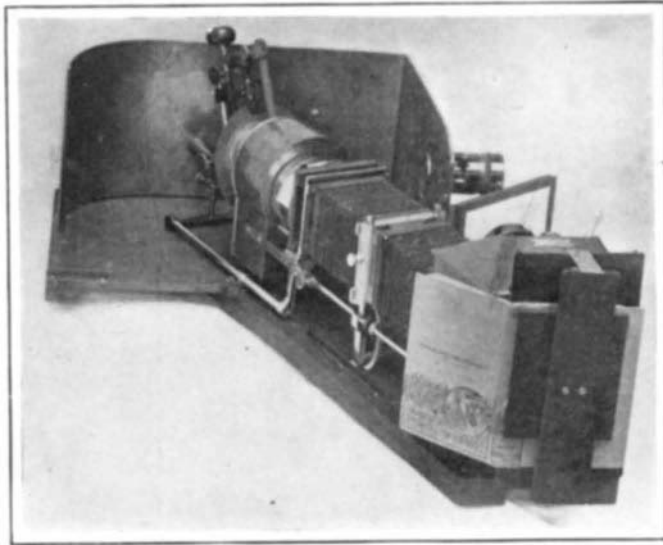


A NOVEL REFLECTING LANTERN.

A new form of lantern has recently made its appearance, which differs markedly both in its optical principles and in the results attained from the ordinary projecting apparatus which the lecturer is accustomed to use. Limited as it is to the utilization of slides only, the ordinary lantern renders it impossible to use directly illustrations from books, sketches, specimens, and models. Photographs of these various objects must first be made, and from the negative a lantern slide prepared. Even though the resulting slide may be sharp and clear in every detail, it still presents the defect of presenting its subject in dead black and white tones. Attempts at coloring, although sometimes successful, are often the cause of many grievous errors on the part of the artist. The apparatus which we are about to describe, and which has been recently introduced by the Philadelphia instrument makers, Williams, Brown and Earle, projects on a screen not only the image of a lantern slide, but reflects as well pictures in books, specimens of insects, or other natural objects, mechanical models and the like, and this all in the natural colors of the objects. The lecturer is thus enabled to make use of the countless illustrations in magazines and books, of an innumerable series of color prints, sketches, photographs, and of working models that can be shown in motion on the screen, as well

mirror, which projects the image upon the screen in its proper position, so that printed matter is read correctly.

