

RANDOM SAMPLES

edited by CONSTANCE HOLDEN

French Reach Accord on Rescue Archaeology

French archaeologists suspended a weeklong strike last week after culture minister Catherine Trautmann agreed to shelve plans that they said would have endangered ancient remains unearthed by construction projects. The government says it will reconsider a proposed law that archaeologists claimed would let private contractors compete for bids to undertake "rescue archaeology."

Archaeologists from public

agencies across France staged protests in Paris, Strasbourg, and Lyons, worried that the quality of rescue archaeology would deteriorate in the hands of private contractors. At present, nearly all such work is done by the Association for National Archaeological Excavations (AFAN), a quasi-public group that employs archaeologists from public agencies. Turning rescue archaeology over to the free market, asserts one AFAN member, creates the danger that "it wouldn't be archaeology anymore, it would just be digging."

Culture ministry spokesperson Jean-Paul Ciret told *Science* that the government never intended to turn to private contractors, but only wanted to end AFAN's "de facto monopoly" and be able to award contracts directly to archaeology research units at public universities and government agencies. At a 7 October

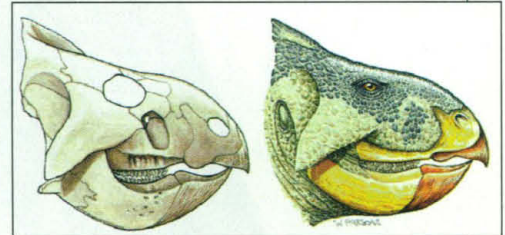
meeting with strike representatives, Trautmann promised that no projects would go to private contractors and also agreed to propose legislation to turn AFAN into a fully public agency—a move archaeologists have been demanding for some years (*Science*, 7 Febru-

ary 1997, p. 746). The strikers, for their part, agreed that the government could bypass AFAN at times and award contracts directly to other public agencies on the basis of scientific merit. New legislation is expected to be ready by the end of the year.

No Cheek From These Dinos

Most kids—and scientists—picture *Triceratops* chewing its leafy meals with the help of pudgy cheeks. But according to research presented earlier this month at the annual meeting of the Society of Vertebrate Paleontology in Snowbird, Utah, the widespread herbivore of the Cretaceous 70 million years ago can't credit cheeks for its success—it probably had a simple horny covering along its jaws.

Paleontologists have long



Skull and new restoration of *Leptoceratops*, with fat cheeks replaced by horny bill.

assumed that ornithischian dinosaurs such as *Triceratops* sported cowlike muscular cheeks. "Some pretty heady ideas were based on these cheeks," says Larry Witmer, a vertebrate paleontologist at Ohio University, Athens. For example, many scientists attributed the diversification of ornithischian dinosaurs to a better ability to hold food in the mouth while chewing.

But Witmer points out that the dinosaurs' closest living relatives—birds and crocodiles—lack cheeks. Moreover, dinosaurs lack the bony ridges to which cheek muscles attach in mammals; *Leptoceratops*, for instance, had only a smooth shelf of bone above the teeth. *Triceratops* and other ornithischians probably had a more extensive horny covering to the jaws. Because this would not hold food like a mammalian cheek, "we may have to take another close look at how they fed," Witmer says.

Other dinosaur experts agree. The finding "could have important ramifications for our understanding of the feeding of herbivorous dinosaurs," says Greg Erickson of Stanford University.

Nothing Ventured, Nothing Lost

"I would not support setting aside a portion of a budget for 'risky science'—that would be risky."

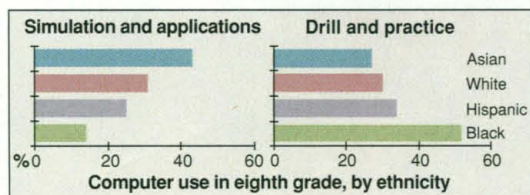
—Presidential science adviser Neal Lane, in a 7 October interview with *Science*

Giving computers to kids early in elementary school may be a waste of money and even counterproductive—at least when it comes to teaching math, according to findings released earlier this month by the Educational Testing Service (ETS).

The study is based on data for 6600 fourth graders and 7100 eighth graders who took part in the National Assessment of Educational Progress, which in 1996 for the first time included detailed surveys of computer use in classrooms nationwide. For fourth graders, the study found, using computers for math drills and practice—such as figuring out answers to simple arithmetic problems—had no effect on grades. When computers are used just for this purpose, "students would be better off not bothering at all" with them, says the study's author, ETS's Harold Wenglinsky.

By eighth grade, however, computers in many classrooms are employed to more sophisticated ends, such as simulations and applications of math concepts to real-life problems. For these students, the report found, computers had a "substantial" effect overall, jacking up performance by two-fifths of a grade. But minority students did not benefit as much—in eighth grade, for example, more than half of black computer users were still mainly in the drill-and-practice mode, which actually appears to depress grades at that age, compared with 30% of whites.

Douglas H. Clements, professor of education at the State University of New York, Stony Brook, says the study left undefined "too many variables, including the specific type and quality of the software and the teaching that incorporated it." Nonetheless, he agrees there's a message here: that "it's how you use [educational technology], not how much it is used," that counts.



Dubious Benefits for Early Computer Use