

## A Light in the Darkness

By Steve Richards

Medicine is timeless. It is as old as the Paleolithic cave-dwellers, perhaps even older. It is as new as medications and treatments genetically engineered for a particular individual. Early evidences of its practice can be traced back at least 10,000 years. It is even possible that earlier species of Homo, such as Neanderthal and erectus, had regular methods of religion and physical care. Yet, for all of our modern "magic" of genes and machines, the art of medicine is still being practiced in certain remote areas of the globe in the same primordial methods and manners as the earliest humans.

In more than a few instances, the quality or lack of medical service has profoundly influenced the course of civilizations. As tribes became chiefdoms and then states and empires, medicine grew as well, as part of an inseparable "trinity" of care with magic and religion peppered with an iota of science. The art of medicine today is quite the opposite; a grayscale canvas of technological wonder and invention painted by scientists and only colored by drops of faith.

Members of "primitive" or, perhaps better titled, ancient societies did not distinguish between medicine, magic and religion. They, first of all—very much as do we—dealt with disease in a matter-of-fact way, using various household remedies without special theories or employment of parishioners. But when those measures failed, they may have resorted to measures very different from those we would take today. While we today assume that disease and death result from natural causes, ancient societies regarded them almost entirely as work of supernatural agents: gods, holy people, ghosts, or sorcery. Spirits and ghosts are provoked into action by neglect, or by the breaking of one of the sacred rules (taboos), either by the patient or by one of his family.

It follows logically that diagnosis of disease from such supernatural causes cannot be made by mere observation and examination of the patient. The medicine man must use supernatural techniques. It follows with equal logic that treatments to combat, to placate or to overcome such supernatural causes must, themselves, be primarily supernatural, magic-religious ceremonies. As a rule, they consist basically of prayers and incantations. However, they also contain elements which would be designated physiotherapeutic and psychotherapeutic, although they are interpreted in magic-religious terms.

Ancient man was extraordinarily subject to suggestion, which explains his strong response to spells, to charms, and to other magic, and his fears of violation of taboos. Unquestionably, primitive medicine achieves no small part of its results through psychotherapy. Confession and suggestion, which loom large in native practices, lately have enjoyed a considerable comeback in our own medical system. Ancient medicine does not differentiate between bodily and mental disease. Certainly, the patient derived a considerable sense of security from magic and religious ceremonies, with both family and community participating. Corresponding improvement in morale and in physical response might well be expected, and, with an upsurge of the body's own defense mechanisms, perhaps even bacterial invaders might be thwarted.

As a medical practitioner and, likely, a future physician, emergency medicine is the point where I see each patient at his and her lowest point, the moments where frailty and terror can grip a soul and reason and logical thought, even for an educated professional of the modern era, will leave, replaced by raw emotion and frantic pleading with any supernatural force that will listen. Despite our best logical, scientific thought, we cry out to God for help. The fear of death is so great as to reduce a world-renowned doctor to tears as he pleads with any god for his wife's recovery from a terminal cancer.

Is it really so difficult to understand why the ancient populations would attribute disease as the wrath of the Gods and its recovery as heavenly blessing? One can easily understand the ancient veneration of the gods after looking at civilizations like Sumer, Egypt, the Indus Valley, and Mesoamerica. But why did they all do it so differently? Is

it culture, region, environment or an artful mixture of each?

Most of the information available to modern scholars about Sumerian medicine comes from cuneiform tablets. While an abundance of cuneiform tablets have survived from ancient Mesopotamia, relatively few are concerned with medical issues. Many of the tablets that do mention medical practices have survived from the library of Ashurbanipal, the last great king of Assyria. The library of Ashurbanipal was housed in the king's palace at Nineveh, and when the palace was burned by invaders, approximately 20,000 clay tablets were baked, and thereby preserved, by the great fire.<sup>1</sup>

The largest surviving cuneiform medical treatise from ancient Mesopotamia is known as "Treatise of Medical Diagnosis and Prognoses." The text of this treatise consists of 40 tablets collected and studied by the French scholar, R. Labat. Although the oldest surviving copy of this treatise dates to 1600 BCE, the information contained in the text is an amalgamation of several centuries of Mesopotamian medical knowledge. The diagnostic treatise is organized in a head-to-toe manner, including subsections covering convulsive disorders, gynecology and pediatrics.<sup>2</sup>

It is unfortunate that the antiquated translations available at present to the non-specialist make ancient Mesopotamian medical texts sound like excerpts from a sorcerer's handbook. In fact, as recent research is showing, the descriptions of diseases contained in the diagnostic treatise demonstrate keen observations. Virtually all expected diseases can be found described in parts of the diagnostic treatise, when those parts are fully preserved, as they are for neurology, fevers, worms and flukes, VD and skin lesions.<sup>3</sup> The medical texts are, moreover, essentially rational, and some of the treatments are essentially the same as modern treatments for the same condition.

