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climatologist David Halliwell, cautioned that the current Alberta temperature increase, "if indeed there is one, is still within the normal range of variation for the province, as is the increase that would be expected from greenhouse effect models. We cannot say what is causing the warming. Then again, the greenhouse effect would likely result in greater variability in the climate as well."

This phenomenon is certainly understandable to residents of Edmonton, where the winter has seen blizzard one week and snow-melting sunshine the next.

A recent article in the *Journal of Climate*, while noting a 5% increase in global temperatures since 1958, stated that, "in view of the pros and cons of observed data... it is premature to state categorically that a greenhouse effect is already being observed."

While the scientific community as a whole is cautiously not certain, the North American media seems to be. "The reports on the climate are too pessimistic," according to geographer Arleigh Laycock, whose views support those of colleague Halliwell.

An article in *Maclean's* last summer mentioned only one scientist, who was

government found that the 1977 drought cost western Canada \$130 million, not including lost income from tourism.

Further costs of a hotter future might include increased electricity use for heating and cooling, and the loss of forests.

"In Alberta, forested area will diminish, but agriculture can take advantage of a longer growing season and a greater diversity of crops," said Dr. Laycock. "But if it keeps warming, worldwide droughts will put great pressures on Canada's food resources from other countries."

While the University of Alberta is not researching the greenhouse effect or its possible outcomes, Dr. Halliwell noted that "thinking needs to be done on the economic, social and ecological effects of major climate change. We must be flexible, ready to respond to change."

In September of 1987, 330 representatives from 46 nations met in Montreal to discuss mankind's alteration of the world environment. The conference, hosted by Environment Canada, called for a 20% reduction in carbon dioxide emissions in the industrial countries.

Let us hope that such concern will only grow.

Feature by
Jon Romalo

"...thinking needs to be done on the economic, social and ecological effects of major climate change."

quoted as saying, "the beginning of the greenhouse process is underway."

Clearly it is too early to see if the greenhouse effect has arrived, although the future definitely has some experts concerned. "There is no unanimous agreement, but all indications suggest that in the next 50-100 years a major climatic change will occur globally. In 10 to 15 years we should be able to see the effects that would indicate whether a greenhouse effect is occurring," said Halliwell.

