

Cute cross-species birth

No, it's not genetic engineering, it's immunology. In an ongoing study of the role of immune responses in early spontaneous abortions, researchers at Cornell University in Ithaca, N.Y., and Cambridge University in England successfully induced mares to carry artificially implanted donkey fetuses to term by injecting the mares with donkey white blood cells.

The research may shed light on why some mares and humans chronically miscarry. In other studies elsewhere, women who had chronically miscarried gave birth after receiving injections of their husbands' white blood cells.

Douglas F. Antczak, an associate professor of immunology at Cornell, says he has "no idea" why the white blood cell injections work. "It's a little embarrassing," he laughs.



Cornell University

Untreated donkeys can serve as surrogate mothers to horses, and untreated mules to donkeys and horses, but until now, about 90 percent of horses would spontaneously abort an implanted donkey embryo very early in the pregnancy. In this study, three of six horses receiving donkey embryos gave birth.

The pregnancy of a horse with a donkey fetus, the only one of the four kinds of equine pregnancy that is almost always subject to these spontaneous early abortions, is also the only one in which fingertip-sized structures on the placenta called endometrial cups do not form. Endometrial cups secrete the hormone chorionic gonadotropin, which stimulates the release of other hormones needed in early pregnancy. But injections of this hormone do not prevent the abortions. Endometrial cups did not develop in the recent horse/donkey placentas, but the correlation between their absence and the abortions, as well as other findings, suggests how important they may be to a normal pregnancy, says Antczak.

American songbirds declining

The destruction of tropical forests in Mexico and Central America is reducing the numbers of migratory songbirds in the United States, said biologists at a recent National Audubon Society conference in Silver Bay, N.Y.

Migratory birds such as warblers, thrushes and tanagers are finding fewer winter retreats because tropical forests are being bulldozed to make cattle ranches, says Sandy Sprunt, vice-president and director of research for the New York-based society.

However, U.S. Fish and Wildlife biologist Marshall Howe suggests a different reason for the decline. Preliminary data, he says, indicate that habitat destruction in the United States, where migratory birds nest, may affect birds such as flycatchers, warblers and vireos more than the destruction in Latin America. "But neither point of view is well substantiated," he says.

"Both are a problem," says Sprunt. "But the destruction in the United States is not going on nearly as fast."

On the scent of Gorda ridge vents

Hunting for hydrothermal vents in the ocean is like looking for the proverbial needle in a haystack. But scientists who went on a cruise last May think they are on the trail of two possible vents along the Gorda ridge, a seafloor-spreading ridge off the coast of Oregon.

With the National Oceanic and Atmospheric Administration's (NOAA) ship *Surveyor*, a team of researchers collected water samples from two areas on the northern end of the ridge that exhibit some of the signs of nearby hydrothermal activity: high concentrations of manganese, iron particles and dissolved radon gas.

"We haven't found any vents yet," says chemical oceanographer Robert Collier of Oregon State University in Corvallis. "But in my mind there is very strong evidence for them." According to Collier, manganese levels in these two spots were 10 times higher than in normal seawater and were comparable to that found within 5 kilometers of vents on the nearby Juan de Fuca ridge. The researchers are now trying to arrange another cruise to narrow down this range before the U.S. Geological Survey scours the regions with more refined instruments later this summer.

The Gorda ridge is of scientific interest in part because its spreading rate—the rate at which new ocean floor is created—is slow, and the best-studied vents have been along faster-spreading ridges. The possibility of vents along the Gorda ridge has also stirred up political and public interest because it is the only ridge lying within the United States' Exclusive Economic Zone. A task force of federal and state agencies plans to study the economic and environmental impacts of mining mineral-rich vents along the ridge if they are found.

News of magnetic poles . . .

The earth's magnetic poles are continuously migrating over the polar regions of the planet. For the benefit of navigators, it is necessary to track them down from time to time. The location of the North Pole was recently reported by Canadian geophysicists, who say its new site falls pretty much along its expected path of travel.

According to Larry Newitt at the Department of Energy Mines and Resources in Ottawa, the North Pole has journeyed northwest 800 kilometers since 1904. Geophysicists attribute this long-term migration to the complex motion of the earth's fluid core. Superimposed on this pattern is an erratic jig—in which the pole can wander by as much as 80 km in one day—induced by the movement of charged particles that get trapped by the geomagnetic field in the upper atmosphere.

The average position of the pole measured in May 1984 was 77° north and 102.3° west. In 1973, the last time the scientists had looked for it, the pole was at 76° north and 100.6° west.

. . . and deep drilling holes

West Germany has given the go-ahead for a 14-kilometer hole to be drilled in either the Black Forest or the Upper Palatinate district beginning in 1988. German geophysicists are especially interested in using the hole to study the stresses that have developed over the last 600 million years in the European crust from the interaction of the American, African and Asian plates.

German officials also recently visited the United States to discuss the possibility of cooperation, such as sharing technical know-how, between the drilling programs of the two countries. The United States' Continental Scientific Drilling Program is just getting up to speed, with a number of sites now being considered for future drill holes. Other nations with deep-drilling programs include Canada, South Africa and the Soviet Union, which so far has drilled a 12-km hole—the deepest to date.