RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Acupuncture: Stuck on the Fringe

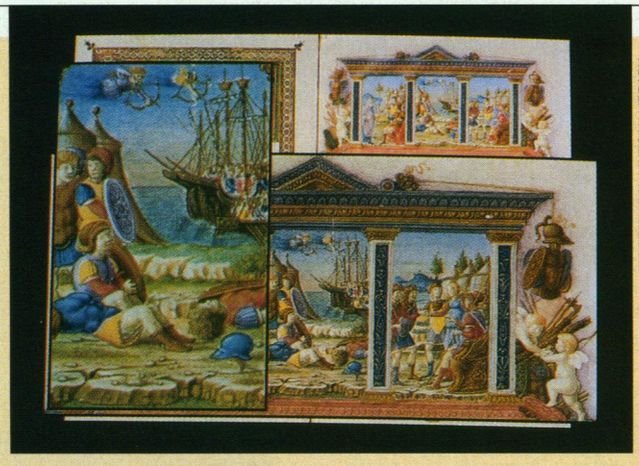
Acupuncture practitioners are seeking medical respectability, and now the medical establishment is helping them. Last month the National Institutes of Health's 2-year-old Office of Alternative Medicine and the Food and Drug Administration (FDA) put on a workshop to guide acupuncture proponents as they try to convince the government that their needles are bona fide medical tools.

In the United States, an estimated 90 million acupuncture treatments are given each year, and its use—for pain, stress, addictions, and other problems—is "rising exponentially," according to Joseph Helms, president of the American Academy of Medical Acupuncture in Berkeley, California. But acupuncture needles are still classified by the FDA as "investigational" devices. That means insurance companies won't pay for treatment. So as a first step, the acupuncture community wants their needles reclassified as Class II devices, where they would join low-risk items such as hypodermic needles.

To do so, practitioners must show the needles are safe and efficacious. That means controlled studies. But since the government hasn't been regulating acupuncture practice, "the pressure hasn't been there to do studies and present data," said Suzanne Parisian, a physician at the FDA's Center for Devices and Radiological Health. Since acupuncture is now so widely practiced, though, Parisian acknowledged that FDA "would be taking on the whole world" if it failed to come to grips with the issue.

Safety, it was agreed, is not a problem. Negative side effects from properly done treatments are almost unheard of. As for efficacy, there's enough data that "you can no longer say that acupuncture is voodoo," said physiologist and physician Bruce Pomeranz of the University of Toronto. Pomeranz described studies offering "17 lines of convergent evidence" that acupuncture activates endorphins as well as various neurotransmitters. And although scientists at the workshop said much clinical research done to date is of dubious quality, there is evidence for effectiveness on a range of conditions including pain, addictions, depression, and neurological problems.

The highest quality effectiveness data, said several speakers, are on acupuncture as a preventive for nausea and vomiting. And as Parisian pointed out, all it takes is one efficacious application to get the needles out of limbo.



IBM RESEARCH/VATICAN LIBRARY

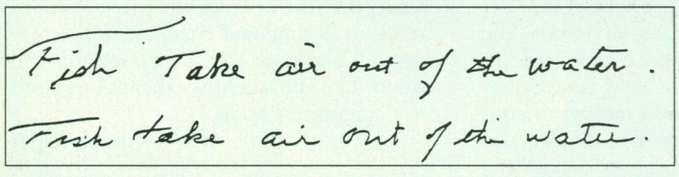
Forthcoming attraction. A panel in a triptych from a 15th century translation of Homer's *Iliad* is enlarged twice with color scanner.

Vatican On-Line

For hundreds of years anyone who wanted to see manuscripts of Virgil's poems or Ptolemy's *Geography* at the Vatican's library in Rome needed scholarly credentials and special permission. But in a couple of years, these treasures may be accessible to computer users around the world.

