting, and medical treatises were preserved in temple scriptoria. Judging by recorded titles, the medical community was highly stratified from Early Dynastic times, with simple physicians (*swmw*), overseers of physicians, inspectors of physicians, chief physicians, palace physicians, inspectors of palace physicians, and chief palace physicians. All of these hierarchical titles could be further divided among a series of medical specialties, including ophthalmology, dentistry, internal disease, and proctology. References within medical texts suggest a working relationship, or at least a familiarity, with the craft of the embalmer; and embalmers are included within the medical profession as *swmw* in the Late period. Other related fields comprised the pharmacist, bandager, and masseur, as well as the priests of Sekhmet and Selqet, and even amulet sellers, who were trained to take the pulse. Virtually all known medical practitioners are male. Before the Late period only a single female physician is attested: Peseshet of the Old Kingdom (fifth or sixth dynasty). As Peseshet is styled “Overseer of Female Physicians,” others must have existed, at least at that time. Women played a greater role as medical auxiliaries, serving as midwives and wet nurses.

Ancient therapeutic intervention is attested both by mummified remains and by wall reliefs with accompanying texts. Perhaps the most pervasive surgical procedure was male circumcision, evident from burials of the Predynastic period onward. In the celebrated tomb of the sixth dynasty vizier Ankhmahor at Saqqara (c.2374 BCE), carved scenes record two stages in the circumcision of a priest; a comparable depiction appears at the Karnak Mut temple complex from the twenty-fifth dynasty, more than a millennium and a half later. A First Intermediate Period stela from Nag ed-Deir (now in the Oriental Institute of Chicago, OIM 16956) indicates that circumcision was the focus of a group initiation, likely performed in late puberty. Human remains show that circumcision was a common, but not universal practice. By Roman times, if not earlier, the rite was restricted to the priestly caste. Mummies have provided evidence of other procedures, including the use of splints, sutures, and trephination. The adaptability of the later Egyptian surgeon is revealed by a relief on the outer enclosure wall of the temple at Kom Ombo, site of the popular worship of “Horus the Good Doctor.” Though formerly much disputed, the relief is now believed to depict contemporary Roman-era surgical instruments together with Egyptian amulets and a censer. Earlier medical instruments survive, including scalpels, needles, tweezers, clysters, and measuring vessels.

The most detailed evidence for Egyptian wound and disease treatment is found in seventeen papyrus compendia, in addition to numerous ostraca that record individual prescriptions from the Amarna through the Roman

eras. The earliest surviving medical manuscript is the Kahun Papyrus of the twelfth dynasty (c.1850 BCE), which contains both gynecological and veterinary treatments. From this and later papyri, it is clear that most female complaints were attributed to a disordered, and often dislocated, uterus. The wandering uterus was believed to affect the eyes, neck, legs, teeth, and even a woman's inclination to leave bed. Remedies included fumigations, potions, and pessaries. Further passages include birth prognostications and vaginal suppositories to prevent pregnancy. The unique veterinary text records treatments for the eyes of birds, dogs, and cattle. The papyrus contains the only references to the technique of bleeding in Egyptian medical practice, when injured cattle are cut upon the nose and tail to see whether these will heal. The association of veterinary and human medicine is reflected in the use of the title *swmw*, which also designates priestly inspectors of sacrificial cattle in Old Kingdom reliefs. The fragmentary Ramesseum Papyri III-V date to the thirteenth dynasty (c.1786–1665 BCE) and include sections on ophthalmology, gynecology, pediatrics, and the vascular system. From the eighteenth dynasty derive the treatises of greatest significance: the Edwin Smith "Surgical" Papyrus and Papyrus Ebers, both likely copied by the same scribe, about 1550 BCE.

