

How the Weather Man Executes His Work

Of all the public institutions that have within recent years come into prominence, the United States Weather bureau is perhaps the least understood by the general public. Many intelligent persons who have a fund of information on the usual run of current topics have but slight conception of the work performed by the weather man, how he does his work and of what value it is to the business world.

There are men and women, not to mention the children, who have a vague idea that the man who forecasts the weather is a prophet. They fancy that he sticks his head out of his office window, looks wise and scans the skies for symptoms of what may be expected of the elements. They

tions are transmitted to the central office at Washington, D. C., and from there they are sent to stations throughout the United States. This is accomplished within forty-five minutes after the observations have been made. By a cipher code a large amount of information is transmitted in a few words. This is not to keep secret what is being sent over the wire, but to reduce the expense of telegraphing.

"When we receive our cipher message from Washington we decipher it, which is easily done, and then, having already received our local information by our own observation, we draw our chart, which shows weather conditions not only at home but elsewhere. On the Omaha weather map



WORK OF THE WEATHER MAN—ASSISTANT FORECASTER BROWN AT RECORD BAROMETERS—Photo by Louis R. Bostwick.

class him as a guesser who sometimes hits and sometimes misses. They do not understand that the forecasting of weather is a science and that it is conducted along the most exacting scientific lines.

Officials connected with the Weather bureau attribute this lack of understanding to the fact that the great majority of people have never taken the time to look into the workings of the system. This is not only true of Omaha, but of every place in the United States where there is a weather station. L. A. Welsh is the weather man for Omaha and vicinity. His official title is local forecast official, and he is located on the top floor of the federal building. Asked about his work the other day, Mr. Welsh explained it lucidly as follows:

"The bureau in this city is of the first class and has all of the appliances and instruments for taking and collecting meteorological data. We do not glance at a thermometer and barometer and then make a guess as to what kind of weather we are going to have. We do not guess at all, but make our deductions from the scientific evidence brought before us by the routine of our system.

"In the first place, we have a wind vane and anemometer on the roof of the building, with self-registering attachments. These registers are on the inside of the office. We look at them and ascertain the velocity and direction of the wind.

"Then there is the thermometer which records the local temperature. The barometer tells of general atmospheric conditions. A rain and snow gauge with self-registering attachments record all forms of precipitation. This is among the most interesting of all our instruments. It weighs the precipitation, and the registering apparatus gives the figures. According to the old method in vogue years ago, the forecast official could ascertain the precipitation only by measuring the depth in a vessel. Our barometric and thermometric equipment is elaborate and, like nearly all the other apparatus, has the self-registering attachment. A photographic sunshine recorder is one of the most intricate devices in the entire lot. It was in use until a few months ago, when it was succeeded by an improved recorder which does its work by electricity. This record is made by the direct rays of the sun and is registered upon prepared sheets in the office. All these instruments make a continuous record of all data collected.

Making Up Data.

"How do we work? Having explained that we are equipped with apparatus for bringing to us exact information as to weather conditions for every moment of the day and night it can be easily understood how we make up our data. Weather observations are made twice each day—8 a. m. and 8 p. m.—at every station in the United States. All observations are made at exactly the same moment, seventy-fifth meridian time. It is a simultaneous atmospheric survey throughout the country. When an observer is taking his observation in Omaha he knows that the same work is being performed at all the other stations at that very minute, even down to the second.

"By means of a system of telegraphic circuits which the government has arranged with telegraph companies these observa-

there are about fifty stations, covering the country from the lower lake region westward to the mountains.

"How can we give advance information of approaching storms? That is easily explained. As I have said before, the telegraphic information we receive tells us exactly the conditions existing throughout the country. We know the exact velocity of the wind; we know where there is storm and where there is sunshine. We also know that all storms move from west to east. They may not move on a direct line, but they move eastward. This is true of all countries north of the equator. South of the equator exactly the reverse prevails. Having all of this information we can readily form an idea as to what may be expected of the weather. We locate the storm center, ascertain the velocity with which the storm is traveling, and, knowing by fixed rule its general direction, there is no guesswork about it. This is how we do our work and how we give correct information without having the wisdom of a prophet.

Recent Improvements.

"Within recent years many improvements have been made in the weather apparatus. For instance, by the old method of measuring precipitation, the figures could not be obtained until the end of the downpour, and then it was for the whole period. By the weight method now prevailing we can tell through the self-registering attachments exact figures for any given moment during the period of precipitation. These self-registering attachments have worked wonders in the perfection of the service.

