

World News & Sports

Supplement

Scientists debate arrival date for earth's next ice age

By NIGEL CALDER

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Casting the snow blitz as science fiction would be easy. You describe the children tobogganing with amazing expertise acquired in nine months' continual practice. Their pinched and grey-faced parents announce that, as it is already August and the snow still hasn't melted, they will have to move. The news bulletins carry dire accounts of the population of New England migrating to Florida.

Not being by disposition a doomsday man, I take no pleasure in reporting that such a picture of the start of a new ice age would be founded in facts. The facts have emerged, in recent years and months, from research into the ice ages of the past. They imply that the threat of a new ice age must now stand along side nuclear war as a likely source of wholesale death and misery for mankind.

During an ice age, solid sheets of ice about a mile in thickness obliterate Canada and Scandinavia. Much of Russia and Britain also vanish under the ice, along with northern sections of the United States and many mountainous areas such as the alps of Europe. Beyond the edges of the ice sheets, large regions become frosty deserts. For instance in the most recent ice age—by no means the worst—in Europe, you would have had to go to the south of France to find any surviving trees. Although primarily a phenomenon of the northern lands, an ice age alters the climate all over the world. As the whole weather machine runs cold and slow, icing occurs in the Southern Hemisphere, too, while the tropics are vulnerable to severe droughts.

That the ice erupted more than once in the geologi-

cally recent past has been plain for many years. Yet there was no apparent cause for alarm. The warm intervals between the ice ages were thought to last for 100,000 to 300,000 years, and new ice ages to take many thousands of years to develop. The recent discoveries overturn this assessment in both respects.

From recent scientific studies, three salient points emerge. The first is that the normal condition of the earth during the past 2 million years has been icy rather than warm. Secondly, the warm periods between the ice ages have been very brief—about 10,000 years long, so that the period of human civilization, from the invention of agriculture to the landing on the moon, entirely fills a typical slot of warmth between ice ages. The third salient point is that the prime cause of the ice ages is at last clear.

analysis

The leading contemporary theory explains the comings and goings of the ice by small changes in the earth's attitude in its orbit around the sun, and in the orbit itself, these changes alter the intensity of sunshine available in summer to melt the winter snow of the northern hemisphere. The varying summer sunshine can be calculated by astronomers.

The aptness of the theory, called the Milankovitch theory, is now unmistakable, but unfortunately it tells us that the climatic golden age was 5,000 years ago, when the Megalithic people of northwest Europe were building their stone circles. At that time, the summer sun shone strongly and vigorous rainbearing winds penetrated into the Sahara and the desert of northwest India. Since then, the trend has been downwards, albeit on a switchback of "little ice ages" and warmer intervals. The northern world will not be so warm again for 120,000 years, and a long and deep ice age will intervene. As the next ice age has, in this sense already begun, the question naturally arises: how quickly shall we feel its effects?

The conventional picture of the start of an ice age has the glaciers running amok. As the snow piles up in a nucleus of mountains, the glaciers grow and merge and flow on to the plains to make a huge ice sheet. The process gradually accelerates, because the high-starching mass of ice itself encourages snow rather than rain to settle on the surface. Modern calculators have indicated that nature would take 15,000 to 30,000 years to build a continent-wide ice sheet by this method. Nothing very alarming in that: human beings would have hundreds of generations in which to adapt to the changes. In practical terms, you would notice the ice sheet inching towards

Will Eugene be under ice?

