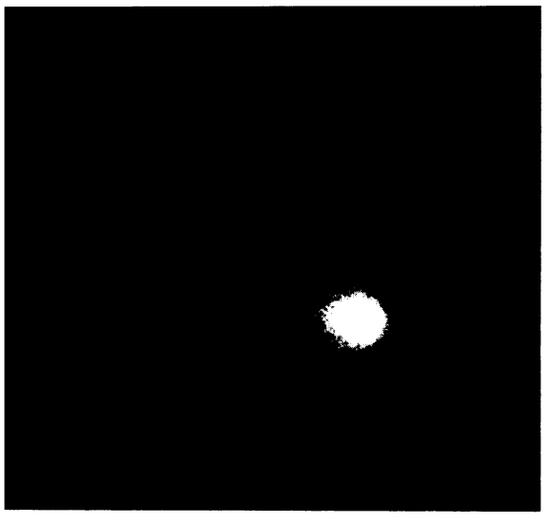

Comet Kohoutek

A photograph of the comet Kohoutek in last week's issue, taken Sept. 29, failed to reproduce accurately when enlarged for printing. This more recent photo of the approaching comet was taken Oct. 26 by astronomers at the University of California's Lick Observatory, using the observatory's 20-inch astrograph. The comet should soon be visible to the naked eye above the southeastern horizon before morning twilight. It will not become an evening object until Dec. 28, after it passes around the sun. In early January it may be magnificent in the west-southwest after sunset.

Switching off allergies: A 'silencer' molecule?

An allergy is a superreaction of a supersensitive person to substances as diverse as pollen, dust, steamed clams or penicillin. Allergy victims announce their presence by wheezes, sneezes, tearing eyes or runny noses. Thirty-one million Americans suffer from allergies. They lose $285 million in work hours annually because of their problem.

The only treatment now available is time-consuming, costly and too often ineffective. It consists of weekly shots of the allergen (substance) to which a person is supposedly allergic. Why such shots desensitize some patients and not others is not clearly understood.

A more effective and economical treatment for allergies is needed, and one promising approach is being explored by David H. Katz, Toshiyuki Hamaoka and Baruj Benacerraf of Harvard Medical School. These three research immunologists report in the October PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES that they have managed to switch off, in mice, the class of antibodies that causes allergies. They hope they'll be able to take a similar tack in switching off allergies in people.

When a specific organic molecule—"Dnp"—is linked with a protein and then injected into an animal, it prompts lymphocytes in the animal to make the class of antibodies that causes allergies. But when Dnp is linked with a particular molecule that does not exist in nature—"D-GL"—and is then injected into an animal, the lymphocytes no longer make the antibodies. Why the Dnp-D-GL packet triggers this response is not yet known. But being able to switch the antibodies off may constitute a way of switching off allergies.

Just injecting a Dnp-D-GL packet won't turn off allergies, though, Katz says. The reason is that lymphocytes of different specificities are involved in each allergic response. Wiping out the lymphocytes that respond to Dnp won't wipe out the lymphocytes that respond to a particular allergen. So the allergen in question would have to substitute for Dnp in the Dnp-D-GL package. This way those lymphocytes that normally respond to the allergen would no longer respond because the allergen is hooked to the silencer D-GL. In other words, if you were allergic to pencillin, you would get injections of penicillin allergen linked to D-GL. Or if you were allergic to ragweed pollen, you would get ragweed allergen linked to D-GL. "We are in the process of making a molecule of a ragweed allergen linked with D-GL to test initially in mice," Katz says.

Because only specific lymphocytes would be turned off by this method, Katz is not unduly concerned that lymphocytes needed to fight infections would be wiped out. But there is this possibility. So for this and other reasons related to possibly harmful side effects, more research has to be done before lymphocyte silencing can be used to treat allergies. □

A record year for tornadoes in the U.S.

After only five months of 1973 had passed, meteorologists were beginning to think that it might well become the Year of the Tornado (SN: 6/16/73, p. 387). Now they know it.

On Sept. 25, tornado No. 930 set a new record for the number of twisters in the United States in a single year, breaking a mark which had stood since 1967. Less than a week into November the number was up to 975. Besides the national record, 10 states —Connecticut, Illinois, Indiana, Kansas, Maryland, Michigan, Missouri, New Jersey, North Carolina and Ohio —have each been blasted with unprecedented numbers of tornadoes this year.

From 1916 through 1935, the first 20 years during which coordinated records were kept, there was an average of about 136 twisters reported per year. In the 20 years ending in 1972, however, the annual average was up to 659. Much of the difference is due to better reporting of storms, says Allen Pearson, director of the National Severe Storms Forecast Center in Kansas City. Nonetheless, he says, it does seem that for some reason the numbers of tornadoes have been growing in recent years. This is the third year in a row in which the total has exceeded 700 (it had only happened three previous times in the past), and the twelfth year in 14 with more than 600 tornadoes.

The death toll, fortunately, is low. There have been 75 fatalities so far in 1973, compared to a 20-year average of 114 and an all-time record of 794 in 1925 (689 of them due to a single titanic twister that blitzed Missouri, Illinois and Indiana).

A lot of the credit for the low death tolls, says Pearson, goes to improved warning systems. Perhaps the largest single system is Project Skywarn, operated by the National Oceanic and Atmospheric Administration and so far working in 30 states and the District of Columbia. A NOAA educational program urges any person actually spotting a tornado, either visually or on radar, to report it to the nearest National Weather Service office or law enforcement agency (who will relay it to the NWS). There the warning is checked and sent out, with an alert signal, over the NOAA Weather Wire service to radio and television stations.

Last month, for example, a tornado was reported heading for Salina, Kan. Besides the radio and TV warnings, a network of 16 sirens was used to sound an alert, and law enforcement officials patrolled the streets in the section where the twister was predicted to strike. When the tornado struck, it roared straight through a trailer camp on the edge of the city, but the camp's population of about 80 had gathered in a shelter beneath the camp clubhouse. The clubhouse itself exploded, and the 44 mobile homes were totally destroyed. ("I saw it myself," says Pearson. "Most of the debris was no more than knee high.") Death toll: Zero.

The tornado's rampage was far from over, however. It hopped along the ground from town to town—from Salina to New Cambria to Niles to Clay Center to Greenleaf—flattening hundreds of homes, businesses and other structures, yet only three fatalities resulted. □