

## PHYSICS—BIOLOGY

**Electron Microscope Tried On Biological Material**

**S**TREAMS of electrons, instead of beams of light, may be useful in future micro-biological studies, to gain sharply defined pictures of structures not readily examined by means of ordinary light.

A preliminary study of the new technique has been reported to the British science journal, *Nature*, by Dr. L. Marton of the University of Brussels. In order to overcome the heating effect of the electron stream, Dr. Marton placed his specimen, a small leaf, on a fine copper screen, so that the metal might carry off the surplus heat. To protect the tissues of the leaf against injury by the electron bombardment, they were impregnated with a deposit of the heavy metal osmium.

Well-defined photomicrographs were obtained by the new method.

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## MEDICINE

**Fear Causes Convulsions In One Type of Epilepsy**

**F**EAR is the basic cause of convulsions in a certain type of epilepsy, Dr. E. W. Lazell of the Veterans' Administration facility at Northport, N. Y., told members of the American Psychiatric Association. This type of epilepsy is called idiopathic and is independent of organic disease, he explained.

More soldiers were discharged from the A. E. F. in 1918 for epilepsy than for any other disability, in spite of the fact that epilepsy occupied eighth place among discharges from army camps in the United States in 1917 where epileptics were eliminated. Although the actual numbers discharged in 1918 were small, they were significant because most of these men had their first attacks in the service, Dr. Lazell pointed out.

Sixty-five of these men were given treatment consisting of mental re-education and one year later most of them were free from epileptic attacks.

Studying these cases led Dr. Lazell to believe that fear is always the immediate cause of the convulsions. He found that almost all of the men suffered from fear and hatred of the world which showed itself in a Bol-

shevik attitude towards society, a general feeling of profound inferiority, a hopelessness of being able to adjust socially, economically, industrially or personally, an absolute intolerance of restraint and a psycho-sexual impotence.

Dr. Lazell explained how fear caused these men to have attacks of epilepsy by pointing out that in the development of the race, fear has been associated with flight, anger or rage. Since these men could not run away

## ECOLOGY

**Desert Plants Defy Their Drought that Never Ends**

See Front Cover

**P**LANTS of the Southwestern desert might well be amused—if plants could feel amusement—over the present grievous outcry caused by the drought's menace to the softer-bodied crops of the moister areas to the east. For desert plants have learned to live in a land cursed with a drought that never ends. They do not live entirely without water—nothing can do that—but they make the most of the scant brief rains and occasional cloudbursts that come into their lives, and during the long parched intervals just mark time.

Desert plants and their ways of making a living in a hard land have been studied extensively by Dr. Forrest Shreve, director of the Desert Laboratory of the Carnegie Institution of Washington, located at Tucson, Ariz.

One route through the desert frequently traversed by Dr. Shreve in his plant-study tours follows the old Spanish "Camino del Diablo," or Devil's Highway, which lies along the U. S.-Mexican boundary between Nogales, Ariz., and a point a little below Yuma on the Colorado river. This was once the only road through the desert, and its dangers to human life are chillingly manifest through the many groups of graves that mark its course.

Yet plants live in this deadly land. Not many kinds of them, nor many individuals when all kinds are counted together. But they do survive, tough evidences of the tenacity of properly adapted forms of life.

Most numerous are the creosote bushes, low, rounded, grayish-green leaved shrubs. So much ground space must each have for its spreading wheel

from or fight the conditions they found intolerable, they escaped by way of epileptic convulsions which consist of fight or flight on a reflex or automatic level.

From his experience with these patients, Dr. Lazell is hopeful that many cases of epileptic convulsions developing in adolescence can be cured by mental re-education if this is begun at the onset of the convulsions.

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**DOES A CACTUS PANT?**

*The instrument under the scrutiny of the Carnegie Institution scientist, Dr. Forrest Shreve at the Desert Laboratory, Tucson, Ariz., is designed to measure small changes in diameter occurring over short time periods, as the plant alternately gains and loses water.*