Humidity This Summer Has Broken Record

It's a Notable Contrast to Just a Century Ago, Which Was "The-Year Without a Summer," When Snow Fell in June

I
t may not have occurred to you that you have been living in a time when the Summer of the Year Without a Summer." One of the reasons for overlooking the anniversary may be found probably in the fact that, counting the thirty-one days beginning July 9 and ending Aug. 8, the mean relative humidity in this city has been 82.4 per cent. This is higher than any monthly mean since taking of records by the Weather Bureau began. The highest monthly mean of record for July was 80 per cent, in 1850 and 1897.

The months of June and July, one hundred years ago, were respectively 3 and 5.8 degrees below the normal. Frosts occurred in every month but Indian corn did not ripen. Fruits occurred in every month. Apples were greatly reduced in quantity, or wholly cut off. On the 8th of June, 1816, snow fell in all parts of Northern New England, reaching the highlands and mountains of five and six inches. On the meridian of the 75th line was one-half an inch thick in standing water, and tramps were fed in some quarters that much of the usual weather this year might be traced to, the more than unusual or extraordinary rainfall. Mr. Saccard shook his head and said definitively:

"There is nothing—nothing at all—like this."

And upon being asked further about it, he could add nothing to what he had just asserted.

"This weather is rather interesting," said James H. Saccard, head of the New York Weather Bureau, "because July gave us a good deal of cool weather, and snow some of the battle, and it seems that lightly rain would repeat the weather of June. But why snow in July? Now what happened in July? As a matter of fact, the mean daily temperature for July was 72.5 degrees, while the average for the four-year period (1890-93) was 75.3 degrees. So July of this year showed only three tenths of a degree, and the average for the four-year period (1890-93) was 75.3 degrees. So July of this year showed only three tenths of a degree warmer than the average for the four-year period (1890-93).

"It was interesting to note, incidentally, that so far as moisture for the July just past is concerned, if measured in inches of rainfall, it was drier than the average for that month. The normal rainfall for this month was 4.81 inches, while the total for this month this year was 5.44 inches, or more than one inch above the average." They say: "Moisture is measured in terms of the temperature."

"This heat is measured in terms of the temperature."

"It is evident that Mr. Saccard was going to say something in which all New Yorkers would be able and doubtless be willing, to give an intelligent interest," and he added solemnly:

"The mean for the month was 71.9 per cent, while the average for the month was 71.9 per cent. The highest monthly mean of record for the month was 71.9 per cent, in 1890 and 1897. During the first eight days of July, the relative humidity was unusually high, but counting the thirty-one days beginning July 9 and ending Aug. 8, the mean has been 82.4 per cent. While an extensive search of the records has not been made, it is probable that this average for a thirty-one-day period is among the highest of record. It is positively higher than any monthly mean since the taking of records began.

"The maximum temperature of record for July was 90 degrees, on July 2, 1898, while the highest for July, 1916, is only 92 degrees. Temperature of 80 or more occurred only once in July this year, or the last day of the month, while the average number of such days for that month is three."

"So you can see the degree of daily comfort or discomfort, as may be inferred from a comparison of temperature, have not changed, but depend on something else than actual temperature of the air, as is indicated by the thermometer," said Mr. Saccard, "who, no matter what the temperature or humidity, will say what he has to say with a smile. "As a matter of fact, it is governed very largely by the relative humidity of the air. If the air under high temperatures is very dry, evaporation of the perspiration of the body produces a cooling effect, so that the degree of discomfort, or heat, sensed corresponds rather closely with the wet-bulb temperature."

"It is very generally known, even in the medical sense, that the heat of the day is less when the relative humidity is high than when it is low."

"This wet-bulb temperature," continued Mr. Saccard, "is sometimes called the 'vital temperature,' because it corresponds more or less closely with the temperature sensed by the person, which is distributed through the skin of the body. Generally speaking, dry-bulb or air temperature of 90 degrees or more will produce sensations of bodily discomfort varying with the relative humidity of the same air at 100 per cent. Air temperatures of 89 and a wet-bulb temperature of 90 degrees represent a relative humidity of 61 per cent. An air temperature of 90 degrees with the wet-bulb remaining at 70 would produce a relative humidity of only 56 per cent, and the degree of bodily comfort experienced under those conditions would not be very materially different from that experienced under a temperature of 90 and a wet-bulb of 70 degrees.