Exploration of a Deep Abyss.—The monthly review

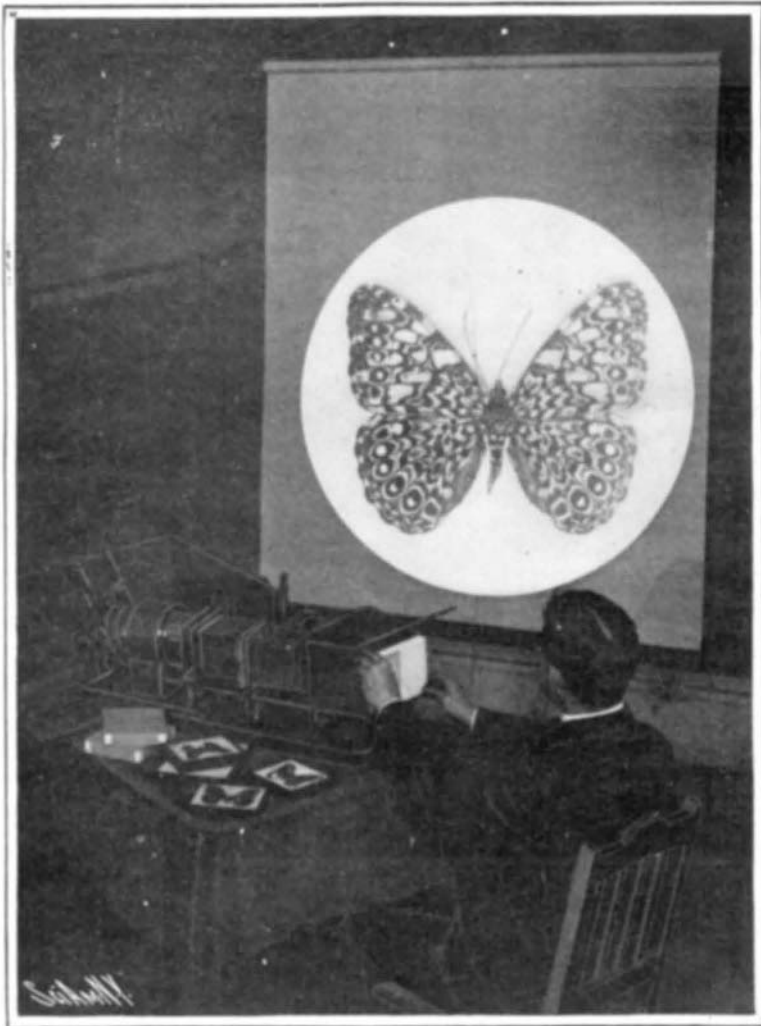


The New Lantern for Exhibiting Any Object in Its Natural Colors on the Screen.

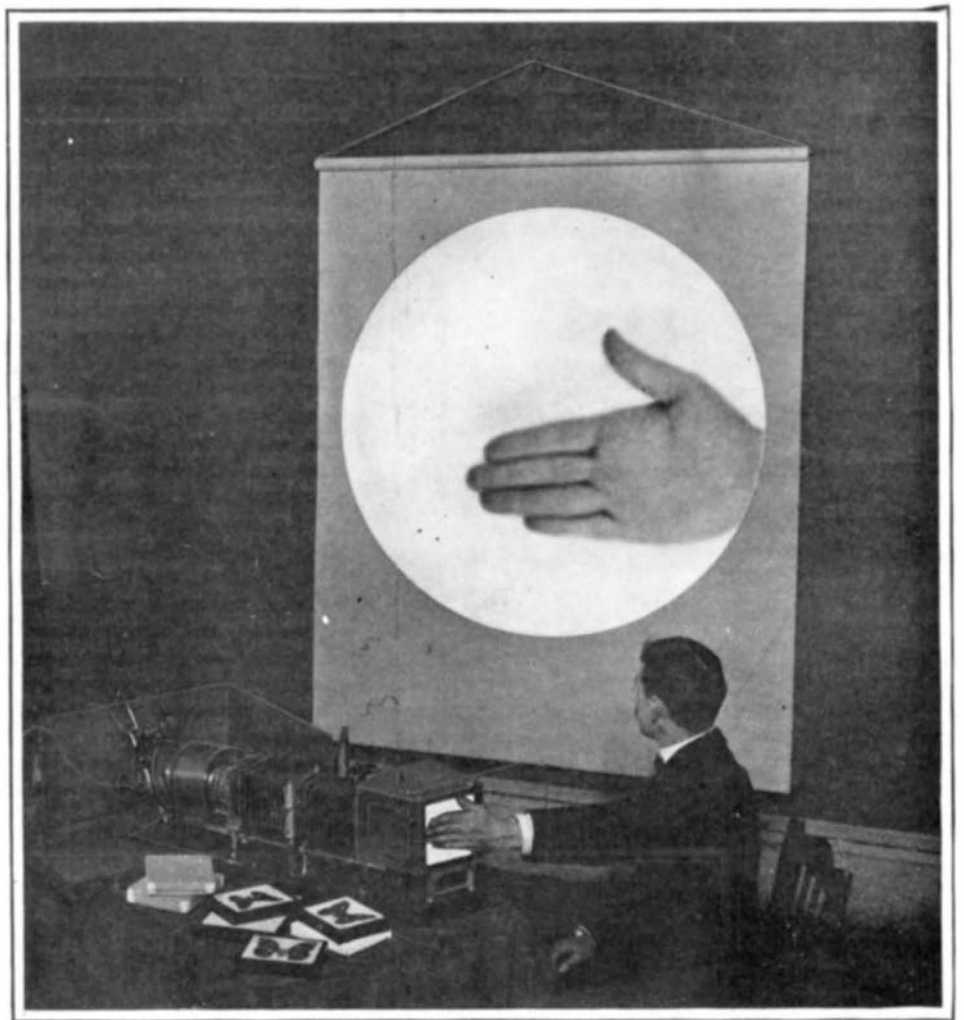
Labor on the Isthmus of Panama.

No American white laborers should come to the Isthmus of Panama seeking employment unless previously engaged by the Commission. At first, before the organization here was fully completed and civil-service methods were applied, work could usually be found for able-bodied white laborers who might arrive here from the United States, or from any other part of the world. Now, however, the situation is changed. Whenever any department of the Commission on the Isthmus desires additional white or skilled labor it communicates with the central office in Washington, and the men are employed there and dispatched by the first steamer following; but even upon their arrival there is sometimes a delay in putting them to work, because the conditions may not be adjusted. When laborers come of their own accord the chances are against their employment.

