and the next commences, the surface tension attains a maximum value and capillary activity is at a minimum. This corresponds in time to that period where, according to recent physiological investigations, ovulation probably occurs[1].

As regards the nature of the substances causing this variation of surface tension, we can at present say nothing definite. It is known, however, that certain hormonic activities, such as excretion of prolan *A* near the midpoint of the cycle[2], are of a periodic nature, and it is, we think, legitimate to suggest that these causative substances are at least linked with the hormones responsible for the menstrual cycle.

Further work is being carried out on these and kindred problems, a full account of which will be published shortly.

C. F. SELOUS.
P. W. PERRYMAN.

Pathological Department,
Kent and Sussex Hospital,
Tunbridge Wells.
Dec. 19.

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Biological Formation of Ascorbic Acid

WE have already reported[1] that the spleen, kidney and liver tissues of the rat are able to form significant amounts of ascorbic acid, as determined titrimetrically, when incubated with mannose for three hours at *p*H 7·4 at 37°. The brain, heart-muscle and leg-muscle tissues of the rat have also been found to share this power, though to a less extent. It has been possible, further, to extract the mannose dehydrogenase system from the spleen, kidney and liver tissues of the rat[2]. A similar enzyme system has also been extracted from germinating *mung* (*Phaseolus mungo*), which can convert mannose into ascorbic acid at *p*H 5·8, but not at *p*H 7·4. This is perhaps related to the acidity of the germinating *mung*.

The ability with which the isolated tissues convert mannose into ascorbic acid *in vitro* differs considerably according to the species, as will be observed from the following table, which gives results obtained with liver tissue only.

Species	Ascorbic Acid (mgm.) formed per gm. liver tissue after incubation with mannose for 3 hours at *p*H 7·4 at 37°
Rat	+0·300
Rabbit	+0·040
Pigeon	+0·053
Guinea pig (normal)	−0·030
Guinea pig (scorbutic)	−0·020
Monkey	−0·010

It will be noticed that the liver tissues of the rat, rabbit and pigeon—species known to be independent of an external source of vitamin C—are able to form ascorbic acid from mannose, whereas the liver tissues of the guinea pig, both normal and scorbutic, and monkey, which are dependent on an outside supply of vitamin C, are apparently unable to do so.

It has generally been found that the other sugars studied, glucose, fructose, galactose, rhamnose, xylose and arabinose, are converted into ascorbic acid by the tissues of none of these animals under our conditions of experiment, with the exception that the liver tissue of the pigeon can convert glucose into ascorbic acid (0·033 mgm. ascorbic acid being formed per gm. of the tissue). Preliminary experiments indicate the possibility that prolonged incubation of glucose with the liver tissue of the rat may also produce ascorbic acid.

It is necessary to state that, in the absence of biological tests, which are presenting several technical difficulties, this work involves the assumption that the substance titrating with 2 : 6-dichlorophenol indophenol consists solely of vitamin C.

B. C. GUHA.
A. R. GHOSH.

Biochemical Laboratory,
Bengal Chemical and
Pharmaceutical Works, Ltd.,
Calcutta.
Jan. 14.

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Alleged Œstrogenic Activity of the Male Sex Hormone

CORRELATION of molecular structure of the sex hormones with that of the sterols and bile acids is now almost complete, and leads to the conclusion that the hormones are biological degradation products of cholesterol. Adopting the working hypothesis that the male hormone (androsterone) is the immediate precursor of the female hormone (œstrone), a study of the action of various tissue extracts on androsterone has been commenced in the hope of converting this hormone into œstrone by biochemical means. The œstrus test gives a very sensitive method of detecting any such conversion.

The œstrogenic action of various testicular extracts[1] and male hormone extracts prepared from urine (for example, hombreol) has led to the suggestion that the male hormone has the same effect on the female genital tract as the female hormone[2]. If this were true, then of course the biological test would be valueless as a means of detecting dehydrogenation of the androsterone molecule. However, it is certain that the œstrogenic activity of male hormone preparations is due to the presence of substances other than this hormone, for no œstrogenic activity could be detected with pure crystalline androsterone prepared from cholesterol by the method of Ruzicka[3].

Four injections of 0·25 mgm. of androsterone, dissolved in sesame oil, were made into each of five ovariectomised mice at 12-hour intervals. Vaginal smears were examined during 72 hours following the last injection, and showed no sign of œstrus. These mice were afterwards given four injections of 0·25 γ of œstrone, and then showed a full œstrous response. Two other castrated female mice received a total of 10 mgm. each of androsterone with completely negative results. Post mortem examination of these two animals showed no enlargement of the uterus or any other symptoms normally associated with the action of œstrogenic substances.

The androsterone used in these experiments was generously presented by Ciba, Ltd., at the request of Prof. Ruzicka.

F. L. WARREN.

Research Institute,
The Cancer Hospital (Free),
London, S.W.3.

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