

Newcomerstown, Ohio

February 6, 1939

Dear Mr. Kusters:

I'm submitting this without knowing whether or not you may be interested in a story along this line. Since I could write it without doing any research, I was tempted to try it as a filler, while collecting material for other features.

You may find the personal angle objectionable, but it's rather difficult to avoid, considering that this is all first-hand information. Perhaps I should explain, to avoid any misunderstanding with "checker uppers" that while I do the work and get the pay, the reports are sent in in my mother's name as a matter of convenience to the department. While I'm known locally as the observer, I have no "official standing". Therefore I have avoided naming any observer in the story.

Sincerely,

*Louis Zimmerman*

Newcomerstown, Ohio

## HOW MUCH DID IT RAIN?

The newspapers extol the heroism of Uncle Sam's Coast Guard. They praise the dependability of his mailmen, and the brilliance of his engineers. They even make more or less of a paragon of the man in the Weather Bureau, although a slight facetiousness of manner at times makes one doubt their sincerity in the latter instance. But never a word of commendation can they find to bestow on the countless folk who, day in and day out, methodically record all the data from which the Weather Bureau compiles its reports. Once in a while the daily paper tells of the poor lonely fellow, who, frozen into some icy waste in Alaska with only static for company discovers and reports the birth of an Arctic whirlwind in time to warn the citizens carelessly soaking up winter sunshine down in the United States. At the same time some fellow-exile perched in a blizzard-whipped shack on New Hampshire's highest mountain may send in reports of wind velocities so unheard of that he earns a fourth-column on the front of half the country weeklies, right in among the bridge parties!

But for every one of these spectacular Observers whose reports add spice to the nation's weather menu, there are hundreds of the every-day, humdrum

variety, whose work might be said to supply the bread and meat and potatoes. A map of the United States showing a dot for the location of each observer is fairly peppered. Ohio has a total of one hundred twenty-five stations of varying degrees of importance, according to the table of Climatological Data for October 1938.

A study of a state map showing the location of these stations quickly reveals the concern shown over rainfall feeding our principal streams. While some counties are almost if not entirely devoid of observers, others, particularly in eastern Ohio, boast three, four, or even five. Twenty-one stations make it possible for the man in the Weather Bureau to know just how much rain or snow has fallen in the district drained by the Muskingum River, while eighteen report on the Scioto district. Twenty-three stations are in the Great Miami basin and the rest are scattered over the areas drained by Lake Erie, the Ohio, the Mahoning, the Sandusky, the Maumee, the Hocking and the Little Miami.

Some of these are regular Weather Bureau Stations, but the majority are called Co-operative Meteorological Stations, and the attendants are called Co-operative Observers. A few of the Co-operative Observers are women.

Daily, weekly, and monthly, the observers send reports by way of letters, cards, telegrams, and telephone messages to the "higher-ups" who require information on all the doings of the weather man in their own neighborhoods, together with data on the river's ups and downs. These reports form the basis for the Weather Bureau's efficient system of flood warnings. One of Ohio's many Co-operative Meteorological Stations is located at Newcomerstown, and for reasons which will doubtless be obvious, this one while one of the most insignificant from the standpoint of importance, will serve as an example. Newcomerstown reports only precipitation and river stages.

When great-grandfather decided to buy a farm on the bank of the Tuscarawas River near Newcomerstown long ago, there was no United States Weather Bureau, nor any engineers planning ways to keep the river away from his door. He learned to love the river, to think of it as his own, and to understand its clear and its muddy moods. The family he founded learned to watch the river too, and so when some twenty years ago, the United States Geological Survey installed a gage on the bridge nearby, our youngest generation took on the job of River Observer as rather an inherent right and privilege. After all, the river had always sort of belonged to us. Soon after that the United States Weather Bureau came along with a rain gage, and asked for observations of both the rainfall and the river. And within the last few years, two other organizations have arranged for reports. These are the Muskingum Watershed Conservancy District at New Philadelphia, and the United States Engineers office at Huntington, W. Va.

Now the ordinary rain gage isn't a particularly fetching piece of lawn furniture. In fact, rather than be bothered by the public's "What is it?" questions, we sought a location for it removed from the gaze of the passer-by. For years it has stood in the backyard - a slender, white-painted, box-like contraption supporting the cylindrical metal gage. The gage itself is really a very simple device - two cylindrical metal tubes, one inside the other, both of which are covered by a funnel-like arrangement which catches the rain and conducts it to the inside measuring tube. This inside tube holds two inches of rainfall, and it is very seldom filled in a twenty-four-hour period. Once in a great while a pouring rain brings more than two inches, and when this occurs the inside tube overflows into the outer one, thus retaining all the precipitation for measurement. The actual measurement is made with a little light-weight, soft-wood stick on which a scale of inches in tenths and hundredths is impressed.

