BIOCHEMISTRY

Male Sex Hormone Prepared In Pure Form For First Time

THE MALE hormone, or gland secretion that is responsible for typically masculine physiology in men and male animals, has been prepared for the first time in fully purified, crystalline form by Dr. Adolf Butenandt of the University of Göttingen. Dr. Butenandt has also analyzed it and determined the proportions of carbon, hydrogen and oxygen that enter into its makeup. They are expressed by the formula $C_{16}H_{26}O_2$.

Although other physiologists have been at work on the same problem, the final crystallization of the hormone is regarded as of the greatest importance. When any preparation can be made in crystalline form, that signifies a high state of purity, which makes possible really accurate comparative physiological tests, and may even lead the way to synthetic preparation.

The male sex hormone seems to be very closely related chemically to its physiological analog, the female sex hormone. This hormone was prepared first in the United States by Professor Edward A. Doisy of the St. Louis University School of Medicine and was announced at the Thirteenth International Physiological Congress at Boston in August, 1929. Subsequently, Dr. Doisy was the first to announce the empirical formula of this female sex hormone, $C_{18}H_{22}O_2$. Dr. Butenandt announced the independent isolation of the female hormone some months subsequent to Dr. Doisy's announcement and the independent analysis, a short time after, thus confirming Dr. Doisy's findings.

Find Wide Usage

The female sex hormone is already being used in medicine to a considerable extent and it may be anticipated that its male counterpart will likewise find clinical employment after further tests on animals have given more data on which to base its first applications to human cases.

Dr. Butenandt, therefore, must be credited with the first isolation and analysis of the male hormone and the independent isolation and analysis of the female sex hormone.

Both the sex hormones are prepared from an ingredient that might well have gone into a witch's cauldron of old—human urine. The female sex hormone can be prepared only from that of pregnant women. However, the long and elaborate processes of condensation and precipitation through which the material must be put before the final few crystals are isolated removes any suggestion of its original repulsive source.

Dr. Butenandt's announcement of the preparation of male sex hormone in crystalline form is made in the German science weekly, *Forschungen und Fortschritte.*

Science News Letter, April 16, 1932

BIOCHEMISTRY

French Scientists Report Two New Sex Hormones

By DR. VICTOR COFMAN,
Science Service Correspondent

DISCOVERY of two substances that affect profoundly the growth and activity of female sex organs has just been reported to the French Academy of Sciences by Drs. André Girard and Georges Sandulesco of the Roussel Research Laboratories in Paris. These substances are described as new sex hormones, in addition to the remarkably active substance known as theelin, the female sex hormone which was discovered by an American, Prof. Edward A. Doisy of the St. Louis University School of Medicine.

The two new hormones belong to the same chemical group, the oxy-ketones, which means that they are related to acetone and alcohol, or rather, phenol. They differ only slightly in composition. They all contain the same quantity of carbon and oxygen in their molecule, namely eighteen carbon and two oxygen atoms, and differ only in the number of hydrogen atoms in the molecule. While theelin has twenty-two hydrogen atoms, the newly-discovered hormones contain only twenty, and differ between themselves only in the arrangement of the atoms. The new hormones have been named "equiline" and "hippuline" because they have been extracted from the kidney excretion of pregnant mares. Several tons of this material had to be used in order to extract about three grains of the new hormones.

The action of equiline and hippuline differs from that of theelin, affecting chiefly only one of the female sex organs, whereas theelin affects more.

Science News Letter, April 16, 1932

CHEMISTRY

Probably No Elements Heavier Than Uranium

HOPE that there are more than the 92 chemical elements now known is not bolstered up by theoretical studies made by Dr. V. V. Narliker, University of Cambridge scientist. Investigating the highest atomic number in the light of wave mechanics, Dr. Narliker finds that the highest possible atomic number seems to be 92, that of uranium, heaviest known element, and not 137 as previous studies had suggested. His report was made to *Nature.*

Science News Letter, April 16, 1932

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912

Of SCIENCE NEWS LETTER published weekly at Baltimore, Md., for April 1, 1932.
Washington } ss.
District of Columbia }

Before me, a Notary Public in and for the District of Columbia aforesaid, personally appeared Watson Davis, who, having been duly sworn according to law, deposes and says that he is the Editor of the SCIENCE NEWS LETTER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Editor, Watson Davis, 21st and Constitution Ave., Washington, D. C.

2. That the owner is:

Science Service, Inc., 21st and Constitution Ave., Washington, D. C., a non-profit corporation without stock, operating as the Institution for the Popularization of Science.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

Watson Davis,
Editor.

Sworn to and subscribed before me this 28th day of March, 1932.

[SEAL]

Charles L. Wade.

(My commission expires April 6, 1933.)