Mesopotamian diseases were often blamed on spirits, gods, ghosts, etc. However, each spirit was held responsible for only one of what we would call a disease in any one part of the body. "Hand of God X" of the stomach corresponds to what we call a disease of the stomach.<sup>4</sup> Also, it was recognized that various organs could simply malfunction, causing illness. Gods could also be blamed at a higher level for causing named diseases or malfunctioning of organs, although in some cases this was a way of saying that symptom X was not independent but was, in fact, caused by disease Y. It can also be shown that the plants used in treatment were generally used to treat the symptoms of the disease, and were not the sorts of things generally given for magical purposes to such a spirit. By examining the surviving medical tablets it is clear that there were two distinct types of professional medical practitioners in ancient Mesopotamia.

The first type of practitioner was the ashipu, often called a "sorcerer."<sup>5</sup> One of the most important roles of the ashipu was to diagnose the ailment. In the case of internal diseases, this most often meant that the ashipu determined which god or demon was causing the illness. The phrase "the Hand of ..." was used to indicate the divine entity responsible for the ailment in question, which could then be propitiated by the patient. The ashipu could also attempt to cure the patient by means of charms and spells that were designed to entice away or drive out the spirit causing the disease. The ashipu could also refer the patient to a different type of healer called an asu.<sup>6</sup> He was a specialist in herbal remedies, frequently called "physician" because he dealt in what were often classifiable as empirical applications of medication. While the relationship between the ashipu and the asu is not entirely clear, the two kinds of healers seemed to have worked together in order to obtain cures, and potentially worked in cooperation with each other to jointly treat patients.<sup>7</sup> When treating wounds, the asu generally relied on three fundamental techniques: washing, bandaging, and making plasters (poultices or salves). All three of these techniques of the asu appear in the world's oldest known medical document, circa 2100 BCE.

<sup>1</sup>Ancient Medicine (Sciences of Antiquity) Dr Vivian Nutton (2009).

<sup>2</sup>Medicine in Babylonia, Marten Stol (1993).

<sup>3</sup>Ibid.

<sup>4</sup>Ibid.

<sup>5</sup>Ancient Medicine: From Sorcery to Surgery (Ancient Technology) Michael Woods, Mary B. Woods (2008).

<sup>6</sup>Ibid.

<sup>7</sup>Ibid.

At least three surviving clay tablets describe a specific surgical procedures. One seems to describe a procedure in which the asu cuts into the chest of the patient in order to drain pus from the pleura. The other two surgical texts belong to the collection of tablets entitled "Prescriptions for Diseases of the Head." One of these texts mentions the knife of the asu scraping the skull of the patient.

Another important consideration for the study of ancient Mesopotamian medicine is the identification of the various drugs mentioned in the tablets. Unfortunately, many of these drugs are difficult or impossible to identify with any degree of certainty. Often the asu used metaphorical names for common drugs, such as "lion's fat" (which was not, in fact, the fat of a lion). Of the drugs that have been identified, most were plant extracts, resins, or spices. Many of the plants incorporated into the asu medicinal repertoire had antibiotic properties, while several resins and many spices have some antiseptic value and would mask the smell of a malodorous wound. It is important to keep in mind that both the pharmaceuticals and the actions of the ancient physicians must have carried a strong placebo effect. Patients undoubtedly believed that the doctors were capable of healing them. Therefore, visiting the doctor psychologically reinforced the notion of health and wellness.