The library has teamed up with the Pontifical Catholic University of Rio de Janeiro and IBM to create a database of images from the library's huge collection of books, manuscripts, art works, and coins. Part of the "pilot project" announced last month will be to determine if high-quality digital images can be substituted for photographs in book publishing. The other major aspect of the project is to computerize the library's catalog and make it available on the Internet.

IBM spokesman Scott Brooks says it will take some time to sort out the digital image service, since legal matters of permissions and reproductions have to be resolved, as well as technical issues involved in converting the manuscripts into high-fidelity electronic images.



Before and after. Two handwriting samples from a 65-year-old man 5 years after a stroke causing partial paralysis of the hand. The top sample, pre-acupuncture, took 32.5 seconds to write. The second, done a month later after 20 acupuncture treatments, took 16.5 seconds. The study was conducted by Margaret Naeser and colleagues in the neurology department at Boston University School of Medicine and Boston's Veterans Affairs Medical Center.

Stabilizing Slippery Silicon

Some molecules are more slippery than others, and silylene, a type of silicon compound, has been particularly elusive. Researchers at the University of Wisconsin, Madison, have finally pinned it down by scalding silicon-containing molecules for nearly 3 days. The result is the first stable silylene, which gives chemists new versatility in creating silicon-containing materials.

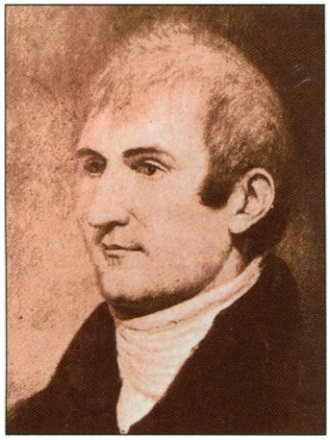
A silicon atom ordinarily forms four chemical bonds with neighboring atoms in a molecule. Silylene, however, only forms two bonds. Starved of two of its bonds and, therefore, two electrons, it will grab electrons from its neighbors. This reactivity enables chemists to make unique silicon-containing molecules. Unfortunately, silylenes usually don't stick around long—they appear only fleetingly in the midst of chemical reactions.

Wisconsin chemists Michael Denk and Robert West last year set about creating a silylene compound with staying power. In collaboration with Matthias Wagner and Mils Metzler at the University of Munich, they calculated that a molecule in which other atoms partially share electrons with the hungry silylene would be stable. They chose to bond a silicon atom to two nitrogen and two chlorine atoms. Then, they forced the two chlorines off by boiling the compound for three days in an organic solvent with a caustic reducing agent. But when it was all over, they report in the 23 March *Journal of the American Chemical Society*, the researchers had a molecule in which silicon was bonding only to the two nitrogens—a silylene stable enough to be stored at room temperature.

The synthesis is a one-step process, and Denk is "amazed at how easy it is to make." University of Tulane chemist Mark Fink says he's excited about the new process, but warns that because the silylene shares some elec-

trons with its neighbors, "its electronic character is different and it may not behave like" the evanescent silylenes that are more familiar to chemists.

Denk says that the silylene compounds are already offering chemists a method to create unique materials like transition metal silylene complexes, which are catalysts for making polymers.



THE BETTMANN ARCHIVE

End of madness. Explorer Lewis.

The Continental Divide and Death Delayed

The mysterious death of Meriwether Lewis, who with William Clark led the first expedition across North America to the Pacific Ocean, has long been a subject of contention among historians. While traveling in Tennessee in October 1809, 5 years after his famous expedition, Lewis stayed the night in a remote cabin. He was shot twice and died at dawn. Was it murder or suicide?

Epidemiologist Reimert Ravenholt says it was suicide, triggered by a terminal case of syphilis. Ravenholt, former director of the office of population at the U.S. Agency for International Development, has a taste for medical mysteries. "When I read of how agonizingly miserable Lewis was in the last months of his life," he says, "it was certainly very clear that this was neurosyphilis peresis"—which in the latter stages causes dementia and severe depression.

