

PHYSICS

# New X-Ray Device Shows Up Human Interior in Relief

## Shadow Pictures Projected on Fluorescent Screen by Impulses Emitted Alternately from Pair of X-Ray Tubes

**A** STEREOFUOROSCOPE X-ray instrument that shows the inner workings of the human body as though it were a moving picture has been perfected at the California Institute of Technology and will be forwarded in a few days to the Henry Phipps Institute at Philadelphia where practical medical experiments are to be conducted.

Several months ago a rough experimental model was completed and caused great interest when introduced to the medical world. When it proved a success funds were secured from the Rockefeller Foundation for construction of a more elaborate instrument designed for use in hospitals.

The instrument was developed by Dr. Jesse W. M. Du Mond, research fellow in physics, Dr. Archer Hoyt, teaching fellow in physics, and Clarence Brandmyer, at the California Institute of Technology. These men worked out the details of the instrument which was built during the last three months.

### Single Transformer

An announcement inviting the public to view the instrument reveals that it consists of two X-ray tubes connected to a single transformer so that they are alternately caused to emit X-rays by alternations of a fifty-cycle alternating current. The alternate X-ray impulses emitted by the tubes project alternate shadow pictures of the object to be viewed on a single fluorescent screen. Since the tubes are spaced apart at approximately the same distance as the distance between the two eyes, the shadow pictures projected on the screen differ slightly in the point of view in the same way that two images in the right and left eye differ respectively from each other when the eyes view any object in three dimensions.

To give the impression of a three-dimensional stereoscopic plastic relief, it is only necessary to arrange that each eye shall see one and only one of the two images formed by the two tubes. This is accomplished by means of a special rotating shutter placed before the

eyes and driven by a synchronized motor in such a way that the right eye looks at the time the right-hand X-ray tube is emitting rays and the left eye looks at the time the left tube is emitting.

By observing certain geometrical relationships between parts it is possible to have the stereoscopic image appear in space in front of the screen as an exact scale reproduction. Calipers are provided that can be introduced into the image and brought into apparent contact with any two parts of the image whose separation or size is desired.

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ETHNOLOGY

## Scientist Obtains Data On Crow Indian Folklore

**N**EW INFORMATION regarding the myths, prayers and narratives of Crow Indians of southeastern Montana has been obtained by Dr. Robert H. Lowie, of the University of California. Dr. Lowie, who has come to Washington to be chairman of the division of anthropology and psychology of

the National Research Council, spent most of the summer on the Crow reservation, making careful notes of the stories and prayers that Crow Indians have known and repeated for centuries.

From the large amount of material which he has written down in Crow language and translated, Dr. Lowie expects to analyze the Crow language. Crow is not one of the "dying" languages, he explains. It is very much alive among the Indians of the reservation. But the younger generation uses English to a considerable extent, too, and when a group deals in two languages the old forms of speech become materially altered. Hence, it is important to science to salvage data regarding the language as rapidly as possible.

### Versions Differed

Crow Indians told Dr. Lowie their story of how the world was created, and he found the account different in many details from versions he had previously encountered. Comparing the versions of myths such as this yields valuable information to the student of Indian tribes. If a story told by members of one tribe has the same details as a story told by another tribe, the ethnologist has reason to believe that there must have been contact between the tribes. Since Americanists are especially interested in tracing the influences of tribe upon tribe in ancient times, this type of evidence is eagerly sought.

The language of the Crow Indians has not been intensively studied heretofore, Dr. Lowie says.

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**THE X-RAY MOVIE**

*Dr. Archer Hoyt, one of the developers of the new apparatus, shows the effect produced when the shadow pictures are projected on the fluorescent screen.*