The primary center for health care was undeniably, the home, as it was when the ashipu or asu were employed.<sup>8</sup> The majority of health care was provided at the patient's own house, with the family acting as care givers in whatever capacity their lay knowledge afforded them. Outside of the home, other important sites for religious healing were nearby rivers. The Mesopotamian peoples believed that the rivers had the power to carry away evil substances and forces that were causing the illness. Sometimes a small hut was set up for the afflicted person either near the home or the river to aid in the families' consolidation of home health care.<sup>9</sup>

Whether or not ancient Mesopotamian medicine passed on a legacy that influenced the doctors of subsequent civilizations is a question that will never be completely answered. While many of the basic tenants of medicine, such as bandaging and the collection of medical texts began in Mesopotamia, other cultures may have developed these practices independently. Even in Mesopotamia itself, many of the ancient techniques became extinct after some thousands of years. It was Egyptian medicine that seems to have had the most influence on the later development of medicine, through trade with the Greeks.

Though Egyptian medical practices could by no means rival that of present day physicians, Egyptian healers engaged in surgery, prescriptive, and many other healing practices still found today.

The Egyptians were advanced medical practitioners for their time. They were masters of human anatomy and healing mostly due to their mummification ceremonies. This involved removing most of the internal organs including the brain, lungs, pancreas, liver, spleen, heart and intestine.<sup>10</sup> To their credit, the Egyptians had a basic knowledge of organ functions within the human body (save for the brain and heart, which they thought had opposite functions).

The practices of Egyptian medical practitioners ranged from embalming to faith healing to surgery and autopsy. The understanding of autopsy came through the extensive embalming practices of the Egyptians, as it was not unlikely for an embalmer to examine the body for a cause of the illness which caused death.<sup>11</sup> The use of surgery also evolved from the basic knowledge of anatomy and embalming practices. From such careful observations made by the early Egyptian medical practitioners, healing practices began to center upon both the religious rituals and the lives of the ancient Egyptians.<sup>12</sup>

It was equally important, the Egyptians believed, to prevent sickness as well; this included praying to certain gods and goddesses, displaying amulets, and eating a healthy and balanced diet. Herbs were frequently used to help relieve symptoms for people in pain and discomfort. Often, charms and invocations were included to encourage the cure to take hold.<sup>13</sup> It was clear to the Egyptians that religious magical rites and purificatory rites were intertwined in the healing process as well as in creating an ideal lifestyle.

Over the years, the Egyptians' knowledge spread to other countries.

In particular, Greece benefited from this expertise, as their medical understanding had been superficial, at best. It was not uncommon in both early and later dynasties for scholars from ancient Greece and other Mediterranean empires to study the medical practitioners of

The largest compendium of ancient medical history was compiled by Hermes (a healer of Greek origin who studied in Egypt), and consisted of six books. The first of these six books was directly related to anatomy; the rest served as physics, and apothecary reference books. Though Hermes was not the first to compile much of the information about Egyptian medical practices, the Egyptians are credited with being the first to use and record advanced medical practices.<sup>14</sup> Thus, the Egyptians helped further the world's understanding and gave other cultures the means to advance the basic understanding of medicine and treatment of illness, trauma, and disease.

Medical tradition in the Indus Valley goes back to the Vedic period when Dhanvantari was worshipped as God of Medicine and living deities were elevated to divine status, called Ashwin Kumars.<sup>15</sup> The system of medicine was a holistic approach called Ayurveda.<sup>16</sup> Being considered at par with Vedas – a science equal to religion – this body of knowledge was spread amongst sages, hermits and other religious men known as vaidyas, belonging to Brahmin, or priestly, caste. The treatises of Ayurveda were passed from generation to generation.<sup>17</sup>

Charaka was a noted Ayurveda practitioner who wrote that "the physician who fails to enter the body of a patient with the lamp of knowledge and understanding can never treat diseases."<sup>18</sup> He also wrote extensively on digestion, metabolism and immune system. He wrote that body functions as it contains three dosha: bile, phlegm and wind. These are produced when dhatus – blood, flesh and marrow – act on the consumed food.<sup>19</sup> The body becomes sick when there is imbalance between three doshas.<sup>20</sup>

Around 800 BCE, the first instances of surgery in the Indus valley were recorded, from dental surgery and cataract extraction to plastic surgery. It was considered as one of the eight branches of Ayurveda. Shushruta-Samhita is the oldest treatise dealing with surgery. The main medical practitioners were Atraya, Charaka and Shushruta.<sup>21</sup> Shushruta studied human anatomy with an aid of a cadaver. He excelled in plastic surgery and ophthalmology (removing cataracts). The restoration of a mutilated nose was one of the greatest contributions of Shushruta.<sup>22</sup> He meticulously carried out the operation almost similar to the steps followed by modern-day plastic surgeons.<sup>23</sup>

