PUBLIC HEALTH

# Survey Birmingham, Alabama, For Value of Spray for Polio

## Health Officials Make House-To-House Canvas In Hope Of Finding Out Whether This Measure is Preventive

THE CITY of Birmingham is in the midst of being a "guinea pig" in the interest of medical science's fight against poliomyelitis.

A house-to-house survey of representative sections of the city is being directed by Dr. Charles Armstrong of the U. S. Public Health Service to determine the percentage of the city's population using the nasal spray he devised as a possible protective measure. Tabulations of this survey will be checked with proportions of the population having the disease.

Although there are not enough cases in the city to make a conclusive showing in the final results of the survey, Dr. Armstrong expressed hope that some indication of the effectiveness of the spray can be gathered.

There is a possibility that health authorities may wait for more cases to develop, although Dr. Armstrong said the epidemic reached its peak in Alabama during the week of July 25. He expressed the desire to get "the maximum amount of available evidence."

Dr. Armstrong said that although the epidemic had reached a normal peak, he couldn't say what would have happened if the spray had not been used.

The secret of why the picric acid-sodium alum nasal spray can protect monkeys and, perhaps, human children against infantile paralysis lies in its ability to coagulate protein, just as acid curdles milk.

Experiments showing that it is probably this coagulation process which gives the spray its effectiveness are described by Drs. Charles Armstrong and W. T. Harrison of the U. S. Public Health Service, National Institute of Health (*Public Health Reports,* Aug. 14, 1936).

The membranes that line the nose and the mucous secretions that coat these membranes are protein in character. The spray presumably coagulates these proteins, making a tough coating something like the clot of well curdled milk or like hard cooked egg white. The infantile paralysis virus, it is thought, cannot get through this coating and so cannot reach the olfactory nerve by means of which it ordinarily reaches the nerve centers where it does its damage.

In the experiments just reported, Drs. Armstrong and Harrison found that a picric acid-sodium alum spray, which coagulated a serous fluid from the body into such a firm clot that the tube containing the mixture could be inverted without spilling a drop, protected monkeys from infantile paralysis virus placed in their noses after being sprayed. A less acid solution of the spray, which did not clot the serous fluid, failed to protect the experimental animals.

This report not only explains how the spray achieves its protective action but indicates the need of using, for protection of humans, only a spray prepared according to Dr. Armstrong's formula.

On the question of whether vaccine treatment is useful, medical science is yet unable to say "yea" or "nay" even after an intensive year of attack on the dread disease of infantile paralysis by the use of vaccines, in which nearly 20,000 children and adults throughout the nation have been treated. Nor do scientists know whether it is a harmful, dangerous procedure.

In an editorial, the *Journal of the American Medical Association* (August 29) reviews the problems of vaccination for infantile paralysis but is unable to give a distinctly positive or negative answer.

*Science News Letter, September 5, 1936*

CLIMATOLOGY

# Heat Records for 117 Years Broken in State of Iowa

HEAT records for 117 years in Iowa have gone down with a crash this summer, as records for intense and continuous cold splintered on last winter's ice.

A statistical survey of the heart of the corn belt, county by county and town by town, conducted by Charles D. Reed of the U. S. Weather Bureau office, has shown that in the short space of about six months, Iowa has experienced the most prolonged severe cold and the most prolonged severe heat since Americans first settled in the territory and began keeping records, away back in 1819, a few years after Thomas Jefferson had "put across" the Louisiana purchase.

It is a confirmation, in sober meteorological data, of the school boy's unconsciously ironic definition of the temperate zone as "the part of the world where it gets awfully hot in summer and awfully cold in winter."

While Mr. Reed conducted his study strictly within the boundaries of his own jurisdiction, many of his figures are of interest outside the state, for as all midwesterners are painfully aware, the heat was by no means confined to Iowa.

Every locality in the state has some new kind of record to gasp over.

### Hottest 37 Days

Many towns will date their "hottest ever" days from the summer of 1936; others will have records of hottest two days, hottest three days, hottest week, hottest two weeks, and so on up to hottest 37 days. At this point Mr. Reed quit simply because he hadn't any more space on his tables, and because his office force was all worn out with adding up and averaging endless piles of data.

Along with heat went terrific evaporation rates. The official evaporimeter on the campus of the State College at Ames showed a total evaporation of fourteen and three quarters inches for the month of July. This is within two tenths of an inch of the record evaporation at Tribune, Kansas, out where it is supposed to be really dry.

The hottest afternoon that the state as a whole ever experienced was on July 14, of this year, when the average maximum temperature at 113 observing stations was 108.7 degrees. This is 2.3 degrees higher than the previous record heat, of the afternoon of August 3, 1930. On other days even higher temperatures were experienced in some parts of the state, with the mercury climbing as high as 113 to 117 degrees. The temperature map for July 14 shows that no county escaped heat of more than 100 degrees, and that most counties had to put up with 110 degrees or worse.

This year's poor corn crop is blamed by Mr. Reed more on the terrific heat than on drought. Water in the soil was short, to be sure, but the crop got along rather well until the heat was turned on. The corn did not perish of thirst, it was burned to death.

*Science News Letter, September 5, 1936*