The Smith Papyrus (now at the New York Academy of Sciences) is an incomplete copy of an older reference manuscript, argued to date from the Old Kingdom on the basis of grammatical features and archaic terminology, supplemented by numerous glosses. The surviving text systematically details the treatment of trauma in descending anatomical distribution from the top of the head to the spinal vertebrae, where the scribe ceased copying in mid-sentence. The preserved forty-eight cases are arranged in a coherent pattern that specifies the "bedside manner" of the Egyptian physician. Following each title, a description of the examination begins with the phrase, "If you examine a man who has . . .," and continues with a detailed list of symptoms. The process of examination includes visual and olfactory clues, palpation, and a calibrated taking of the pulse. Thereafter, the physician pronounces an oral diagnosis and an assessment of the patient's chances of survival, by stating either, "An ailment which I will treat," "An ailment with which I will contend," or "An ailment not to be treated." When considered feasible, treatment is described in the final section and includes bandaging, splints, poultices, manipulation, and, in one instance, a heated lancet applied to a suppurating tumor. Particularly common is the recommendation to leave the patient "at his mooring stake," an expression clarified by a gloss as indicating enforced bedrest and normal diet until a decisive moment is reached. Surprisingly modern in approach, this determination suggests an awareness not

only of the physician's limitations, but of the body's ability to heal itself in certain circumstances. As in other papyri, wounds are treated with honey and copper salts, which have been shown to be effective antibacterial agents in modern clinical trials. In one extreme case where treatment is not advised, a magical spell is recommended, and additional incantations were copied by the same scribe in a separate section on the *verso* of the papyrus. Final additions to the *verso* include brief sections on gynecology and cosmetics, and a second scribe has appended a prescription for a wrinkle remover ("Recipe for Transforming an Old Man into a Youth") and a suppository.

Whereas the Smith Papyrus concentrates on external trauma, the contemporary Ebers Papyrus treats internal disease and includes critical theoretical sections that detail the vascular system and the source and progression of internal illness. The papyrus displays a rudimentary knowledge of the circulatory system, envisioned as a network of vessels centered on the heart and extending to individual organs and then to all body parts. Within the system moved blood, water, air, and the corruptive residue of bodily waste, termed *wḥdw*. The notion of *wḥdw* constituted the first empirical, comprehensive disease theory in history, explaining in rational form the onset of disease, aging, and death, and providing the rationale for diet, medicine, and mummification. In practice, the physician tested the soundness of the system by taking the pulse at various points in the body. An excess of *wḥdw* in the system brought about illness, and the existence of the corruptive agent was seemingly proved by the manifestation of pus in wounds or blisters. To prevent an accumulation of *wḥdw*, the physician recommended purges and enemas; otherwise the vessels would slowly fill with the residue over a lifetime, producing the onset of old age with failing organs crippled by constricted or blocked vessels. Ultimately, the natural accumulation resulted in death, and the embalmer's attempts to preserve the body were also directed against *wḥdw* by draining bodily fluids and by removing those organs thought most likely permeated by food residues. Belief in the system of *wḥdw* was maintained into Hellenistic times, and it was adopted in part by the Cnidian school of Greek medicine and by subsequent Alexandrian enema specialists. The orthodoxy of the Ebers Papyrus is demonstrated by the somewhat later Hearst Papyrus, 100 of whose 260 paragraphs are paralleled in the earlier text.

Ramesid collections include the London Medical Papyrus (BM 10059, c.1350 BCE), Papyrus Berlin 3038 and Papyrus Chester Beatty VI (both c.1300 BCE), and Papyrus Carlsberg VIII (c.1200 BCE). The cosmopolitan character of Ramesid Egypt is reflected in the London Papyrus, which incorporates seven incantations in foreign languages. Six of those spells are in Northwest Semitic dia-

lects, while one is said to be “in the language of Crete (Keftiu, the Biblical Caphtor).” The first and last foreign spells use a Semitic term (“strangulation”) to designate the illness, suggesting that the disease was first encountered abroad, with the Egyptian physician adopting both its local name and form of treatment. Hittite sources do record a plague among Egyptian soldiers based in the Near East at the time of the compilation of this papyrus. Further Hittite records show the local adoption of Egyptian medicine, with a steady importation of Egyptian physicians and remedies to the Anatolian court.

