

GEOLOGY

Ice of Glacial Yesteryear Leaves Mark on Western Rocks

MARKED with many fine lines that suggest the cuneiform writing of ancient Babylonia, are slabs of fine-grained stone, discovered by William D. Mark of Wallace, Idaho, while he was engaged in geological work for the U. S. Geological Survey some time ago. Even more do the patterns resemble the frostwork on a frozen windowpane.

And it is a fact that they were made in just that way—by finely branching crystals of ice; and they are so old that the day when Abraham departed out of Ur of the Chaldees was but as yesterday, compared to these stone slabs with the writing of Time itself on them. For they are somewhere near a thousand centuries old; they belong to the Pleistocene, the Ice Age, when all eastern North America, as far south as the Ohio River, was burdened with mile-thick glacial sheets.

But how could so fragile and fugitive a thing as a web of ice crystals carve its signature into a slab of rock? The answer is, it didn't. The ice crystals that made this writing formed in the sandy silt on the shore of Lake Bonneville, a tremendous lake that occupied a large part of the Great Basin region of the West, and of which Great Salt Lake is only a shrunken and bitter remnant. Later, after the crystals melted, the molded silt, still bearing their marks, was gently buried under other layers, and in time the whole hardened into stratified stone. There the ice-writing remained until the inquisitive pick of Mr. Mark pried apart the leaves of this ancient book of nature.

In the forthcoming issue of the *Journal of Geology*, Mr. Mark will report on experiments which he performed, showing how ice can form in sands and muds containing the right proportion of water, building knife-like crystals with their edges downward, and how, when the ice thaws, the marks of the ice will still be left.

The process that left these marks on the surface of the stone slabs where the edges of the lost Lake Bonneville used to be is being repeated every day now that spring is beginning to unlock the shores of rivers and ponds. Every one who has access to a quiet body of water that has been frozen may, in the course

of an afternoon's walk, be able to find such ice impressions along its margin. If washing rains or careless trampling feet come that way, they will be destroyed forthwith; but if they have a chance to dry and harden, the next flood may bury them under an inch of mud without disturbing them. And there will be a record of the winter of 1931-32 sealed up and waiting for some scientist of the next geological epoch.

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ENGINEERING

New Tests Show Safety In Using Hot Cement

IT IS SAFE to use hot cement in paving concrete road, tests made under direction of the American Society of Testing Materials have shown. The general belief heretofore has been that hot cement would impair the appearance and strength of the finished product. Some state highway departments require that the cement when delivered on the job must not exceed a standard temperature of 125 degrees Fahrenheit. The tests, however, show that there is virtually no difference in the quality of the concrete when the cement used has a temperature of 180 degrees Fahrenheit or more.

ECONOMICS

Dial Telephones Add Almost Seventy Thousand to Jobless

THE MECHANICAL brains and fingers of the dial telephone system have reduced the number of jobs for telephone operators in the United States by more than 69,000. This is the estimate reported by the U. S. Bureau of Labor Statistics, which has surveyed the progress of the dial telephone and its industrial effects.

Complete conversion to the dial system means an average displacement of about two-thirds of the operators, the report states. And as the telephone-using



SIGNATURE OF THE ICE

Cut as with cuneiform writing, but ages older than the earliest king in Babylon, is this slab of fine-grained stone from western Utah, telling of a hard winter on the shores of a vanished lake a thousand centuries ago.

The tests were conducted, so a report to the *Engineering News-Record* reveals, on sections of a concrete road in northern Indiana. Cold cement was used as well as the hot for purposes of checking. It was found that up to three months the workability, compressive strength, change in volume and tendency to crack was virtually the same with both cements.

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public grows more fully accustomed to spinning the dial, even fewer operators will be needed to help out in emergencies. In addition, the trend now is toward automatic handling of simpler types of toll calls, a fact which may further reduce the number of operators employed.

In 1921, less than three per cent. of the telephones in the United States were of the dial type. By the end of 1930, very nearly one-third of the phones were dial-equipped.

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