

# The Grog Ration



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# Glimpses of the Forgotten Museum

## A History of the U.S. Naval Museum of Hygiene

In the latter quarter of the 19<sup>th</sup> century, the United States capital had little resemblance to the tourist Mecca and popular family destination it is today. The modern model-Republic remained a dream of the city's first architects and planners. Beneath their visions was the murky reality that Washington, DC, was a town of unpaved, muddy streets elevated above marshlands and open sewers, and ruled over by the tiny conveyor of disease: the *Anopheles* mosquito.

Still, for those patrons willing to brave the miasmatic cityscape, there were attractions to see. The Capitol building, the White House, the Washington Monument, the National Museum (aka: the Smithsonian), and even the U.S. Naval Observatory all served as popular cultural oases. The city was also home to separate Army and Navy medical museums. The Army's Medical Museum (now known as the National Museum of Health and Medicine) held a richness of pathological specimens: displays of gunshot/arrow wounds and diseases afflicting troops. Notable exhibits included the amputated limb of the self-proclaimed Civil War hero, and altogether scoundrel, Major General "Devil Dan" Sickles. Purportedly, Sickles often visited the severed appendage with a date in tow on each anniversary of the limb's loss at Gettysburg.

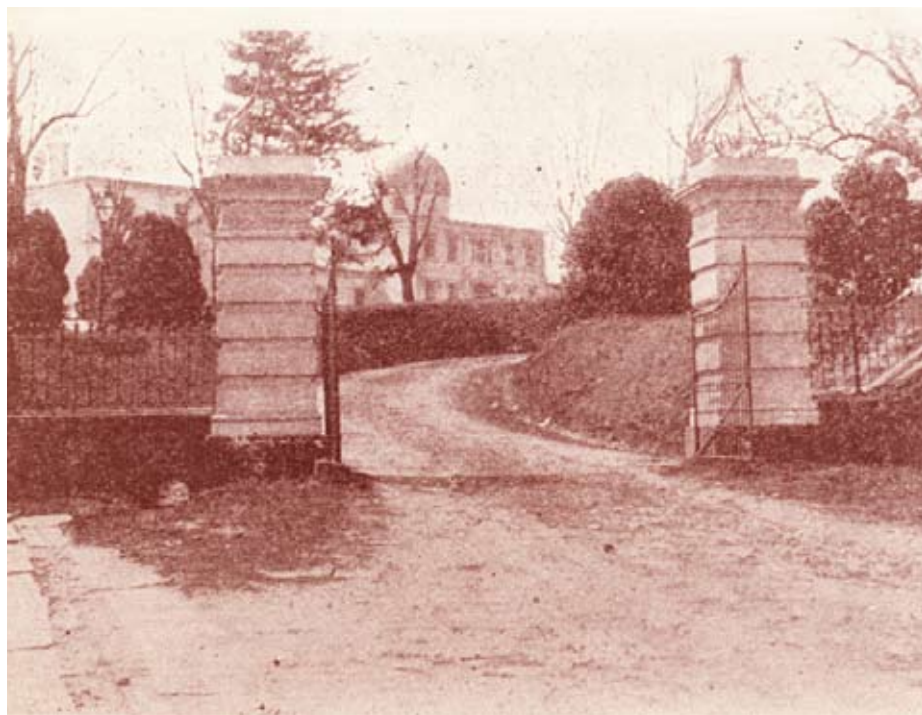
The size and scale of this fine institution easily kept the Navy's comparatively modest venture in the shadows. It is from here that

the Navy's short-lived "Museum of Hygiene" was disestablished on 20 May 1905. At its peak, the Naval Museum of Hygiene could be divided into three divisions: an experimental laboratory, a medical library that contained about 12,000 books and periodicals, and finally a museum that exhibited a sizeable assortment of medical instruments, nautical artifacts, and what can only be termed as a "curiosity shop" worth of cultural relics—much of which were collected and donated by Navy surgeons on their journeys across the seas.

### NAVAL HYGIENE

What we know about the mu-

seum comes from old Surgeon General copy books now at the National Archives (Record Group 52), as well as bound *Reports of the Surgeon General of the U.S. Navy* (at BUMED), newspaper clippings, and a GPO published catalogue of exhibits with descriptions (dated 1893). Sources paint a picture of a museum of questionable mass appeal where visitors could behold displays on corrosive pipes, drinking water, and learn about the hazards of city life, and much more. Interestingly, the museum also held what, in hindsight, can be seen as an anthropological function. Patrons could learn about foreign burial practices and see



Photographs from the BUMED Library and Archives

**Naval Museum of Hygiene, circa 1900. The Navy Medical Department's first presence on the Old Observatory campus was in the form of this Museum. The Hygiene Museum operated here from 1894 to 1905 when it was formally disestablished.**



foreign clothing and culinary artifacts collected by Navy officers. There were models of hospitals, hospital ships, of the Roman baths in England; and there was even a display showcasing the evolution of the water-closet (i.e., toilet). The importance and peculiarity of this hygiene museum should be noted. It was the first (and only) public museum dedicated to “Hygiene” established in the United States, and only the second of its kind to be founded in the world.<sup>1</sup>

Arguably, the name of the museum does not do it justice. For many of us, thoughts of hygiene conjure up a host of sanitary measures such as washing one’s hands with soap and water, wearing clean clothes, or brushing one’s teeth. Perhaps our modern ears are not fully tuned to the word “hygiene” as it was spoken by Navy surgeons and sanitary scientists of the 19<sup>th</sup> century. Navy hygienists—like their very namesake Hygeia<sup>2</sup>—were guardians of health. They sought to improve ventilation on ship and shore; to educate citizens about the contaminants that were making Victorian homes death-traps. They fostered the notion of what we may now call a “fit fighting force” by improving nutrition of sailor and Marine and proposing temperance. And they sought to extinguish infectious and tropical diseases which, blazing hot and furious throughout the globe, affected the health of Navy crackerjacks and U.S. Marines. In essence, 19<sup>th</sup>

century Navy hygienists were what preventive medicine, and industrial, occupational and public health specialists were to become in later generations.

