

likewise in substantial agreement with the data presented here. His measurements having been taken at only 4 wave-lengths with the longest at 2750 Å, any increase in absorption with age at 2800 Å would not have been detected in his experiments.

Later data of Caspersson and Schultz¹² on the cytoplasm of *Drosophila* gut cells and on the root tips of *Allium sp.* do reveal an absorption band at 2800 Å for mature cells, while immature or actively dividing cells have their absorption maximum at 2600 Å. Characteristic of the latter type of absorption spectra are the recently obtained curves for the sporidia of *Ustilago zea*,¹³ the cytoplasm of *Drosophila* eggs,¹⁴ and the contents of *Zea mays* pollen grains.¹⁵

Summary. The ultraviolet absorption spectrum of the yeast, *Saccharomyces ellipsoideus*, exhibits a maximum of 2650 Å. The extinction coefficient for the maximum decreases for inactive cells, thus revealing a secondary maximum at 2800 Å. Agreement with the theory of Caspersson on nucleic acid metabolism as a function of division rate is obtained.

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Action of Tincture of Iodine when Injected into the Pericardial Sac.

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Since the appearance of the work of Musser and Herrmann¹ on the injection of tincture of iodine into the pericardial sac, no work has appeared on this subject. It was considered worth while to study this problem as an introduction to a general study of drugs administered by this route.

Eight healthy dogs of average size anesthetized with pentobarbital sodium were used in this series. Six dogs anesthetized with ether

¹² Caspersson, T., and Schultz, J., *Nature*, 1939, **143**, 602.

¹³ Landen, E. W., *J. Cell. Comp. Physiol.*, 1939, **14**, 217.

¹⁴ Caspersson, T., and Schultz, J., *Nature*, 1938, **142**, 294.

¹⁵ Uber, F. M., *Am. J. Bot.*, 1939, **26**, in press.

¹ Musser, J. H., and Herrmann, George R., *Proc. Soc. Exp. Biol. and Med.*, 1925, **23**, 212.

were used to check the effects of the anesthesia. Artificial respiration was used, blood pressure was recorded from the carotid artery, and on some animals intestinal contractions were recorded by the balloon method.

The heart was exposed by dividing the sternum, thus facilitating intrapericardial injections. The exposed viscera and tissues were protected with liquid petrolatum.

Usually an hour was allowed to elapse following the operative procedure before the experiment was started, to decrease the effects of shock.

Injections were made through the elevated pericardial sac, care being used not to injure the cardiac musculature. Time was permitted to allow irregularities induced by lifting the pericardial sac to be reduced to a minimum before the tincture of iodine was injected.

Following the slow injection of 2 cc of tincture of iodine (U.S.P.) there was usually a slow, gradual rise of blood pressure which lasted 5 or 10 minutes, and a concomitant increase in pulse pressure. There was also depression of intestinal activity, most probably due to the alcohol contained in the tincture. Repeated doses of tincture of iodine produced similar results.

In a second series of 4 dogs, large doses, as much as 10 cc, of tincture of iodine were injected into the pericardial sac. This amount was not fatal and results similar to those indicated above were obtained. Sixteen cc given in 2 cc doses at 15-minute intervals were not lethal. The fact that the urine gave tests for iodides indicates that the drug is absorbed from the pericardial sac.

It was found in a third series of 3 dogs that the fatal dose of tincture of iodine when injected intravenously (femoral vein) was 1 cc per kg of body weight.

A more detailed investigation is now in progress and the report will appear in the near future.

Conclusions. (1) Tincture of iodine injected into the pericardial sac is rapidly absorbed, as indicated by the presence of iodides in the urine. (2) Tincture of iodine injected in the pericardial sac effects a gradual rise in blood pressure with an increase in pulse pressure. There is also a temporary decrease in intestinal activity, which occurs after section of the vagi, and is also obtained by intravenous injection of the iodine. (3) The M.L.D. of tincture of iodine injected intravenously, when given at the rate of 0.1 cc of tincture of iodine per kg of body weight every 5 minutes, is 1 cc per kg of body weight. (4) Ten cc (1 dose), and 16 cc given in divided doses of tincture of iodine in the pericardial sac were not lethal.