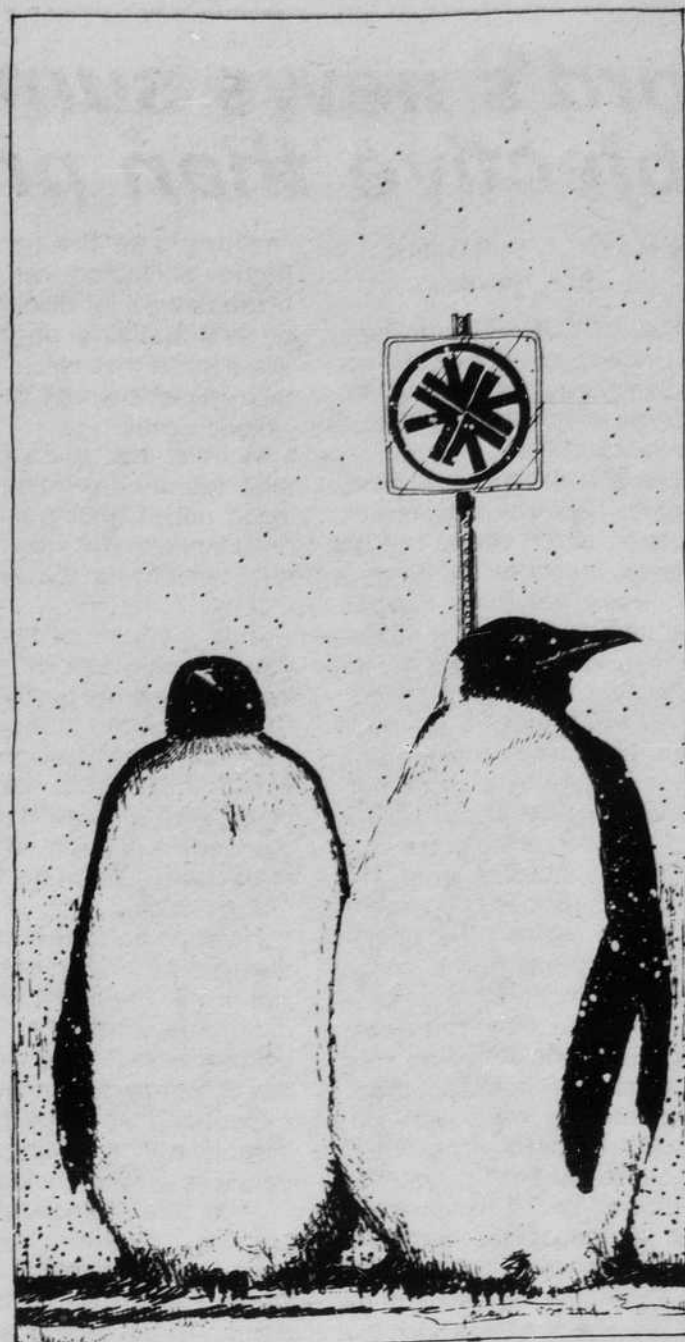
you and recommend that your grandchildren might move a few miles farther south

This theory is now being displaced by another, harsher theory that I call the Snow Blitz. In a snow blitz, the ice sheets grow from the bottom up, on the plains as well as the mountains. To be sure, mounds of ice built by heavy snowfall in a snow blitz would also splay sideways, in glacier fashion, but there any similarity with the conventional picture ends. The ice that seizes the northern lands comes directly from the sky, as winter snow that fails to melt during the following summer. A few inches of unmelted snow persisting from winter to the next could make a region uninhabitable.

By a snow blitz, nature could suddenly, in the course of a single bad summer, put an arbitrarily large area under ice. Thereafter the snow would simply pile up thicker and thicker on the naked snowfield for many thousands of years—until the earth at last nodded its northern summer head towards the sun well enough to melt the ice.

A miniature snow blitz has recently occurred at the Canadian breeding-ground of the lesser snowgoose. It is at Bylot Island at the North of Baffin Island. Since 1972, snow has lain there unmelting through the summers. The birds, unable to breed, are in grave trouble.

The ice age will eventually hurt most countries, by drought if not by cold. But it will strike hardest at the present citadels of the white man's economic power. (Not even Mao can have thought of snow as the ultimate agency of anti-imperialism.) In the present international climate, Arabs, Africans and Asians might not be particularly fearful about the impending burial of New York and Moscow, and they might actually oppose any international measures needed to hold back the ice.



Drawing by Jim Longstreth

upi roundup

Amtrak train derails

KELSO, Wash.—A southbound Coast Starlight Amtrak train with 122 passengers plus crewmembers on board jumped off the tracks Sunday 20 miles east of here. First reports indicated there was only one injury. An ambulance was sent to the scene along with aid from the sheriff's office. Brian Duff, news director for Amtrak, said from Washington, D.C., that the second locomotive and all 10 cars of the southbound train derailed but remained upright. He added he did not know the speed or weather conditions at the time nor was the cause of the derailment immediately determined.

India recognizes PLO

The Palestine Liberation Organization scored a major political victory Friday by winning formal recognition from India, the first non-Arab country to give diplomatic status to the guerrilla group. PLO chairman Yasser Arafat hailed the agreement with the Indian government to open an office in New Delhi as "a very big push forward" in the PLO's struggle for recognition as the "sole legitimate representative" of the Palestine people.

Democrats to urge tough controls

By EDWARD DELONG
UPI

WASHINGTON—Stealing the march on President Ford's State of the Union proposals, congressional Democrats will present their own program Monday to end the nation's economic crisis through a tax cut and eight other major reforms within the next 90 days.

The program includes proposals for a tough wage and price control program, possible gasoline rationing, increased credit, additional public service jobs

and an emergency housing program.

If the more traditional measures do not show significant progress in reducing interest rates by mid-summer, the plan says, Congress should consider enacting a progressive tax on the income derived from interest rates of 9 per cent and above.

The seven-page document was prepared by a task force of the Democratic Steering and Policy Committee. Rep. Jim Wright, D-Tex., was chairman of the group, named by Speaker Carl

Albert.

Challenging Congress to take the initiative immediately rather than wait for presidential proposals, the program criticizes economic policies of the Nixon administration as "cruel" and indirectly calls those of the Ford administration "half-way" and "timid."

For too long has the economy been allowed to drift, devoid of purposeful direction," said the plan, which was obtained by columnist Jack Anderson and made available to UPI.