blue per 100 gm. of body weight was injected intraperitoneally. The CO_2 production and O_2 consumption were measured for varying periods during the following 48 hours. The results in all 6 animals bear a striking similarity. The composite graph depicts the observations of the 4 animals that were in the postabsorptive condition.

The graph discloses that there is a fall in the R.Q. which is followed by a subsequent rise. The early fall in the quotient is caused in part by a diminished production of CO_2 and partly by an increased consumption of O_2. The greater O_2 uptake indicates that the decreased production of CO_2 occurs despite an increased pulmonary ventilation. The fall of the R.Q. carries it to a value below 0.7 but the total R.Q. for the entire period of 48 hours in these 4 rats varied between 0.711 and 0.737.

6732

Effect of Methylene Blue on the R.Q. of the Brain in Situ.

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TABLE I.
Effect of Methylene Blue.

	R.Q. of brain	pH of arterial blood	Rectal temp. C.°	Sp. Gr.
Amytal	0.99	7.24	39.3	1.0653
MB 15 min.	0.77	7.25	39.8	1.0659
1 hr.	0.92	7.26	40.2	1.0673
1¾ hr.	0.54	7.27	40.7	1.0698

An early effect of methylene blue in the intact animal is to decrease the R.Q.[1] Methylene blue exerts a similar action on the R.Q. of excised cortical tissue of the brain[2] causing a decrease below the physiological value of unity.[3] This communication presents the results of preliminary experiments of the changes produced by methylene blue on the R.Q. of the brain *in situ.*

[1] Himwich, H. E., and Goldfarb, W., PROC. SOC. EXP. BIOL. AND MED., 1933, **30**, 906.

[2] Himwich, H. E., Fazikas, J. F., and Hurlburt, M. H., PROC. SOC. EXP. BIOL. AND MED., 1933, **30**, 904.

[3] Himwich, H. E., and Nahum, L. H., *Am. J. Physiol.*, 1932, **101**, 446. Dickens, F., and Simer, F., *Biochem. J.*, 1930, **24**, 1301.

Ten cc. of 1% solution of methylene blue were injected into the common carotid artery of 4 dogs under amytal anesthesia. Blood samples from the femoral artery and the superior longitudinal sinus were analyzed for CO_2 and O_2, pH and specific gravity. The respiration and rectal temperature of the dogs were recorded.

The arterial-venous differences of CO_2 and O_2 indicated that the R.Q. of the brain diminished after the injection of methylene blue. At the same time the rectal temperature of the animals rose. This is in agreement with the greater O_2 uptake noted previously.[1] The specific gravity of the blood increased as did the pulmonary ventilation, the latter producing a rise of the pH of the arterial blood. The results of a characteristic experiment are presented in tabular form.

6733

Studies on Bacterium Granulosis in Relation to Trachoma. (III-IV).*

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By repeated instillation of *freshly isolated* cultures of *Bacterium granulosis*, or by a single subconjunctival injection of this organism, granular conjunctivitis was produced in several rhesus monkeys. This confirms the work of Noguchi,[1] Olitsky, Knutti and Tyler,[2] and Thygeson.[3] It was observed, moreover, that by repeated irritation with powdered, dry, sterilized Portland cement (applied by means of a cotton swab), or by previous inoculation with a virulent hemoglobinophilic bacillus *(H. influenzae)*, the monkeys' conjunctivae were at times rendered more vulnerable to infection with *B. granulosis*. Best results were, however, obtained by the subconjunctival injection of freshly excised, macerated, infected monkey tissue (tarsus and conjunctival follicles) containing *B. granulosis*.

* For previous publications in this series, see Weiss, C., *J. Inf. Dis.*, 1930, **47**, 107, and PROC. SOC. EXP. BIOL. AND MED., 1931, **28**, 398.

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[2] Olitsky, P., Knutti, R., and Tyler, R., *J. Exp. Med.*, 1931, **54**, 31; and subsequent papers in the *J. Exp. Med.*

[3] Thygeson, P., *Am. J. Ophth.*, 1932, **15**, 293.