The work of Louis Pasteur, Robert Koch, and others revolutionized the way medical professionals looked at disease in the second half of 19<sup>th</sup> century. The naval hygiene movement was in essence born out of the new paradigm. In 1870, Medical Director Joseph Wilson, Jr., USN (1816-1887), wrote *Naval Hygiene: Human Health and the Means of Preventing Disease*. As Wilson explained, his book was intended for the general public as a source for the “leading principles of hygienic management” drawn from personal experience. Chapters covered such topics as drainage of bilge water, seasickness, food rationing, and nutrition to ventilation of ships, quarantine, endemics, and contagious diseases.

In 1871, Medical Inspector (later Director) Albert Leary Gihon, USN (1833-1901), wrote *Practical Suggestions in Naval Hygiene* which was considered a standard for its time. In his tome, he underlined the notion of overwork, overcrowding, personal hygiene and nutrition, among other factors, as causes for disease and impairment. Years later, while serving as the Commanding Officer at Naval Hospital Annapolis, Gihon put his theories of naval hygiene to practice. Dr. Gihon believed the Naval Academy offered many hazards to the

midshipman. He attributed typhoid fever at the Academy to a defective sewage system. He looked at cadets’ rooms as disease traps and proposed the substitution of latticed openings for solid doors to permit the “equalization of [room] temperature. These openings would also help enforce a proposed ban on studying after hours (in the dim light) which was detrimental to the eyesight of cadets. Gihon also called for a ban on tobacco (even cited alcohol consumption as a natural consequence of tobacco use). In the course of his forty-year career, Gihon penned and edited over thirty publications on the topic of naval hygiene further defining the field.

#### A MUSEUM IS BORN

In early 1879, the Bureau of Medicine and Surgery (BUMED) established a laboratory to investigate hygienic matters. Soon after, Navy Surgeon General Philip Wales (1837-1906) established the Hygiene Museum at the laboratory (then located at 18<sup>th</sup> and K Streets, NW, Washington, DC) with the mission to preserve, promote, and study (and therefore advance) the field of sanitary science.<sup>3</sup>

Even though the museum was not formally authorized by Congress until 30 June 1883, Dr. Philip Wales issued a circular in 1882 asking for “contributions and co-operations of all interested in sanitary matters, to make this attempt [at establishing a medical

<sup>1</sup> The Parkes Museum of Hygiene predates the Naval Museum of Hygiene. It was established in London, England in 1877.

<sup>2</sup> Aesculapius—“the god of medicine”—fathered nine children, including two daughters Panakeia (All-Curing) and Hygeia (Health). Unlike her sister, Hygeia was not known to be a healing goddess, but a “guardian of health.” Flocking to principal sites of her cult—Corinth, Cos (birthplace of Hippocrates), Epidaurus, and Pergamon—Hygeia’s worshippers sought her protection from the epidemics and plagues that so ravaged their lands. Her cult was especially popular among athletes who would call upon the goddess to keep them in good form for the first Olympic games.

<sup>3</sup> Unsourced Navy Medical School records at BUMED calls the Museum a “pet project” of Medical Director Thomas Turner, USN (1829-1901). Like Gihon and Wilson, Dr. Turner was a noted authority on public health in the late 19<sup>th</sup> century.



**Museum of Hygiene's third home at 1707 New York Avenue, NW, Washington, DC (1887-1894)**

museum] a success.” According to newspapers and periodicals of the time, there is evidence that that the museum may have existed in some form as early as 1881.

On 23 September 1883, Medical News reported that Navy Surgeon General Wales has “organized a ‘Museum of Hygiene,’ which has, it appears, been made the ‘permanent repository’ of the American Public Health Association. Singularly enough, in a museum of hygiene under the control of a naval bureau, we find almost no provision for naval hygiene...The museum of hygiene is commendable enough, but, surely it ought to have a special direction, since Congress has authorized its establishment by the Bureau of Medicine and Surgery of the Navy, if a repository of the Public Health Association, it should, also, illustrate all conditions of naval hygiene.”

One interesting note is what the museum was actually called. In an article published in *The Brooklyn Eagle* dated 23 August 1882, the museum is called the “National Museum of Hygiene.” Invari-

ably, the museum was known as the “Navy,” “Naval,” “National,” “Washington Museum of Hygiene,” and even “Bureau of Hygiene” throughout its existence.

On 15 December 1883, Surgeon General Philip Wales presented the mission and scope of the Museum of Hygiene:

“It is the province of the museum to consider the prevention of disease, as a means to do this, we solicit and have contributions of articles, appliances, models, drawings, etc., illustrating improvements in food, water supply, bedding, clothing, marine architecture, house and hospital construction and furniture, apparatus for heating, illuminating, ventilation, and removal of excreta and refuse, culinary, laundry and bath facilities, and appliances for physical culture and exercise.

The visitor to the museum will see also in it samples of clothing worn by different armies and navies, specimens of food of all nations, water and gas systems, expedients for the care of the sick on board ship and in hospitals, speedy

means of escape from danger, and the safe protection there from, methods to secure comfort from travel, practical arguments in favor of the disposal of the dead either by burial or cremation, how to embalm bodies, how to guard against infection and contagion, and all that concerns the ease or health of mankind, and practical illustrations of the effect of soil and water on various kinds of drainage pipes.”

The museum served as a meeting venue by the Naval Medical Society, Public Health Association, and other professional societies. Researchers could explore the enormous medical library—a composite of the BUMED library, and an ever-growing collection of multilingual collection medical texts and periodicals. Exhibits educated visitors on proper methods for preserving foods; while military medical personnel could see the latest in life-saving and casualty transportation devices (some of which were invented by Navy medical officers). In 1893, the museum exhibited at the Columbian Exposition in Chicago, IL. Of note, was the exhibit of the “model of the system of disinfection practiced at the [naval] quarantine station at New Orleans.”

At the museum’s laboratory, scientists experimented on trap siphonage,<sup>4</sup> ventilation (1886), and on the steel used in U.S. Navy’s guns to determine the clinical value of the metal (1887). They also studied water purification (1890s). In 1891, Navy Surgeon General J. Rufus Tryon declared that the experiments in water purification by rapid filtration were “the most important

<sup>4</sup> On 27 Feb 1886, *The Medical and Surgical Reporter* reported that architect Glenn Brown conducted experiments at the Museum “showing the effects of siphonage, ventilation, etc.,” and to further knowledge of house planning with respect to sanitary science.

subject that has been investigated [by the museum laboratory]. . . In the chemical department analyses of various animal substances, normal as well as the results of pathological processes, have been made; also, of foods and drinks, medicines, ores, minerals, metals, woods, cements, and deposit in drainpipes.”

