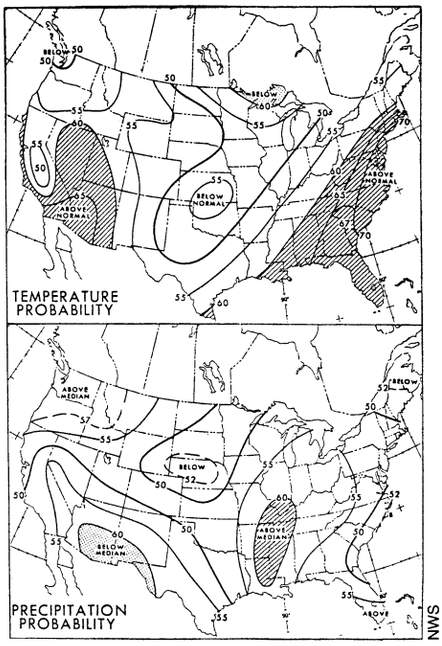
Forecasters gamble on a mild winter

Mild in the East, mild in the West and cold in the middle. Donald L. Gilman, Chief of the Predictions Branch at the National Weather Service in Washington, D.C., drew an optimistic, if tentative, picture of what we can expect from this winter's weather. For the second year running, he says, much of the nation is likely to experience warmer weather than normal. Last year's wet, extremely mild winter was caused largely by the El Niño, a massive warming of the equatorial Pacific. That disturbance is dying out (SN: 11/5/83, p. 298), but in their search for past weather patterns similar to the present one, the forecasters noted that the winter of 1973-1974, following the last strong El Niño, also was generally mild. Such a pattern of warmth on the coasts and cold in the nation's center occurs once in 10 or 15 years, Gilman says.

The Pacific warming last year disrupted the westerly winds, and prevented them from dipping south from the Arctic. This year, Gilman says, the westerlies are expected to dip more strongly, bringing occasional frigid Arctic blasts into the central states. A band from northern Minnesota to upper Michigan stands a 60 percent chance of being colder than normal, while parts of Kansas and Oklahoma have a 55 percent chance for an extra nip. There is a 70 percent probability that the East Coast from South Carolina to Long Island will enjoy warmer weather than usual while the far Southwest, Nevada and the California coast stand a 60 percent chance for a warmer than normal winter. Only the Northwest, Midwest and lower Mississippi Valley are likely to receive more precipitation than normal. The Southwest may be drier than usual.

Winter Outlook



NWS

Vast chunks of the country — much of the Great Plains, Midwest and the Pacific Northwest — are in a statistical fog and provide too little information to allow the predictors to set clear odds on a specific temperature pattern. Nor are there strong odds for high or low precipitation on the East Coast, Great Plains or much of the Rockies. In recent years, the National Weather Service three-month winter outlooks have been accurate 65 percent of the time. Says Gilman: "We're handicappers, not prophets." —*C. Simon*

Antibody targets kidney rejection

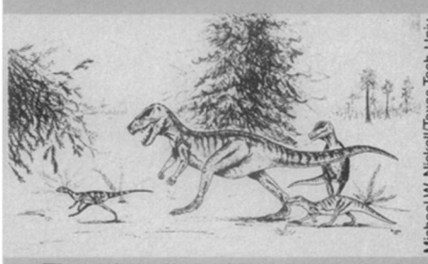
Though the one-year survival rate for kidney transplants has jumped to between 90 and 97 percent today, battling bouts of rejection without overprescribing drugs remains a problem for transplant surgeons and their patients. The same drugs a transplant recipient needs daily to keep from rejecting the new kidney also thwart the ability to fight infection. In a preliminary report in the Nov. 19 LANCET, researchers cite what could be a new tool in the quest for a selective weapon against transplant rejection.

A new monoclonal "antiblast" antibody, CBL1, reversed the rejection process in 17 of 19 transplant patients treated, report Paul I. Terasaki of the University of California at Los Angeles School of Medicine and H. Takahashi of the Sendai Shakaihoken Hospital in Japan. Even if further work confirms the early results, CBL1 would not replace steroids or cyclosporine (SN: 3/5/83, p. 150) in prevention and treatment of chronic rejection of organs, Terasaki told SCIENCE NEWS. Rather, CBL1 would join the arsenal in fighting the severe, acute bouts of rejection that are sometimes resistant to conventional therapy.

Monoclonal antibodies, the specialized protein "bullets" that are gaining widespread use in medical research and therapy because of their ability to seek and bind to specific target cells (SN: 5/7/83, p. 296), are not new to transplant research. About two years ago, John Hansen and colleagues at the Fred Hutchinson Cancer Research Center in Seattle began using them to increase the effectiveness of bone marrow transplants (SN: 2/14/81, p. 104). And A.B. Cosimi and colleagues at Massachusetts General Hospital in Boston tested a monoclonal antibody called OKT3 in kidney transplants. Since then, several teams around the world have developed their own brand of these antibodies, each designed to eliminate the subgroup of T lymphocytes (a type of white blood cell) that seems crucial in mediating rejection. CBL1 is unique, Terasaki said, because it is even more selective — targeting for destruction the activated "blast cells," primitive bone marrow cells that later give rise to tissue rejection. "Use of this [CBL1] at the height of rejection should kill only those cells that are reacting against the graft," he said. Because it targets bone marrow, CBL1 risks damaging the body's ability to make healthy blood cells, but no such complications arose in the preliminary study, the authors report.

"This is a different kind of approach that is worth a lot of careful follow-up work because it is looking at a different aspect of the immune system," said Charles B. Carpenter, who researches monoclonal antibodies in transplantation therapy at Harvard Medical School. —*D. Franklin*

Dinosaur ancestors unearthed in Texas



Michael W. Nickell/Texas Tech Univ.

The unfriendly looking creature in the center may have been the ancestor of Tyrannosaurus, *says Sankar Chatterjee of Texas Tech University in Lubbock. The newly discovered animal, named* Postosuchus *for the town near the quarry in which the fossils were found, lived 200 million years ago during the Triassic Period. A hunter, it may have traveled in a pack and cared for its young.* Postosuchus *was 13 feet long and weighed about 600 pounds. While it looked like a miniature* Tyrannosaurus, Postosuchus *was a reptile, Chatterjee says, based on the structure of its ankles and pelvis.*

Researchers working at the Dockum Formation about 60 miles from Lubbock also found a four-inch long piece of upper jaw, including teeth. Chatterjee announced last week that it belonged to a new genus of plant-eating dinosaur (left), yet unnamed, that he believes is the earliest known ornithischian, or bird-hipped dinosaur. Ornithischians evolved to become one of the two great lines of dinosaurs, and included the armored and duck-billed dinosaurs. Tyrannosaurus *belonged to the other line, the saurischians.*

The quarry also yielded an ancient jaw similar to that of a modern snake, and an ictidosaur, an early mammal-like animal. Chatterjee suggests that the animals perished when a flash flood rushed through the countryside. Now the area is parched and rocky, but in those days, water was abundant and vegetation lush. When the flood gushed past, the creatures in its path were buried rapidly and their bones preserved.