THE OMAHA SUNDAY BEE MAGAZINE PAGE

NEW DISCOVERIES OF SOME THE EARTH



WEATHER **FORECASTSAre** So Often WRONG

By W. H. Ballou, Sc. D.

WHEN the sky is overcast and it is raining or enowing hard you can't be blamed for feeling a trifle indiguant to see staring you in the face from the front page of your newspaper an official

Government prediction of fair weather. Such differences between New York's weather and the Government's forecast of what it is going to be ure, however, bound to be frequent so long as the Weather Bureau pursues its present methods. The trouble is that New York is surrounded by such peculiar atmos-pheric conditions that its weather is often entirely different from that which prevails on the mainland only a few miles away. The Government forecasters fall to take these peculiar conditions into account and therefore their predictions for New York come true much less frequently than those for other sections of the

There are two walls of opposing atmosphere on New York's ocean front, the land wall and the salt-water wall. Manhattan Island lies wholly within the ocean wall, which is changed twice daily by strong tides. The result usually is that when a howling storm comes out of the West it meets the opposing wall of salt atmos-

Why New York's Peculiar Conditions Which Affect Manhattan Island, but NOT the Mainland, Only a Few Miles Away

that the seasons.

The land wall of atmosphere is partly a creature of the temperature of the land, and the ocean wall of the temperature of the water. It stands to reason that in Autumn the salt water is from one to several months in getting as cold as the land. In the Spring, the salt water is one or several months getting as warm as the land.

At the latitude of the mouth of the St. Lawrence and At the latitude of the mouth of the St. Lawrence and of Jacksonville, Fia., the temperatures of the land and salt water are always nearly equalized. The result is that storms passing from the West along the Gulf coast, pass right along out to see, as do also storms from the West passing along the Canadian border.

New York has Winter, Spring, Fall and Summer only when the two walls of atmosphere equalize. Winter sets in on the mainland from one to two mouths earlier than on Manhattan Island. The same may be said of each of the other seasons. New York gets

earlier than on Manhattan Island. The same may be said of each of the other seasons. New York gets whatever weather prevails on the ocean front. When the early snowstorm attempts to cross the North River, which is merely an arm of the sea, whatever precipitation there is on the island is in the form of rain. The Weather Bureau, which has predicted snow for New York, explains its absence later with the old formula that the storm was deflected to the Guif of St. Lawrence. The fact is, as the bureau has yet to learn, the anowstorm had to move to sea, where the sait water was cold enough to against its passage.

anowstorm had to move to sea, where the salt-water was cold enough to assist its passage.

The Weather Bureau has no stations on the ocean, as it has everywhere on land. It has never taken into account the differences of pressure at New York. In consequence, the only times it has ever been able to predict New York weather with anything like accuracy is when the two walls of atmosphere become equalized in temperature.

It has never established an observer at New York permanently. It brings observers from the inland who know nothing of oceanic conditions and who do not remain long enough to learn and profit by them. It will never be able to predict New York weather until it adopts a new and radical departure of stationing there wen of distinguished attainments in science,

Diagram Showing the Land and Salt Water Walls of Opposing Atmosphere Which Have Such a Profound Influence on New York's Weather. who shall remain permanently and be allowed to do independent predicting solely for this island.

Neither will predictions in Philadelphia, an taland town, do for Atlantic City, a coast town. There is a stretch of coast line along our front, where the Gulf Stream bends in close to shore, from Absecon Light to Fire Island Light, that the Weather Bureau can never master

under its present system.

Byen within Greater New York itself are found weather vagaries of which the Weather Bureau has no knowledge and does not take into account. Take a December north-wester, blowing at Seventy-ninth street. Most often, if you make a tour, you will find the wind west at St. George, Staten Island; southwest at St. George, Staten Island; southwest at Tottenville, south at Midland Beach and very likely southeast at Sandy Hook. While the December northwester is blowing at North River points, the ceast at Coney Island may have southerly winds.

and farther South and West.

creeps into open spaces, and is the

companion of sassafras and huckle-

berry bushes, Old. worn-out, gullied

fields appeal to this pine, because lit-tle else will grow there, and it is not

The differences of temperature on such occasions may run from 30 to 30 degrees. One can in a twolve-mile tour around New York go from quite cold conditions into quite warm ones. Even in midwinter, there is often 10 degrees of difference between the west and east ends of Seventy-ninth street. But for that matter the Weather Bureau never takes New York temperature at all. It takes the temperature 400 feet above the city where no one lives.

persture at all. It takes the temperature 400 feet above the city, where no one lives.