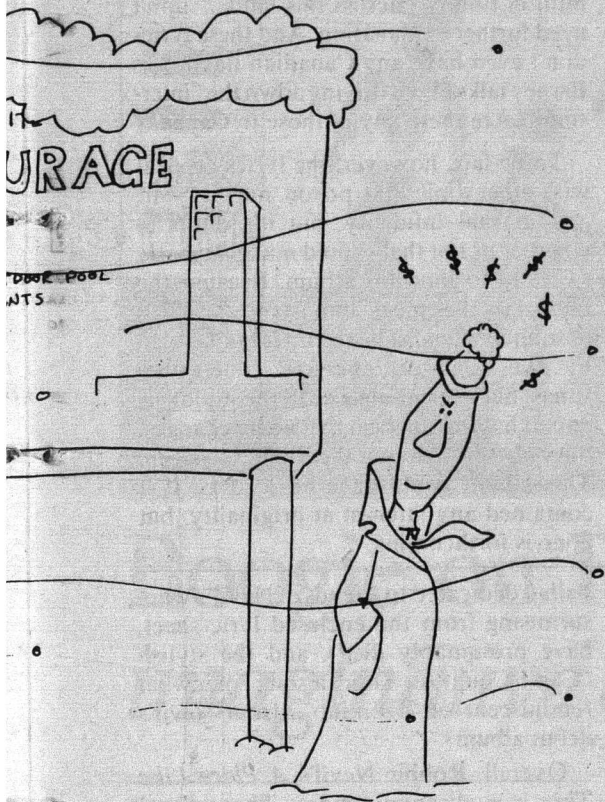
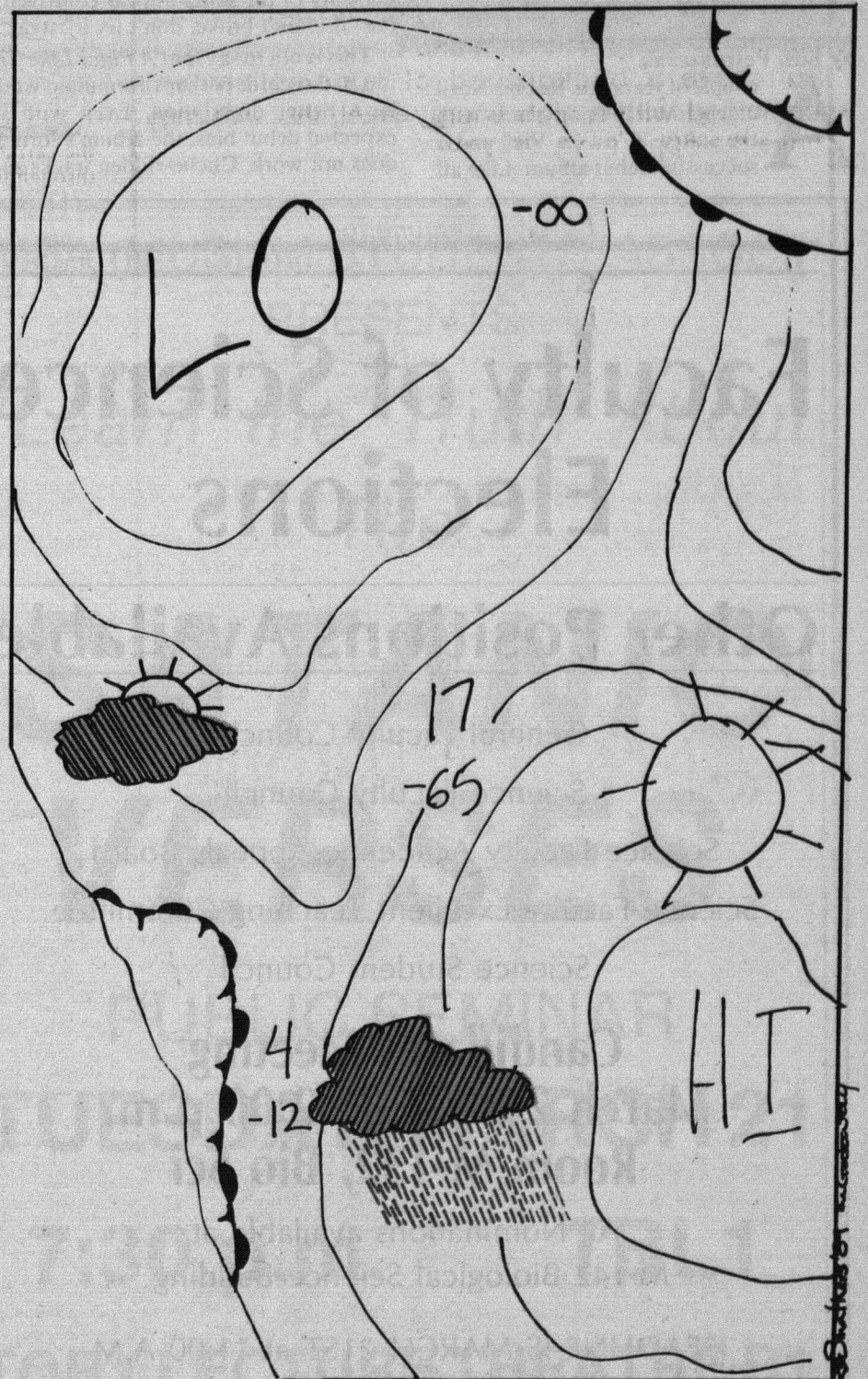
The predictions of greenhouse effects, which come from computer simulations of the earth's climate, suggest an increase in the global average temperature of 1.5 to 4 degrees celsius over the next 50 years.

"To put this in perspective, the last ice age occurred when the earth's average temperature was only 6 degrees different from today," explained Halliwell.

"Climate is extremely complex. But we will most likely see a hotter, drier future with more frequent and severe droughts."

Such a change would be a "big problem for agriculture," according to Dr. R.B. Stewart of the Agriculture Canada's Soil and Climate section in Ottawa. "Rapid climate change will mean trouble. But we could handle a smooth change over the next 50 years with new crops and moisture retention techniques. Again, it is difficult to say exactly how climate will change."

In the United States, droughts cost an estimated \$1.2 billion in losses every year, and a study by the federal



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Edmonton and Calgary," says Dr. Edward Lozowski, a U of A meteorologist. "But since these are growing cities which tend to heat up the air around them, I examined the climate of small-town Calmar. The pattern matched that of the cities, while lagging behind one-half a degree. And this seems to correspond to a global trend."

Lozowski added, however, that "the cause of the warming is difficult to determine. Some of my colleagues like James Hansen of NASA's Goddard Institute for Space Studies, have said unequivocally that it is the greenhouse effect."

A colleague of Lozowski, U of A