"As to the value of the weather bureau to the business world much is to be said. There are many lines of trade that are contingent upon weather conditions. This is especially true of shippers of various products. Business men who have learned to appreciate the advance information that is to be obtained from the weather bureau consult it daily as a guide to their movements in trade. One day last week one prominent Omaha trader telephoned the local bureau that he had made a saving of \$3,000 by the knowledge he had received. This is only one incident out of many. The weather forecast is looked upon as being a reliable index in all cases where cold or heat or snow or rain make a difference in trade results.

"On the great lakes of the north a system of caution signals has been inaugurated, and with this warning of approaching storms, many disasters to vessels have been avoided. Along the rivers there is a system of announcing the stages of the water in times of freshets, and this has proved of great benefit. The Omaha bureau has charge of the Missouri river all the way from Kansas City to its source. This information is obtained and sent to headquarters by observation at the various sections along the route.

Omaha a Most Important Station.

"The Omaha Weather bureau was opened for business November 1, 1870, and there has never been a break in the records since the opening day. Owing to the geographical location, being a gateway between the east and west, this is one of the most important stations in the United States. It is also one of the most elaborately equipped, and in many respects is superior to any other,



WORK OF THE WEATHER MAN—TAKING THE WIND GAUGE—Photo by Louis R. Bostwick.

not excepting the stations in the greatest cities, such as New York, Philadelphia and Chicago. There is not another with such elegant office furniture, and as to scientific apparatus, there is none better."

Observer Welsh secures for Omaha all the latest appliances. He is in point of service one of the oldest forecast officials in the United States, he having had twenty-seven years experience. He has been stationed in several of the most important points. He opened the Kansas City bureau in 1888, and soon thereafter came to Omaha, of choice. Speaking of his location here, Mr. Welsh says:

"I secured my appointment to Omaha because I liked the town, and now, after a residence here since 1888, I have grown to esteem the Omaha people most highly and am contented to remain here and keep tab on the weather the remainder of my days."

Mr. Welsh bears the reputation of being one of the most thoroughly informed forecast officials in the United States. His office force consists of two observers, W. D. Maxwell and O. P. M. Brown, and one map distributor, J. C. Coffman. The bureau occupies handsome quarters and is conveniently located. The only break in the service of Mr. Welsh in the Omaha bureau since he located here was for a short time a few years ago, when he left the city temporarily to close a station at Leavenworth, Kan. With that exception his service has been continuous.

Relative to general lack of information concerning the purposes and accomplishments of the Weather bureau, Mr. Welsh says: "Many persons who are not engaged in business wherein the weather cuts a figure have not had opportunity to investigate our work and therefore they are not to be blamed for not having a clear understanding of what we are doing. I am always glad to extend information concerning weather observation. We invite the public to visit us and get an insight into the routine of an institution that has come to stay. A weather bureau is conducted by the government for the benefit of



WORK OF THE WEATHER MAN—LOCAL FORECASTER WELSH AT HIS DESK—Photo by Louis R. Bostwick.

the citizens of the United States, and I shall at all times give due consideration to any suggestions intended for the improvement of the service."

The government is inclined to pay much attention to the extension and development of weather observation, and this disposition has notably increased of late years. Each year the weather bureau becomes a more important institution than it was the preceding year, and the service is expanding into the new possessions.

Tales of the Pulpit

A Baptist and a Methodist minister were by accident dining at the same house. As they took their seats, relates the Columbian, there was an embarrassed pause, the hostess not knowing how to ask one minister to say grace without offending the other. The small son quickly grasped the situation and, half rising in his chair, moved his finger rapidly around the table, reciting:

Eny mense miny mo,
Catch a nigger by the toe.

He ended by pointing his finger at the Baptist minister and shouting, "You're it!" The reverend gentleman accepted the decision and said grace, but it lacked the usual solemnity.

The Kansas City Journal says: "At Effingham, in Atchison county, the Rev. L. F. Mauzy recently preached a sermon against woman suffrage from which we extract this extraordinary bit of erudition: 'Take the word woman. Anglocite it, whom does it mean? It means wo-man, and transferred to Greek it means woe to man.' At the conclusion of the sermon an enthusiastic woman suffragist in the audience declared that the bible said 'all men and women are created free and equal.' Parson Mauzy called the man down and said it was the Declaration of Independence, and not the bible, that said this. The man returned to the charge and offered to bet a dollar that he could find it in the bible. The preacher refused to bet, and the audience dispersed in full conviction that he had been licked."

