Cyanide Named as Kentucky Foal Killer

After 3 weeks of feverish detective work, researchers late last month identified the likely cause of more than 500 stillbirths or deaths of newborn thoroughbred foals this spring in central Kentucky. The culprit: cyanide from wild black cherry trees, passed on to mares via caterpillars.

The crisis occurred at the height of Kentucky's thoroughbred foaling season. In late April, sick newborns with respiratory problems started showing up at veterinary clinics, and aborted and stillborn foals arrived daily at the University of Kentucky, Lexington, for study.

Hundreds of scientists and veterinarians from the United States and abroad were mobilized to find what was striking at the heart of the world's thoroughbred industry. After testing animal, food, and environmental samples, the researchers ruled out infectious agents, shifting their attention to toxins from fungi growing on feed grasses. Then suspicion focused on eastern tent caterpillars, in great profusion this year, some of which tested positive for mold toxins or cyanide. Finally the link was made with caterpillar fodder: cherry trees, whose presence often seemed to coincide with a foal tragedy.

Cherry trees bane to pricey horseflesh.

Toxicologist Thomas Tobin of the university's Gluck Equine Research Center explains that cyanide became concentrated in dry cherry leaves due to a hot early spring followed by a freeze and a drought. Caterpillars stripped most of the trees bare by the end of April, and droves of cyanide-laden creatures and their equally toxic feces suddenly appeared in pastures and water tanks, where they were apparently ingested by pregnant mares. Cyanide is hard to detect because it dissipates so rapidly, says Tobin, but it was found in dead foals, and their symptoms were consistent with cyanide poisoning, which blocks oxygen delivery. A team of experts is now visiting farms to figure out exactly how the calamity occurred.

Measuring Up

Japan's economy may be in the dumps, but that doesn't seem to stem a yen for setting up high-stakes scientific awards. The latest entry is by high-tech entrepreneur Ikuo Takeda, who in April established a foundation to honor measurement and testing engineers with an annual cash prize of 1 million yen ($800,000). Takeda, 78, founded the forerunner of what is now Advantest, which sells measurement and test devices used in making semiconductors and telecommunications equipment.

Three awards will be given each year for innovative work in information or electronics, life science, and environmental science related to measurement technology. The foundation, whose program is being managed in part by SRI International in Menlo Park, California, will also offer scholarships and "techno-entrepreneurship" research grants. The first Takeda Award winners will be announced in September.

Dissecting Schizophrenia

Researchers have fingered a variant gene carried by many schizophrenics that appears to be implicated in cognitive problems that characterize the disease. The study, which appears in the 29 May *Proceedings of the National Academy of Sciences*, is one of the first to reveal the way a specific gene contributes to mental illness.

Psychiatrists Michael Egan and Daniel Weinberger of the National Institute of Mental Health (NIMH) in Bethesda, Maryland, have been looking for specific mental anomalies in schizophrenia-prone families that might be associated with schizophrenia in the same way that high cholesterol levels track with heart disease.

One approach they used is a test in which subjects match cards of different shapes and colors. This job uses the prefrontal cortex, relying on dopamine and a dopamine-degrading enzyme, catechol-*O*-methyltransferase (COMT). The NIMH team confirmed earlier studies hinting that schizophrenics are more likely to carry a "fast" version of COMT. People with the fast variant got lower scores on the card test, presumably because their dopamine was being degraded too fast.

The subjects' brains were also imaged during a number memory test. The prefrontal cortex was more active in subjects with the faster enzyme, indicating that it had to work harder.

"This is a major paper," says psychiatrist Michael Flaum of the University of Iowa College of Medicine in Iowa City. It "gets to a particular [brain] mechanism involving a single protein" and links it with a particular cognitive function, he notes: "It's a good example of 21st-century psychiatry."

Healthy Life on the Plains

American Plains Indians were among the tallest people in the world in the middle of the 19th century, according to a new analysis of bone measurements. That, says economic historian Richard Steckel of Ohio State University, Columbus, means they were healthier and better nourished than many have assumed.

Steckel and anthropologist Joseph Prince of the University of Tennessee, Knoxville, analyzed height data originally collected by Franz Boas on 1123 adult male Indians from eight tribes. The shortest ones averaged 168 centimeters—the same as the average Scotsman. The tallest were the Cheyenne from the central plains, who averaged 176.7 cm—way above the Australians, at 172 cm the tallest men of European descent at the time.

The data on the Plains Indians are "dramatically at odds with preconceptions of their standard of living relative to European Americans" and show their resilience in the face of periodic epidemics, the authors note in the latest issue of *The American Economic Review*. Steckel attributes this to their rich and varied diet of buffalo and vegetables; their mobility, which kept them from accumulating waste and parasites; and their communal lifestyle.

Tallest men in the West.

Economic historian Robert Margo of Vanderbilt University in Nashville, Tennessee, says, "In terms of traditional notions of living standards, Plains Indians were 'poor.' " But they may have been better off than more sedentary Euro-Americans, whose height at midcentury, he says, was actually declining, probably because of unhealthy aspects of industrialization.

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