Meetings

Great Lakes Research

The Great Lakes are no longer considered to be so large and perennially renewed that present practices in water use, land use, and waste disposal can go on simultaneously and independently without consequent changes in water quality or in other characteristics of the lakes. There lies ahead the challenge of a cooperative effort involving two nations, eight or nine states and provinces, many municipalities, counties, and townships, as well as power, industrial, shipping, and conservation interests. In his welcoming speech at the eighth conference on Great Lakes research held 29–30 March in Ann Arbor, Michigan, A. Geoffrey Norman (University of Michigan) stated that plans for such a program "cannot be drawn with real confidence until much more is known about the lakes themselves and what goes on in them."

Problems of urban economic geography, industrial development, water supply, transportation, fisheries, and tourism are among those which must be considered in formulating plans. These problems were reviewed by Demitri Shimkin (University of Illinois and Harvard University) in the keynote speech at the conference. Shimkin pointed out that any one problem considered in isolation results in a somewhat limited viewpoint. He noted that the central and southern parts of the Great Lakes region are at present the second most densely populated segment, and that the Great Lakes region has the highest productive output in North America. Its potential for future development exceeds that of any other region of the continent because of its own mineral and water resources, as well as the availability of additional water and energy sources to the north and northwest, and because of its wealth of educational and research institutions and its favorable environment for living and recreation. Shimkin predicted that changes in technology and energy sources will lead to more intensive development of the presently sparsely settled Lake Superior and upper Michigan and Huron areas.

Shimkin stated that the highly centralized systems of resource control such as those of the Soviet bloc have had significant successes, but these have been achieved at high human and physical cost. He recommended, instead, the viewpoint of human ecology in resource management, in which a uniform master solution is improbable and probably undesirable, but in which acceptable and compatible partial solutions based on empirical surveys of popular goals and the technical requirements for their achievement are feasible.

In discussions of the broad aspects of the Great Lakes resource it was concluded that almost any desired development in the region can be brought about by present or prospective technology, but that choices must be made and the development must be guided on the basis of results of additional research both in the physical-biological and in the socio-economic-legal realms.

Papers were given on a broad range of topics concerning the physical environment, involving the heat budget of the lakes as it affects and is affected by the overlying air masses, solar radiation, water temperatures, stratification, dynamics of water circulation, structure and growth of lake ice, and ice and snow cover; under the topic of geology-palynology, there was discussion of methods of pollen study, the late-glacial vegetation history of the Lake Superior region, and of studies of near-shore topography and sediments in Lakes Michigan, Erie, and Ontario.

Several sessions were concerned with the biology and chemistry of the lake waters. C. F. Schenk (Ontario Water Resources Commission) and R. E. Thompson (Toronto) reported that Lake Ontario water at the Toronto intake showed a significant increase in abundance of plankton from 1923 to 1954, coincident with the increases in free ammonia, chlorides, hardness, and turbidity correlated with proximity to a large center of population. An increase in the standing crop of phytoplankton in Lake Erie was described by V. L. Casper (U.S. Public Health Service, Cleveland), and L. G. Williams (Taft Sanitary Engineering Center) reported that planktonic organisms in Lake Erie showed a decrease in diversity and an increase in abundance in response to pollution.

A long-term increase of chlorides, sulfates, and hardness-producing salts in Lake Michigan was recorded by C. R. Ownbey and G. E. Willeke (U.S. Public Health Service, Chicago). An appreciably greater concentration of nitrogen, phosphorus, and phenols was found in the south end of Lake Michigan, where population and industry are concentrated, by C. Risley, Jr., and F. D. Fuller (U.S. Public Health Service, Chicago). A correlation between bacterial density, especially concentrations of coliform and fecal streptococcus, and the presence of urban population centers around southern Lake Michigan, was found by L. E. Scarce (U.S. Public Health Service, Chicago). L. D. Fay (Michigan Department of Conservation) and O. W. Kaufman (Michigan State University) reported on the mortality of loons, grebes, ducks, and gulls in 1963–64, stating that significant mortalities in prior years were limited to gulls. Botulinal poisoning apparently was the cause of the recent mortalities.

In a session on fisheries problems it was noted by S. H. Smith (U.S. Bureau of Commercial Fisheries) that the alewife, an undesirable species, is taking a dominant place in Lake Michigan, while there is a decrease in the number of predators such as lake trout and whitefish, related to an increase in the number of lampreys.

The deterioration of water quality noted in several of the papers is not yet general in the Great Lakes, but it is of concern near urban areas and apparently is proceeding at an accelerating rate as a result of human activity in the region.

The ninth conference on Great Lakes Research will be held in Chicago in the spring of 1966, with the Illinois Institute of Technology as the host.

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