The result is that a majority of such men find themselves, after a short stay on the Isthmus, without funds or work. If it were possible for them to do manual labor in the sun like the Jamaicans, at corresponding wages, there would be plenty for them to do, but they cannot stand that class of work. Finding themselves in these straits, they come to the legation and the consulates, and, not knowing that there are no funds provided by the United States for the care of



A Butterfly on the Screen.



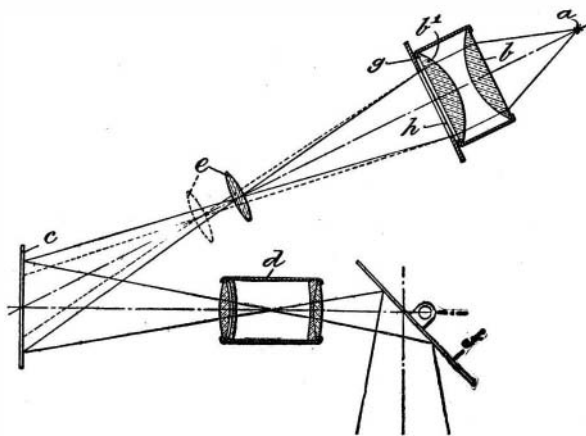
How the Human Hand is Thrown on the Screen.

as apparatus for experimenting in chemistry and physics, specimens of plants, flowers, and moths, all in the delicate tints of the originals.

The optical principle of this apparatus is well shown in the diagram. The source of light, *a*, sends forth its rays to the lenses, *b* and *b'*, which are condensers of the usual stereopticon type. The diaphragm, *gh*, is employed to give a sharp, clear outline to the beam of light, so that the picture when presented on the screen is clear. By means of an illuminating lens, *e*, a cone of light from the condenser is projected upon the object, *c*, every part being uniformly illuminated. The lens, *e*, is used either for spreading the light over the entire object, or condensing it upon a small portion when a very brilliant light and special details are desired. When the lens, *e*, is shifted toward the source of light, the rays are distributed over the entire object; when the lens is drawn toward the object, *c*, the beams condense and concentrate on the point desired. An image of the brilliantly illuminated object, *c*, is projected by the objective, *d*, upon the mirror, *f*. The image of the object, *c*, has been reversed by the objective, *d*, before the mirror restores it to normal position.

Particularly important factors in utilizing this apparatus are the diaphragms, which give a perfectly clear edge to the image on the screen, and the illuminating lens, *e*, which distributes the light evenly over the object at *c*, reducing or increasing the surface illuminated at the will of the operator, and producing a most intense illumination; and lastly, the reversing

of the Italian Alpine Club announces the preparations for exploring the chasm in the calcareous plateau of Causiglio to the east of Belluno (Venetia) and attributes to it a depth of 460 meters. This measure-



Optical Principle of the Reflecting Lantern.

ment, if correct, would perhaps render it the deepest chasm known, but the soundings, so far, have only reached 259 meters, and the estimates beyond that are based on the time elapsing in the fall of stones. The expedition is regarded as perilous.

indigent or stranded Americans, expect the minister and consuls here to provide them with food and lodging until they can get employment, or to give them passage back to the United States. It is often difficult to persuade them that the minister and consuls are not responsible for their condition. The minister has frequently assisted, and is now assisting, men in these straitened circumstances, but of course a limit must be placed on such charity.

When questioned, these laborers say they gained the impression from the papers that there was abundance of work at high wages here for everybody, and in most instances they gave up fairly good employment in the United States in order to take chances of doing better here. A remarkable feature of this situation is that these men come from all parts of the United States. The last steamer brought laborers, on their own account, from Maine, New York, Tennessee, Illinois, Colorado, and California, and they have all been obliged either to go without employment or to take work in competition with Jamaican and other colored labor, which they will not be able to endure for any length of time.—John Barrett, Minister to Panama.

Calstonite.—A new product of the electric furnace has been introduced in France under the designation calstonite. It is a double carbide of barium and calcium, produced by M. J. Cartier, an electro-metallurgist of Mancieux, which decomposes on contact with water, like calcium carbide.