



THOUSANDS OF COLORS; NO TWO ALIKE

PHYSICS

Artist Paints Spectrum of Recently Found Element

RHENIUM, element number 75, which was discovered a few years ago in Germany has had the portrait of its spectrum painted at the U. S. Bureau of Standards in Washington by Charles Bittinger, noted artist. Mr. Bittinger is working in the laboratory of Dr. W. F. Meggers who has measured more than 2,000 new lines of light in rhenium's spectrum.

If this picture were reproduced in color, each of the many vertical lines on Mr. Bittinger's canvas would appear in a different hue or shade. In fact, the spectrum of rhenium, like the spectra of all elements, contains thousands of lines, no two of which are exactly alike in color.

These lines represent different rates of the vibration going on within an atom of an element. To find actually what these colors are, the atoms must be excited, by subjecting a bit of the substance to heat, electricity or some other form of energy. Light from the hot element passed through a prism will be broken up into the myriad of many-colored lines, just as light from the sun passed through a prism is broken up into the colors of the rainbow.

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Night flying has been introduced for the first time regularly on a British commercial air route.

STATISTICS

Death and Loss of Sight Are Held to be of Equal Value

A TABLE for calculating degrees of incapacity, which answers the question as to whether an armless or a legless man is more disabled, has just been published by the Association des Industriels de France.

Accident statistics obviously call for some table of relative values, but it seemed impossible to express mathematically the incapacities resulting from accidental injuries.

Permanent disablement of three fingers is equal in value to permanent disablement of one thumb and one finger, according to the French table. This type of injury is equivalent to the loss of 1,200 work days. The values for disablement are given in terms of percentage of total. In this table death and permanent total disablement have each a value of 100.

Loss of sight in both eyes also has a value of 100. Loss of sight in one eye is 30. Loss of hearing in both ears is 50, loss of hearing in one ear, 10. Loss of one leg above the knee is 75, or three-fourths of total disablement, but loss of one leg at or below the knee is 50, one-half of total disablement. Permanent disablement of one thumb and four fingers has the same value as loss of one foot, 40. The loss of time in work days for these two injuries is given at 2,400. For total disability, loss of

time in work days is given as 6,000.

The table gives values for 23 types of injury.

This matter of evaluating accidental injuries has been the subject of discussion by International Labor Office Conferences, but no convention has yet been adopted.

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ASTRONOMY

Astronomers Plan Locations For 1932 Eclipse Observatories

IN ORDER to determine the best locations for temporary observatories that will be erected to photograph the eclipse of the sun on August 31, 1932, members of the American Astronomical Society's eclipse committee will soon make a study of the eclipse path across New England and Canada.

Speaking to a Science Service representative, Dr. Frederick Slocum, director of the Van Vleck Observatory, of the Wesleyan University at Middletown, Conn., explained that the southern edge of the eclipse path extends from Montreal to Cape Cod, and that the path is about a hundred miles wide. It includes

popular vacation spots in Maine, New Hampshire and Vermont.

The center line, along which the duration of the eclipse will be longest, about a hundred seconds, passes close to Mt. Washington, but weather records show that the top of the mountain is apt to be cloudy in the afternoon, when the eclipse occurs.

For six years Dr. Slocum has been gathering weather records from points along the path of totality. These records indicate that the chances for a clear sky are a little better than fifty per cent, practically all along the line.

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