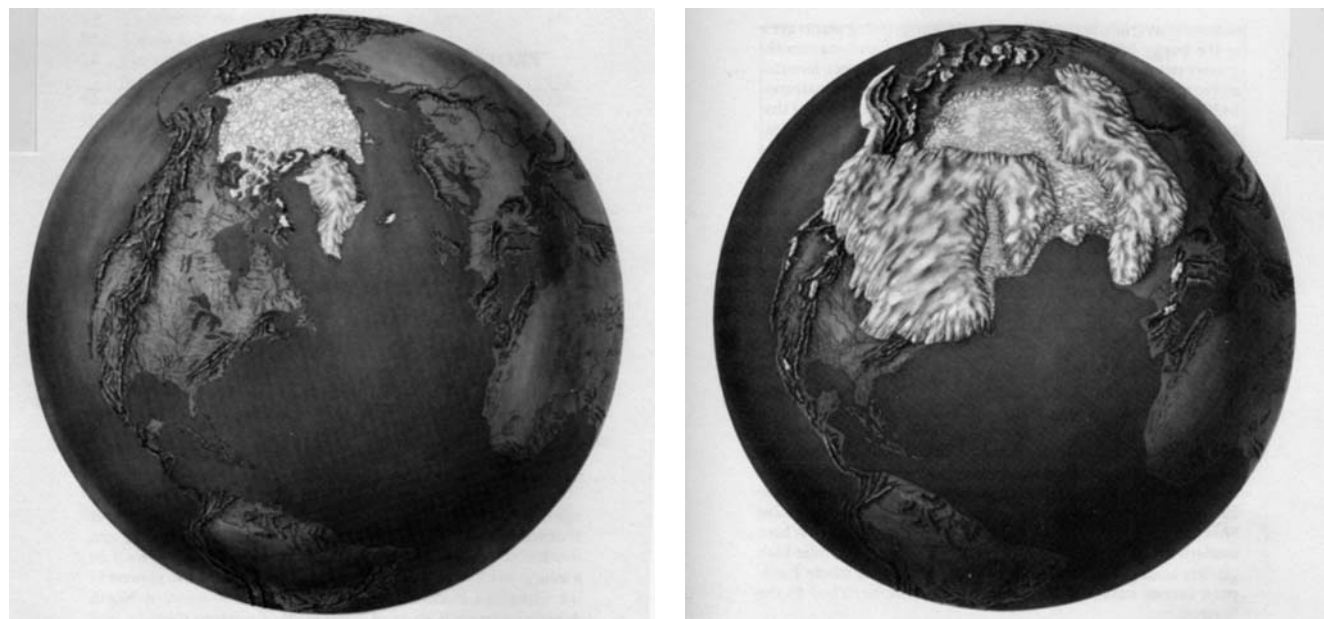


FIGURE 6

## Earth in the last Ice Age



*Earth today (left) and during the last Ice Age (right). Twenty-thousand years ago, great ice sheets covered parts of North America, Europe, and Asia; surface waters of the Arctic and parts of the North Atlantic Oceans were frozen; and sea level was 350 feet lower than it is today. Many parts of the continental shelf, including a corridor between Asia and North America, became dry land.*

Source: Drawing by Anastasia Sotiropoulos, based on information compiled by George Denton and other members of the CLIMAP project; reprinted from John Imbrie and Katherine Palmer Imbrie, *Ice Ages: Solving the Mystery* (Short Hills, N.J.: Enslow Publishers, 1979).

## Ice ages and glaciation

Over the past 800,000 or so years, the Earth's climate has gone through eight distinct cycles of roughly 100,000-year duration. These cycles are driven by regular periodicities in the eccentricity, tilt, and precession of the Earth's orbit. In each of these eight cycles, a period of glacial buildup has ended with a melt, followed by a roughly 10,000-year period—known as an interglacial—in which relatively warm climates prevail over previously ice-covered northern latitudes.

At the present time, glaciers—large, slowly flowing masses of ice formed from recrystallized snow—cover about 6 million of the approximately 57 million square miles of land place area on the Earth. At the height of an Ice Age, perhaps another 8 to 12 million square miles of land area, largely in the Northern Hemisphere, becomes covered with a thick layer of ice and crushed snow.

Currently, the greatest area of glaciation is the continental ice sheet of Antarctica (about 5.0 million square miles). The largest northern hemisphere glacier is the Greenland ice sheet (about 0.8 million square miles). As glaciation expands, most

of the additional growth takes place in the Northern Hemisphere.

The maximum extent of glaciation, the glacial climax of the last 100,000-year Ice Age, occurred just 18,000 years ago, at a time when human societies were already well established on the Earth. At that time, a huge continental glacier covered North America down through the northeastern states of the United States, reaching across the midwestern plains and up into Canada. Its southernmost limit extended through lower New York State, Ohio, Illinois, and then up diagonally into the Dakotas and across the southern tier of the Canadian plains. In western Europe, the glacier reached down from Scandinavia over northern Germany, Poland, and the Baltic nations. It reached deep into Russia and Ukraine south of Kiev, and eastward as far as the central Siberian Plateau. It stretched southwestward over the Netherlands and covered Ireland and most of the British Isles. A separate portion extended outward from the Alps and another one from the Caucasus Mountains in Asia Minor.

—*Laurence Hecht, edited excerpt from "The Coming (or Present) Ice Age," 21st Century Science & Technology, Winter 1993-1994, p. 22.*