New Yorkers live on or near the surface of the island, not far above it. The temperature of the city is the temperature of its surface, and there is not the slightest scintilla of scientific basis for recording as its temperature che temperature of the air far above it. At all seasons of the year the temperature is much lower at the street level of the Woolworth Building. St. Patrick's Cathedral and other lofty spired atructures than elecwhere on the island, because the spires draw down to earth the lower temperature of the air far anove the street.

A common inaccuracy of the weather forecasts is the

A common inaccuracy of the weather forecasts is the one which states that "the storm which formed Wednesday on the west Gulf coast will move northeasterly, reaching New York some time Friday." No storm ever formed on the west Gulf coast, nor elsewhere within the United States or Mexico. All American storms are first noted in Siberia, Japan, the Philippines, China or elsewhere, although they may not have formed there.

The point of origin of a storm has never been determined, although astronomers can predict with accuracy the cause and near date of each storm, flood, ice jam, earthquake, etc., by the movements of sidereal bodies and their position with relation to each other. All we know is that probably every storm moves entirely around the world, and that the weather of New York to-day will be repeated in Europe from ten days to twe weeks later. England is struck by every storm

at passes out of the Gulf of St. Lawrence, besides the

whacks it gets from its own North Sea.

These world-circling storms move in certain parallels of latitude, deflected to the northeast or southeast by large bodies of water and by differences of temperature, the sun and its movements being the primal cause of all of them. Thus we have north temperate some storms, equatorial storms and south temperate some storms moving entirely around the world in simost parallel lines, deflected here and there by differences of temperature.

parallel lines, deflected here and there by differences of temperature.

Astronomers know all these things and can base long distance predictions on them. But even astronomers would not undertake to make specific predictions for New York on any such basis as the Weather Bureau uses. Here are purely local influences on which they can base only greater or lesser tides.

When the seasons have settled in New York—that is, when the ocean and inland temperatures have harmonized—any one can tell what New York weather will be today by ascertaining what it was in Chicago from twenty-four to thirty hours previously.

It is only in the deflecting storm and fair periods that the weather of the two cities varies. In the deflecting periods, when New York is in a distinct ocean wall of atmosphere, the storm strikes Chicage and then goes out to sea further north of us, where the ocean invites rather than repels.

Deflected storms are worthy of far more study than they have ever received. Thousands of unpredicted reinstorms which have deluged New York within the memory of man first crossed the Gulf of Mexico, turned around to the north, and then followed the Gulf Stream with tremendous rapidity, bending in with it finally from 600 miles out at sea, to strike the Absecon-Fire Island coast line. At the same time ten miles inland the sun was shining.

Some TREES ARE BRAVE and Others Are COWARDS

Make CHIMNEYS DRAW

THOUSANDS of chimneys, both large and small, frequently smoke and

cumulations of scot which cling to the interior of chimneys and flues, and

clog up stovepipes.

Many fires have been caused by the burning out of the soot which

and which have been caused by the both and an unhealthy atmosphere are frequently produced in houses where soot is burning in chimneys.

All this danger and unpleasantness may be avoided by the use of small potatoes, which are as a rule almost worthless for any other purpose.

If burned a few at a time every day or two, these will prevent soot col-

Even the potato peelings, which are usually cast into the garbage can be burned in a stove or furnace, and will help keep the pipes and flues free from the usual accumulations of soot. Try this plan if you want to enjoy better health and protect your property from fire.

advocated, but few of these are successful.

prove a great annoyance. Quite a number of remedies have been

The greatest hindrance to a chimney drawing as it should is the ac-

Not all men are brave and eager to fight for existence. In times past many human tribes have retreated to deserts or to other inhospitable regions rather than fight to hold better lands. And the same rule, it has just been discovered, holds with forest trees. Some trees are so averse to competition that they withdraw to tracts where no competition can fellow.

