

MEDICINE

# Climate and Your Health

## Stimulating Regions Rapidly Wear Out Body Machinery By Driving You to Live at Too Swift a Pace

By JANE STAFFORD

**T**HE CLIMATE of the place you live in has a subtle effect on your health and bodily machinery.

This new theory has been advanced by an Ohio physician, Dr. Clarence A. Mills of the University of Cincinnati College of Medicine, who has spent three years trying to discover and to explain the relation of climate and the weather to the health of man.

Maybe you have already been holding the stormy weather responsible for your neuralgia or your rheumatism. Or, if you live near the sea, you are probably used to blaming the damp, seacoast climate for the foggy throat and stuffy nose you awake with nine mornings out of ten.

Dr. Mills' study, however, indicates a somewhat different effect which the climate may have on your health.

"The evidence so far indicates that the response to climatic changes or differences involves mainly the glands of internal secretion, particularly the pancreas, thyroid, suprarenal and sex glands," Dr. Mills stated.

His theory is that in certain regions the drive of a too greatly stimulating climate is forcing an increasing number of people to live at such a fast pace that their body machinery breaks down under the strain. This does not refer merely to the swiftness of night club life, either, but to the intensity and rate of work as well as play. Dr. Mills even goes so far as to suggest that our very civilization may be threatened by the drive of an overstimulating climate. He does say that the factors which will limit the advance or progress of our civilization are already in evidence and that they can be expected to increase in severity as the pace of life still further accelerates.

### Climate in Treatment

Furthermore, he advises that climate should play a part in the treatment of certain diseases, and that patients suffering from them should be sent to regions where the climate is less stimulating.

These theories are based on investigations which have been carried on in

two directions, experimental and statistical. He has recently reported on the results of the statistical investigations. These showed a relation between different types of climate and the deathrates for certain diseases. They also seem to upset some popular notions about climate and health.

The stimulating climate of the northern and northwestern parts of the United States, for instance, has popularly been considered more healthful than the sluggish, semi-tropical climate of the South. Dr. Mills' studies, however, indicate that the climate in some regions may have too stimulating an effect on certain bodily processes. Where the climate is most stimulating, Dr. Mills found that the deathrates from diabetes, exophthalmic goiter and Addison's disease were highest.

Dr. Mills' studies start with a map of the country on which are shown areas where the climate has the most stimulating effect and areas where it has the least stimulating effect.

You probably think of a stimulating climate as one where all the days are bright and sunny but the air is always brisk and cold. Scientists, however, have a different idea of a stimulating climate.

### Index of Stimulation

The effect of climate on man depends on several factors, Dr. Mills explained. Chief of these is temperature, but here again two factors enter in. One of these is the average degree of temperature and the other is the variability of temperature. Human efficiency is greatest when the temperature averages about 64 degrees Fahrenheit. Temperatures above this level or below 38 degrees Fahrenheit have been found to lower human efficiency. Frequent fluctuations in the day to day temperatures are also important for producing stimulating effects on human beings.

So in plotting his map, Dr. Mills took into consideration the daily maximum and minimum temperature readings for a year, the variation in temperature from day to day in each locality, and the days when the temperature in that locality was above 64 degrees Fahrenheit or below 38 degrees Fahrenheit.

With these figures and by a process of mathematical calculation, he found an index to the stimulating effect of the climate in each of many different localities over North America.

Two areas where the climate is greatly stimulating appear on his map. One of these extends from the northwest prairie provinces of Canada across the Central States in the United States and east to the Atlantic Coast. The climate of this region is stimulating mainly because of the great variability of the temperature. The other area where the climate is very stimulating is located on the Pacific Coast, extending from San Francisco northward to the region north of Seattle and Vancouver. Here the temperature does not vary much but during almost the entire year it is within the best limits for human activity.

### South Non-Stimulating

Almost the entire South on the other hand, has a climate which has very little stimulating effect. This is because the temperature does not vary enough from day to day and because for a good part of each year the temperature, being above 4 degrees Fahrenheit, has a depressing instead of stimulating effect on human activity.

Next Dr. Mills charted on his map the deathrates for various diseases in the different states and provinces of the continent.

"On comparing the map of climatic stimulation with the one showing deaths from diabetes mellitus, one notes a significant similarity," he pointed out.

Diabetes is most severe and its deathrate highest in those areas where the climate is the most stimulating, while in the South and far North, where the climate is non-stimulating, it is a much milder disease. This suggests to Dr. Mills that a climate which stimulates certain body processes to the point of exhaustion may be a factor which determines how many cases of diabetes there will be in a given population.

Study of the maps showed further surprising relations between climate and disease. In the same areas where the climate is most stimulating and where diabetes is most severe and its deathrate most high, deaths from exophthalmic goiter, a disease of the thyroid gland, are most numerous.

Patients suffering from this disease are thin and nervous and have the bulg-

ing eyes which give the disease one of its names. In this condition the gland is over-active and produces too much of its hormone, thyroxin. Since it is this hormone which regulates the pace of the body's activity, it is easy to see that too much of it, which makes the body's fires burn faster and faster, consuming every available scrap of fuel, would drive the body's machinery at such a rapid pace that it would soon wear out. Fortunately, the activity of this gland can in most cases be regulated by either surgical or medical means.