This job of Observer is one of those where pride of service far outweighs the return in dollars and cents. No one, I am sure, will rise to dispute me when

I say that the Grand Total Salary for all four of these reporting jobs would not keep one well-hinged pair of jaws in chewing-gum. This is compensated for though, when once in a long time the local Observer becomes the most important person in the community. Folks hang on his words with each alarming rise of the river, depending upon his observations and past records to decide when the moment has come to carry the fruit up from the cellar, or haul the winter fodder out of the low ground; and a respectful silence always anticipates his official announcement of the depth of last night's downpour.

At no time was this truer than when in August of 1935, Eastern Ohio experienced a cloudburst and to Newcomerstown's "Lady of the Rain Gage" fell the doubtful distinction of reporting the heaviest rainfall in the whole area - eight and seven tenths inches overnight!

Fortunately for the community, such exciting times are the exception rather than the rule. But the local Observer, always eager for those exciting moments when all the neighbors attend her every word, can't but regret their passing, for with the advent of winter, her lot becomes an inglorious one, and no one envies or will even share her eight-in-the-morning and five-in-the-evening trips to the river gage. Her glow of pride in public service dims with the shortening of the days, and only after a period of mental wrestling does she finally bundle up and go sliding down the road and out to the middle of the bridge to unlock and unwind the wire-weight gage. While a wind straight from the North Pole sweeps up off the ice-choked water and stings her eyes to tears, she reads the result on the cylinder and rewinds and locks the gage. Quite often the lock has frozen after a night of sleet or snow, and for these emergencies a pocketful of bread-wrappers and a book of safety matches comes in handy. It's no wonder that drivers of cars passing by cast amazed glances at the spectacle of her bending low to shield the wavering matches from the wild wind until the paper catches fire, for this reincarnation of "The Little Match Girl" must be quite striking.

Warmed only by her wrath at the frozen lock, she flings a fiery glance in the direction of the truck driver who dares to call out, "Hi, there! Sweety!"

Rainy days too, have their share of discomfort, for the bridge floor has a series of depressions right by the gage, in which large puddles of muddy water collect to be fanned out at the Observer by passing motorists who have a zest for target practice.

And then this business of snow reports isn't any joke either! If we had honest-to-goodness big snows it might at least be interesting; perhaps here one could recapture some of the excitement of spring floods or summer storms. But read a few excerpts from the page of instructions sent out by the Weather Bureau to their local observers, and then think of going to all that bother for a stingy little bit of snow:

"It is very generally agreed among experienced meteorologists that the correct measurement of snowfall is one of the most difficult things the observer is asked to do. This difficulty is due to a number of causes, such, for example, as the effect of wind movement on the catch in the gage, the drifting of the snow, the character of the snow, whether dry or moist, and then as we all know from experience the act may be attended by more or less discomfort. However, the importance of.....

"When the overflow collector is unprotected from the wind its catch represents the true amount of snow only in the case of precipitation during calms or very light winds. On windy occasions the catch is often highly inaccurate. The true quantity must be found, if possible, by measuring a section of the freshly fallen snow cut out by forcing the overflow, mouth downward, through the layer and then slipping a thin board or sheet of metal underneath so as to separate and lift up the section of snow thus cut out. ... Assuming that a representative quantity of snow has been obtained in the overflow, a

measurement may be secured by placing the vessel in a warm room until the snow has melted and then measuring the water in the measuring tube in the usual way."

It's very discouraging and ever so much trouble, to say the least:

As for the clerical end of the job, it's not so much the multitudinous reports, as the problem of remembering when to send them to whom. The Weather Bureau requires daily reports from December to June inclusive, sent in the morning, showing the river stage, amount of ice, amount of precipitation, amount of snow, both newly fallen and accumulated, and present condition of weather. The triplicate report made at the end of each month contains all this daily information together with a record of approximate hours in which precipitation fell. Then too, there are special telegraphic reports at times of excessive rainfall or floods, with postal confirmation.

The Geological Survey requires weekly postal reports of daily river stages on Saturdays; the Conservancy District daily precipitation reports by postal every Wednesday, together with reports by telephone at times of heavy precipitation which must be confirmed by postal; and the U. S. Engineers' reports of river stages are sent each evening. The Geological Survey and the Engineers also furnish quarterly books in which permanent records are made. These are mailed in at the end of every three-month period.

And yet, for all this, the job is fun most of the time. Keeping an hourly check on a rapidly rising river is an exciting business, and staying up most of the night to lower the weight every hour into the muddy circle cut by the flashlight from the roaring blackness all around is by no means the least of it, for once the river passes flood stage the Observer stays close to the job until the crest has been reached. Those who have built the Muskingum Conservancy dams tell us that real floods will never again menace our section, and thereby they

pronounce the doom of all that the River Observer has in the past found glorious and dramatic. <sup>She</sup> ~~I~~ almost regrets it.

But such is the way of progress. In the future, at least in our district, Co-operative Meteorological Observers will just have to content themselves with rain and snow and hail and fog and wind and northern lights. Yes, and earthquakes!