The stately white pine is one of these vegetable cowards. This tree was found in the original forests of America occupying sandy tracts, rocky hills and uninviting situations. In its long struggle with competitors it lost the rich valleys and fertile hills and retreated to situations where pursuit and competition would

Some people suppose that the white pine occupies sand, swamp and rocks because it likes those conditions best. The correctness of that opinion is doubtful, according to a writer in the Hardwood Record. Probably no tree "likes" poor soil, though some are seldom found elsewhere.

Cypress is a vigorous tree, of gigantic bulk and long life, but it fied to the Southern swamps while the white pine was taking refuge on andy tracts and rocky ridges in the North; and it fied from the same enemy—other trees which demanded the best lands.

The mangrove-tree is one of the best-known instances of trees which literally "got off the earth." It grows in the water along the shores of southern Florida, and has done it for a period so long that its seeds have lost any land habits they ever had, and are now adapted to waterplanting only.

The Southern pines resist competi-tion feebly. The long-leaf pine, which sticks to the sandy land more closely than some of the others, is a poor fighter for space. It is the opinion of some good botanists that if left to its own resources, with no human heip, it could not hold its present ground many hundred years. Grass would choke the seedlings, and broad-leaf

pine of the Eastern States, which has various names in different regions from Massachusetts to Tennessee. It can hold on fertile ground, but is crowded out by other trees and retreats to poor tracts, whither its pursuers will not follow. It will grow where even white pine cannot hold out, taking possession of sterile ridges, where the soil is dry and thin. Forest fires do not often hurt it, and it is safe in its poverty.

choke the seedlings, and broad-leaf trees would finally take possession. It is believed that before the white man's coming it was the Indian's yearly fire that enabled the long-leaf pine to hold its ground. The fires cowardly tree is the scrub-pine, also purried the grass and the broad-leaf tree, of poor form and pitiful apsendings, but the pines managed to survive the scorchings sufficiently to perpatuate themselves, though the stands were usually quite thin.

Another cowardly tree is the pitch and anyland, Virginia, West Virginia

tle else will grow there, and it is not obliged to fight for room.

As a rule, the broad-leaf trees are better fighters for ground than the soft woods. The trees which bear broad leaves—that is, the hardwoods—have been the principal means of driving the pines, cedars and cypresses to sand, rocks and swamps. The hardwoods are handicapped. The hardwoods are handicapped. however, by their inability to presper on poor soil. They can crowd their competitors off the fertile land, but cannot follow with much vigor upon The oaks may be classed as the strongest of all trees—that is, they can hold their own in more kinds of soil than most others. But there is

great difference in this resp smong the fifty-odd kinds of oaks in this country. The willow-oak and the water-oak, for example, can follow the cypress to the very edge of from their pursuit, but they cannot follow the white pine, pitch-pine and Table Mountain pine very high or the hills. The chestnut-oak, on be other hand, can grow on ridges about as barren as those where the pitch-

It is believed that the first trees on earth were the softwoods or needle-leaf species. They had full possession once. When the broad-leaf trees appeared, in the course of ages, they had to fight for every acre they got. Up to the present time they have succeeded in taking most of the fertile land, but the softwoods

BE CAREFUL How You DRINK MILK ents, that it is too poor in iron and that it is too insipid. Milk forms an invaluable component part of a general diet, but more should not be expected of it. Its special functions are the enrichment of a diet otherwise poor in fat and protein, and the rearing of babies. In these it remains unassailed. nary sense of that word. It is both a food and beverage in itself and should not be used merely as an aid to the digestion of solid food or to quench thirst. Other reasons why too much milk

as the "ideal food," but the newest discoveries of science show that any such description seriously exceeds the truth. Even for infants milk is seldom a safe food unless modified, and for adults it should always be used with more or

An intermediate position between a drink and a solid food is what milk occupies. It is too nutritious for a beverage and too dflute to replace

solid nourishment altogether. Many persons, failing to under-stand the true nature of milk, try to drink it in great draughts as if it were water, and are surprised to find that it disagrees with them so much that they often have to give it up al-

Nature intended that milk should be sipped, and when taken in this way it will seldom cause indigestion. But when consumed like water it is very liable to take the form of large, troublesome clots as soon as it reaches the stomach on account of the stomach's normal acidity.

However you drink it, you can make milk easier to digest by dilut-ing it with a little carbonated or plain water.

Being already charged with solid matters to the extent of one in seven or one in eight, milk should never be made to serve as a drink in the ordiWounds May Make You See Green.