### Metabolic Diseases

Another glandular system appears to be affected by the drive of a stimulating climate. Deaths from Addison's disease, a condition resulting from exhaustion of the suprarenal glands, make up a bigger percentage of the total deaths in those regions where the climate is most stimulating.

Deaths from pernicious anemia, the disease in which there are not enough red cells in the blood, and from leukemia, in which the blood has too many white cells, are higher in these regions, indicating that the diseases of the blood-forming organs are also more common in regions where the climate is greatly stimulating.

The map of cancer deaths is remarkably similar to that of climatic stimulation and to those of the diseases like diabetes and exophthalmic goiter, in which there is a breakdown in some of the normal activities and processes of the body. Physicians call these ailments metabolic diseases because they affect the body's metabolism. This foreign-sounding word is taken from the Greek and is the term for the building-up and breaking-down processes, and for the changes of food into fuel and energy and fat and other tissue and back again into fuel and energy, that are constantly going on in the body. The Greeks did not have a name for this, but scientists have made one for it from a Greek word meaning change.

In cancer, the breakdown or metabolic disturbance is localized, Dr. Mills points out, but even this condition is much more common in the regions where the climate is highly stimulating.

It is not only bodily failure which seems to be positively correlated with the stimulating effects of climate. Suicides, which Dr. Mills took as the best index of mental failure, were studied with regard to their frequency in various localities.

"Strikingly enough," Dr. Mills found,

"the suicide map does show the same climatic relationship as exists for the metabolic diseases."

The greatest number of suicides per 100,000 population was found in the Pacific Coast and northwest region extending from below San Francisco to a little above Vancouver on the map, and inland about 300 miles, taking in part of Nevada, most of Oregon and Washington, and the southwestern corner of British Columbia. It is this region which studies of climate show has the most stimulating climate.

Ellsworth Huntington, who has also made extensive studies of climate and its effect on mankind, calls attention to the same condition in one of his discussions of climate.

"The chief defect of the climate of the California coast is that it is too uniformly stimulating," he says. "Perhaps the constant activity which it incites may be a factor in causing nervous disorders. When allowance is made for the fact that California's urban population is relatively smaller than that of states like Massachusetts and New York, insanity appears to be even more prevalent than in those states.

### Suicide in California

"Moreover, the cities of the California coast have the highest rate of suicide. In proportion to the population the number of suicides is greatest in San Francisco; then come San Diego and Sacramento; while Los Angeles and Oakland are exceeded only by Hoboken and Saint Louis.

"Possibly these facts may be connected with the constant stimulation of the favorable temperature and the lack of relaxation through variations from season to season and day to day, although other factors may also play a part. The people of California may perhaps be likened to horses which are urged to the limit so that some of them become unduly tired and break down."

According to Dr. Mills' figures, the suicide rate in the area of most stimulating climate ranges from 18 per 100,000 population to 28 per 100,000. In the New York, New England and New Jersey area the rate varies from 11.6 to 13.2 per 100,000. In the rest of the area of second greatest climatic stimulation, including the central plains, middle west and middle Atlantic regions, the suicide rate ranges from 12.2 to 16.7 per 100,000. But in Florida, where the climate has very little stimulating effect, the suicide rate is fairly high, being 16.2 per 100,000.

From these studies, Dr. Mills concluded that there is apparently a direct relationship between the stimulating effect of the climate and the breakdown of human metabolism, that constant interchange of energy which is necessary to life.

"In the stimulating areas of the North and Northwest, humanity pays the price in its increasing metabolic breakdown for its rapid industrial development," Dr. Mills observed.

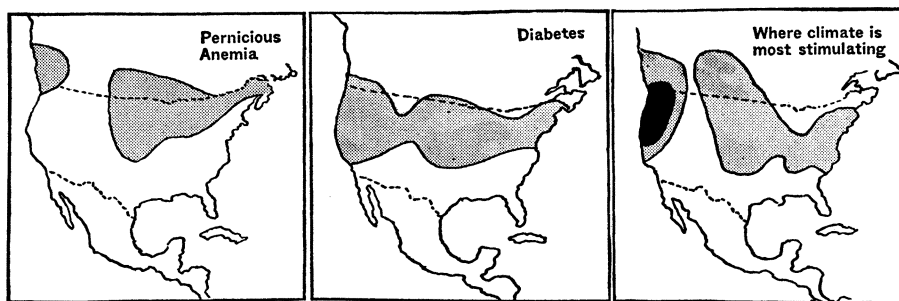
"In the non-stimulating South, material development is more sluggish and the metabolic functions less disturbed."

Dr. Mills makes no recommendations as to whether you should change your residence because of the climate, but he does give some advice for those who suffer from the diseases considered in his study, diabetes, pernicious anemia, exophthalmic goiter and the like.

"It is suggested that great benefit may be derived from the climatic treatment of the metabolic diseases," he says. "Cases of metabolic or mental breakdown should be sent south for treatment whenever possible so that they might have the benefit of the lessened vigor of the climatic drive."

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Science News Letter, June 25, 1932



### DISEASE MAPS

The shaded portions of the map on the right show where the most stimulating climate is found. Strikingly, deathrates from pernicious anemia and diabetes are highest in very much the same regions.