

village view

by Andrea Leonard

Throughout the long and bitter winter just past, the one we're gladly forgetting with all the conscious effort we can muster, we've been hearing weather reports with an additional statistic with which most of us are unfamiliar.

Again and over again, we hear the temperature reported as 32 degrees, zero Celsius, or 40 degrees, 5 Celsius. As warmer weather comes, the reported temperatures rise, of course. Still, there's the extra figure: 50 degrees, 10 Celsius; 60 degrees, 16 Celsius.

And as summer blesses us with even higher temperatures, we'll be hearing 70 degrees, 21 Celsius; 80 degrees, 27 Celsius. If it gets as hot as 90 degrees, we'll be told it's 33 Celsius.

What's this new term we're hearing? For starters, it's not new. When you went to school you may have learned about the Centigrade thermometer. The Celsius scale is your old friend Centigrade, now more frequently referred to by the name of the man who devised it, Anders Celsius who was born November 11, 1701, in Uppsala, Sweden.

Anders Celsius became a professor of astronomy at the University of Uppsala in 1730 and maintained that position until his death on April 25, 1744. During his career in astronomy, he published in Nurnberg in 1733 a collection of 316 observations of the Aurora Borealis which had been made by himself and others in the field of astronomy between 1716 and 1733.

Celsius was the first astronomer to associate the phenomenon of the Northern Lights with the earth's magnetic field.

Later, in 1736, in Paris, he advocated the measurement of an arc of the meridian in Lapland, and took part in the expedition organized for that purpose by the French Academy.

His most lasting contribution to science, however, was the development of the standard scale of temperatures we now are learning to use as part of this country's gradual switch to the metric system.

The French word Centigrade is from the Latin: centum, one hundred, and gradus, degree.

At the time Anders Celsius began his astronomical studies, thermometry was based on the standard Fahrenheit scale which had been devised by Gabriel Daniel Fahrenheit, a German physicist born in 1686, who lived most of his life in Holland.

Fahrenheit was the first to use mercury in thermometers. This is, of course, the scale with which we are most familiar, and registers the freezing point of water as 32 degrees, and its boiling point as 212 degrees.

Mercury, which you may know as "quick silver," is a silvery-white poisonous metallic element, liquid at room temperature, which has been used in thermometers, barometers, vapor lamps, and batteries over the past two centuries, and more recently in the preparation of chemical pesticides.

When confined in the familiar glass tube, mercury expands in volume at a measurable rate with changes in temperature. It is used in the Celsius thermometer as well.

Another type of thermometer is based on increases in electric resistance of metals as temperatures rise. These, logically enough, are called resistance thermometers.

The thermometer Anders Celsius devised differs from Fahrenheit's in that the freezing point of water is designated as zero, and the boiling point, 100 degrees, under normal atmospheric pressure. Scientists have found this scale easier to work with, based, as it is, on figures divisible by ten as in other metric systems.

Most humans display a natural resistance to change, and so it is with the temperatures we are hearing reported along with the weather forecasts.

When the announcer gives the temperature on the Fahrenheit scale, we hear him, and we register the reported degrees or the forecasted high and low temperatures for the day; but few of us register any meaning to the figures given on the Celsius scale, even though we hear them, too.

The purpose of reporting both, obviously, is the hope that, in time, people will relate the temperature Celsius in the same way we've related temperatures Fahrenheit scale entirely.

It's really just as easy to recognize zero degrees as the freezing point of water as to think of 32 degrees. We have learned one set of figures, one scale; we can learn another.

When the weather reporter tells you it's minus 18 degrees Celsius, it's going to feel mighty cold outside, because that's zero degrees Fahrenheit.

There are formulae for converting from one scale to the other: to reduce degrees Fahrenheit to degrees Celsius, subtract 32 degrees and multiply by 5/9; to reduce degrees Celsius to degrees Fahrenheit, multiply by 9/5 and add 32.

If you're capable of doing the arithmetic in your head, that might be, for you, the easiest way to learn the Celsius scale. For those of us who find arithmetic a chore, it's easier to learn the new scale by rote and experience.

As we hear these numbers, if we try to relate them to the known scale, they will soon become meaningful at the same semi-conscious level the more familiar ones are now. Their interpretation will become as automatic as Fahrenheit degrees.

In the same way you learned the meaning of degrees Fahrenheit, the scale that's become obsolete and is being phased out of use, you can painlessly learn the Celsius scale. All we have to do is really listen.