Other reasons why too much milk is undesirable for adults over a long period are that it is too rich in fat in preportion to its other constitu-

the discriminatory apparatus so that impulses caused by certain color rays would have a prependerating influence and a person would be able to distinguish only that one color. This has just been proved by the case of a soldier wounded in the fighting around Solssons. A bullet passed clear through his head without killing or even atunning him, and since then he sees everything green and is unable to distinguish any other color.

How Ugly Faces Can Be Cured.

THE discovery that canges in the adut's face depend chiefly on altertions in the amount of fat below the skin has led to a new way of correcting ugly facial defects. Fat, transplanted from other parts of the body, is used to fill in unsightly depressions due to the removal of tumors or the resections of scars. In the same way deformities, such as receding thin and irregular jew bouss, can be corrected.

A New Paradise for Sportsmen.

THE Forest Service of the Department of Agriculture says the little known Uinta Mountains of Utah, included within the Wasatch, Uinta and Ashley national forests, should become a favorite recreation region because of the many small lakes within depressions accoped out by glacial drifts. Seventy such lakes can be counted from Reid's Peak, and one particular township, thirty-six miles aquare, contains more than a hundred.

How Many Tires We Use.

WN round numbers there are now 1,600,000 automobiles in the country, and not one of them can possibly get along with less than four tires a year. The most conservative estimate must place the number per car at six tires a year. This would be 9,600,000 tires. In addition there are sched-uled for manufacture during 1915 not less than 600,000 new cars, which must be fitted with at least 2,400,000 new tires, making a total of at least 12,000,000 tires. In reality the number is much greater, even though a million or more tires are "re-treaded." fitted with "covers," etc. Taxicahs and some of the high-powered converted racing cars could not possibly get along with less than twenty tires a year. The money spent for tires in 1914 in the United States alone probably exceeded \$200,000,000.

advited eating and drinking to excess.

BLOWING UP Your SKIN Like a FOOTBALL with OXYGEN

the only means of keeping a person alive when in the critical stages of pneumonia and other diseases and when sudden collapse occurs during a surgical operation. But the difficulty has always been that frequently when oxygen is most needed the patient's breathing is so weak that it is impossible to give it through the mouth or nose. Now this difficulty is overcome by the discovery that oxygen can be given successfully by injecting it under the skin. It is pumped into the patient's body just as you would pump air into an automobile tire, and it puffs the skin out at the point where it enters in a

lump half the size of a football. A cylinder containing compressed oxygen is connected by rubber tubing with a hellow sterilized needle such as is used for injecting antitoxin. The skin is painted with iodine at any desired spot, usually the upper part of the chest, but any part where the skin is lax will do equally well.

The needle is placed under alcohol or sterile water, so that the rate of flow on reg-ulating the valve of the cylinder may be observed. A rate just short of a continuous stream of bubbles answers best, although the rate does not appear to be of much impor-

The needle is then pushed through the skin, and according to its depth the oxygen will be seen infiltrating in all directions, gradually causing a lump to rise. The usual procedure is to raise a lump about half the size of a football in tailf to one minute. If the needle he withdrawn and the opening stepped with a piece of adhesive plaster absorption usually control or include and the seedle that the seedle and the seedle and the seedle and the seedle that the seedle and the seedle that th occurs quickly and the mass disappears in a few minutes, although for several hours the fingers can detect crepitation. With a steth-

oscope loud crackles may be heat a for a couple of days.

In a Montreal hospital thirty-three patients suffering from different diseases were recently treated in this way.

A striking result was obtained in the case of a man who appeared to be dying three hours after g serious operation. His lungs were in very bad shape with the respiration 50 and shallow. He was given four large intions of oxygen during three hours. though no change was noticed for a considerable time in the respiratory rate, he became mere comfortable from the moment the gas was injected, and he recovered.

Eleven cases of pneumonia were treated, but the results were disappointing. The respiratory rate never fell more than 6 per minute and often remained unchanged, and except for a slight increase in the patient's comfort. the treatment did no good. This is believed to be due to the fact that in pneumonia the oxygen-combining power of the blood is greatly lessened.

