

pure toxin production be decisive, it will be necessary to establish this point. Obviously there must be a time when toxin production is at a maximum and when the progressive developmental cycle of thermolabile and thermostable components can be studied. To this end experiments are now being made with different strains of tubercle bacilli grown in different media for varying periods of time. Work now in progress with a rapidly growing strain of tubercle bacilli points to the presence of a tuberculin-free thermolabile component which gives skin reactions in normal and tuberculous patients and animals. These results can be correlated not only with the stage of infection but with the clinical progress of the disease. There is clear-cut evidence also that most of the patients with far advanced tuberculosis do not give minimal or negative tests unless antibodies are absent, contrary to the report of Herrold and Saelhof.²

¹ Ebersson, F., *PROC. SOC. EXP. BIOL. AND MED.*, 1926, xxiv, 79.

² Herrold, R. D., and Saelhof, C. C., *J. Am. Med. Assn.*, 1926, lxxxvi, 747.

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A Note on Tissue Respiration in Relation to Thyroidectomy.

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In the course of a study of the influence of lactic acid upon tissue respiration it was observed that tissues from thyroidless rats showed a lower rate of oxygen consumption than did similar tissues from normal rats.

Bits of diaphragm tissue suspended in Ringer solution containing 0.2 per cent glucose and buffered to pH 7.5 by a M/80 phosphate mixture under an atmosphere of oxygen were studied by Warburg's¹ manometric method.

Normal.		Thyroidless	
Wt. of animal.	Q _o ² * 1st hour.	Wt. of animal.	Q _o ² * 1st hour.
gm.		gm.	
142	8.2	174	4.0
145	8.8	175	5.3
172	6.4	241	5.3
175	9.6	177	6.8
180	5.7	155	4.5
	mean 7.7		mean 5.2

* Q_o² = cubic millimeters O₂ per mg. dry tissue per hour.

The results are of interest in connection with the recent paper of Grafe, Reinwein and Singer,² who found that the rates of respiration of surviving tissues of animals varying in size from the mouse to the ox, are of substantially the same magnitude, whereas the oxygen absorption per kilogram of the whole living animal is some 20 times greater for the mouse than for the ox, thus demonstrating that the constant relation between metabolism and surface area is a function of the intact animal, and not a result of inherent characteristics of the protoplasm. These authors seek an explanation in considerations of oxygen supply to the tissues and the relative number of patent capillaries. In the case of our thyroidless rats the metabolism of the living animal is 25 to 30 per cent below the average normal, as is also the respiration of its isolated tissues under conditions of maximum oxygen supply.

My thanks are due to Professor P. E. Smith, who gave me the thyroidectomized animals. Further work is in progress.

¹ Warburg, O., *Biochem. Z.*, 1923, cxlii, 317.

² Grafe, E., Reinwein, H., and Singer, *Biochem. Z.*, 1925, clxv, 102.

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Influence of Age on Degree of Renal Hypertrophy Produced by High Protein Diets.*

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Three adequate diets which contained 18 per cent, 31 per cent and 70 per cent of protein in the form of casein, which differed only in respect to a replacement of cornstarch and lard by casein, were fed to three groups of male albino rats from the time they were 26 days old until they were 70 days of age. The animals were then killed and the kidney weights ascertained. Table I shows that as the amount of protein increased there was a considerable increase in the weight of the kidney.

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