Caffeine and Parkinson's

Can coffee drinking stave off Parkinson's disease? A longitudinal study of heart disease in Hawaii offers the strongest evidence to date that the more coffee you drink, the less likely you are to develop Parkinson's, a disease that kills off dopamine-producing neurons and leads to tremors and motor impairment.

Several studies have already hinted that smokers are somehow protected against the disease. Now, a team led by neurologist Webster Ross of the Veterans Administration in Honolulu says caffeine may work better.

The data come from 8004 aging men, 102 of whom have developed Parkinson's since 1965. Scientists report in the 24 May issue of *The Journal of the American Medical Association* that non–coffee drinkers were two to three times as likely to get the disease as coffee drinkers. The risk went down fivefold for those who consume seven or more cups a day. Smoking had an independent protective effect, but diet and alcohol consumption were irrelevant.

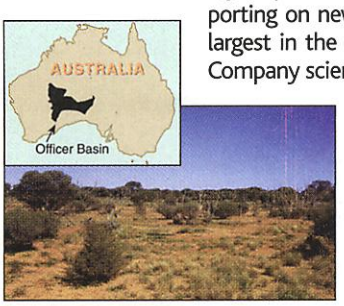
The Hawaii study parallels research presented last month at the American Academy of Neurology meeting in San Diego by researchers from the Erasmus Medical Center in Rotterdam. A 10-year follow-up of 8000 people over 55 found a lower incidence of Parkinson's in smokers, coffee drinkers, and alcohol drinkers.

The evidence linking coffee to protection from Parkinson's is now "very strong," says epidemiologist James Mortimer of the University of South Florida. The mechanism is still a mystery. Ross theorizes that caffeine may help keep dopamine levels up by removing chemical inhibition of its transmission. Mortimer and the Dutch team say drinkers and smokers may have higher dopamine levels to begin with: He says many people predisposed to Parkinson's don't get a kick out of popular vices—suggesting deficient dopamine systems.

Under the Outback

Australia's vast interior is largely desert. But underneath it are reservoirs of water about which little is known. That may soon change, however, as a mining company's sudden interest in one of the largest, the Officer Basin, promises to unearth a mother lode of data about these mysterious aquifers.

Last month Anaconda Nickel Ltd. of Western Australian announced that it hopes to exploit the contents of the basin, a huge deposit in sandstone that sprawls underneath South and Western Australia. Reporting on new test bores, Anaconda officials said that the Officer Basin, the fifth largest in the country, contains nearly fresh water that is not difficult to retrieve. Company scientists plan to date the water to determine whether it's an ancient deposit or a renewable reserve, and map it with airborne sensing of electromagnetic fields. Anaconda envisions a government-built pipeline servicing agricultural and mining operations in the region.



Desert covers huge aquifer.

"Anaconda's drilling program should provide a quantum leap in knowledge about one of Australia's larger and least known groundwater basins," says Philip Commander, a hydrogeologist at the West Australian Water and Rivers Commission. But he cautions that when it comes to being of use, "the Officer area is a long, long way from anywhere." Besides, says zoologist Bill Humphries of the West Australian Musem, draining the water might deplete shallow underground aquifers that support rare, blind species of marine life.

But the Australian press snapped up Anaconda's announcement. It touched, says Commander, "the deep-seated quest for the 'inland sea' in the Australian psyche."

Sounds Fishy?

How do fish ears work? That's what psychologist Richard Fay wants to know. He's found that goldfish, despite having primitive hearing systems, seem to process sounds much as humans do.

Unlike higher vertebrates, fish have no cochlea, a frequency-separating device, to discern pitch. To find out how well they perceive sound, Fay, a professor at Loyola University of Chicago, conditioned goldfish to respond to certain sounds by administering small electric shocks. In an experiment presented at the Acoustical Society of America's annual meeting in Atlanta this week, he looked at how the fish determine whether a sound is coming from a single source.

Aural examinee.

Imagine a series of alternately high- and low-pitched sounds pinging 40 times a second. If the interval is small, a human will perceive a single warbling tone. But as the interval increases the sound suddenly splits into two tones.

Fish, it turns out, perceive the same phenomenon. After training them to flinch at various 40-pings-per-second tones, Fay found that if the interval was increased the fish stopped flinching. Next on the agenda: finding out whether fish can also discriminate between complex musical tones with overtones.

Book Comes Home

The page above is from a 12th century English manuscript of treatises on medicine which was recently returned to the National Library of Medicine (NLM) in Bethesda, Maryland, after a 50-year absence. The NLM's Carol Clausen says they didn't even know it was missing until a sharp-eyed staffer at the Wellcome Medical History library in London called to say a Los Angeles book dealer had offered them a manuscript, for $200,000, that "looked very like" a catalog description of the NLM's book. That dealer had bought it from another dealer, who had picked it up in the estate auction of a former NLM cataloger in 1989. "We don't know that he stole it," says Clausen. "He might have taken it home to catalog." The NLM is putting on an exhibit of medieval manuscripts through 30 June to celebrate its return.

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