One of the most common dangers in Egypt at all periods was injury by snake or scorpion, treated by a specialist known as the “Controller of Selqet.” The manual of such a specialist survives from the thirtieth dynasty or early Ptolemaic period. The Brooklyn papyrus on snakebite (47.218.48 and 47.218.85) features a systematic description of snakes by name, distinctive features, toxicity, divine associations, and treatment alternatives, including incisions, emetics, topical salts, and spells.

It is only with the loss of Egyptian independence that stark changes appear in local medical practice and its related pharmacopeia. Egyptians came to dominate the medical field during the Persian Empire, and individual Egyptian doctors are known to have served as court physicians for several Persian emperors. Increased contact produced influences in both directions. During this period, medical astrology was introduced to Egypt, and the Egyptian physicians resident in Persia surely encountered new plants and drugs that were later incorporated into their practices back home. Unfortunately, no general medical treatise of this period survives, and it is only in the Roman period (second century CE) that our documentation resumes. Though poorly published, the Crocodilopolis Medical Book (Papyrus Vienna 6257), in Demotic, is nevertheless an excellent witness to the adaptive nature of the Egyptian physician.

While the theoretical underpinnings of native Egyptian medicine and the ancient treatise format are undisturbed in this late work, the range of new plant and mineral ingredients is striking. This abundance is due less to Greek or Roman cultural domination than to unprecedented international trade that was made possible by succeeding Persian, Ptolemaic, and Roman empires. Egyptian medicinal use of plants had always been extensive, with some 160 distinctive plant products—of which roughly 20 percent have been identified securely or tentatively. In the Crocodilopolis manual, more than sixty new plants and five new minerals now appear in the native pharmacopeia, while about two hundred ingredients are used in this one manual. How many of these newer items had been adopted in the previous Persian or Hellenistic times cannot be known. Additional exotic ingredients appeared in

recipes on the *verso* of the London and Leiden “Magical” Papyrus of the following third century CE.

Coptic medicine is best represented by the Papyrus Chassinat from the ninth century CE, containing 237 recipes collected by a physician for his son. Remedies for a variety of illnesses are listed unsystematically, with most concerning the ubiquitous eye diseases still prevalent in the country. Trachoma, trichiasis, cataracts, nearsightedness, inflammation, and abscesses are noted. Additional Coptic recipes are preserved in collections in Berlin, Cairo, London, Manchester, and elsewhere. The collections treat skin diseases, gout, female complaints, teething, adult toothache, wounds, leprosy, jaundice, loss of sleep, and even domestic hygiene. References to surgery are rare, with circumcision and tooth extraction noted explicitly. Although Coptic medicine displays clear influence of contemporary Greco-Roman practice, native elements survive, as indicated by the reliance upon purgatives and the topical use of traditional “magical” ingredients, such as mother’s milk and animal excrement. The medical hierarchy, now associated with monasteries rather than temples, included teaching doctors, general practitioners, and senior physicians. Female doctors administered to patients of their own sex. The increased concern for skin ailments in Coptic medicine is striking, and leprosy has been identified in a mummy of the sixth century CE.

Paleopathology constitutes the most innovative investigation of Egyptian medicine and health, utilizing not only dissection, but the more modern techniques of radiography, computed tomography, electron microscopy, differential diagnosis, and DNA analysis. Such examinations have revealed the presence of a variety of ancient diseases, including bilharziasis (*Schistosomiasis*), roundworm (*Ascaris*), guinea-worm (*Dracunculus*), and tapeworm (*Taenia*) infestation, with rare examples of malaria, tuberculosis, smallpox, and carcinoma (cancer). Ancient dental remains have been studied intensively. These show a low incidence of caries (cavities), probably attributable to an absence of refined sugars in the native diet, but extraordinary abrasion throughout the adult population, leading to tooth loss, abscesses, and, exceptionally, osteomyelitis. The cause of such tooth wear is blamed on the native bread, rendered gritty by friable grindstones and ambient sand. Several examples of dental bridges have been recovered from burials, though these may be postmortem cosmetic appliances.