With all that was going on at the museum there were several problems that forebode its dim future. In his first state of the museum report, dated 1888, Officer-in-Charge,<sup>5</sup> Medical Director Henry Wells (1835-1905) noted the perceived obscurity of the institution. “During the recent congress of physicians and surgeons held in the city the museum was visited by many delegates, some of whom until then were ignorant of the existence of such an institution, while all expressed surprise and gratification at what had been accomplished in so short a time, and promised their interest and support in the future.” It is unknown if non-medical personnel ever took an interest in the museum as they do now at the National Museum of Health and Medicine and the Mutter Museum.

Owing to regular donations and contributions, its library and exhibit collection, the Museum continually grew out of its confined spaces. Originally located on the southwest corner of 18th and K Streets, NW, the museum relocated to the southeast corner 18th and G Streets, NW in 1882. In 1887, the museum and laboratory moved to 1707 New York Avenue, NW. Seven years later after its lease on the building ended, the museum moved to the



**The Museum's first home at 18th and K Streets, NW, Washington, DC (1887-1894).**

Old Naval Observatory Building (presently 23rd and E Streets, NW). In 1902, the School of Instruction, then located at Naval Hospital Brooklyn since 1893, moved to the museum and became the Naval Medical School. They were soon joined by the Naval Medical Examining Board Office. The Navy Medical School would develop into the dominant organization in the Old Naval Observatory building. The museum library was now the Medical School library and the old hygienic laboratory was used by the students.

On 27 May 1902, by Navy General Order 89, the Naval Museum of Hygiene was rebranded the “U.S. Naval Museum of Hygiene and Medical School.” Three years later on 20 May 1905, the U.S. Naval Museum of Hygiene and Medical became simply the “U.S. Naval Medical School.” The museum's collection of historic laboratory

equipment and natural historical artifacts were transferred to the National Museum.

Today, material evidence of long-departed institution can be found in the form of old medical books stamped “Naval Hygiene Museum” at the BUMED library and archives and the Stitt Library's rare book room at Bethesda, MD. The greater collection of unusual artifacts have been lost within the massive Smithsonian archive--perhaps stored in some unmarked creight or long ago mixed into another collection. And even though the museum did not survive past its silver anniversary, we should not remember it as a failed experiment. In reality, like the city it occupied, the Museum of Hygiene stands in the institutional memory as a reflection of its time; it was as an experiment in public health and public service. ~ABS

<sup>5</sup> On 25 October 1882, Medical Director (later Surgeon General) J. Mills Browne became the first “officer-in-charge” of the Museum (1882-86). Browne was succeeded in this capacity by Drs. Thomas J. Turner (1886-88), Henry M. Wells (1888-90), Philip S. Wales (1890-93), Albert C. Gorgas (1893-95), Newton Bates (1895-97), Charles White (1897-1900), George P. Bradley (1900-02), and John W. Ross (1902-1905).



# U.S. NAVAL MUSEUM OF HYGIENE SOURCES

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13. *The Washington Post*. "A Museum of Hygiene: New Use for the Old Naval Observatory. Seek Microbes Instead of Stars." October 23, 1898. p. 10.
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2. *Annual Report of the Surgeon General of the U.S. Navy*. Washington: Government Printing Office: 1884; pp. 5-6.
3. *Annual Report of the Surgeon General of the U.S. Navy*. Washington: Government Printing Office: 1887; pp. 39-47.
4. *Annual Report of the Surgeon General of the U.S. Navy*. Washington: Government Printing Office: 1888; p.7.
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7. *Annual Report of the Surgeon General of the U.S. Navy*. Washington: Government Printing Office: 1898; p. 20.
8. *Annual Report of the Surgeon General of the U.S. Navy*. Washington: Government Printing Office: 1900; p. 42.
9. *Annual Report of the Surgeon General of the U.S. Navy*. Washington: Government Printing Office: 1902; p. 49.
10. *Annual Report of the Surgeon General of the U.S. Navy*. Washington: Government Printing Office: 1903; pp. 6-7.
11. *Annual Report of the Surgeon General of the U.S. Navy*. Washington: Government Printing Office: 1904; p. 8.

# Highlights from the Catalogue of the Naval Museum of Hygiene

*The following is an excerpted inventory of exhibits (with descriptions) that originally appeared in the official Catalogue of the Museum of Hygiene (1893). After reading this list, ask yourself would you have visited the old Naval Museum of Hygiene?*

- **Alaskan Indian Casket**, for holding the incinerated remains of the dead.
- **Ancient Roman Cinerary Urn**, containing the ashes of the dead.
- **Boyd's Patent Burglar-Proof Grave Vault**. (Purchased December 1882). This has the general shape and dimensions of the grave box which is commonly used to enclose the burial casket. It is composed of two parts—a bottom upon which the casket rests and a top which covers it wholly. The latter is made of heavy boiler-plate iron in two sheets joined transversely, and heads of C.H. Flange Iron, the whole being thoroughly riveted together. The bottom is constructed of heavy angle iron for framework and a boiler plate for the bottom sheet thoroughly riveted together. The fastenings of the vault which render it burglar proof consist of six heavy steel springs, which are on the inside when the vault is closed, are fastened by bolts which are concealed from view by the angle iron from the bottom. The lugs are riveted into the boiler iron of the top in such a manner that when the two parts are brought together these rivets are concealed, as are the rivets and bolts which hold the fastenings, so that when the vault is closed it cannot be opened without cutting it into pieces. The corners and the guides in the center of the vault are made of malleable iron, so that they cannot be broken by any force that may be applied to them. These guides and corners catch the top as it descends and compel its correct adjustment, which is assumed by the click of the springs. The weight of the vault is 400 pounds, each part weighing 200 pounds.
- **Fragment of Shell**. The explosion killed many men, August 5, 1864, on board USS *Hartford*.
- **Metallic Burial Casket**, like those sent to transport the bodies of the officers and crew of the U.S. Arctic Steamer *Jeannette* who perished on the *Lena Delta*, October 1881. The casket is designed to preserve the body in a nearly natural state by excluding the air. The body is surrounded with ground cork, and is then wrapped in a layer of thick felt and placed in a tight pine case, which is also closely filled with ground cork. The seams of the pine box are carefully stopped with white lead, and the whole enveloped in another thick wrapping of felt. Over this is a covering of burlap secured by stout cord. Outside all is a fine crate.
- **Model of a Foot**. Illustrating the effect of a Chinese custom. It was made from the foot of a girl fifteen years of age, a patient in the American Missionary Hospital at Canton, China. The four small toes are folded beneath the sole of the foot, the whole anterior part of which is infantile in size and deformed. The Shoe and lower part of the trouser leg accompany the model (gift of PAS George E.H. Harmon, USN, August 1882)
- **Model of Hospital Ship**. Deck plans by Medical Director A.L. Gihon, USN; hull by Navy Constructor J. W. Easby, USN. Has spar deck, berth deck, and hold. On the first are quarters for the officers and working force. The berth deck is given up wholly to the sick. Aft are ten staterooms, two bath rooms with closets, writing and sitting rooms; forward are two staterooms, bath, and store rooms; between these, two-thirds of the length of the deck, 72 inches, are occupied by thirty beds, in two rows, with a glazed window between each two beds. Along the center of the deck are ranged settees for convalescents. Each bed has a small table.
- **Model of the Tower of Silence** (Purchased August 31, 1885)
- **Mott's French Bath**. This tub is made lightly of cast iron, lined with porcelain, and raised 7 inches from the floor upon movable cast-iron feet.

