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Of Roman Extraction

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"The little grains of sand found in the horns of snails, if put into hollow [rotten] teeth, free them at once from pain." So says Pliny the Elder in the treatise on toothaches in his *Natural History*, which he dedicated to the emperor Titus in A.D. 77.

of

by

Birgitte Ginge, Marshall Becker, and Pia Guldager

Roman dentistry was a curious mixture of just such folk remedies, outright magic, and sound practice. While great advances have been made in the use of anesthesia as well as in the filling and the straightening of teeth, it comes as a surprise to discover how little basic dentistry has changed down through the millennia.

The Etruscans, for example, were practicing dentistry in one form or another from well before 500 B.C., as we know from more than 20 gold bridges and dental braces found at Etruscan sites. By 300 B.C., Greek practitioners from the

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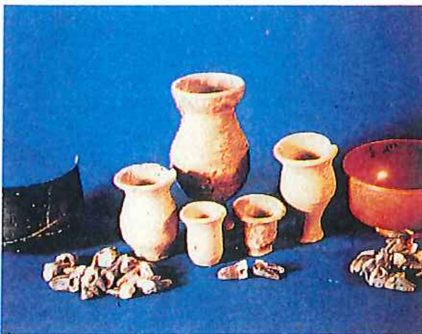


A surprise discovery of 86 teeth beneath the stairway of the Temple of Castor and Pollux yields evidence that highly sophisticated dentistry was being practiced in ancient Rome.

school of Hippocrates had amassed great amounts of medical and dental knowledge, and had written many texts on the subjects. This knowledge was available to medical specialists and the educated public of the ancient world by A.D. 50, a time when literally dozens of medical texts were being written—almost all of which included large sections on dentistry.

But where, exactly, was dentistry practiced in ancient Rome? Until recently, there simply was no answer to this question. The problem was compounded by the fact that ancient dentists were not specialists in the modern sense of the term. Just as ancient butchers often doubled as surgeons, so dentistry was practiced by a variety of professionals—doctors, barbers, beauticians, and vendors of drugs and cosmetics.

Then in 1984 and 1985 a team of Scandinavian archaeologists working in the heart of the Roman Forum unearthed a considerable collection of human teeth. Most of these teeth—which numbered 86 in all, including two children's molars—were extensively decayed, and they had

EXTRACTION

been skillfully extracted.

The *taberna*, or shop, where these teeth were discovered stood strategically at the corner of the Via Sacra and the Vicus Tuscus, one of the oldest streets of ancient Rome. It was one of 29 such tabernae built into the podium of the Temple of Castor and Pollux, now known to tourists by its three graceful columns, which still stand to their full height.

The site appears to have been an early barbershop or beauty salon where dentistry was also practiced, not a dentist's office proper. Artifacts found in the shop—small glass bottles, miniature ceramic jars and bowls, and delicate ivory scoops, picks, and spatulas—are identical to tools used by pharmacists even recently. Some of the small vessels still contain traces of blue, yellow, red, and purple pigments. This all suggests that cosmetics and pharmaceuticals were used and sold here; associated finds of dice and other gaming pieces may reflect the activities of the people who frequented the shop and entertained themselves while waiting their turns.

The Temple of Castor and Pollux was important to the civic and religious life of ancient Rome, and the shops that occupied the openings in its base must have done a brisk trade. The temple, located in the center of the city, had stood there in one form or another since 484 B.C., when it was inaugurated by the Roman general Aulus Posthumus. A major reconstruction was undertaken centuries later by consul Lucius Caecilius Metellus Dalmaticus, who saw to its rebuilding in 117 B.C..

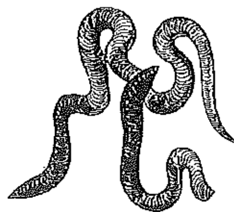
But a catastrophic fire struck the Forum in 14 B.C., and the Temple of Castor and Pollux was one of the many buildings destroyed. The importance of the temple is reflected in its speedy rebuilding; in A.D. 6 the impressive stone structure that we know today was dedicated by Augustus in the name of Tiberius, his designated successor. The Augustan temple continued in use until it was destroyed in the first half of the fourth century, never to be reconstructed.

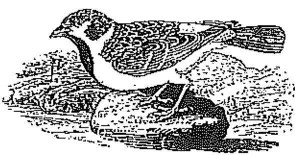
The Augustan temple appears to have incorporated the same platform built for the original structure. Examination of this podium reveals that the 29 tabernae were an intrinsic part of its design, as is occasionally the case for Roman temples. For the Temple of Castor and Pollux, these small open-fronted rooms, most of which measured about 6 by 12 feet, offered well-lit working

Pliny on Pain

The following recommendations come from Pliny's "Toothache Remedies, Gum Therapies and Agents Which Cause Aching Teeth to Fall Out with Ease."