In the May issue of the journal *Epidemiology*, Ravenholt relates that the diaries of the Lewis and Clark expedition provide compelling evidence for his theory. Lewis may have acquired the infection on the night of August 13, 1805, when, celebrating the ascent of the Continental Divide the day before, he apparently had sex with a Shoshoni woman. And Lewis wasn't the only one in a celebratory mood: On 19 September, he wrote of "brakings out, or irruptions of the skin," among others in his party. Lewis also recorded that he was "anxious to learn whether [the Shoshonis] had the venerial," and learned, through an interpreter, that they "sometimes had it" and "most usually die with its effects."

That fall, writes Ravenholt, Lewis was suffering from an unnamed "severe and incapacitating illness." Four years later, he intimated to a former love that he knew he was going to die. And twice before his fateful journey, he attempted suicide. Nonetheless, numerous historians have insisted that Lewis, a national hero, could not have killed himself.

Ravenholt says the diagnosis was obvious, but that most historians have no medical training. "Still," he says, "it's hard to understand all those people who must have trampled over it in 185 years but didn't have the sense" to figure it out.

Song of the Top Quark

Soon after particle physicists made headlines last month with claims of finding "top quarks," this anonymous work—après Dr. Seuss—hit the Internet. A quick deconstruction may clarify some of its more obscure passages. The Colliding Detector refers to the house-sized particle detector at the Fermi National Accelerator Laboratory that gathered evidence for the quarks in question. D-zero refers to a competing detector at the same lab. DOE is, of course, the Department of Energy, and the dead collider is the Superconducting Super Collider. The ending reflects the confusion among physicists themselves, who are still trying to figure out whether the race for the top quark is over.

The Colliding Detector
was loaded for bear.
They had neutron detection
and silicon flair.
And a jungle of wires
(or current emitters)
and a muonic system
(with a bad case of jitters).
But the D-zero people
were ready, quite plain.
With their huge box of iron.
And unity gain.

And from far far away,
watching all of the thrills
Lived the big DOE
who paid all of the bills.
And they loved both
detectors
with hardly a doubt.
But they had to find
something
or else they'd be out!
Cause they answered to
Congress.
The meanest of mean!
Killed the Collider.
Killed it quick.
Killed it clean.

So they said to their labs
From the place where they
stood
"Here's the money.
Find TOP quarks.
And please, make it good!"

So the CDF group
in their own quiet way
found a one in a million.
Or more! Who can say?
But does D-zero see it too?
No they don't.
Well not really.
But then maybe they do!
It's such fun to know facts
That were thought to be easy
but turn out quite slippery
and also quite sneezy!

And so there you have it.
The TOP's in the bag.
And so on, researchers
can rightfully brag.
But wait! It's still out there!
Could it really be true!
And who'll really find it?
Maybe me.
Maybe YOU!

Cold Fusion Reproduced—on Paper

Cold fusion, dismissed by most scientists as an irreproducible flash in the pan, is still alive and well on the cover of the May-June issue of the *Technology Review*. The magazine is edited at the Massachusetts Institute of Technology (MIT), though it is not an official school publication. And the magazine's MIT connections have raised eyebrows rather high, since it was MIT researchers who in 1989, cold fusion's heyday, published some of the most devastating refutations of the claims.

"You bet it's embarrassing," says Paul Linsay, a physicist at MIT's Plasma Fusion Center who participated in those experiments. "It reads just like nothing has happened in 5 years." The cover story, by retired Los Alamos chemist Edmund Storms, one of the earliest champions of cold fusion, assures readers that "the basis for skepticism is dwindling as reports of energy-releasing nuclear reactions at room temperature pour in from labs around the world." *Technology Review* editor Steven Marcus says Storm's article was reviewed by "a distinguished faculty member at MIT" before publication.

Richard Petrasso, an MIT plasma physicist who played a major role in debunking the original research, says the article may be another manifestation of competition between the two prestigious Cambridge institutions. "If Harvard can push abductions by UFO aliens," said Petrasso, referring to a recent book by Harvard psychiatrist John Mack, "it's only fair that MIT still has cold fusion."