

Hilger spectrograph of the autocollimating type, with very large prisms, and apparently capable of yielding excellent spectra on a large scale. The members of the regular staff of chemists at the Station, under the direction of Dr. R. B. Moore, are too much occupied with their regular duties to undertake special spectroscopic researches. Therefore this fine instrument has not been utilized as it might be. An unusual chance is thus presented for the establishment of a fellowship for spectroscopic research, under the joint auspices of the station and of some university, physical laboratory or scientific fund.

A second consideration of immediate importance lies in the fact that Golden is situated near the central line of the total eclipse of June 8. American science could be accused of grievous neglect, if this spectrograph, already in the eclipse track, should not be used on that occasion by an expert spectroscopist. To many such I have written personally during recent months, urging that the opportunity be improved; but as a result of war duties or the shortage of assistants in the laboratories, thus far no one has been found who could undertake the work.

It would be necessary for the person to go to Golden early enough in May, so that the spectrograph could be put into excellent adjustment and then to mount it where a clear view of the northwestern sky could be had. The necessary heliostat could doubtless be borrowed from some laboratory. The altitude of Golden is 5,700 feet, and if the foliage around the station building was too heavy in June, it would not be at all difficult to transport the spectrograph up to an elevation of about 7,500 feet on Lookout Mountain, where Colonel Cody was buried.

The ideal arrangement will of course be for this same person who gets familiar with this spectrograph to continue in research with it after the eclipse. If a suitable person is found, an effort can be made to raise the necessary funds for a fellowship or other basis which may be arranged for the work.

Time might perhaps be saved for those who may wish to consider the observation of the

eclipse with this instrument, if they will write to me directly.

I am writing this at the request of Dr. Charles L. Parsons, of the Bureau of Mines, and Dr. Moore. EDWIN B. FROST

YERKES OBSERVATORY,
WILLIAMS BAY, WISCONSIN,
April 13, 1918

THE DESICCATION OF THE EARTH

TO THE EDITOR OF SCIENCE: In Notes on Meteorology and Climatology in the issue of SCIENCE for October 21, 1910, attention is invited to an article in *Umschau* by Dr. Karl Stoeckel which helps to explain the slow desiccation of the earth.

It is believed that the ultra-violet rays of sunlight which fall upon the water vapor suspended in the lower strata of the earth's atmosphere decompose a small part of it to produce hydrogen, which rises to great heights. . . .

I do not think it has been pointed out before that the earth's surface must be continuously losing hydrogen through the decomposition of water vapor by every flash of lightning. Pickering and others have recognized the hydrogen lines in the spectrum of lightning, and the larger works on meteorology mention the fact that lightning flashes decompose some water. See Hann's "Lehrbuch der Meteorologie," 2d edition, page 480:

But the electric flash also decomposes some water and causes the incandescence of the hydrogen.

The hydrogen formed by every lightning flash rises rapidly to the upper atmosphere and is lost to the earth.

Considering the frequency of thunderstorms during the summer season in both hemispheres and at all times in the equatorial regions the loss of hydrogen in this way can not be considered as insignificant. As long as conditions upon the earth remain such as to render thunderstorms possible, the slow desiccation of the earth must continue.

C. F. VON HERRMANN

AREAS OF AUDIBILITY

TO THE EDITOR OF SCIENCE: Students of the constitution of the atmosphere have published