One of the most well-known stories tells how Shushruta succeeded in curing the crown prince of the kingdom of a fatal illness. According to legend, the prince was very ill and, as he lay dying, the court physician could do nothing to help. Shushruta was summoned to treat the prince. Upon his arrival, Shushruta found the crown prince being prepared for the funeral. Despite the funeral arrangements, Shushruta requested an examination of the prince. His examination confirmed his suspicion that the prince had actually gone into a deep coma. He gave the prince treatments to revive him and then applied compresses soaked in a decoction of herbs. Within hours, the prince was able to get his feet. Translated as the "science of longevity," Ayurveda as an art of healing was treated with divine respect in this period.<sup>24</sup>

Mesoamerica: Maya & Inca

Medicine in Mesoamerican cultures began in 1500 BCE and ended with the conquest and destruction of Mexico-Tenochtitlan in

<sup>8</sup>Ibid.

<sup>9</sup>Ibid.

<sup>10</sup>Ibid.

<sup>11</sup>Medicine in Ancient Egypt, Sameh M. Arab, MD (2007).

<sup>12</sup>Magic and Rationality in Ancient Near Eastern and Greco-Roman Medicine, Marten Stol (2004).

<sup>13</sup>Ancient Egyptian Medicine John F. Nunn (2002).

<sup>14</sup>Prehistoric and Egyptian Medicine (The History of Medicine) Ian Dawson (2006).

<sup>15</sup>The Roots of Ayurveda, Dominik Wujastyk (2003).

<sup>16</sup>Ibid.

<sup>17</sup>Ibid.

<sup>18</sup>Asceticism and Healing in Ancient India, Kenneth G. Zysk (1998).

<sup>19</sup>Ibid.

<sup>20</sup>Ibid.

<sup>21</sup>Ibid.

<sup>22</sup>Ibid.

<sup>23</sup>Ibid.

1521 AD, by Spain. Mesoamerica started with the Olmec civilization followed by the Teotihuacanes, Toltecs, and Mayas, and perished with the Aztec Empire. Two examples of the marriage of holistic healing and religion with rudimentary practical science and herbal therapy are seen, although quite differently, in the Maya and Inca cultures.<sup>25</sup>

The holistic traditions of Maya healers have still been preserved, the knowledge surviving the persecution by the Spaniards in the sixteenth century. What's more, the Maya medicine tradition shows striking similarities to some Eastern forms of healing, including the concept of a life-force (ch'ulel), a primitive system of acupuncture (pinchar) and even massage techniques. Other components include herbal baths (hydrotherapy), cupping, and magical-religious components such as prayer and dream visions.<sup>26</sup>

The healing traditions of the Maya were primarily oral, passed down from generation to generation. Holistic by its very nature, Maya medicine is classified as a medico-religious healing tradition, taking into account not only the physical ills of the body but the effects of the spirit—attitudes toward life and living, as well as emotions—and recognizing how intertwined they are.<sup>27</sup>

The Mayas sutured wounds with human hair, reduced fractures, and used casts. They were skillful dental surgeons and made prostheses from jade and turquoise and filled teeth with iron pyrite, and they used obsidian blades to perform surgery. Three clinical diseases, pinta, leishmaniasis, and yellow fever, were described. Athletes' foot and diarrhea were very common and reliably cured with herbal medicine. The Mayas also cited conjunctival granulations, something not often caught by today's ophthalmologists.<sup>28</sup>