"Yes," said the old before-the-war darkey in Georgia, "dey didn't fergit me in de Christmas, I tell you! I got seven second-hand longtail coats, seven pair er britches, seven of beaver hats, en Lawd knows des how many collars!"

"And what did you do with 'em all?"
"Well, suh, my ol'es boy jumped into one er dem, en no sooner did he jump dan he felt a call ter be a missionary. Den, de next ter him hopped into n'er one en felt a call ter be a perfesser in a schoolhouse. En den n'er one rigged himself out, en felt a call ter be a lawyer, en he's a-hangin' roun' de justice courts. N'er boy put on a suit en feel a call ter be a congressman—do' he never took a drink in his lifetime."

"And how do you feel about it?"
"Well, suh, ter tell de plain truth, en no lie, I all mix up 'bout it. Fer de life er me I dunno w'ether I a preacher, a politician er des de same fool nigger dat I been ever gence freedom broke out!"

Told Out of Court

Justice Gray of the United States supreme court is a good deal of a wag and has been known, even when on the bench, to crack a joke. On one occasion an attorney was using a map to illustrate his argument. Justice Gray asked what the map was. "A bird's-eye view of the land in controversy," was the reply. "Well," said his honor, "please bring it a little nearer. I haven't a bird's eye."

A native Indian barrister of Bengal recently made the following unique address in court: "My learned friend, with mere wind from a teapot, thinks to browbeat me from my legs; but this is guerrilla warfare. I stand under the shoes of my client and only seek to place my bone of contention clearly

in your honor's eye. My learned friend merely, and vainly, runs amok upon the sheet anchors of my case. My client is a widow, your honor; a poor chap, with one post-mortem son; a widow, not able to eat more than one meal a day, or to look after a man; so my poor client has not such physique or mind as to be able to assault the lusty complainant. Yet she has been deprived of some of her more valuable leather—I, e., the leather of her nose. My learned friend has said that there is on the side of his client a respectable witness—namely, a pleader; and since this witness is independent, therefore he should be believed. But, your honor, with your honor's vast experience, is pleased enough to observe that truthfulness is not so plentiful as blackberries in this country; and I am sorry to say—though this witness is a man of my own feathers—that there are in my profession black sheep of every complexion, and some of them do not always speak gospel truth. Until the witness explains what has become of my client's nose leather he cannot be believed. He cannot be allowed to raise a castle in the air by beating upon a bush. So, trusting in that administration of British justice on which the sun never sets, I close my case."

"Now," said the client, taking out his pocketbook, "how much are your services worth?"

"That has nothing to do with the case," answered the professional man of fine distinctions. "What you ought to have asked is merely how much I am going to charge you."

"So," the lawyer said, "you wish to break



WORK OF THE WEATHER MAN—BAROMETER AND THERMOMETER BOX—Photo by Louis R. Bostwick.

your father's will? What's the matter with it?"

"Well, he left nearly half of his fortune to colleges and charitable institutions."

"H'm. Did he ever show any evidences of being weak-minded?"

"He was accepted as a juror in a murder trial once."

"Oh, this'll be dead easy!"

Pointed Paragraphs

Chicago News: The unexpected seldom happens more than once.

A hungry parrot comes very near being a hollow mockery.

Some people are radical in theory but conservative in action.

Be sure you are right—then let your wife have her own way.

The bite of a toothless dog might be termed a soft snap.

A pretty girl thinks every mirror she sees is worth looking into.

The hungry actor at the table is willing to take everybody's part.

Men tell more lies about their weight than women do about their age.

The old black diagonal now shines unseen under the charitable ulster.

A woman may think her husband is a failure, but marriage—never.

The bill board makes the actor glad, but the board bill makes him tired.

The foremost question of the day is concerning the prospective weather.

An enterprising Chicago baker gives a can-opener with each of his pies.

A man can talk himself out of a job easier than he can work himself into one.

When two souls have but a single thought the thought seldom interests outsiders.

New wrinkles in dress please a woman, but a new one in her face has the opposite effect.

Every time a man sees his wife purse up her lips he thinks she is going to ask him for money.

When a man is in trouble his friends console themselves with thinking it will be a lesson for him.