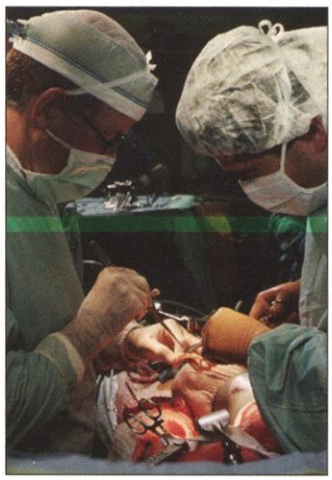
Reconditioned Livers

Green tea has developed quite a reputation in recent years as a cancer-fighter and plaque-dissolver, although the science is sometimes skimpy. Now researchers at the University of North Carolina say it may have another use: making fatty livers more transplant-worthy.

There are about 18,000 people waiting for liver transplants in the United States, but only about 4500 new livers become available each year. A major source for livers are people who die on the road. But alcohol is a common player in accidents, so perhaps 30% of the livers that become available have fatty buildups, one of the early manifestations of heavy drinking. Alcohol causes fat formation by increasing production of triglycerides and blocking them from being passed out of the liver, says hepatologist Zhi Zhong of the University of North Carolina, Chapel Hill. Fatty livers put out more free radicals, which researchers believe may be responsible for primary graft failure, which occurs in about 10% of transplants.



Liver transplant.

But green tea extract might substantially enhance the fitness of transplanted livers, says Zhong. The researchers mimicked the bodily effects of a binge on mice by putting alcohol in their stomachs via a tube. They killed them 20 hours later, took out their livers—which already had started building up fat deposits—and infused them with a solution containing green tea extract, which is rich in free radical scavengers called polyphenols. The extract increased the survival of about 85 transplanted fatty livers from 13% to 75%, Zhong reported last month at the meeting of the American Physiological Society in New Orleans.

Previous rat studies by the group showed that consumption of green tea extract may stem liver damage from trauma or blood loss. Would drunks have more respectable livers if they also drank a lot of green tea? "I think so," says Zhong. Liver researcher Bin Gao of the National Institute on Alcohol Abuse and Alcoholism agrees that green tea appears to have a protective effect on the liver, but there are "so many components" in it that it's still not clear how it works.

First, Do No Harm

"To my knowledge, after Thomas Jefferson, the first secretary of state, there has been only one other secretary of state with a background in science—moi. ... I happen to hold a bachelor of science degree in geology from the City College of New York. And my great contribution to the field of science is that I never entered it."

—Secretary of State Colin Powell, in 30 April speech at the annual meeting of the National Academy of Sciences

Big Bucks for Bird Brain Studies

Jarvis and hummingbird.

Neurobiologist Erich Jarvis of Duke University has been awarded this year's prestigious Waterman Award for his work on discovering brain areas and genes involved in bird vocal learning. The award, from the National Science Foundation, carries with it $500,000 in research funds.

Jarvis, 35, got his doctorate from Rockefeller University—one of only 52 African-American men out of more than 4300 biologists to get Ph.D.s in 1995—working with renowned birdsong researcher Fernando Nottebohm. He recently published work showing that hummingbirds share with songbirds and parrots the special brain structures that are active in song and talk. The three bird orders are the only ones known to be capable of vocal learning. Jarvis is especially interested in comparing these brain structures with language structures in humans.

Jarvis is the 27th winner of the award, which goes to researchers 35 or under, and the first black winner. He was to be honored at a 7 May ceremony in Washington, D.C.

Salvaging Florida's Orchids

With 116 native species, Florida is the nation's orchid hotbed. But development and poaching are putting the pinch on wild orchids, especially around Naples, on the southwest coast. All 43 of the region's orchid species are on the state's endangered or threatened species list. Researchers say the problems include pesticides, loss of habitat, and the fact that some orchid colonies have grown too small to attract pollinators.

Now scientists and private collectors are hoping to reverse the orchid decline with the Native Orchid Restoration Project. Funded by the National Fish and Wildlife Foundation and private donations, it cost $250,000 to set up and will need $150,000 a year.

Scientists are preparing to culture rare blooms, from the delicate, leafless white ghost orchid (see above) to the speckled and sprawling cigar orchid, which will then be transplanted to Florida's forests and swamps. They are also studying how the environment, especially different types of fungi and pollinators, affects orchids' propagation and growth. One goal is to make them more efficient at spreading themselves around: Wild orchids may produce up to a million seed pods, but only a few may survive, says Lee Hoffman of the Naples Orchid Society, who is president of the restoration project.

Researchers will grow orchids in new labs and greenhouses that are being set up in the Naples area at Caribbean Gardens, a zoo, and the Florida Panther National Wildlife Refuge. Those raised at the refuge are to repopulate the wild; the zoo blooms will be sold to help finance the project. Making the plants readily available to the public also is intended to cut down on theft. "It's not a question of if it's rare," says Hoffman. "If it's an orchid, people will poach them."