Dr. John McCrae, a Montreal physician, believes that the injection of oxygen will be the means of saving many lives on the operation table because it can be done by a more allowed.

ating table, because it can be done by a nurse while the surgeons are busy with other restor-

You EAT MORE if You're THIN

alive," is a remark you often hear made about fat men or women. The truth of the matter is, however, that of two persons of the same weight, the one who is thin requires considerably more food than the one who is fat.

Science tells us that the amount of food required is proportional to the amount of energy lost. The latter, in, turn, is dependent not simply upon the total weight, of the body, but upon the net quantity of active cell protoplasm and upon the relationship between the body's surface area and its

The chief reason why a thin person requires more food than a fat one of the same weight is that fat, being metabolically inactive, does no work. It is nature's supply of fuel for future use.

Another reason is the fact that the thin

person has more surface area from which heat is continually radiating. The stouter a person gets the more nearly be approaches the form of a sphere, and, therefore, the less

the torm of area area area one point of view.

There is, you see, from one point of view.

bones well rounded out with flesh. The body that is reasonably plump is much more ecohomical of the heat which is supplied by the food eaten.

The average human body has two and one-half times the area of a sphere of the same specific gravity and weight. A man weighing two hundred pounds, but of the same degree of plumpness as one weighing only one hundred pounds, will require less than twice as much food as the thinner individual. The reason is that although the surface of his body is greater it is not twice as great, for the ratio of surface to weight is less than in the case of the

smaller person:

For the came reasons a woman usually requires only from four-fifths to minatenths as much food as a man of the same weight. The more graceful contours of a woman's figure as compared with the angularity of a man's body are accompanied in general by a larger proportion of fat and a relatively smaller surface area. Both of these differences entail less energy consumption and make less food necessary.



bleed and many other foolish beliefs which still persist "are part

Costume of a French Physician in the Early Eighteenth Century—A Curious Combination of Foolish Superetition and Scientific Truth. Among all races, at some time or other, the belief pre-valled that illness was the result of evil spirits, and that a cure could be effected by frightening them away

chestnut in your , pocket will cure rheumatism or that the wearing of a red string on the finger will stop nose-

of our heritage from the days when what is now the science of medicine was only a curious mass of superstition.

For centuries manking had little or no accurate knowledge of the nature of disease

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How DOCTORS Used to Try to FRIGHTEN AWAY DISEASE The plague, which often caused as many as 10,000 deaths a day in a single city, was thought to be always foreshadowed by some heavenly portent. For example, just before its appearance in London in 1665, an angel with a drawn sword was said to have been seen hover-

with a drawn sword was said to have been seen hovering over the city.

As to the cause of the plague, no theory was too absurd for belief. It was the work of malignant demons; it was sent from heaven in punishment for sin; it was the result of evil magic exercised by man on man; it was engendered in the clouds; it was caused by earthquakes which liberate the poisons from the earth; by dust which irritates the skin; by impure air, or unsuitable food. Of all the speculations, the most mischlevous because productive of such hideous creaks. chievous because productive of such hideous cruelty was the surmise that it was caused by water which had been poisoned by men of other races or religious.

How CACTI Help

ACTI are found in great abundance throughout the high and somewhat desert lands of the Southwest and throughout a vast section of Mexico, where rain is very scarce.

It is an acknowledged fact that in upper chambers, or near the ceilings of our homes, where the air is dryest, is the best place to secure good results in growing casti in the home. Many of the different casti blooms do much better in a hot, dry atmosphere.

These plants kept in such places will do much towar?

The garb represents sound scientific knowledge in the protection it gives the body against infection and is quite similar in this respect to that worn by physicians in plague stricken districts to-day.

But the big staring glass eves and the huge artificial nose which served no useful purpose were survivals of the idea that disease was caused by evil spirits which

Some held that the plague could be cured by prayer and human sacrifices. Others recommended the kindling of huge hondres in the streets, while still others

A good example of the long struggle which science had to make to overthrow supersition is shown in the curious costume worn by French physicians in the carly eighteenth century when treating sufferers from

could be frightened away if the physician's appearance

they take in great quantities of thom,

Some attempt to hold out the idea that house plants
rob the atmosphere in the house of what humanity
needs. An over supply might do this in very small,
close quarters, but a large, healthy cactus will purify
the air in any room.

the air in any room.

Men who work constantly in large conservatories usually enjoy good health, unless it be a few who are affilted with rheumatism, which is often due to care-leasness in exposing themselves to dampners.