methods. Attempts have been made to utilize the cultured virus for the preparation of immunizing vaccine but so far only equivocal results have been obtained. With the recent report of Kurotchkin[8] on the successful cultivation of vaccinia virus on the same medium, further trials with some other viruses seem to be indicated.

11327 P

Ultraviolet Absorption Spectrum of Cytochrome C.

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(Introduced by O. T. Avery.)
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Dixon, Hill and Keilin[1] published the ultraviolet absorption curve of cytochrome c. A sharp maximum was found at about 4150 Å. Other than a plateau in the region 2600-2900 Å no other structure was detected. Roche and Benevent[2] also found a similar curve.

The cytochrome c used was prepared from fresh beef heart by the method of Keilin and Hartree.[3] Tetrapyrrolic iron was determined by the dipyridyl technic of Hill,[4] following the treatment of cytochrome c with alkali and hydrogen peroxide. Several lots were assayed for the hemin iron content with an average value of 0.39%. The theoretical value is around 0.4%.[5]

Since it is known that the absorption curves obtained with the line source and photometer may fail to show all the details of the bands,[6] photographs were taken with the continuous light of the hydrogen discharge tube and a small Hilger quartz spectrograph. The spectrum obtained is drawn in Fig. 1a. The band at 4150 Å is seen, also other bands not clearly indicated in the curve. The band in the region of 3500Å is rather diffuse as are the other bands in the protein region. Not shown in the illustration are bands in the region 2550-2600 Å. These are of such intensity that it is difficult to obtain their exact wave length.[5]

8 Kurotchkin, T. J., PROC. SOC. EXP. BIOL. AND MED., 1939, **41**, 407.
1 Dixon, M., Hill, R., and Keilin, D., *Proc. Roy. Soc.* B, 1931, **109**, 29.
2 Roche, J., and Benevent, M. T., *Bull. Soc. Chim. Biol.*, 1935, **17**, 1473.
3 Keilin, D., and Hartree, E. F., *Proc. Roy. Soc.* B, 1937, **122**, 298.
4 Hill, R., *Proc. Roy. Soc.* B, 1930, **107**, 205.
5 Theorell, H., *Science*, 1939, **90**, 67.
6 Lavin, G. I., and Northrop, J. H., *J. Am. Chem. Soc.*, 1935, **57**, 874.

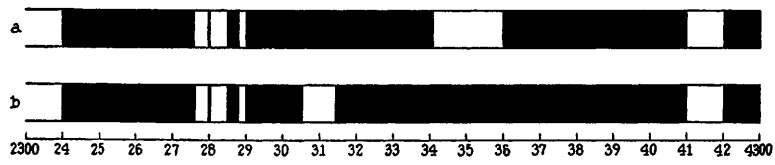

Fig. 1

When cytochrome c is treated with sodium formaldehyde sulfoxylate ($CH_2OHOSONa$) the band at 3500 Å disappears and a new band appears at about 3100 Å, as depicted in Fig. 1b. At the same time the well characterized band of reduced cytochrome c becomes apparent in the visible at 5500 Å. Experiments are now in progress to determine the possible reversibility of this process and the complete significance of the above data is being further investigated.

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A Technique for the Perfusion of the Foetal Placental Circulation.*

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Investigation of the various factors which control the placental circulation has necessarily been limited owing to the experimental difficulties involved. It is suggested that the following technic may offer a line of approach to some of the problems involved.

Methods. The experimental animals used were cats or bitches which were in an advanced stage of pregnancy. Rabbits were found to be unsuitable owing to the friability of the placental vessels. Anesthesia was induced with open ether, and maintained with chloralose given intravenously in a dose of 100 mg/kilo body weight. Both vagi were cut, and the carotid blood pressure recorded by means of a mercury manometer. The abdomen was opened with as short an incision as was compatible with adequate access, and a part of the uterus containing one foetus brought up into the wound. A small cork platform approximately 5 cm square was approximated to the section of uterus exposed, and the uterine peritoneum loosely

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