"In other words, within reasonable limits, the greatest degree of bodily comfort will be sensed with wet-bulb temperatures ranging from 65 to 70 degrees. Carrying the illustration further, if the air temperature rises to 90 degrees, the wet-bulb remaining at 70 degrees, the relative humidity would have dropped to 21 per cent."

"I tell you this in some detail because there is a very widespread impression abroad that air temperature is the sunshine and in the shade, and in the shade, quite distinctively different. A moment's thought about this will convince one that such a thing could not be true. Suppose air at temperature of 80 to be moving at the rate of ten miles per hour. How much would its temperature change in passing a streak of sunshine the width of the street?"

Mr. Saccard pointed out the window on the twenty-first floor of the Whitney Building, 187 State Street, overlooking the park, and said:

"How much does the air lose in temperature in passing through the shadow of that flag pole in Battery Park?"

"It is true that bodies exposed to the
direct rays of the sun absorb more or less heat (insolation) and themselves become warmer than the surrounding air. But air temperatures do not differ materially, whether in the shade or in the sunshine. It is often complained that temperatures recorded by the Weather Bureau are not comparable with those experienced by the man in the street. The actual difference as registered by an accurate thermometer is very much less than seems to be generally believed.

"On some of the hottest days this summer, men have been sent from the office of the Weather Bureau with tested thermometers to take temperatures on the street in different parts of the city—at the Post Office, in Wall Street, and such places. When such temperatures have been taken in the shade of buildings, or in the middle of the street, the thermometer being shaded from the direct rays of the sun by the body or hat of the observer, differences exceeding one or two degrees have rarely been found. And these differences," added Mr. Scarr, with a good-natured and rather slow wink, "have not always been what the critic in the street might call 'in favor of the Weather Bureau,' either. Sometimes, in other words, the figures are lower than the bureau's."

While Washington is the weather bureau centre, whence local reports are received, the New York bureau, while but a branch, is the most important in the country, because of its vast commercial interests. The present head of the New York bureau did not, as a young man, have much faith in the forecasting profession, he admitted the other day. He used to teach school, and once started a newspaper in the West.

"Does the department err frequently?" Mr. Scarr was asked.

"We err, but not frequently," he replied. "There is no bureau in the world more accurate, more comprehensive. We cannot direct the course of a storm, we cannot rule the winds, but in nine hundred and ninety-nine cases out of a million we can tell which way they are going and so warn the public hours in advance. It is true we make mistakes. We are only human and the elements—well, when humanity is pitted against the warring elements, our best efforts, supplemented by science, go awry.

"Our principal mistakes, however, are due to one cause. We forecast by States, covering the entire State. Frequently a portion, a small portion, of the State is just outside of the edge of a storm. It escapes. The remainder of the State doesn't. You see, the trouble is that the weather man, with all his wisdom and reports, cannot keep a storm within the State limits."

"Is there anything that he can do about all this humidity?" Mr. Scarr was asked.

"Some of the readers of The Times will doubtless remember Saunders's Old Third Reader," replied the Weather Man. "If so, they will recall a story about John Hasty and Caleb Careful. Caleb said: 'Keep cool, John, keep cool.' "Weather is a perfectly harmonious result of natural laws, hence we may agree with Ruskin that there is no bad weather—just different kinds of good weather. The weather will be what it will be. When the people of New York think they have the worst sort of weather, they should remember that it won't make conditions seem any better to indulge in complaints and emphasize the temporary discomforts. The Weather Man doesn't really make the weather, and our estimate of what the weather conditions really are often depends as much upon the state of one's physical condition as it does upon actual meteorological conditions.

"I think, in short, that it should be consoling to the people of New York, who think they are having a hard time with the heat, to remember Mark Twain's classic comment about Winter in India. He said there was no such thing—that the people in India spoke of it to differentiate between weather that would melt a brass door knob and the kind that would only make it mushy."

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