# Honoring the Dead: A Tour through the Ancient Underworld

by Katherine M. Bentz

**A**ncient burial practices changed with the civilizations that used them. From mummification to inhumation (i.e., interment), burial practices have constantly evolved through the ages influencing historians as well as medical practitioners. As we look at today's funeral practices, we can reflect back to the Naval Museum of Hygiene and its attempt to find "...practical arguments in favor of the disposal of the dead either by burial or cremation..."<sup>1</sup> Roman burial urns and a reconstruction of a Tower of Silence allowed visitors to view ancient burial practices which had impacted their own. The Naval Museum of Hygiene allowed people to learn about foreign burial practices while improving their practices.

## EGYPTIANS

Along the Nile in North Africa, ancient Egyptian burial practices changed and evolved over thousands of years. Badarians, the early inhabitants of Egypt, lived during 5000-4000 BCE, the so-called Badarian Period. The Badarians buried their dead in desert pits outside villages. The bodies were curled up, laid on their sides facing the west (the direction which the dead were believed to travel), and buried along with pots. Burying the bodies in the sand preserved them, making natural mummies. This may have led to the process of mummifica-



Photograph courtesy of author

**Etruscan cinerary urns are known for their depictions of the deceased on their lids. The urn seen in this photograph can be dated to the 2<sup>nd</sup> century BCE and is made of terra cotta, earthen clay. Part of the Etruscan urn collection at the Guarnacci Etruscan Museum in Volterra, Italy.**

tion which the Egyptians used to prevent the decay of the bodies that were placed in sarcophagi (s. sarcophagus). The mummification process was developed in the Old Kingdom (2650 BC – 2134 BCE) then perfected and used up through the New Kingdom (1550–1070 BCE). The lungs, liver, intestines, and stomach were removed and

placed in four canopic jars. The Egyptians believed the heart was the seat of intelligence, so they left it in the body and removed the brain through the nose. The body was soaked in natron, a salt, for 70 days and then wrapped in linen. Mummified bodies would have protective amulets and trinkets wrapped in the linen to protect

<sup>1</sup> *Annual Report of the Surgeon General of the U.S. Navy*. Washington: Government Printing Office: 1883; p. 10.



it. The majority of Egyptians had their deceased cleaned, wrapped in a shroud, and buried with few grave goods. Mummification and pyramids were primarily reserved for the elite few and those who could afford it.

Along with mummification came a variety of texts or spells which ensured passage and assisted the deceased in entering the Afterlife. Coffin texts, spells written on the inside of the coffin, were in use during the Middle Kingdom (2040-1640 BCE). Pyramid texts written on the walls of the pyramids came into existence in the 6<sup>th</sup> dynasty (2323-2150 BCE) during the Old Kingdom. Inside tombs, New Kingdom Egyptians deposited Books of the Dead with pages of papyri containing spells and illustrations. The books listed spells that the deceased might use to pass the trials which he/she encountered--roadblocks--that might prevent them from entering the Afterlife. Depictions on the walls of the tombs showed the journey of the deceased into the Afterlife and the trials they faced, while ushabti figures<sup>2</sup> served as workers for the deceased in the Afterlife.

Other paintings on the walls depicted the life one had or wanted and assured that the deceased had food and all their earthly items in the Afterlife. Egyptians made sarcophagi of stone, granite, clay, wood, etc. (depending on the status of the deceased), and placed inside burial chambers. A burial mask

of gold, lapis lazuli, turquoise, carnelian and/or other precious stones covered the head of the deceased.

Before the construction of pyramids, mastabas were used for burials. Mud brick mastabas had an above ground chapel and a burial chamber below ground. Scenes depicted on the walls showed food and libation offerings to ensure the deceased would not go hungry in the Afterlife. As far as burial goods go, the wealthier the deceased, the more grave goods they had, and vice versa for the poor.

Also dependant on the status of the deceased was the quality of the grave goods placed in the tomb. In a mastaba, the deceased lay in at chamber at the bottom of a shaft. In the Old Kingdom, burials were conducted in pyramids. The Step Pyramid of Djoser was initially a mastaba that became the first pyramid. Pyramids are an arrangement of large stone blocks, each weighing several tons. Some were also cased in limestone. Burials took place underneath pyramids and the pyramids themselves were part of a 5<sup>th</sup> dynasty (2465-2323 BCE) pyramid complex consisting of: a valley temple, used for mummifying the body, a causeway, a funerary temple, and the pyramid. The pyramid contained a serdab, a room which housed the ka<sup>3</sup> statue of the deceased. The ka traveled from the body into the statue to view the rituals for the deceased. Solar temple complexes were also constructed during



**This mummy was originally identified as “Ankhpakhered,” son of Ankhefenkhons on the basis of the inscription on the coffin. However, when it was unwrapped in the 19<sup>th</sup> century, the body turned out to be that of a woman, even though the name Ankhpakhered indicated that the owner was male. The woman was quite short, and elderly. Her hair was short and grey, but had been colored brown by the embalming process.**

<sup>2</sup> Also known as shabti figures

<sup>3</sup> Ka is the Egyptian word for “life force.”

