

PSYCHIATRY

Mental Recovery Aided

► **LEARNING TO** hold people at the right distance, getting neither too far away nor too close emotionally, plays an important part in the recovery of some mentally sick persons, Dr. Milton Wexler of the Menninger Foundation, Topeka, Kans., told members of the American Psychiatric Association meeting in Cincinnati.

He illustrated his idea by telling of a patient suffering from schizophrenia, sometimes popularly called split personality, who grew terribly frightened when anyone showed interest in her. She fought angrily to keep all people at a distance.

"The more kindly she was treated, the more frightened and angry she became," Dr. Wexler said. "She assaulted her therapist (doctor) and the whole world around her partly as an effort to prevent anyone from getting close to her and partly because her rage was the only means of

making contact with objects around her."

A blunt, direct, demanding approach was then tried. This allowed her gradually to develop an attachment to her doctor which was secure enough so that she could give up her defensive hatred and establish a relationship on a more secure footing of affection and understanding.

Schizophrenic patients, Dr. Wexler said in summary, are like the porcupines in Schopenhauer's famous story. They were freezing on a cold winter's day. At first they crowded so close together that their quills produced intolerable pain. When they separated, they nearly froze and were driven back close together again.

"So," Dr. Wexler concluded, "they moved backwards and forwards until they finally found a mean distance at which they could most tolerably exist."

Science News Letter, May 19, 1951

TECHNOLOGY

High-Heat-Resisting Paint

► **PAINT THAT** failed to burn when test panels were brought to a dull red heat of about 1300 degrees Fahrenheit has been demonstrated by the Du Pont Company, Wilmington, Del. In final form on the wall it is a combination of titanium dioxide and aluminum.

The paint is still in an experimental stage. There are many problems to be solved such as getting it to adhere satisfactorily to metal and attaining resistance to salt-water attack. But there is no question relative to its ability to resist heat. Coatings, for example, failed to burn when heated to a temperature of 650 degrees Fahrenheit for an hour.

Manufacture of the paint starts with a chemical compound known as titanium tetrachloride, similar in structure to the well-known cleaning fluid and fire extinguisher, carbon tetrachloride. This titanium compound is reacted with isopropyl alcohol to form a compound known as tetraisopropyl titanate. This is used with aluminum flake in making the paint.

When the paint is applied, the titanate compound reacts with the moisture in the air, forming titanium oxide, and an alcohol that evaporates off. This leaves a film of titanium oxide and aluminum on the painted surface.

An expected application for this new paint is on shipping to protect interior walls and lessen fire hazards. Paints now commonly used on ships' interiors are fire resistant to a degree, but not enough so to give complete protection. Once wall temperatures are raised to the paint's combustion point, fire is apt to spread from one

steel compartment to another. It is expected that the new paint will give higher protection than those in use.

Science News Letter, May 19, 1951

METALLURGY

Coating for Ceramals May Give Better Turbine Blades

► **BETTER TURBINE** blades, able to resist high temperatures developed in gas turbine and turbojet engines, may result from work at the National Bureau of Standards with high-chromium ceramic-metal coating over titanium-carbide materials.

A report on the work has just been issued by the National Advisory Committee for Aeronautics. The investigation has demonstrated, the report states, the feasibility of protecting a cobalt-bonded titanium-carbide ceramal against oxidation by the application of a ceramic-metal coating having a high content of chromium powder.

At a blade temperature of 1,800 degrees Fahrenheit, the report continues, this coating would probably greatly prolong the life of this ceramal blade under operating conditions sufficiently severe to accelerate failure of the uncoated blade by oxidation.

Ceramal is a relatively new term applied to materials consisting of a combination of ceramic and metallic ingredients. All carbides are considered ceramals. The material used, protected by the new coating, contained 80% titanium carbide and 20% cobalt. The coating contained 80% by weight of chromium powder and

20% frit, a melted ceramic glaze. After the glaze was applied, either by dipping or by spray, the coating was bonded to the ceramal by firing at 2,200 degrees Fahrenheit for ten minutes in an atmosphere of high-purity hydrogen.

High-temperature alloys in current use for gas-turbine blades give reasonably good service in the temperature range from 1,500 to 1,550 degrees, but not at temperatures higher than this.

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AGRICULTURE

More Castor Oil Coming But Not for Small Boys

► **ABOUT TEN** times more castor bean oil will be processed from California crops in 1951 than in 1950.

But America's small boys need not worry—very little of it will be used for medicinal purposes, says Dr. P. F. Knowles of the agronomy division of the University of California Agricultural Experiment Station, Davis, Calif.

Most of the product will go into paints and varnishes, hydraulic fluids, lubricants, and textile oils. Nearly 200 other uses of castor bean oil are assuming some commercial importance.

The great increase in production is mainly due to a world shortage of castor bean seed. The oil is also a partial substitute for tung oil, which is becoming increasingly scarce.

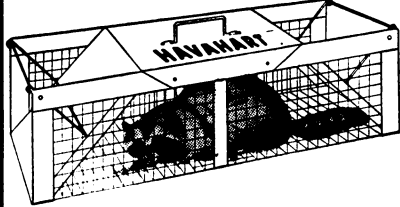
Even so, the castor bean crop in California, for example, is limited to 20,500 acres because only enough seed to plant this acreage is available. All of this is grown under contract with an oil seed processor.

A minimum price of 10 cents a pound is guaranteed by the Commodity Credit Corporation.

Science News Letter, May 19, 1951

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