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## PHOTOGRAPHY

# Light Develops Film

➤ **LIGHT** can not only take a photograph but it can quickly develop it.

A process now is doing this to prepare microfilm and film for data storage. It differs from the usual silver photographic processes in that it uses diazonium salts to form the images.

The sensitizing salts, which can be of several kinds, release tiny nitrogen bubbles when they are exposed to ultra-violet light. When the emulsion is softened by a flash of heat these bubbles expand and a shell forms around them. Because these shells deflect or reflect light rays they form an image. No solutions or darkrooms are needed.

Two units are used to process the film. One is the exposor. It creates the latent image by exposing the film to an ultraviolet light image of the subject. The second unit, the activator, develops it by flashing it quickly with heat that softens the emulsion and causes the image to appear.

The Kalvar Corporation, New Orleans, La., which developed the film and process, believes it has a high potential for business and military use.

It is possible that it will be of great use to the motion picture industry and to any process where durable, quick, "release prints" would be helpful. A dye can be incorporated in the film that allows a variety of tones to be projected. The polyester base and emulsion is rugged and tough, which allows it to be cleaned by washing with soap and water and will last for a long period.

## MEDICINE

# Depression Cure Foreseen

➤ **THE DEPRESSIVE ILLNESSES** are most likely to be cured by medicine's continuing attack on the great problem of mental disease.

Dr. Seymour S. Kety, chief laboratory of clinical science, National Institute of Mental Health, Bethesda, Md., rated this advance as the one most expected in the remaining years of the century.

Biochemists have found that when one is depressed, there is a fall in metabolic substances in the brain, called catecholamines.

Already some drugs have been successful in making catecholamine more available to the "receptor" sites of the brain. Imipramine is the best of these, but all have some harmful side effects. It is hoped that a further unravelling of biochemical factors will supply a solution.

Other advances foreseen by Dr. Kety are: Senile dementia related to the blood flow can be prevented in the next century.

Arteriosclerosis, or hardening of the arteries, which causes a decrease in the blood flow, has been demonstrated as the cause of this particular kind of senile dementia. Greater understanding of the biochemistry of arteriosclerosis may solve the problem.

The film now is of slow speed and sensitive only to ultraviolet light. It is being used where these characteristics are an advantage. Sensitivity only to ultraviolet allows it to be used in office light, which does not contain much ultraviolet, without the fear of inadvertent exposure.

There is hope that research can produce a camera film that is fast and sensitive to many colors of light but Kalvar believes this will take much time and money. Today it is being put on the market as a photocopying process because it is ready for this and because a very large quantity of photocopying supplies are used in this work.

The film can be viewed or printed as a positive or a negative according to the way it is illuminated. Kalvar has apparatus that changes the angle of the printing light so that a positive or a negative can be made at will.

Thus the same film can be used as a positive or a negative. The way it is illuminated can also change the contrast of the image and thus vary the character of the print from brilliant to more subtle tone ranges.

The film has been in the development stage since the late 1940's when Dr. Robert T. Nieset, Kalvar vice president for research and development, and Alfred J. Moran, chairman of the board of Kalva, found the basic principles while at Tulane University, New Orleans.

• Science News Letter, 87:46 January 16, 1965

The antipoverty program will help those forms of mental retardation traced to social deprivation.

Several new "subgroups" with metabolic disorders similar to phenylketonuria, called PKU for short, will be recognized.

Treatment of the mentally ill will be shifted from large custodial institutions to communities where patients will be given individual care near their homes.

The number of the mentally disturbed probably will not be reduced, however, and cost of their care will appropriately increase.

Schizophrenia, which accounts for one half of the hospital beds of all types of resident hospitals, will largely remain an enigma. It will be treated, however, not as a single disease but as a collection of disorders grouped according to various biological factors including genetics. There will not be a pill to cure schizophrenia by the year 2000, he said.

Dr. Kety's talk was one of several on medicine in the year 2000 given at the University of Pennsylvania conference on graduate medical education.

• Science News Letter, 87:46 January 16, 1965