

CHEMISTRY

Cortisone Made from Yams

Practical method of making anti-arthritis hormone, cortisone, from yams developed. Process, requiring 22 steps, promises more plentiful drug supply.

➤ A PRACTICAL method of making the anti-arthritis hormone, cortisone, from a wild Mexican root, instead of ox bile as now necessary, promises to make this wonder drug more plentiful in the future.

The new synthesis was worked out in Mexico by a chemical team of the Syntex Research Laboratories, American branch of which is Chemical Specialties Co., Inc., New York. It requires 22 steps but is a practical process which will be used in an industrial plant in Mexico to be in production early in 1952.

Ever since cortisone was demonstrated to be effective in treating rheumatism and many other disorders in 1949, there has been an intensive search for a non-animal source of material from which to make it. Only bile from ox and sheep, by-products of slaughterhouses, has been used heretofore. The starting point of the Syntex synthesis is a common tropical yam, known as dioscorea or cabeza de negra (negro head), which has been the starting point for Syntex production of other hormones such as testosterone, estradiol, progesterone and pregnenolone.

Two years ago the Mexican chemists began an intensive attempt to start with the yam and come out with cortisone. A three-stage attack brought success, through a combination of research in their own and other laboratories. The principal scientists of Syntex were Dr. George Rosenkranz and Dr. Carl Djerassi, with Dr. Gilbert Stork of Harvard as consultant.

Success in two of these stages is just being announced. The July issue of the JOURNAL OF THE AMERICAN CHEMICAL SOCIETY tells how cabeza extract is converted into a complex substance known as 11-keto-allo-pregnanolone. Previously in the same journal the conversion of this substance into Reichstein's Compound D was re-

ported, and in the British journal NATURE (July 7) a relatively simple three-step procedure for transforming this compound into cortisone was detailed.

Thus a synthesis of cortisone has been developed that is not dependent upon the fluctuating supply of cattle but begins with yam roots that even now are being processed at the rate of 500 tons a month.

Dr. I. V. Sollins of Chemical Specialties Co., New York, explained that Syntex chemists expected to be able to eliminate in the future five or six of the 22 steps in the process.

The total synthesis of cortisone in 60 steps, as a chemical process that will not be applied practically, was also announced. The research of other scientists, notably Sir Robert Robertson of England, and Prof. Robert B. Woodward of Harvard, were applied in working out this total synthesis.

While the inedible yam dioscorea grows wild, it was placed under cultivation two years ago when it proved to be valuable as a raw material for drug synthesis. It is now being grown in Puerto Rico as well as Mexico to assure a continuing supply, not only for cortisone production but for other hormones as well.

Science News Letter, July 14, 1951

AERONAUTICS

All-Canadian Jet Fighter Readied for Flight Test

➤ THE FIRST all-Canadian jet fighting airplane is being readied for its first flight, it was revealed by the builder, A. V. Roe Canada, Ltd., of Malton, Ontario. Its notable feature is the two Orenda turbo-jet engines with which it is powered. The Orenda is rated as one of the world's most powerful jet engines.

This new engine has already undergone many types of bench tests and late in 1950 was used to power an American Sabre F-86. During the present year an Orenda-powered Sabre fighter flew from Toronto to Montreal at an average speed of 665 miles per hour. The engine is claimed to be more powerful than the jet used in the Sabre when it established the world's speed record of 670 miles per hour.

The plane in which the new engine will be used is the Avro Canada CF-100. It is a long-range all-weather fighter, designed particularly to meet the defense problems of Canada. CF-100s already in use are powered with British engines.

Science News Letter, July 14, 1951

● RADIO

Saturday, July 21, 1951, 3:15-3:30 p. m. EDT
"Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. George K. Bennett, president, Psychological Corporation, New York, will discuss "Psychology at Work."

INVENTION

Remove Nitrogen to Get High Heat Value Gas

➤ GAS OF a high heating value, needed in certain industrial processes, is obtained from natural gas by removing the nitrogen from it by a process which was awarded patent 2,557,171. It was issued to William W. Bodle, North Kansas City, Mo., and Walter W. Deschner of Kansas City, Kans. J. F. Pritchard & Co., Kansas City, Mo., has obtained the patent rights.

Science News Letter, July 14, 1951



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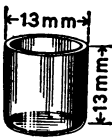
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