ness are used in mounting objects for projection purposes, so that the projector may be brought to the proper focus with the least possible delay.

To secure the best results it is evident that the rotary stage must be accurately and rigidly built, in order to secure precise double centering of the object, and freedom from vibration.

Amon B. Plowman.

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HELIUM IN NATURAL GAS.

Some three years ago a strong flow of natural gas was struck at Dexter, Kans. Upon the first attempt to utilize this, it was found that it would burn with difficulty and that only in previously heated enclosed space. Experience has so far improved the method of handling the gas that at the present time it is being successfully used for burning brick. The whole difficulty is due to the fact that it contains only a little over fifteen per cent. of combustible constituents. The first publication upon this gas was a paper by Haworth and McFarland, Science, Vol. 21, p. 191, in which they reported that it contained in addition to a large amount of nitrogen some inert residue.

We have taken up the further investigation of this gas and at the New Orleans meeting of the association Dr. E. H. S. Bailey reported for us that it contained 1.84 per cent. of helium. The occurrence of such a large percentage of helium in one of the gases of the Kansas field has led us to the examination of others. Up to the present time we have investigated some twenty samples from the most widely separated points of this field and have found helium in every case, but always in much smaller amounts than at Dexter. From the latter gas, we have with the aid of liquid air extracted a very fair amount of helium.

Accompanying the determination of helium, we are making complete analyses of the gases and shall have within a short time results from thirty to forty samples covering in detail the entire Kansas field as at present developed—an area of some twelve thousand square miles. The rather large number of analyses is required because the gas is extremely varied in its character. This is illustrated by the fact that the wells at Arkansas City, less than twenty miles from Dexter, yield more than 97 per cent. of combustible gases and only .16 per cent. of helium as compared with 15 per cent. and 1.84 per cent., respectively, for these constituents in the Dexter gas. Samples are also being obtained from the other fields of the country and the results from these will be included in a detailed paper to be published soon.

As the gases are run through the analyses spectral tubes are filled, and various residues and fractions are saved with the intention of subjecting them to a detailed spectroscopic examination. Some work of this kind has already been done.

We feel that we have here a very unusual opportunity for obtaining helium in practically unlimited quantities, and as we have worked out the details for its separation we shall have a large amount prepared and will attempt its liquefaction. While the necessary preparations are in progress we shall devote ourselves to the spectroscopic work above mentioned.

Hamilton P. Cady,
David F. McFarland.

The University of Kansas, Lawrence,
July 12, 1906.

CURRENT NOTES ON METEOROLOGY.

DR. HANN AND THE 'METEOROLOGISCHE ZEITSCHRIFT.'

The fortieth anniversary of Dr. Hann's assumption of the editorship of the *Meteorologische Zeitschrift* was fittingly observed by the publication of a special number of that excellent journal, to which friends and colleagues contributed articles. The 'Hann-Band' numbers 404 pages; contains 42 papers by as many different writers, and has as a frontispiece an engraved portrait of Dr. Hann. An appropriate introduction, by Pernter and Hellmann, refers to the remarkable work which Hann has done for his science in the *Zeitschrift*. Among the papers, all of which are of immediate importance, the following are of most general interest: Paul Schreiber: