

## PUBLIC HEALTH

# Diphtheria Still Unconquered, Even Shows Local Increases

**I**N THE GENERAL rejoicing over the decrease in deaths from diphtheria some of the facts in the situation seem to have been overlooked. The disease is far from being conquered in spite of the fact that a means of wiping out the disease is at hand and that great progress toward that end has been achieved in some localities.

It is something of a shock to learn from the statisticians of the Metropolitan Life Insurance Company that "there are still a number of states and cities where the diphtheria mortality is today not only atrociously high, but is actually increasing."

Their figures show that in 1932 four states registered more than 13 deaths from diphtheria per 100,000 population. In every one of these states, the diphtheria death rate was much higher than that recorded two years previously.

"A summing up of the distinctly unfavorable aspects of the diphtheria situation shows that there were 18 states which recorded, in 1932, diphtheria death rates in excess of the average for the United States in that year," the report states.

"In 12 of these states the situation is getting worse instead of better, as is shown by comparison of their 1932 death rates with those recorded two years earlier. Furthermore, in 22 of the 32 large cities whose 1932 diphtheria mortality rates were above the average for the country, the 1932 figures were higher than those for 1930."

During the ten years from 1922 to 1932, the latest for which complete figures are available, the diphtheria death rate in the country at large was reduced nearly 70 per cent. But in Kentucky, West Virginia and Oklahoma the diphtheria death rate of 1932 was nearly as high as the average for the country ten years previously. In New Mexico, which had the highest diphtheria death rate in the country, the 1932 death rate from this disease was actually 34 per cent. higher than that of the United States as a whole ten years previously.

With the exception of New England, the Middle Atlantic and Pacific Coast States, at least one and usually several states of every other section of the coun-

try have diphtheria death rates that are high and still increasing.

There were 32 large cities in 1932 which had diphtheria mortality rates above the average for the country. The worst situation was in Knoxville, Tenn., where diphtheria killed 17 out of every 100,000 inhabitants. Following closely after were Dallas, Tex., Fort Worth, Tex., Peoria, Ill., Lowell, Mass., and Oklahoma City, Okla.

"It is difficult to understand how whole states and certain cities can justify their administration of the public health facilities to permit the continuance of high and increasing diphtheria rates at the very time when a marked reduction is going on in the country at large, and all over the civilized world," the insurance company statisticians observe. "Diphtheria would soon be banished altogether if immunization by toxin-antitoxin or toxoid were extended to include all susceptible children."

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## GEOLOGY

## Sun Symbols Shown To Be Petrified Puddles

**R**EVERED as sacred symbols of the sun by Indians of the Southwest, peculiar pits in sandstones with radiating ridges running out from them have been shown to be the result of small pools of rainwater, repeatedly collecting and evaporating in the same places. They are literally petrified puddles.

Such is the interpretation placed upon these peculiar formations by Walter B. Lang of the U. S. Geological Survey. The history of a rainwater pool in the Southwest is likely to be different from that of a similar pool in more humid regions, Mr. Lang points out. Rainwater has an eroding and dissolving effect on sandstone and other rocks. Its dissolving action causes shallow basins to become broader and deeper.

But in an arid region the dissolving action is intermittent, simply because the water soon evaporates. Moreover, where slight irregularities are present around the rim of such a pool, they function in a more or less wick-like fashion, drawing up water by capillary attrac-



### SUN-SYMBOL

*Revered by Southwestern Indians, these rib-rayed depressions in porous rocks are now interpreted as results of repeated evaporations of rainwater pools.*

tion, the water bringing the mineral salts dissolved in it. This results in a concentration of these salts, and the formation of the radiating ridges. Thus the "sun symbols" are formed by the rain and the sun.

There are a number of these peculiar "sun symbols" in the rocks of the Southwest that were given particular reverence by the Indians. One of them, perhaps the one most seen nowadays by white man, is at Mesa Verde National Park. Indians of ancient time surrounded this on three sides with a wall, leaving the fourth side open, thus forming a sort of open-air temple or shrine.

Earlier geologists interpreted this "sun symbol" first as a print of a petrified palm leaf, with ridges where the ribs used to be. Then this interpretation was set aside in favor of the idea that it was formed by a spring gushing up through a sandy basin in earlier geologic time, leaving ridges that subsequently were hardened into stone. But when Mr. Lang made a critical study of the distribution of minerals in a section through one of these "sun symbols" he found that it did not support the ancient spring hypothesis, which by actively stirring up the sand would have made for uniform distribution of the salts throughout the sandstone. Instead, the localized distribution of some of the minerals, and especially their concentration in the ridges, indicates that the rainwater pool explanation is closer to the truth.

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