

of Chicago told members of the Radiological Society of North America.

The camera consists really of two cameras, one above and one below an illuminating bulb, Dr. Thal explained. The whole arrangement is small enough to be passed into the stomach easily. A flexible tube from the camera carries the manipulating mechanism. Each camera has four film chambers arranged so that tiny photographs are made of four sides of the stomach walls. Thus eight pictures may be made at one time, covering the entire interior area.

By means of the X-ray, the physician can see the camera in the stomach and guide it to the best place to take the pictures. When all is ready, the exposure is made by opening the shutter and flashing the light. The picture tells the surgeon just where he may expect to find the ulcer he wishes to remove.

Science News Letter, December 5, 1931

GEOGRAPHY

Uncle Sam's Coast Surveys Speeded up by Airplane

SHORE LINES of the Atlantic and Gulf coasts, with their complicated inside waterways, are being mapped at one-third to one-fifth the former cost, the annual report of the director of the U. S. Coast and Geodetic Survey reveals. Airplane photography is the secret.

Over territory where ground crews plod laboriously for months, a plane sweeps in a single day. Constant revision of these charts necessitated by harbor developments and shifting sands, helps to make the air-photo scheme twenty to thirty per cent. more efficient than the old ground methods.

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SOCIOLOGY

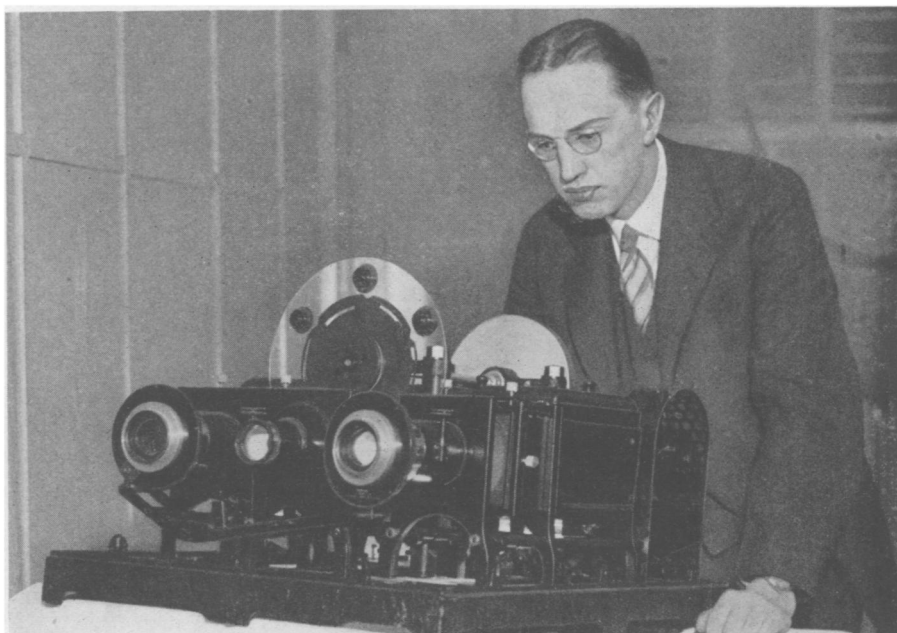
Irish Immigrants Becoming Emigrants

THE IRISH immigrant is now an emigrant.

Statistics of emigration for the first six months of this year show that during that time the number going to the "Old Country" outnumbered by 604 those coming to the United States, it is indicated by a report in the current issue of *Eugenical News*.

Two possible reasons are suggested for this turn of events: the economic depression, which has discouraged migration; and the legal restrictions imposed by the United States.

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THREE MAGIC LANTERNS IN ONE

The sun eclipse projector and its designer, James Stokley, associate director of the Franklin Institute Museum, Philadelphia. This machine will speed up the motion of the moon sixty times.

ASTRONOMY

New Projector Will Produce Eclipses of Sun on Demand

VISITORS to the new Franklin Institute Museum, now being erected in Philadelphia, will be able to see eclipses of the sun at any time with the aid of a new projector. The machine was constructed by the Bausch and Lomb Optical Company after the design of James Stokley, associate director of the Museum in charge of astronomy. It shows partial, annular and total eclipses, the latter with the Baily's beads, spots of light visible at the beginning and end of a total eclipse and caused by the sun's light shining through valleys on the edge of the moon, as well as the corona. The latter is the outer layer of the sun, visible only at eclipse time, and appears as bright streamers.

The machine makes use of three projectors, each similar to an ordinary magic lantern. The center one projects a circular spot of light, representing the sun. In front of the circular hole which forms this spot revolves a glass disc to which are attached a series of smaller discs, approximately the size of the hole. One disc crosses the hole to one side, producing a partial eclipse. The next one crosses the hole centrally, but is

somewhat smaller than the hole. This gives the effect of the annular eclipse, such as occurs when the moon is a little farther from the earth than at most eclipses, and a ring, or "annulus," of sunlight is seen around the moon. The third disc completely covers the hole, and as it does so, one of the other projectors flashes on momentarily, to show the Baily's beads. This quickly fades into the corona, which remains visible for several seconds. Then the Baily's beads reappear, but on the opposite side of the sun, and then they fade into the returning crescent of sunlight, which gradually increases until the uneclipsed sun is again shining. After that, the entire cycle is repeated, over and over.

A small motor operates the mechanism, which moves at a rate such that the normal motion of the moon is speeded up approximately 60 times. Several cams operate mercury switches which turn on the outer lanterns at the right time, and automatic irises which cause the fade-in from Baily's beads to corona and back.

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