UNITED STATES DEPARTMENT OF AGRICULTURE
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CHATS WITH THE WEATHER MAN. RELEASE: Friday, July 22, 1932.

NOT FOR PUBLICATION

ANNOUNCEMENT: Now we have a chat with the Weather Man. Experts of the United States Weather Bureau today give us a suggestion on something we can do about the weather.

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Mr. B. C. Kadel, in charge of the Instrument Division of the U. S. Weather Bureau, says if you have the time, and an interest in weather you might keep tab on the rainfall. And by measuring rainfall you might do a real service to the country.

As he points out, in the Biritsh Isles there is a rainfall organization the members of which have measured the rainfall of the British Isles for years. They have assembled and published the results of their measurements from time to time. Mr. Kadel says there is a real need for a similar effort in this country. What's more, the need is far greater today than ever before, on account of the growing use of water for power and irrigation.

In this broad land of ours, the Weather Bureau has some five thousand regular rainfall stations. In some sections, such as the Eastern seaboard, stations are close enough to each other to give a fair idea of the general average rainfall in those sections. But in other parts of the country, especially in the less densely populated sections of the West there is real need for many more measurements than are available. Many such thinly settled sections are the source of supply of western rivers. As Mr. Kadel says, water is one of our great natural resources, and it is highly important we should have a survey of how much we have. However, he doesn't urge that the government multiply its rainfall stations, as it is a comparatively simple matter to measure the rainfall, he thinks interested individuals can do it to their own enjoyment, and the benefit of the country.

Of course, folks have been measuring rainfall for hundreds of years. The first rain gauges known to have been used were made of stone. That was over in Korea.

Nowadays, we make them out of metal. All through the world, you'll find metal cylindrical vessels with the top leveled and freely exposed to the sky for catching the rain.

The rainfall is measured on the basis of the depth of water on a level; assuming that none is lost from the time it falls until it is measured.

The custom most widely followed in this country, is to catch the water in a big vessel. Then pour the water that falls into that big vessel into a small vessel to increase its depth, so as to provide a magnified basis for measurement.

For example, Mr. Kadel says you might catch the rain in a washtub, then pour it into a one gallon straight-sided syrup can to measure it, by putting a measuring stick or foot ruler in the water. Of course, there must be a definite relationship in the sizes of the two containers. A wash-tub---syrup can rain gauge would be too crude for accurate practical purposes.

In the regular Weather Bureau rain gauges, the smaller vessel or measuring tube is uniformly one-tenth the size of the larger vessel or container.

The U. S. Weather Bureau rain gauge consists of a metal cylindrical collector eight inches in diameter at the upper end, terminating in a funnel which directs the water into the measuring tube, the diameter of which is one tenth the diameter of the collector.

In Europe, Mr. Kadel tells me, the weather men use a similar funnel to direct the water into a glass jug. Then they measure the water by pouring it into a glass graduate. In some cases, the amount of water is determined by weighing. Ordinarily, however, the weighing method is limited to measuring snow.

And right there, it is well to remember that measuring the water content of snow is a subject closely allied to rainfall measurement. The snowfall which lies in the mountains, feeds the headwaters of many rivers. Measuring that snowfall, Mr. Kadel says, is a problem on which only a beginning has yet been made. Enough has been done, however, he declares, to show that it is practical to appraise the quantity of water available for power and irrigation well in advance of the time it will be used. -----

That is quite another question. - Let's get back to our rain gauge. As we were saying, when it is impossible to make measurements immediately after rainfall, we must provide against loss of water by evaporation. The common method of doing that, is to build a collector in the form of a funnel which directs the water into a narrow necked storage vessel. The Weather Bureau used a collector which is eight inches in diameter at the top. Mr. Kadel suggests, however, that for anyone building his own rain gauge, it would be a good idea to make their rain gauge exactly five and thirty-six hundredths inches in diameter at the top. With a five and thirty-six hundredth inch diameter, each fluid dram of water caught in the collector will correspond to one one-hundredth inch of rainfall. That is very convenient size, because then you can measure the rainfall collected by simply pouring the water into a measuring glass such as you can buy at most any drug store.

If you make a rain gauge 5.36 inches in diameter, and use a funnel, Mr. Kadel points out that the funnel should be nearly or quite three inches deep to prevent outsplashing. The slope of the sides of the funnel should be not less than 45 degrees.

If you want further information on rain gauges and rainfall measurement, you can get it from the circular the Weather Bureau has prepared as "instructions for cooperative observers." That is Weather Bureau Circular No. 843. You can get it for ten cents from the Superintendent of Public Documents, at the Government Printing Office, Washington, D. C.

As you understand, rainfall is often a very local proposition. The United States Weather Bureau with all its five thousand rainfall stations, may never catch or measure the rain in many of the more thinly settled localities of this country. For farmers or engineers or others the rainfall in any particular locality at some distance from the regular Weather Bureau station may be of great practical importance. For example, an engineer called upon to build a sewer big enough to take care of the water without spending too much to build it unnecessarily big, would be greatly helped by knowledge of the exact rainfall in that immediate locality.

However, any of you people who decide to build a rain gauge, Mr. Kadel says, should keep in mind that the rain gauge must be exposed reasonably free to the sky. Small objects twice their own height away from the gauge are not objectionable. Place the rain gauge on the ground, preferably where surrounding shrubbery or low fences break the force of the wind. Do NOT place the rain gauge on a roof, unless, as Mr. Kadel says, you are so unfortunate, as is the Weather Bureau itself, to be compelled in order to render service to a great mass of people to maintain offices in the heart of cities. Under such conditions, the Weather Bureau makes the best of a bad situation, by placing the rain gauge so as to take advantage of the shielding effects of surrounding buildings. The Weather Bureau imitates as far as practical the ideal ground exposure.

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ANNOUNCEMENT: That idea of private individuals measuring rainfall seems to have interesting possibilities. We will have another of these chats from the U. S. Weather Bureau this time two weeks from today.

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National Oceanic and Atmospheric Administration

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