THE REALM OF SCIENCE

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THE latter part of November the Observatory was honored by the presence of G. D. Swezey, professor of astronomy in the University of Nebraska at Lincoln. As he was on the point of replacing his own small and portable transit by a larger and fixed instrument, he wished to make a fair trial of the Creighton transit in order to see what an instrument of its size and mounting could do. He accordingly made a thorough examination of every detail, and asked such questions as only an expert could ask. It was a great pleasure to see him at work, and there never was even a momentary misgiving, as there is almost constantly with students, of his inadvertently turning the wrong screw or in any other way failing to get out of the transit all it was capable of doing. He was delighted not only with the excellence of the transit and that of its accessories, the chronograph and the clocks, but also with the many practical conveniences that are so essential to the best results.

He observed for about three hours and took about a dozen complete transits of stars in various positions. His intention to reduce his results by the method of least squares is a proof of his own ability, no less than a fit tribute to the excellence of the transit. The expert use of its best instruments for several hours by the astronomer of its state university will ever remain a bright page in the history of the Creighton University Observatory.

On November 17th the Photo-Revue and Photo Magazine of Paris, France, published a French translation, with its four photographs, of the article, "A Shadow in Court—The Sequel,"

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which had appeared in the Scientific American on July 20th. This is the third time this journal has thus honored articles emanating from the Creighton Observatory.

The extent of the college grounds affords an excellent comparison with the size of the Great Pyramid in Egypt, which is universally acknowledged to be the largest single structure ever built on earth. From the property line on Twenty-fourth street to that on Twenty-sixth street the distance is 812 feet, and from California to Burt street it is 636.6 feet. The area of this space, 12.81 acres, is not all, however, the property of Creighton University, since 0.82 acre belongs to other parties. Subtracting this amount from the 12.81 acres, leaves the actual property equal to one hundredth of an acre, or 20 feet square, less than 12 full acres.

The base of the Great Pyramid is 762 feet square, or 13.33 acres. If it were placed upon the college grounds it would fall 25 feet short of the east and west lines, but go 37.2 feet beyond the north and south limits.

The height of the Great Pyramid is 485 feet. Let the reader stand on the lowest point of the college property, on the sidewalk at Twenty-sixth and Burt streets, and look up at the tower on the main building. This tower is 267.2 feet above the city datum plane and the ground at his feet is 84.9 feet above it, so that the top of the tower is 182 feet above the northwest corner of the grounds. The top of the Great Pyramid is two and two-thirds times as high. To reach it we would have to climb the hill and the tower twice and the building a third time.

Popular Astronomy for December, under the heading, "Curious Features of Lightning," on page 857, quotes a large part of the article written by the editor, "Seeing the Lightning Strike," which appeared in Science September 6, 1907.

School Science and Mathematics for December contains a long article by the writer of these notes entitled "A Heliostat

for the Lecture Room.'' A heliostat consists of a mirror moved by clockwork in such a way as to reflect the light of the sun continuously for hours in any desired direction. It therefore practically makes the sun stand, as its name implies. Heliostats are generally supposed to be very expensive and to call for some considerable knowledge of practical astronomy. As both of these requirements are beyond the reach of ordinary professors of physics, a heliostat is usually classed among ideal and unattainable acquisitions. The object of the article referred to is to show that a practical working heliostat may be constructed by anyone possessed of some skill in the handling of tools and that it calls for only a very moderate knowledge of astronomy, and that only when the instrument is first mounted. When the directions given are complied with one may set up a heliostat in a minute or two without a knowledge of the time or the sun's position and without the use of graduated circles, and even if the instrument should be fifty feet away, in a place absolutely inaccessible during the lecture, one may have ''all that time a beam of sunlight more steady, more parallel, more brilliant than that of a stereopticon, and absolutely white and noiseless and inexpensive.'' Its use opens up an unlimited number and variety of experiments, many of which are beyond the reach of artificial light.

The article is written for professors of physics and goes into many details that it would be out of place to mention here. It is illustrated by a photograph of the Creighton College heliostat, concerning which some items of interest may be found in Vol. III, No. 8, of the Chronicle.

Mr. Julius Festner, who carried off the prize medal in the graduating class of the College of Arts last June, is studying political economy in the University of Marburg au der Lahn, Hessen-Nassau, Germany. Although he contributed his share toward the class present, the position micrometer mentioned last month, he says in a letter of November 28th:

''As it is customary for loyal graduates to present their Alma Mater with some token of gratitude and esteem after they have left her sheltering walls, I, too, would like to add something to the Creighton stock of instruments, and am accordingly

sending you a Lambrecht's Polymeter, a meteorological instrument, useful for predicting weather conditions by showing the relative moisture of the air."

The instrument, which arrived on December 18th, is handsomely finished. Below a thermometer, which gives also the saturation vapor pressure at different temperatures, there is a dial with a double graduation, one showing the relative humidity and the other the number of degrees that the dew point is below the actual temperature at the time. The hygroscopic element used by the maker is a small bundle of human hair, which he says expands and contracts with moisture more uniformly than any other substance and has better lasting qualities.

Besides the temperature, vapor pressure, relative humidity and dew point, the Polymeter indicates indirectly four additional items too technical to be detailed here. It is, therefore, deservedly styled a Polymeter. It is a reliable, scientific instrument, and not a toy, as most hygroscopes are, and is, therefore, a welcome addition to the physical cabinet.