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the 5<sup>th</sup> dynasty. Like pyramid complexes these had a funerary temple, a causeway, and a valley temple. However, instead of a pyramid, they featured an obelisk<sup>4</sup> and a sun temple intended for the worship of Ra, the sun god.

At the end of the Old Kingdom and beginning of the Middle, pyramids were constructed of mud brick and as a result they often collapsed. Also, rock-cut tombs, (e.g. at Beni Hasan) tombs carved directly into rock cliffs, came into existence. These had a passageway leading to the burial chamber and other rooms. Grave goods consisted of items that were deemed useful to the deceased in the Afterlife. Some grave goods were items the deceased used in life. A rock-cut tomb included a carved chapel for performing devotions for the ka, interior columns to support the ceiling, painted walls, and a false door. The burial itself was at the bottom of a deep, nearby shaft outside the chapel. As in the Old Kingdom, models were left in the tombs to provide assurance for supplying the ka. Coffin texts and wall-paintings continued to provide for the deceased as well and depict the challenges that would have to overcome to enter the Afterlife. If the deceased could not pass even one of these trials, he or she could not enter the Afterlife and that was the worst thing that could happen to (any) dead Egyptian.

The New Kingdom saw pha-

raohs buried in rock-cut tombs and an abandonment of pyramid complexes. They had several rooms and chambers cut directly into the rock just like the rock-cut tombs of the Middle Kingdom. When the Egyptian capital was at Thebes, Egyptians buried their pharaohs in the steep rock cliffs of the Valleys of the Kings/Queens (a massive necropolis of tombs buried and hidden away in the valleys). Chambers were cut into the rock, grave goods and a book of the dead were placed in the tomb, and depictions and texts were painted on the walls in bright and vibrant colors. Grave robbers required the move from ostentatious pyramids to the hidden valley. These criminals had ransacked the pyramid burials despite all the obstacles put in their way. The move, however, did not hinder the robbers and most of the graves were desecrated. There was also an increase of grave goods being manufactured and placed in the graves. These goods were often remnants from the daily life of the deceased. Also at this time, people hired professional mourners for funerals to lead the procession to the burial site.

Others had their own underground tombs which could serve as the burial place for their entire family. One such case is Sennedjem who lived in the late 19<sup>th</sup> and early 20<sup>th</sup> dynasty and worked on the Valley of the Kings. One reached the tomb via a shaft and staircase

which led to a room containing 20 mummies in wooden and stone sarcophagi. The tomb had a vaulted barrel ceiling with wall paintings and ushabti figures. The tomb was richly decorated with images of Sennedjem and his family as well as with ushabti figures to provide for him in the Afterlife.

## PERSIANS

Around 600 BCE,<sup>5</sup> the ancient Persians were followers of Zoroastrianism.<sup>6</sup> Following the Muslim Conquest of Persia in the 7<sup>th</sup> century CE,<sup>7</sup> many adherents of Zoroastrianism fled to what is now eastern India where they were now called as Parsees.<sup>8</sup> The Parsees continued to perform the same rites and burial practices of Zoroastrianism in their new land. They constructed “Towers of Silence” for their dead. These Towers were built of stone on elevated ground away from human dwellings.<sup>9</sup> Towers were open to the sky, had an iron gate, and had three concentric circles within them: one for men, one for women, and one for children. Only the pall bearers could enter the Towers to place the (naked) body on the cement slabs where it would attract flesh-devouring birds (i.e. crows and vultures) and other detritivores. The bones were swept into a central well and the soul was believed to then pass on to the “next world.” This form of burial disposed of the body with respect to the dead and prevented injury or harm to the liv-

<sup>4</sup> A tall, tapered shaft capped by a pyramidion, or little triangle. Obelisk is a Greek word meaning “little pointed stick.”

<sup>5</sup> “Ancient Persia Religion.” Ancient Persia. 17 Jul 2009 <[http://www.ancientpersia.com/religion/rlg\\_f.htm](http://www.ancientpersia.com/religion/rlg_f.htm)>.

<sup>6</sup> The religion was introduced by Zarathushtra.

<sup>7</sup> “History of Persia.” History World. 17 Jul 2009 <<http://www.historyworld.net/wrldhis/PlainTextHistories.asp?ParagraphID=ebp>>.

<sup>8</sup> Corruption of Persia. Name given to non-Hindu followers who practiced Zoroastrianism in India.

<sup>9</sup> Modi, Jivanji Jamshedji. *Funeral Ceremonies of the Parsees: Their Origin and Explanation*, 2nd ed., Fort Printing Press, 1905, pp. 15-25.

ing. Parsees believed that inhumation and cremation contaminated the sacred elements: earth, fire, and water. Towers lasted for centuries without polluting and contaminating the earth or its inhabitants. At the time of death, the Parsees believed everyone to be equal; there was no distinction between the rich and the poor. Everyone was accorded the same funeral rites.<sup>10</sup>

## SUMERIANS

The ancient Sumerian civilization was located in Mesopotamia (modern day Iraq), often known as the “Land between Two Rivers.”<sup>11</sup> They used inhumation and buried the dead in coffins or reed matting, and then placed the body in the bottom of a pit. The deceased were clothed, had personal belongings in their tomb, and held a cup. Royal burials, i.e. those of kings, required the sacrifice of attendants and a chief sacrifice, usually that of a queen. These sacrifices would fill up the tomb with costly materials which exuded his wealth. Vessels in the tomb had food and water so the spirit would not be hungry. The family decorated the tombs with what they could afford. For a poor person, the tomb contained modest and practical items they could afford.<sup>12</sup>

## GREEKS

“Greek” burial practices encompass many groups and cultures. There were no singular group; some lived on the mainland in divided units, some lived on Crete, and others lived on the Cycladic islands and elsewhere. Nevertheless, the prevalent type of burials united the Greeks are cist graves, tholoi burials, pithoi burials, and shaft graves.

