RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Ancient Stone Road Found in Ireland

Archaeologists in Ireland have uncovered a cobbled roadway dating from the Iron Age—about the time of the birth of Christ—making it the oldest known Celtic stone road. The find is causing experts to rethink early Ireland's history, particularly concerning the compelling possibility that large-scale movements of troops, people, and goods in wheeled vehicles took place along the frontiers of warring Celtic kingdoms.

Workers in the Irish government's Discovery Programme in archaeology recently discovered the road by digging out samples at a military-style Celtic earthwork in southwest Ireland. The earth wall, called "Black Ditch," is a long mound, flanked on each side by a ditch, that snakes through 22 km of countryside from the Ballyhoura Hills to the Nagle Mountains. Post holes reveal that a stout wooden fence ran along the top of the bank, which links the sites of several known Celtic forts.

Such formations, generally thought to mark borders, have been found elsewhere in Ireland. But what came as a "complete surprise" was a cobblestone road running alongside one of the ditches, says project director Martin Doody. Celts are known to have constructed roads of oak for crossing bogs. But, says Doody, "we have never before found any evidence that the people here at this time were building stone roadways."

From peat samples over the road, scientists dated it to A.D. 139, but the style of the earthwork suggests the road is even older, perhaps constructed as early as 100 B.C. That era is known for big building projects—such as a huge wooden structure at Navan Fort in Armagh—and great battles between emerging Celtic kingdoms.

Archaeologist Barry Raftery of University College Dublin, an expert on oak roads, says this might be the first evidence that wheeled vehicles—either carts or military chariots—were in use at the time, as they were in England. Scientists have yet to establish whether the roadway was used as a trading route or was built for military purposes, says Discovery Programme manager Ronan O'Flaherty. The next step will be to consult early Irish texts for clues to what archaeologists are now calling the "Riddle of the Black Ditch."

Boys + Girls + Math

A 2-year study of very young, mathematically talented children adds to evidence that math ability is a stable trait, and that the small sex difference favoring boys is also more stable than some have assumed.

Education researcher Nancy M. Robinson of the University of Washington, Seattle, and colleagues followed 276 children, aged 5 1/2 to 8, first identified during preschool and kindergarten as in the top 2% for their age groups on standardized tests of math ability. Half the children took part in 2 1/2 hours of extra communal math-oriented activities every other Saturday over 2 school years. The control group just went to school.

The boys initially tested somewhat higher than the girls, and the researchers found that neither regular nor enriched schooling narrowed the gap. "We had predicted (even hoped)" that schooling would compensate for the fact that girls engage in fewer "math-rich" extracurricular activities, the authors write. But in the control group, "the boys gained overall in mathematical and visual-spatial scores more than did the girls." In the intervention group, everyone's quantitative skills improved—but again, the girls failed to catch up, the authors report in the current issue of *Gifted Child Quarterly*. They note that over time, the students' math abilities relative to their less able peers stayed the same or even increased, which suggests that preschool precocity is a stable characteristic and not just a "flash in the pan." However, they find "the early and persistent appearance of gender differences ... disheartening."

Psychologist David Lubinski of Iowa State University in Ames says Robinson's findings "fit in" with findings about older gifted children. While Robinson says any explanation for the sex difference can only be "speculation," Lubinski believes it has a lot to do with "preferences." Mathematically and scientifically precocious boys, his research has shown, tend to pursue such interests single-mindedly, whereas precocious girls often are equally drawn to nonscientific interests.

WILLIAM THUSS

Nature through glass. These images, made by a cameraless photographic technique called cliché verre, are part of an exhibit at the National Academy of Sciences to open on 26 March. Artist Maggie Foskett of Sanibel Island, Florida, composes assemblages the size of a large postage stamp on a glass plate, which she puts in an enlarger. When light is shone through the glass, it registers the image on color-sensitive paper. At left is "Lightly Turns," a dragonfly wing on a background of allamanda petals; at right is "Down by the Bayou," made from x-rays of two lizards and an alligator with a dislocated jaw obtained from a nearby wildlife rehabilitation clinic.

Pollinators in Peril

An international group of scientists is calling for measures to stem a drastic decline of species that pollinate plants. The decline threatens not only biodiversity but the world's food supply, they assert in the February issue of *Conservation Biology*.

Honeybees, on which many commercial crops depend, are in especially bad shape, say the scientists. In addition to pesticides and habitat loss, they are threatened by a scourge of parasites that has cut their population by 25% since 1990. Other pollinators—insects, rodents, birds, and bats—are in trouble too, and many are on the verge of extinction, the authors say.

"This is the most perilous decline of any serious agricultural [resource] in our lifetime. We anticipate declining yields of food crops if nothing's done," says lead author Gary Paul Nabhan, an ecologist at the Arizona-Sonora Desert Museum in Tucson. The authors urge reductions in pesticide use, as well as plantings to create "nectar corridors" along highways so insects have an alternate pollen source when crops are out of season.