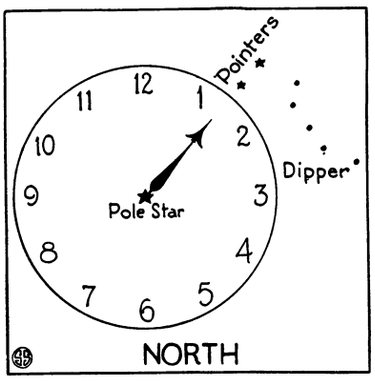

Time From the Stars

With summer approaching, people are more likely to be out of doors at night, and one never knows when his watch may stop, and he wishes to know the time. If the night is clear, it is easily possible to tell the time from the stars. Of course, most people are familiar with a method of telling the time from one star, for the sun dial tells it from the sun, and the sun is the nearest of all the stars.

However, it is the stars visible at night that serve as the clock face by this method. When the astronomer wants to get the exact time, he observes the passage of stars across the meridian line, with the aid of a transit instrument. Every clear night at the Naval Observatory in Washington, for instance, such stellar observations are made, and the time as found from them is broadcast to the country by radio and over telegraph lines.

No complicated instruments are necessary to tell the approximate time, however, if you remember the following rules, which were prepared by Prof. Chas. C. Wylie, of the University of Iowa. First look at the North Star, and the two "Pointers" in the Great Dipper, which are on a line with it. Imagine that in the sky there is a huge clock face, as shown in the drawing, with the hour hand pointing to the Pointers. Read the time to the nearest quarter hour, which will be easy with a little practice. To this figure, add the number of months since January 1, to the nearest quarter month; double this, and subtract the result from 16¼. If the result is more than 16¼, subtract it from 40¼. The result is the time in hours p. m. If the time is greater than 12, it means that it is after midnight, so subtract 12, and you have the time in hours a. m.

Let us try an example. On the night of June 1 you see the Pointers in the position of 10:45. Five months have elapsed since January 1, so add 10¾ to 5, making 15¾; doubling it gives 31½, and subtracting from 40¼, we have 8¾, which means that the time is 8:45 p. m.

Science News-Letter, June 18, 1927

Worms Noisy But Don't Sing

Earthworms are noisy, but they cannot properly be said to sing, declares the latest participant in the discussion over the vocalizing annelids, Dr. W. R. Walton, entomologist in the United States Department of Agriculture, in *Science*. Qualified persons here admit that Dr. Walton knows his worms, for his specialty lies in a nearly allied scientific field, and he is, moreover, a disciple of the famous Izaak of the same surname and has a critical musical ear in the bargain.

"For 'lo these many days," he writes, "it has been my custom to keep captive, in numbers as large as one hundred or more, adult specimens of the large cosmopolitan earthworm, *Lumbricus terrestris*. They are kept in a five-gallon earthenware crock in a cool corner of the cellar for use in a pursuit which in some states of the Union is considered immoral, or at least illegal, when indulged in on Sunday. In the course of my dealings with these worms I have many times heard the sounds recently referred to as 'singing' and, although personally fond of music, have failed to notice anything in the least musical about these faint clicking sounds or stridulations, recently termed 'song.' The singing of insects, for instance, could be considered as symphonic poems when compared with these insignificant rustlings."

Dr. Walton's observations seem to stand against a theory advanced earlier: that the worms make the sounds by rasping the minute bristles under their bodies across pebbles at the mouths of their burrows. He says that they produce their sounds when they are kept in moist moss, where there is, of course, nothing to rasp on, and that, moreover, he has heard the noises when the worms were all underground in their imprisoning crock. He reports that it is extremely difficult to make observations on the worms, for they become noisy only at night, and although they have no eyes they are still extremely sensitive to light and retreat into their burrows instantly if a light strong enough to see by is turned on them.

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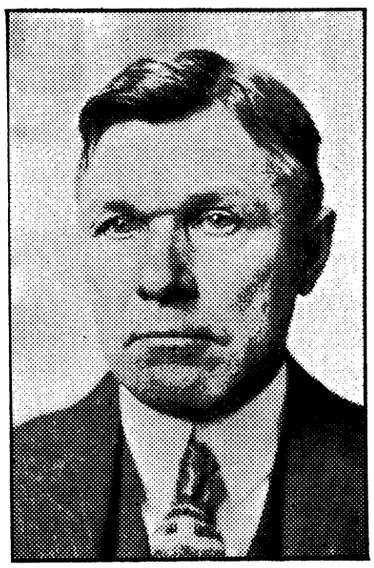

SAMUEL ALFRED MITCHELL

Eclipse Chaser

Fifty thousand miles to parts of the earth's surface from Norway to Sumatra is the record of Dr. Mitchell in his chase after eclipses of the sun, for he is one of the world's champion eclipse hunters. Even now he is in the little Norwegian town of Fagernes, preparing to make the most of the brief moments on June 29, when the path of a total eclipse sweeps across England and Scandinavia. But where other eclipse observers have made photographs of the corona, or measured the brightness of the eclipse, Dr. Mitchell has specialized in the flash spectrum, the last sliver of sunlight that shines just before totality commences, and the first that reappears after it is over.

But eclipses do not occur every day, and in the rest of his time Dr. Mitchell has also performed valuable work, in measuring the distances of the stars, for the Leander McCormick Observatory, of which he is a director, is one of the chief centers of parallax measurements.

A Canadian by birth, Dr. Mitchell graduated from Queen's University, Canada, with the degree of M. A., in 1894, and 30 years later the same institution gave him its Doctor of Laws. But he has been an American by adoption for many years, for he received his Ph. D. from Johns Hopkins in 1898. From there he went to Columbia until 1913, when he was called to the directorship of the Leander McCormick Observatory of the University of Virginia in 1913, where he still remains.

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