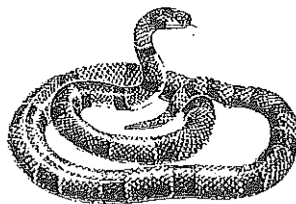
Earthworms: *reduced to ash (burned in an earthen pot) and plugged into decayed teeth cause them to fall out easily, and applied to sound teeth relieve any pain.*





Sparrows: *sparrow dung, wrapped in wool and worn as an amulet, causes dental pain to disappear, but causes unbearable itching.*

Snakes: *the slough [shed skin] of a snake, with oil and pitch-pine resin, warmed and poured into either ear, is good for the gums (some add frankincense and rose oil). If put into hollow teeth it also makes them fall out without trouble.*



Mice: *the ash of burned mice mixed with honey (with some fennel root added) when rubbed on the teeth makes the taste of the mouth agreeable.*

Ancient Armamentarium

Roman dentists used a variety of instruments and techniques to treat dental problems. Since ordinary pliers would have shattered the crowns of badly decayed teeth, forceps were developed to dislodge unhealthy teeth so they could be drawn without breaking. The use of specialized blades for cutting the gum to expose the root, both to get a better grip with an instrument and to cut away the surrounding bone, seems to have been quite common by the first century B.C. Post-operative cauterization, with a white-hot iron, was also practiced.

Celsus recognized the great danger involved in extracting a tightly fixed tooth, especially the upper teeth, which have more widely spreading roots than the lower teeth. He recommended scraping such a tooth free of the surrounding gum, down to the bony socket. He also advocated extracting teeth with the fingers whenever it was possible to ensure a delicate and uniform pressure. Where the forceps are used, says Celsus, the tooth should be pulled straight out lest the curved roots, particularly in the upper molars, break off the thin bone within which the tooth is seated. Small fragments of bone inadvertently left under the gum had to be located by probing or cutting and removed.

Toothpicks were common in the first century A.D. Slips of wood from the mastic tree (*Pistacia lentiscus*) were the preferred variety, but quills of different sorts could also offer relief. Martial, the first century A.D. poet, mentions tooth powder used to brighten teeth rather than to cleanse them. Mouthwashes were also prescribed by many authors. The lists of dentifrices provided by various authors clearly suggest that clean breath and teeth were regarded as assets to good health, even if the connection to dental decay was not clear.

establishments directly facing the street. Most of these establishments occupied the entire space between the massive stone pillars that supported the columns of the temple, but the northernmost shop on either side of the podium was slightly smaller since it was actually beneath the stairway at the front of the temple.

Several of these chambers were excavated, but only the beauty salon beneath the main stairway produced clear evidence of the trade conducted there. (Digging during the eighteenth and nineteenth centuries had destroyed much of the archaeological evidence of activities in the other shops.) The finds were discovered in a drainage system cut into the floor of the shop. This drain constituted the "plumbing" for the shop, and fed into the sewer channel running along the Vicus Tuscus, the "Etruscan street" in Latin.

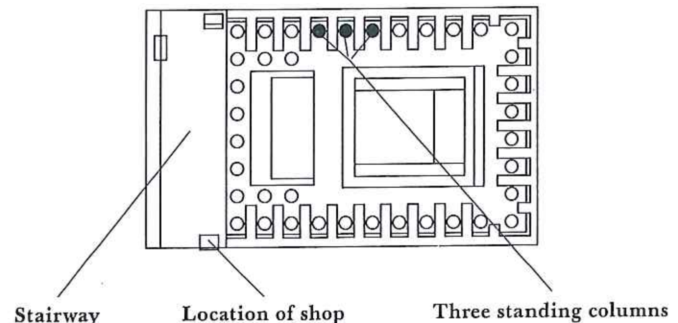
Fire destroyed the shop around the beginning of the second century, and the finds recovered date from the time of its destruction and from the immediately preceding period. We cannot say precisely when the fire occurred or what befell the shop afterward, but it seems clear that the shop no longer functioned in the same capacity.

But we do know enough about the Vicus Tuscus to make some interesting connections with the beauty salon and the teeth found in it. A small street on the west side of the Temple of Castor and Pollux, the Vicus Tuscus leads toward the Forum Boarium, the ancient Roman cattle market on the banks of the Tiber. The area surrounding this street appears to have been a residential district during the Archaic period (6th century B.C.), and by the time of the barbershop, it was known as an area in which prostitution was common. The street was also known as the Vicus Turarius, referring to the vendors of incense and perfume who were active in this area. That shops on such a street would deal in perfumes, pharmaceuticals, and drugs is no surprise. The use of narcotics—as indicated by recent studies of residues in ancient containers—would certainly have been an adjunct to the extraction of decayed teeth.

What did ancient dentists have in common with modern ones? First would be their skill in extracting decayed teeth of the sort which the taberna has produced in such abundance. By the first century A.D., this delicate art had been thoroughly mastered; and dental practitioners understood the importance of extracting the decayed tooth in an unbroken condition. Aulus Cornelius Celsus (25 B.C.–A.D. 50), writing early in the first century, stressed the danger of leaving fragments behind in the gum.