The ancient Maya perceived health as "balance," whereas illness and disease were "imbalance." Fundamental to the medicine of the Maya is the concept of "life force" or ch'ulel and it is the First of the Six Principles of Maya Medicine.<sup>29</sup> This life energy is everywhere and permeates everything—mountains, rivers, houses, plants, people—and is said to be from a divine, spiritual source. This is similar to the Eastern traditions of qi (or chi), ki and prana. As the unifying element of all life, the Maya healer's aim was to balance the flow of this ch'ulel in the body. The Second Principle is that there is no separation between the body and the soul, between the physical and spiritual realms. Ch'ulel means everything is inter-woven and inter-connected, that the physical and spiritual are all part of one continuum. The Third Principle is the recognition of natural cycles and the veneration of plants. Maya healers talked with plants (more than just talking to), as do herbalists in other traditions. The Fourth Principle recognizes that healing is an integrative, comprehensive approach, requiring the healer, the patient, spirits, plants, etc., to collaborate in the healing process. There is no single component more important than the other. The Fifth Principle is the status of the blood. The use of pulses to determine imbalance is a central factor in diagnosis and treatment. It also helps distinguish between illnesses that are of physical versus spiritual (emotional) origin and determines the course of treatment. The Sixth Principle is that of Hot and Cold, which applies equally to illnesses, foods and plants. Fevers, diarrhea and vomiting are example of "hot" diseases. Cramps, constipation and paralysis are examples of "cold" diseases. Hot foods can be garlic and peppers while cold foods would include cheese, for example. The concept of Hot and Cold is most important in choosing plants to treat with, inasmuch as "hot" plants treat "cold" illnesses and vice versa. The Maya used these six primary principles and other techniques like cupping, called ventosa—literally "pulling out the wind," ritual and ceremony, incense, amulets, spirit guides, and dream visions to treat various maladies.<sup>30</sup>

While religion was frequently at the root of ancient medicine, the approach of the Inca could be seen in a remarkable contrast to the Mayan methods. We know a great deal about Inca medicine thanks to the historical manuscript written by Huaman Poma, who was born in Peru.<sup>31</sup> He wrote the most complete information about medical practice during the Inca civilization. The original manuscript has been kept in the Danish Royal Library since 1660, though it only came into public view in 1908, when it was discovered by the German scholar, Richard Pietschmann.<sup>32</sup> We now know that Inca medicine was a complex blend

of different medical specialties and treatments. The Incas believed that all sicknesses were provoked by the action of supernatural forces. In addition, the Incas believed that lies, sins against the gods or breaking Inca laws were reason enough to get sick.<sup>33</sup> Remedies were combinations of herbs and minerals, always accompanied with prayers and magic spells. However, this is where medicine and magic part ways.<sup>34</sup>

Inca medicine was tri-partite. The first type of doctor was the watukk; his job was to find the origin of the sickness by an interpretive process of the patient's daily lifestyle.<sup>35</sup> The watukk tracked the overall somatic, emotional state and pathology of the patient. He was fully responsible for the right diagnosis of the patient. The hanpeq is the second type of doctor, similar to a shaman.<sup>36</sup> He was both a mystical religious leader and a naturopath. The third type of Inca doctor was the paqo.<sup>37</sup> His work was strictly focused on the treatment of the soul, which the Incas believed was located in the heart. The paqo would align the health of the spirit with the body. Inca medicine was so ahead of its time that it classified and treated depression, mental illnesses, behavioral and psychotic disorders.<sup>38</sup>

#### Future

In its early phases and in all civilizations, ancient medicine was primarily the mercy of the gods, all powerful only through the intervention of the healer. There was some rudimentary science and practicality, but the fusion of salve and salvation was inseparable with degree of variance between divine and profane being the only major difference between the pristine civilizations. This concept in which the disease was considered to be divine punishment and the wrath of the gods is still somewhat accepted by man today. However, there are Catholic, Methodist, Lutheran, Baptist and Jewish hospitals throughout the United States, all with strong faith-based healing programs, working on a person's faith and salvation while maintaining a scientific approach to physical care. This holistic approach of science and spirituality recovered from antiquity is promising, but there are still flaws in the union of faith and science.

In April of 2008, a teenage girl in Texas died of uncontrolled diabetes. It could have been easily treated by any qualified EMT, or even another child with a tube of medication. Her parents stood by and prayed for a miracle while their daughter died.

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<sup>26</sup>The Healing Hand: Man and Wound in the Ancient World. Guido Majno (2002).

<sup>27</sup>Ibid.

<sup>28</sup>Ibid.

<sup>29</sup>Ibid.

<sup>30</sup>The Healing Hand: Man and Wound in the Ancient World. Guido Majno (2002).

<sup>31</sup>Ibid.

<sup>32</sup>Ibid.

<sup>33</sup>Early Civilizations: Prehistoric Times to 500 C.E. (The History of Medicine) Kate Kelly (2009).

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<sup>35</sup>The Healing Hand: Man and Wound in the Ancient World. Guido Majno (2002).

<sup>36</sup>Ibid.

<sup>37</sup>Ibid.

<sup>38</sup>Ibid.