The impact of Egyptian medicine on developing Greek medical theory has been noted above, and further survivals and influences are certain. The Pre-Alexandrian Hippocratic Corpus contains adaptations of Egyptian birth prognoses and a variety of ingredients labeled “Egyptian” that become standard in Greco-Roman medicine.

The most important of the latter was natron, used as a purifying agent in Egypt and subsequently in Greece. Some Egyptian technical terminology was simply translated into Greek, with the term *gs-tp* (“half-head”) rendered as *hemikrania* (modern “migraine”). The city of Alexandria must have served as a transmission point, and it can be no coincidence that the Alexandrian Herophilus was the first Greek to adopt the local technique of pulse-taking. The longstanding affiliation between Egyptian medicine and embalming, particularly reinforced in the Late period, provided an environment favorable to Herophilus’ pioneering studies in human dissection, which would have been prohibited elsewhere.

[See also Dental Care; Disease; Hygiene; and Magic, article on Magic in Medicine.]

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MEDINET HABU, the area adjoining the cultivation at the southern end of the Theban Necropolis (25°44'N, 32°35'E). The Arabic name Medinet Habu (“City of Habu”) was thought to reflect the site’s more ancient connection with Amenhotep, the son of Hapu, a respected sage of the fourteenth century BCE, later deified, whose memorial temple was immediately to the north. No trace of this association has come down from ancient times, however, as the site’s formal name in Egyptian was either Djeme, “Males and Mothers”—originally with reference

to the eight primeval deities, or Ogdoad, whom the ancients believed to be buried there—although the name continued to be used by the site’s later Christian inhabitants.

Medinet Habu’s most conspicuous standing monument is the great memorial temple of Ramesses III (r. 1198–1166 BCE). On the grounds of this complex, however, are numerous other structures, most notably the so-called small temple (built in stages, from the mid-eighteenth dynasty until the second century CE) and the memorial chapels of the divine votaresses of Amun (twenty-fifth dynasty and twenty-sixth). Among other ancient buildings at the site, but less well preserved, is the memorial temple of King Horemheb (r. 1343–1315 BCE), usurped from his predecessor Ay (r. 1346–1343 BCE), which abuts Ramesses III’s enclosure on its northern side. To its east are a number of tomb chapels made for high officials of the later New Kingdom. Most abundantly on the enclosure wall of Ramesses III’s temple are the remnants of later mud-brick houses—from the town that engulfed the site beginning in the eleventh century BCE until the site was abandoned in the ninth century CE. Reuse of Ramesses III’s temple was made especially apparent by the decorated doorways that were cut into its northern outer wall during early Christian times, when the Holy Church of Djeme occupied the building’s second court.

Detailed knowledge of the area’s history and function has come from the work begun in 1924 by the Oriental Institute of the University of Chicago, under the direction of James Henry Breasted and funded by the Rockefeller Foundation. By 1933, the entire site had been systematically excavated and its plan recorded; the copying of the reliefs and inscriptions carved on the walls of Ramesses III’s temple, however, including its eastern high gate, continued into the 1960s. Recording by the Epigraphic Survey (Chicago House) of the other inscribed structures at Medinet Habu still continues. As the only attempt to document the entire archaeological, architectural, and decorated substance of a such a large site, this unique series of publications is of ongoing value for the study of ancient Egyptian history, religion, and culture.

The great temple of Ramesses III was called the “Mansion of Millions of Years of King Usermare-Maiamun ‘United with Eternity in the Estate of Amun on the West of Thebes.’” The precinct, 210 × 315 meters (about 700 feet × 1000 feet), was entered by two stone gates in the mud-brick enclosure wall, on the eastern and the western sides, respectively. The western gate—presumably the normal entrance for employees who lived outside the precinct—was destroyed when the temple was besieged in a civil war, during the reign of Ramesses XI (c.1096). The eastern entrance, approached by a canal, terminated in a harbor, from which important visitors and statues could