

roid on Basal Metabolic Rate and Pulse Rate of Hyperthyroid Individuals" before the Society of Experimental Biology and Medicine on May 16, in which they reported that the administration of 2 grains of thyroid a day to persons with "hyperthyroidism" lowered their basal metabolic rates. In this connection the following data may be of interest.

Five persons with "hyperthyroidism" were given 190 mg iodine per day for 2 weeks, assuring that there was no iodine shortage in the glands. A large part of the thyroid of each person was removed and the thyroglobulin separated and purified.<sup>1</sup> The total iodine and thyroxine iodine were then determined. The results compared with the normal were as follows:

Basal metabolic rate at time of removal of thyroid .....	Nor- mal	+ 14 cent.	+ 15 per cent.	+ 33 per cent.	+ 45 per cent.	+ 66 per cent.
Per cent. thyroglobulin in thyroid	20	15	19	8	12	6
Per cent. iodine in thyroglobulin .....	0.57	0.577	0.534	0.4	0.4	0.20
Per cent. thyroxine-iodine in thyroglobulin .....	0.25	0.162	0.156	0.115	0.1	0.04
Ratio Thyroxine-iodine Total iodine	0.44	0.28	0.29	0.29	0.25	0.20

Hektoen and his collaborators have detected thyroglobulin in the thyroid vein and lymph by serological methods, and it has been assumed that the high metabolic rate is due to more rapid passage of thyroglobulin into the blood. These data show that it would require an unusually large amount of this thyroglobulin to account for the observed rise in basal metabolic rate as it is low in thyroxine, the case of highest basal metabolic rate being in a person whose thyroglobulin contained only 0.2 per cent. thyroxine (0.04 per cent. thyroxine-iodine).

J. W. CAVETT  
CARL O. RICE  
J. F. MCCLENDON

UNIVERSITY OF MINNESOTA  
MEDICAL SCHOOL, MINNEAPOLIS  
MAY 25, 1934

#### DISSOCIATION IN ERWINIA AMYLOVORA (BURRILL) COMM. S.A.B.<sup>1</sup>

IN a study of morphological, cultural and pathogenic variability in the fire blight organism the phenomenon of dissociation was observed.

<sup>1</sup> Cavett and Seljeskog, "The Preparation of Thyroglobulin," *Proc. Soc. Biol. Chem., Jour. Biol. Chem.*, 100: xxvi, 1933.

<sup>1</sup> Contribution from the Division of Plant Pathology, University of California, Berkeley, Calif.

The "rough" type was obtained by growing the "smooth" form in common nutrient broth of pH 6.9 for twenty days at temperatures from 12 to 25° C. Some isolates yielded 100 per cent. roughs in response to this treatment, while many showed the presence of a large number of intermediates. Many bouillon cultures stored from four to nine months at room temperature showed abundance of rough types upon streaking on nutrient agar plates. Another method of inducing dissociation consisted in daily transferring (at intervals of 18 hours) into bouillon of pH 6.9 and incubating at 28° C. With some isolates this method produced almost 100 per cent. roughs after 20 to 25 transfers.

The rough colonies appeared large, flat, wrinkled and dull. They were firm when touched with the needle and formed clumps when suspended in 0.85 per cent. NaCl solution. The individual bacteria of the rough type were motile but less so than those of the smooth type. The rough type showed a slight pathogenicity to pear shoots and avirulence to certain shrubs, which were very susceptible to the smooth type.

Rough and intermediate types were isolated from old natural infections of pear, apple and some shrubs.

Reversion of R to S was found to take place in 2 per cent. sucrose or 1 per cent. dextrose bouillon after four to six transfers. On the other hand, the organism was attenuated by sucrose concentrations of 10 per cent. or higher.

The comparatively easy reversibility of R into virulent S type, and the fact that the nectars of species susceptible to the fire blight disease may reach concentrations of sugars of from 2 to 5 per cent. in air of high relative humidity<sup>2,3,4</sup> may be suggested to have some bearing on epiphytotic of the fire blight disease.

P. A. ARK

UNIVERSITY OF CALIFORNIA, BERKELEY

<sup>2</sup> Ruth Beutler, "Biologisch-chemische Untersuchungen am Nektar von Immenblumen," *Zeitschr. f. vergl. Physiol.*, 12: 72-176. 1930.

<sup>3</sup> H. E. Thomas and P. A. Ark, "Nectar and Rain in Relation to the Fire Blight Disease." In press.

<sup>4</sup> George H. Vansell, "Bee Behavior as Affecting Pollination." In manuscript.

#### BOOKS RECEIVED

*Catalogue of the Scientific and Technical Periodicals in the Libraries of Australia.* Supplement 1928-1933. Pp. xx + 453. Brown, Prior, Melbourne.

FENICHEL, OTTO. *Outline of Clinical Psychoanalysis.* Pp. 492. Norton. \$5.00.

LOEB, LEONARD B. *The Kinetic Theory of Gases.* Pp. xx + 687. 80 figures. McGraw-Hill. \$6.00.

SMITH, THEOBALD. *Parasitism and Disease.* Pp. xiii + 196. Princeton University Press. \$2.00.

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