

CLIMATE AND HISTORY

The Conference on the Climate of the 11th and 16th Centuries held in Aspen, Colorado from June 16th to 24th of this year may prove to be the cornerstone of important advances in our understanding of past climates. Certainly for the 43 anthropologists, biologists, geographers, geologists, historians, and meteorologists who attended, the Conference provided a unique opportunity to examine the numerous techniques involved in describing the operation and effects of climatic changes over long periods of time. Unlike previous conferences on the subject of paleoclimatology, the Aspen Conference was designed to attack the questions of climatic change by empirical means, assembling information from a variety of sources and examining these in small, informal working sessions freed from the hollow ritual of formal papers.

The results of this approach were impressive. Out of the evidence on glaciers, drift ice, freezing of lakes-harbors-rivers, the growth of trees, deposits of pollen, changes in the rate of sedimentation and the chemical composition of soils, the migrations and habitats of pre-historic peoples, the depth of permafrost, the harvest dates of vine-yards and the blossoming dates of cherry trees, rogations for rain, chronicle references, manorial accounts, and a host of other sources came a mass of detailed information on the climate of the 11th and 16th centuries, perhaps the largest single compilation ever made. It was not possible at the Conference to examine all of the evidence critically (the 70 some graphs assembled by the historical section alone will be redrawn and published together with a critical study sometime next year), and only the most obvious and dramatic largescale changes, such as the increasing severity of winters during the second half of the 16th century, were easily distinguishable among the numerous decadal and annual fluctuations recorded. Nonetheless, it is now apparent, as it never was before, that climatic changes can be described in detail and with reasonable confidence in the quality of the evidence and that certain large-scale fluctuations in the climate can be reliably measured and dated. Obviously the detail and quality of the evidence improve with the last three centuries, but good evidence also exists as far back as the 13th century, and even the chroniclers, if selectively used in conjunction with other data, can offer valuable descriptions for even earlier periods.

The problems, however, of extending this limited, if impressive, beginning are complex. If the Conference did nothing else, it effectively demonstrated that the future of paleoclimatology must depend upon close cooperation among various disciplines as well as among those engaged in the same specialized studies. The isolated nature of evidence before the time of continuous meteorological observations, the geographical diversity of all kinds of data, and the tentative quality of much meteorological information make it imperative that descriptions of past climates be drawn from a conjuncture of evidence, that they be synthetic.

The importance of knowing in precise detail the climatic conditions of past centuries or of appreciating the large-scale effects of small meteorological fluctuations should not be exaggerated. Yet neither should the subject of climate be ignored, especially by historians of agriculture and agricultural societies. If we have tended in recent times to forget that until 200 years ago 8 out of 10 persons were committed to agriculture and husbandry, we have also lost sight of the enormous effects that climate could have on harvests, prices, trade, disease, and population, to name only the most important. The purpose of present and future research in paleoclimatology is not to make climate the single cause of economic and demographic events but to restore climate to the history of people living close to the margin of subsistence. In this respect the Conference this summer in Aspen marked a sensible and exciting beginning in the cooperative study of past climatic changes.

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