

PHARMACOLOGY

Barbital Beats New Drugs

► AN OLD established drug, butabarbital sodium, has proved superior to recently introduced tranquilizers for patients suffering anxiety and tension.

Butabarbital sodium has been in wide use since 1943. The results of a five-year comparative study of calming drugs showed that, although butabarbital sodium is not a perfect sedative, it most closely approaches the ideal.

Ten factors were used to determine the desirability of each of six different drugs, plus a placebo, or "dummy" pill containing no medication.

The first factor was high predictability of satisfactory control, with the usual therapeutic dosage, within a reasonable period of time. Other factors included the unfavorable aspects of the drugs, such as tendency toward addiction, difficulty of administration, daytime drowsiness, reduction of mental processes, and variation of normal function of a major organ or system of the body.

When 168 patients were given one or more of the following drugs, glutethimide, acetylcarbromal, the placebo, phenobarbital, prochlorperazine and meprobamate, the butabarbital sodium led all the rest in desirable performance and lessened after-effect.

Although daytime anxiety and insomnia may be separate problems, it is possible by means of effective tranquilizers to relieve both by small multiple daytime dosage, Dr. Arthur J. Grossman of New York Medical College reported at the meeting in Phil-

adelphia of the American Society for Pharmacology and Therapeutics.

Butabarbital sodium offered the best performance of those drugs tested for the control of anxiety and insomnia by daytime dosage. The five-year study was conducted by a New York Medical College investigating team headed by Dr. Robert C. Batterman. He was assisted by Dr. Grossman and Drs. Paul Leifer and George J. Mouratoff.

Science News Letter, May 3, 1958

ROCKETS AND MISSILES

Missile Reentry May Be Routine, Due to Plastics

► ROCKETS soon may be brought back from space as a matter of routine, thanks to a revolutionary family of plastics.

The new materials which are produced and formed like plastics, but incorporate the strength of metals and heat resistance of ceramics, are able to function "in areas where all other known materials break down," a joint conference of the American Institute of Chemical Engineers and the Chemical Institute of Canada, meeting in Montreal, was told.

"Haveg compounds," as the new family of materials is called, are not metals, plastics or ceramics, but a "combination developed for high temperature operation," John H. Lux, Haveg Industries, Inc., Wilmington, Del., and Norbert H. Noland, Reinhold

Engineering and Plastics Co., Norwalk, Calif., reported.

A combination of composition and a unique reaction mechanism while being exposed to high temperatures makes the materials functional at temperatures up to 12,000 degrees Fahrenheit.

The materials are "reinforced plastics" and basically are similar to many familiar products made of plastic reinforced with other materials.

Haveg compounds consist of inorganic silicates similar to glass, held together with an organic plastic binder, the engineers reported. Consequently, the compounds can be produced and molded like plastics, but assume the rigidity and strength of glass.

When a nose cone or missile fin made of Haveg compounds encounters extremely high temperatures, a chemical reaction takes place between the organic plastic and the inorganic silicates, producing a new material that actually reflects away most of the heat, and has a high resistance to corrosion.

Haveg-based nose cones, motor cases, insulators and jet vanes capable of withstanding temperatures near 6,000 degrees Fahrenheit already are in production. Newer compounds that will withstand reentry runs of 20 seconds at 12,000 degrees Fahrenheit have been developed.

Science News Letter, May 3, 1958

● RADIO

Saturday, May 10, 1958, 1:30-1:45 p.m., EDT
"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio network. Check your local CBS station.

Dr. Elizabeth Drews, professor of education, Michigan State University, East Lansing, Mich., will discuss "Gifted Children."

INVENTION

Supersonic Device Removes Barnacles

► AN ELECTRONIC device that prevents barnacles from growing on the steel hulls of vessels will save Australian shipowners tens of thousands of dollars.

The device has been tested successfully for a year on the interstate vessel *Manoora*, the only ship fitted with the device.

Shipowners saved at least \$500 in docking and fuel costs each time the vessel went into dry dock.

The device sends supersonic waves through the steel hull, shaking off barnacle growth. Research during several years showed that barnacles were allergic to vibrations between 17 and 20 kilocycles a second. The vibrations cannot be felt or heard by passengers or crew.

Engineers said the device makes it unnecessary to paint hulls in the future with anti-fouling compound.

The equipment has a transmitter unit that generates a high frequency current. This current is transformed into mechanical vibrations, which are transferred to the hull of the ship. The latter operation is performed by a transducer.

Science News Letter, May 3, 1958



LABORATORY ANIMAL—The nematode, *Caenorhabditis briggsae*, may provide answers to unsolved problems of cell growth, differentiation, and cell deterioration and disease. The blunter end (right) of this bi-sexual worm is its mouth; the intestine is the dark area extending its length. The doughnut-like shapes are an egg which has begun to divide. Magnified here about 100 times, the nematode actually measures approximately one-twentieth of an inch in length. A group of Kaiser Foundation scientists headed by Dr. Ellsworth C. Dougherty is studying the nematode. A conference devoted to a discussion of this and similar animals was recently sponsored by the New York Academy of Sciences and the Kaiser Foundation.