Cist graves were oval or rectangular pits covered with slabs of rock, and for poor adults, this was the cheapest form of interment. The Greeks lined the sides of the cist graves were lined with large stone slabs and covered with one or more additional slabs. The construction of the cist graves evolved to encompass a corbel vaulted roof and dromos (entry way). They were generally for one person, but could have 2<sup>nd</sup> or 3<sup>rd</sup> stories added for other family members. The bones of ancestors might be deposited in the grave’s lower parts. Some Greeks buried their children in pithoi inside settlements rather than outside. The deceased, laid on the floor in the fetal position (aka, a ‘flexed burial’), wore clothing or was wrapped in cloth, and occasionally covered with stones. A plaque served as a pillow for the dead. Grave goods placed in the tomb were dependent on gender,

age, and class of the deceased.<sup>13</sup> Graves of adults had relatively few goods, most of which were inexpensive, while the graves of young children contained more and usually more expensive items.<sup>14</sup>

Tholoi (*s. tholos*), or beehive tombs, were above ground and located in and around the Mesara plain while some were on Crete.<sup>15</sup> These were stone tombs with corbel vaulting and a porch out front. They played a role in burials as well as religious festivals. They featured a dromos (entryway), and a stomion (doorway) leading into a thalamos (underground burial chamber), with a corbelled roof. The tomb contained food, drink, and grave goods. To provide more space for additional remains, a tomb might be re-opened, the body removed, the skeleton disarticulated, and then moved to the side to make room for new bodies.

A pithos was a large storage jar, decorated or undecorated, in which a body would be placed for burial. Depending on the size of the jar, a body was removed, disarticulated, and moved into a different area of the jar to make room for a second body. Pithos burials are found in tumuli, artificial earthen mounds (*s. tumulus*) and elsewhere.

On the Greek mainland at Mycenae, Grave Circles A (1600-1500 BCE) and B (1650-1550 BCE), are

<sup>10</sup> Green, Jennifer and Michael Green. *Dealing with Death A Handbook of Practices, procedures and Law*, 2nd ed., London and Philadelphia: Jessica Kingsley Publishers, 2006, pg. 294.

<sup>11</sup> Mesopotamia was between the Tigris and Euphrates Rivers.

<sup>12</sup> Helstad, Lillian. “Sacrifices in the Sumerian Culture .” 16 Jul 2009 <<http://gallery.sjsu.edu/sacrifice/sumerians.html>>.

<sup>13</sup> “Early Cycladic Burial Customs.” The Bronze Age on the Aegean Island. 16 Jul 2009 <<http://www.fhw.gr/chronos/02/islands/en/society/burials/index1.html>>.

<sup>14</sup> Immerwahr, Sara Anderson. *The Neolithic and Bronze Ages* 1971 130. Web. 16 Jul 2009. <[http://books.google.com/books?id=ELsHwqPE7UIC&dq=cist+graves&source=gbs\\_navlinks\\_s](http://books.google.com/books?id=ELsHwqPE7UIC&dq=cist+graves&source=gbs_navlinks_s)>.

<sup>15</sup> Home to the myth of the Minotaur and Minoan culture discovered by Sir Arthur Evans. South East of the Peloponnese, located in the Mediterranean Sea. Several figurines found on Crete represent the “Snake/Mother Goddess.” A figure with an exposed chest (fertility), a flounced skirt, an apron, a belt, a tight, three quarter sleeve bodice open at the front, a head piece, and two snakes (renewal of life) in her outstretched hands.



## *The Grog Ration*

prime examples of shaft graves. Shaft graves are enlarged cist graves entered through a roof several feet below the ground. After the burial, the roof was filled in and the area marked by stones and a stele (*pl. steles*) or grave marker. Not every grave had a stele; some had chariot scenes or other decorations carved on them. It was common for multiple burials to be in one shaft grave. The original body was removed, disarticulated, and moved to the aide to make room for the new body. In some cases, the Mycenaens moved the first occupant of the grave into a corner rather than removing and replacing it. They wrapped the bodies in a shroud and adult males had a gold funeral mask while adult females did not.<sup>16</sup>

## ETRUSCANS

The ancient Etruscans of Etruria in central Italy and parts of northern Italy employed cremation<sup>17</sup> as well as inhumation. Etruscans cremated their dead in early burials; later in the 6<sup>th</sup> and 7<sup>th</sup> centuries BCE, tombs became more prevalent. Three types of tombs were typical of Etruscan society: rock-cut tombs, hypogea,<sup>18</sup> and tumuli. In southern Etruria, graves were dug into the ground while in northern Etruria, they were built on top of the ground. The upper class had chambered tombs and sarcophagi which depicted the deceased reclining on the top. In some instances,

couples were depicted reclining together. Grave goods accompanied the urns and sarcophagi in the tombs. Rock-cut tombs resembled houses with household furnishings carved into the rock (e.g. couches, beds, pillows, etc.) Frescoes depicted actual events that occurred during a person's life. No expense was spared in the construction and decoration of these tombs. They were ornate, furnished with pottery and metal work, and featured wall paintings from the mid 6<sup>th</sup> century BCE on. These painted scenes were of every day Etruscan life: hunting,

chariot races, religious scenes, men and women dining together, etc. Hypogea were underground catacombs with niches for cremation urns and room for sarcophagi as well. Tumuli were artificial mounds of earth that contained pithoi,<sup>19</sup> urns, etc. Generations of families could be buried in these tumuli along with their grave goods.

## ROMANS

The early Romans of Latium, in which Rome was located, used cremation from Latial Culture (LC) I (1000-900 BCE) until LC



Photograph courtesy of author

**Unlike many other ancient societies, Etruscan women had the same rights as the men. As a result of this, lids of sarcophagi and urns sometimes depicted spouses together. This particular lid shows a man and woman reclining together. Circa 2<sup>nd</sup> century BCE made of terra cotta. Part of the Etruscan urn collection at the Guarnacci Etruscan Museum in Volterra, Italy.**

<sup>16</sup> "Lesson 16: The Shaft Graves." Prehistoric Archaeology of the Aegean. 18 MAR 2000. Trustees of Dartmouth College. 16 Jul 2009 <[http://projectsx.dartmouth.edu/classics/history/bronze\\_age/cgi-bin/highlight.cgi?file=/Users/classics/Sites/history/bronze\\_age/lessons/les/16.html&search=cycladic](http://projectsx.dartmouth.edu/classics/history/bronze_age/cgi-bin/highlight.cgi?file=/Users/classics/Sites/history/bronze_age/lessons/les/16.html&search=cycladic)>.

