MEDICINE

Bronchial Asthma Relief

➤ A NEW drug first found good against rheumatism is also effective in relieving bronchial asthma and swollen lung tissue, the American College of Physicians was told in Philadelphia.

The drug is metacortandracin, now called Prednasone, a relative of cortisone having fewer of its undesirable side effects.

Dr. Alvan L. Barach, professor of medicine at Columbia University's Medical School and associated with Presbyterian Hospital in New York, described results with the drug on 120 patients during the past six months. Half had bronchial asthma, the other 60 suffered from swollen lung tissue, or pulmonary emphysema.

The "unique difference" of Prednasone from cortisone, Dr. Barach reported, "is its capacity to produce relief of bronchospasm and to exert an anti-inflammatory effect without salt retention and without loss of potassium."

In 20 of 30 patients in whom cortisone had previously resulted in some adverse effects, he said, use of the new drug was followed by a "marked increase" in ability to exercise without labored breathing.

Six out of eight patients also lost three to nine pounds, probably by removal of salt and water from the lungs. This effect was "never encountered previously with the use of cortisone," Dr. Barach said.

He cautioned that other side effects of cortisone have been found with Prednasone and that especial care should be taken to prevent ulcers and broncho-pulmonary infection. Prednasone was developed by chemists at the Schering Corporation, Bloomfield, N. J.

Another "important" advance in the treatment of patients with swelling of lung tissues, Dr. Barach said, is restoration of diaphraghm function.

Training in breathing in the head-down position brings this result, and it can be enhanced by use of the Gordon-Barach Emphysema Belt.

Science News Letter, May 21, 1955

AERONAUTICS

"Bomb" Tests Fuels

➤ A "BOMB" that does not blow up is being used to help oil scientists produce a more powerful, quicker burning gasoline.

It is a metal test chamber that can be heated to temperatures from 400 to 1,500 degrees Fahrenheit and into which fuel mixtures are injected. Characteristics of the ensuing explosion are recorded by instruments attached to the constant-volume bomb.

Thus scientists with this tool, described at the meeting of the American Petroleum Institute in St. Louis, Mo., can learn more precisely how fast new fuels explode, how long before ignition begins and what temperatures are needed to begin the explosion. Advantages of the device were described as follows:

1. Only a small quantity of the fuel is needed for each test, making it possible to study pure hydrocarbons which frequently are available only in limited quantities.

2. Tests can be made under closely controlled temperature and pressure conditions.

3. The temperature and pressure can be varied over wide ranges.

4. The composition of the atmosphere of the bomb can be varied easily.

Measurements with various fuels using the new technique were reported by M. A. Elliott of the Illinois Institute of Technology, R. W. Hurn of the U. S. Bureau of Mines and H. M. Trimble of Phillips Petroleum Co., Bartlesville, Okla.

Ignition delay usually decreased with increasing bomb temperature, but this behavior varied widely for different hydrocarbon structures, the scientists found. The longer the carbon chain in the molecule, the less the delay.

Hydrocarbons with branched-chain molecular structure were apparently less temperature sensitive than paraffins or naphthenes. The various fuels tested differed markedly in their rates of heat release.

Science News Letter, May 21, 1955

AERONAUTICS

"Shot Gun" Telescope To Track Missiles

➤ A DOUBLE-BARRELED telescope that can record a golf ball's flight eight miles away will go to work for the Air Force to track guided missiles.

Stationed 50 miles apart, two of these Recording Optical Tracking Instruments (ROTI's) can pinpoint a missile with a maximum error of only nine inches in a mile. Accurate radar systems are usually off about nine feet in a mile.

The first ROTI is scheduled to be installed at the Holloman Air Force Base, Alamogordo, N. M.

The two 16-in-diameter telescope units on each ROTI have different focal lengths and are mounted one above the other. During operation, both color and black-and-white slow motion movies of the missile's flight can be made while a third camera photographs the telescope dial readings.

Mounted like a cannon, the ROTI focuses on the moving target using a mechanism that compensates for the response time lag of the human operator.

The ROTI's long range enables it to cover many types of missile problems from a single stationary vantage point far away.

Recording experimental flights by telescopic instruments gives the most complete and accurate information on missile velocity, acceleration, attitude and spatial position. Other methods currently used to track missiles are telemetering, in which the missile radios instrument readings to the ground, and radar.

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The *angler fish* has a flap of skin on its head which it wiggles to lure smaller fish; when they come within range the angler fish gobbles them down.

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