In fact, the teeth excavated from the shop in the Forum include an example of this very problem: one of the teeth was so severely decayed that the extractor had to pinch together the fragile bony tissue as well as the root stump before removing it. Yet the tooth was removed with the remains of its decayed crown intact, a small segment of the jaw still adhering to it—a drastic but successful alternative to breaking the crown off at the root.

The 86 teeth were found in a shop near the stone arch that once supported the temple stairway. Ground plan shows column positions and location of shop.



Ancient dentists understood the nature of periodontal problems and the pharmaceutical benefits of a wide range of substances, even if their recommendations were mixed with a liberal dose of pure superstition. Celsus is a good case in point. Most impressive is his concern with treating the gums first. Only when gum treatment was unsuccessful does he consider extracting a tooth. Children's teeth, he says, should only be pulled if they are impeding the development of adult dentition; and he points out that teeth loosened by a blow can be fixed in place with a gold wire until they securely reestablish themselves.

The use of effective surgical procedures, the application of ointments, and the use of drugs were all part of the pharmacist's trade in the ancient world. This combination of skills created a natural affinity between pharmacy and dentistry. Pharmacy, barbering, and what is now called cosmetology in the United States may all have been part of the lively trade practiced in the little shop beneath the stairway of the Temple of Castor and Pollux. ■

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Dual Pursuits

Robert Blumenschine ("Man the Scavenger," page 26) chose the Serengeti region to pursue his long-held, dual interest in human evolution and African wildlife, because of northern Tanzania's unparalleled wealth of wildlife and prehistoric archaeology. Blumenschine is an assistant professor of anthropology at Rutgers University in New Brunswick, New Jersey. While a graduate student at the University of California, Berkeley, he participated in J. Desmond Clark's archaeological expeditions to the Son Valley in India, and the Middle Awash Valley, Ethiopia.

Dental Detectives

Marshall Becker ("Of Roman Extraction," page 34) has studied the human skeletal remains from more than 40 archaeological sites in Italy, Greece, and Turkey. A professor of anthropology at West Chester University of Pennsylvania, Becker is primarily interested in the biological impact of Greek and Carthaginian colonization in Italy. When not working in the Old World, he pursues archival and archaeological research on the Lenape ("Delaware") Indians of Pennsylvania.

Birgitte Ginge is currently a research associate at the University Museum of the University of Pennsylvania. Previously she has held postdoctoral fellowships at the University of Cambridge and Princeton University. Affiliated with the Danish Academy in Rome since 1978, Ginge has excavated at Ficana and Satiricum in central Italy. Her major field of research is in Etruscan ceramics from the Orientalizing period to the Roman conquest of Etruria. This summer she will concentrate on a previously neglected category of late Etruscan and early Roman inscribed cinerary urns from the territory of Chiusi.

Educated at the universities of Copenhagen and Aarhus, Pia Guldager has participated in excavations in Denmark, outside Rome at Osteria dell'Osa, and at the Temple of Castor and Pollux in the Roman Forum. On Cyprus she was a member of the Canadian Palaiopaphos Survey Project from 1983 to 1986.

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Szegedy-Maszak

Pastron

Chippindale

ticipation in the joint Scandinavian project to excavate the Temple of Castor and Pollux in Rome is funded by the Carlsberg Foundation.

Eye on Photography

Andrew Szegedy-Maszak, newly appointed photography editor for Archaeology magazine ("Picturing the Past," page 38), did his undergraduate work at the University of Michigan and received his doctorate in classics from Princeton University. He is currently professor and chair of the Classics Department at Wesleyan University. His photography columns in Archaeology and his article "Sun and Stone: Images of Ancient, Heroic Times," in the July/August 1988 issue, are undoubtedly familiar to readers of the magazine.

Gold Rush Fever

While teaching at the University of Santa Clara, Allen G. Pastron ("On Golden Mountain," page 48) was asked to consult on an archaeological project on the San Francisco waterfront. This single-day assignment led to a five-year study of historical archaeology in San Francisco.

In 1977, Pastron founded Archeo-Tec, a private consulting firm, under whose auspices he has conducted extensive archaeological and historical research in San Francisco, focusing on the Gold Rush era (Archaeology, July/August 1988).

Pastron received his Ph.D. in anthropology from the University of California, Berkeley, in 1977 and has conducted archaeological research in northern California, the western Great Basin, and northwest Africa.

Living with the Past

Christopher Chippindale ("The Heritage Industry," page 62) is the editor of the British journal *Antiquity* and an assistant curator in the archaeology museum at the University of Cambridge, where he teaches historic preservation. His own research mostly concerns European rock art. "I am constantly amazed, and delighted, by the variety of ways that ancient sites and places are used and seen in the modern world, and particularly what people do to Stonehenge," he says. He is the author of *Stonehenge Complete*, now the standard book, and, with colleagues, the forthcoming *Who Owns Stonehenge?*

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