<sup>17</sup> Cremation is the burial practice consisting of burning a body and putting the ashes in an urn.

<sup>18</sup> Hypogea are underground catacombs with niches or the area underneath the Colosseum which housed animals and gladiators, s. hypogeum.

<sup>19</sup> A large storage jar, decorated or undecorated, in which a body would be placed for a burial. Depending on the size of the jar, a body could be removed, disarticulated, and then moved into a different area of the jar to make room for a second body.

II period (900-700 BCE). Cremation was the most popular form of burial in which the ashes of the deceased would be placed in a hut-like urn, representing a house for the spirit of the dead, and buried with tiny, metal utensils. Inhumation then replaced cremation and the graves reflected the power of the growing aristocracy, which had the wealth to import foreign wares from distant lands; fibulae<sup>20</sup> were no longer made of bronze but gold and silver. Silver wire bound women's hair, and an abundance of weapons appeared in the tombs. The more wealth and power one had, the more he or she could afford to put in their graves. In LC IV B (620-580 BCE), wealthy people displayed their wealth publicly rather than in tombs by building temples for the gods. Inhumation was mostly popular during the Roman Empire and cremation became popular again during the first and second centuries CE. Those pre-

paring the deceased washed and dressed them in their finest clothes, and placed a coin in their mouths for the ferryman Charon to cross the river Styx. They were then cremated via a funeral pyre. Burial societies created by poor Romans and slaves allowed them to pool their resources to insure a proper burial. Remains of the deceased were deposited in urns which they then placed in columbaria, underground tombs with pigeonhole niches. Some niches had a bust of the deceased or a plaque.<sup>21</sup> Wealthy Romans and war heroes built large, expensive tombs along the roadsides, especially the Via Apia, or Apian Way, to emulate the importance of military valor and/or their wealth. Rarely, a tomb became part of the wall surrounding the city. Romans buried their dead outside the pomerium, or city limits, to prevent the spread of disease from buried bodies. As at Pompeii, there was a necropolis for the dead con-

structed right outside the pomerium.<sup>22</sup> The necropolis contained both urn and inhumation burials. Each grave would have had a grave marker or tombstone ranging from wooden (for the slaves and poor) to marble (for the rich).<sup>23</sup>

## CONCLUSION

It has been said that modern civilization has been built upon the faded memories and experiences of past ages. Indeed, the very hallmarks of societies have been around since the dawn of civilization. Very few concepts are new, but rather cyclical. With few exceptions, ancient burial practices follow this rule. Although around for millennia, the cremation movement in the United States "originated" in the late 19th century.<sup>24</sup> After thousands of years, cremation and interment remain the two most common forms of burial. ■

## ABOUT THE AUTHOR

Ms. Katherine Bentz is an intern in the Medical Historian's Office at BUMED. She is entering her third year at University of Maryland Baltimore County where she majors in Ancient Studies.

<sup>20</sup> Fibulae are the Roman women's equivalent of brooches which were worn to fasten her robes, s. fibula.

<sup>21</sup> Gill, N.S.. "Roman Burial Practices." About.com: Ancient / Classical History. 2009. About.com. 16 Jul 2009 <<http://ancienthistory.about.com/od/deathafterlife/a/RomanBurial.htm>>.

<sup>22</sup> Mirza, Sumair and Jason Tsang. "Rome Exposed- The Romans and Their Dead." *Classics Unveiled*. 1999-2009. 16 Jul 2009 <http://www.classicsunveiled.com/romel/html/romedeath.html>>.

<sup>23</sup> Imber, Margaret. "Roman Civilization Tombs and Funerals." 16 Jul 2009 <<http://abacus.bates.edu/~mimber/Rciv/tombs.htm>>.

<sup>24</sup> The first crematorium in the United States was built in Washington, PA in 1876.

# Scuttlebutt:

medical and nautical history news,  
notes, and miscellany

## ***The Hospital Corps Quarterly Returns!***

In World War I, the Bureau of Medicine and Surgery established a supplemental periodical for the purpose of providing hospital corpsmen in the field with the “latest available current information relative to the care of the sick and injured.” Known as *The Hospital Corps Quarterly*, this periodical was published continuously from 1917 to 1930 and 1942 to 1949.

Some 60 years since it last went to press, *The Hospital Quarterly (HCQ)* has returned. The *HCQ* editorial staff are now looking for award notices, news, and original articles about Hospital Corps’ activities past, present, and future. If you are interested in submitting material to *The Quarterly*, or would like to be added to the electronic mailing list, please e-mail *HCQ* editor-in-chief HMCS Charles R. Hickey at: [charles.hickey@med.navy.mil](mailto:charles.hickey@med.navy.mil)

## **Brooklyn Navy Yard Oral History Project**

The Brooklyn Historical Society (BHS) is working in conjunction with the Brooklyn Navy Yard on interviewing people who worked at the Yard in World War II. For more information, please contact the BHS oral history program coordinator, Ms. Sady Sullivan at e-mail: [ssullivan@brooklynhistory.org](mailto:ssullivan@brooklynhistory.org)

## **Brooklyn Navy Yard Tours**

The Urban Oyster Walking Tour Company, in partnership with the Brooklyn Historical Society, is offering special two-hour bus tours of the old Brooklyn Navy Yard. This tour provides an overview of the fascinating stories of the Brooklyn Navy Yard’s past, present, and future. Stops on the tour include a pre-Civil War dry dock, the long defunct Navy Hospital, and the nation’s first multi-story, multi-tenant, Leadership in Energy and Environmental Design (LEED)-certified industrial building. For more information on the Navy Yard Tour check out: <http://www.urbanoyster.com/navy-yard-tour.html>

## **“Final Victory” is here!**

In November 2009, the last installment of the “Navy Medicine at War” series, “Final Victory,” will be released. This unique documentary series, adapted from the book *Battle Station Sick Bay: Navy Medicine in World War II*, presents stories of the Navy dentists, hospital corpsmen, nurses, and physicians who represented the Medical Department during the harrowing years of World War II. DVD copies of the six-part film series can be obtained by e-mailing us at: [andre.sobocinski@med.navy.mil](mailto:andre.sobocinski@med.navy.mil).



