THE REALM OF SCIENCE

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H ON. John A. McShane has lately presented the Scientific Department with a most valuable selection of lantern slides. He had bought them several years ago while on his trip around the world. As he has personally viewed almost every scene shown on the slides, they form a very pleasant souvenir of his journey. Animated by a desire to have his investment produce greater pleasure, and at the same time to help in the information and education of our students, he determined to give these pictures a wider sphere of utility by presenting them to the scientific department of Creighton University. As new generations of students succeeded each other in uninterrupted order, these pictures will thus ever retain their original value.

These slides are the best of their kind to be purchased anywhere. Not only are they perfect as photographs, but more than half of the number are hand-colored with such artistic skill as to rival real photographs in color.

The subject matter of the slides embraces mainly two topics, the Orient and Italy. There are 304 colored views of Jerusalem and its environs, showing the present condition of the holy places, the customs of the people, and even the wild flowers of the region. Egypt follows with 200 colored views of the pyramids and the many other interesting historical ruins of the country, as well as of its modern aspects. A type-written catalogue accompanies these 504 slides. Rome is represented by 151 views and the rest of Italy by 63. This subject is as interesting in its ancient ruins and modern structures as is that of Palestine and Egypt. And lastly there are five conjectural

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views of Solomon's Temple, and 15 showing Mr. McShane and his wife in various parts of their journey.

There are therefore 504 colored and 234 plain slides making a total of 738. As the colored slides are sold at a dollar and a half a piece, and the plain ones at fifty cents, the collection is valued at nine hundred dollars. For a religious and educational purpose the subject matter of the slides could hardly have been better chosen. In addition to his former donations, especially to the Observatory many years ago, the faculty and students of Creighton University have been placed under a new obligation of gratitute towards the generous donor, Hon. John A. McShane.

The panoramic or cycloramic photographs of October, 1912 and of May 29, 1914 have yielded to the power of mathematics. In the first the college students were aligned in single file in a semi-circle on the front lawn. The second photograph was taken on the occasion of the flag raising on Decoration Day, when all the students were massed on the hill side adjoining the Observatory.

The problem proposed was to find the position and focal length of the camera. In the first photograph the long and perfectly straight front of the north wing of the college building suggested the successful application of one of the many seemingly useless formulas of trigonometry in which the tangent of 2x is proved to be equal to twice the tangent of x divided by one minus the square of tangent x. As the camera revolved about a fixed centre, every inch in the length of the picture corresponded to the same angle. This angle is unknown, but we do know that two inches are equal to twice that angle. According to this principle, equal lengths were measured on the photograph and the spots on the building carefully noted, and their distances measured with the greatest accuracy. This was done in two opposite directions. The result was that the optical centre of the lens was found to be 38.06 feet east of the front of the north wing, 66.66 feet south of its northeast corner and 7.6 feet

below the level of the first floor of the college. The focal length
of the camera was 8.30 inches, and it was turned through 225.5
degrees or within half a degree of exactly five eighths of a
complete revolution.

In the second photograph another principle had to be
resorted to. We know that lines drawn from any point to two
objects diverge the more the farther they are extended. For this
reason, the distance between two supports or stanchions of the
railing on the Observatory retaining wall must be less than the
distance between their projections on the wall of the Observa-
tory building, as they appeared in the photograph. The railing
and the building are only 5.69 feet apart and the divergence of
the two stanchions was only 0.640 feet or seven and two-thirds
inches, but it sufficed to fix the position of the camera at 126.0
feet east of the east wall of the Observatory building 10:64 feet
north of its south front, and 10.82 feet below the level of the top
of its retaining wall. The focal length of the camera was 22.00
inches, and it was turned through 81 degrees or two ninths of
a complete revolution. Both photographs have been mounted
on frames curved to their respective focal lengths. When viewed
from their centers of curvature, their appearance is perfectly
natural, whereas when they are mounted in a straight frame
as pictures are always mounted, and as they may be seen in the
Assembly Hall, the lines of the building and the walk, which
are perfectly straight in reality, are bent into sine curves and
present an unnatural aspect. Students possessed of the neces-
sary mathematical acquirement, have found the study of these
cycloramic photographs very interesting.

The Monthly Evening Sky Map, published by Leon Barritt,
No. 150 Nassau Street, New York, which is said to have the
largest circulation of any astronomical journal in the world,
reprints in its December issue the Article ''Why is the Moon?''
written several years ago for St. Michael's Almanac.

Gerald La Violette has presented the Science Department
with an elegant panoramic kodak.