

Estrogen therapy.—A group of immature female rats (30 days) were kept on the following diet:—

Sugar 10, casein 14, butter 15, Osbourne Mandell salt mixture 5, and rice flour 56 parts. The diet was supplemented by $\frac{1}{2}$ tablet of yeast and 2-3 drops of cod-liver oil per day per rat.

The experimental rats received 3-4 drops of the cress oil in addition to the above diet, whereas the control rats received only the above diet. All the rats were killed on the 72nd day, having received the oil for six weeks. The ovary, thyroid and thymus glands were removed and weighed.

The ovaries of the experimental rats weighed consistently more than that of the control rats. The average weight of the ovaries from the experimental rats was 0.45 gm. per Kg. body weight, whereas that of the control rats was 0.25 gm. per Kg. body weight. Macroscopic examination of the ovaries of the rats receiving the oil was very significant and exhibited several hæmorrhagic follicles on the surface. No such characteristics were observed on the ovaries from control series. The uterus, thymus, thyroid and other organs did not show any abnormality. The results along with the details of histological examination will be reported later.

There was no significant difference in growth rates of the rats. The rats receiving the oil weighed comparatively less (average 83 g.) than the control ones (average 88 g.) but were significantly more active than the control series.

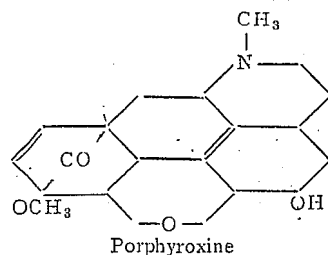
Thanks are due to Dr. V. Subrahmanyan for his keen interest.

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December 9, 1942.

A SEARCH FOR PORPHYROXINE IN BENGAL OPIUM

PORPHYROXINE $C_{16}H_{19}O_4N$ was isolated¹ by Rakshit from the Indian variety of *Papaver somniferum* L. He represented² the base as a derivative of a tetrahydro codeine with the carbonyl group in a bridge position in the aromatic ring of Pschorr's codeine formula:



Later, Machiguchi³ isolated from Japanese opium, an identical product which, however, proved to be a mixture of codamine, laudanine

and meconidine. Recently⁴ the view has been expressed that the constitution proposed for porphyroxine can only be accepted with reserve. It was, therefore, considered necessary to re-investigate the occurrence of porphyroxine in Bengal opium, a specimen of which was purchased as a dry powder from the Government opium factory at Ghazipore.

Following Rakshit's method¹ the total water-soluble non-phenolic bases were isolated by ether-extraction of a lime-water extract of opium. Further treatment of the crude bases with dilute hydrochloric acid gave a sparingly soluble hydrochloride (A) in a yield of about 0.34 per cent. The same hydrochloride (m.p. 265°-269° d., after a slight darkening at 240° C.) was prepared in an yield of 2.6 per cent. by extracting the total alkaloids of opium with chloroform and subsequent treatment of the alcoholic solution of the bases with dilute hydrochloric acid. On recrystallisation from alcohol the hydrochloride (A) in colourless needles melted at 276°-277° c.d. after sintering at 270° C. The free base corresponding to this was crystallised from alcohol in colourless rectangular rods. (M.P. = 152°-153° C., unchanged on mixing with a genuine specimen of codeine for which the author is deeply indebted to Prof. B. B. Dey.)

The above yield of codeine from Bengal opium is much higher than Rakshit's estimate,⁵ but agrees well with that of Annet⁶ and Dunicliff.⁷

Attempts to isolate porphyroxine from the mother-liquors of codeine hydrochloride have so far proved fruitless. Only a more intensive search can finally settle the possibility that Rakshit's porphyroxine might be an impure specimen of codeine.

As the author is at present unable to continue this work, owing to other preoccupations, he leaves this question to be settled by others interested in the subject.

The author is highly grateful to Prof. L. F. Small for suggesting this problem, and to Mr. J. N. Rakshit and Col. S. S. Sokhey for their kind interest.

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December 28, 1942.

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PROTOGYNY IN UGANDA SPONTANEUM

THE wild species of *Saccharum spontaneum* has been of particular importance and use at the Imperial Sugarcane Station X CBE. Most of the Co. canes found useful in cultivation have in them the blood of some form of *Saccharum spontaneum* and sometimes of two