# GORDIAN KNOTS

*A Navy Medical History Quiz*

## Medicine of the Ancient World

*Match Word. Read the following statements and match it to the corresponding culture or name.*

- |   |             |
|---|-------------|
| A. Evidence suggests that this culture was the first to employ what we may call “medical specialists.”  | 1. Chinese  |
| B. First to use artificial respiration.   | 2. Egyptian |
| C. Their ancient text declares that mankind is plagued with 99,999 ailments.  | 3. Greek    |
| D. Hospitals were erected by this culture as early as 427 B.C.  | 4. Hebrew   |
| E. Adherents to this culture’s concept of “way of life” believed that controlled breathing practices and frugality and regulation of food were additional methods of prolonging life. | 5. Indian   |
| F. This culture’s oldest medical text dates to 982 A.D. and covers such topics as skin disorders, eye, ear, and tooth diseases, midwifery, dietetics and drugs.                       | 6. Japanese |
| G. First system of licensure made medical practitioners responsible for their actions.  | 7. Persian  |
| H. Physicians from this culture were the first to record medical histories of patients.   | 8. Roman    |

**Source:**

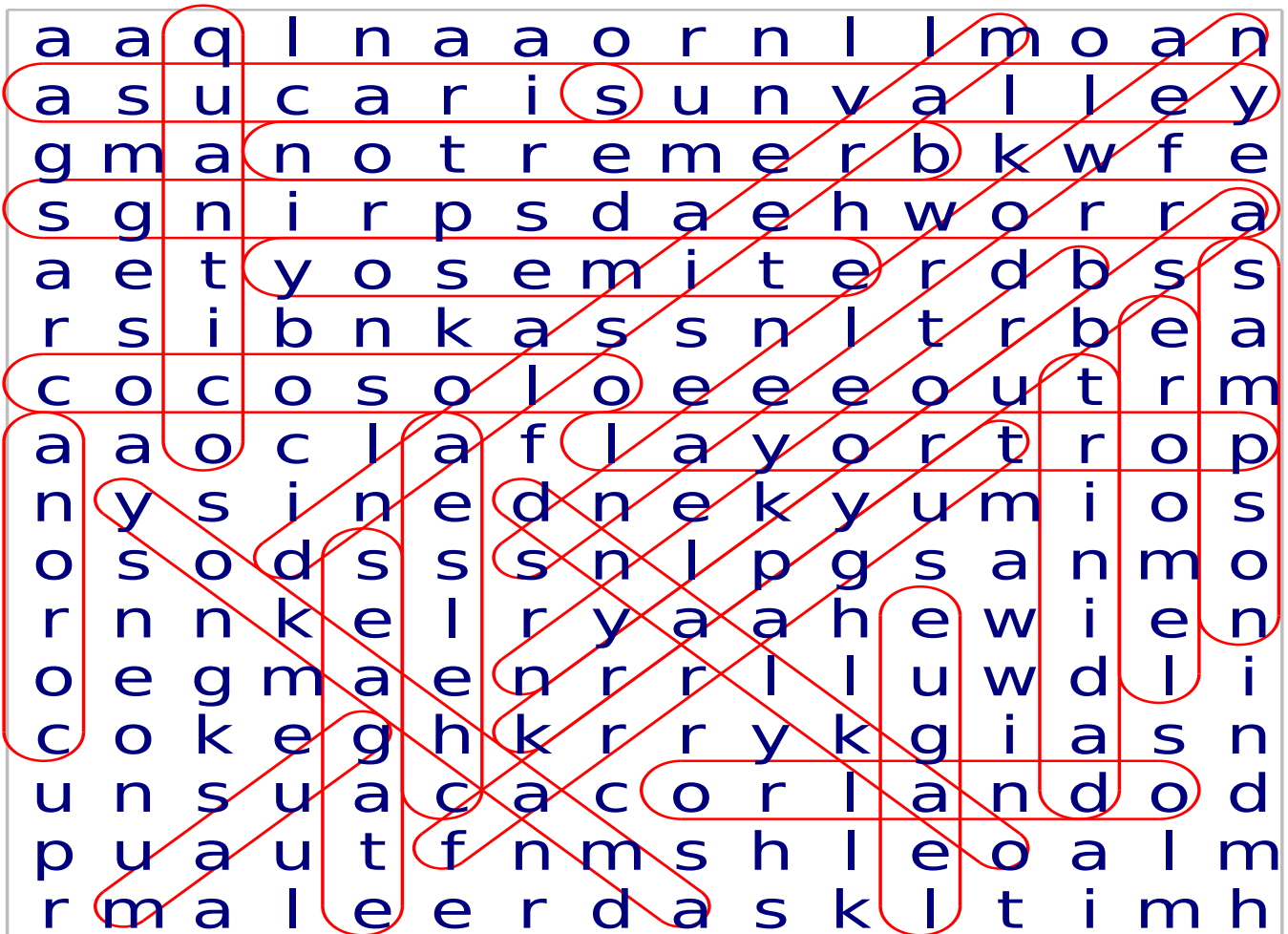
Gordon, Benjamin Lee. *Medicine throughout Antiquity*. Philadelphia: F.A. Davis Company. 1949

# SOLUTIONS TO PREVIOUS QUIZ (SEP-OCT 2009)

## GORDIAN KNOTS

*A Navy Medical History Quiz*

**Word Search.** Find the following historic Navy hospital locales in the word block below.



Arrowhead Springs  
Brooklyn  
Corona  
League Island  
New Orleans  
Port Royal  
Seagate  
Trinidad

Asbury Park  
Chelsea  
Farragut  
Lemoore  
Oakland  
Quantico  
Siracusa  
Yokahama

Bremerton  
Coco Solo  
Guam  
Mare Island  
Orlando  
Sampson  
Sun Valley  
Yosemite



### ***About *The Grog Ration****

*The Grog Ration* is a bi-monthly publication dedicated to the promotion and preservation of the history of the Navy Medical Department and the greater field of maritime medicine. Articles and information published in *The Grog Ration* are historical and are not meant to reflect the present-day policy of the Navy Medical Department, U.S. Navy, and/or the Department of Defense.

Here at “The Grog,” we are ALWAYS looking for engaging articles and news pertaining to the history of nautical medicine. If you would like to submit an article or news feature for publication, or if you have an idea to suggest, please contact us at:

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