hundred rats. The figures obtained varied between 140 and 60, with 9/10 falling between 80-100 mm. It was then thought advisable to compare readings obtained by this method with those secured by direct needling of an artery. Both readings were made in the same 10 minutes, in an animal which remained in apparently the same stage of anesthesia, and in which the direct reading was obtained virtually without blood loss.

TABLE I.
Blood Pressure in Millimeters of Mercury.

Animal	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Indirect†	68	97	85	91	112	74	96	105	75	65	102	88	110	70	88
Direct‡	74	91	76	94	102	78	88	112	81	77	98	80	112	75	94

† Using left femoral artery.
‡ 1-5 inclusive using abdominal aorta, 6-15 inclusive the left carotid.

7696 P

Observations with Oerskov's Milk Bacillus.

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Oerskov[1] reported that in the cultures of certain *fluorescens* strains isolated from milk, if the media contains saccharose, masses of tiny non-stainable granules develop which multiply independently from the bacteria. The cultures on ordinary agar plates correspond in every respect to the cultures of other *fluorescens* strains; on saccharose agar plates the colonies consist mostly of an amorphous substance in which strands of bacteria are embedded. By direct examination under the microscope or by the usual bacterial staining methods in the amorphous substance, no form elements are visible. In dark background preparations it seems to consist of innumerable tiny granules small enough to pass a Berkefeld filter. If the development of the colonies is examined under the microscope, it is seen that the bacilli and the amorphous substance start to grow separately. The amorphous substance grows in tiny round transparent colonies with a more refractile zone at the center. Most of these colonies coalesce later with the colonies of the bacillus and those which remain free grow only to a size of 0.1-0.2 mm. Oers-

[1] Oerskov, T., *Zentrbl. f. Bakt. I. O.*, 1931, **120**, 310.

kov did not succeed in growing the granules separately from the bacteria but when a bacillus emulsion was killed by moderate heat and planted, the granule colonies grew between the dead bacilli. The conclusion of Oerskov is that a virus-like organism is growing in symbiosis with the bacillus.

We succeeded at the first attempt in isolating Oerskov's bacillus and were able to verify his most important observations. In the following points our observations supplement those of Oerskov or are at variance with them.

The granules can be cultivated separately from the bacillus. The granule colonies are of 2 distinct types; one is smaller, perfectly transparent and gives no growth in transplants; the other is somewhat larger and, as already indicated by Oerskov, it contains a more refractile central zone. This central zone is really grown into the agar. If the plates are washed, they remain unchanged; if the agar is stained, they are visible as small unstained spots in the agar in which no bacteria are visible. The larger colony type can usually be transplanted and in the transplants numerous colonies of the first type grow which then cannot be further transplanted. If a fresh saccharose broth culture is filtered through a Berkefeld filter and planted immediately after filtration, innumerable tiny colonies belonging to the first type develop in the transplants. Bacteria are never reproduced in the filtrates or in the transplants from granule colonies.

The bacteria exert no growth promoting effect on the granules and there is no reason to assume a symbiotic relationship between them. The growth of the transplants is not affected by the presence of dead or living bacteria in the agar or on the agar surface or by the proximity of bacterial colonies.

The granules originate from disintegrating bacilli. The most appropriate medium for the study of the derivation of the granules from the bacteria is dextrose broth. In the cultures grown in this medium granules are not visible in dark background preparations but a few minutes after addition of saccharose a large number of the bacilli disintegrate and are transformed into clumps of the characteristic granules. We observed a Gram negative bacillus, not belonging to the *fluorescens* group, which showed the same phenomena on saccharose agar as Oerskov's bacillus. The bacilli in the culture of this strain grew to very large crescent shaped forms before they disintegrated. The granules continue to multiply after the disintegration of the bacillus. In most cultures, especially in dextrose and saccharose broth, there are also invisible elements

which give rise to granule colonies. If the broth is plated on saccharose agar, direct examination under the microscope shows that granule colonies grow mostly in places where no bacteria were deposited.

The phenomena observed with Oerskov's bacillus show, in addition to characteristic differences, close similarities to the phenomena described in previous notes with Gram-positive aerobic bacilli.[2, 3] As we have already indicated, these phenomena are probably closely related to the mucoid fermentations and the production of bacterial capsules.

We have formed so far no definite opinion concerning the nature of the amorphous substance and its connection with the bacteria, though it is probable from analogies to the Gram positive bacteria, that it contains living elements different from the usual bacterial forms.

7697 P

Presence of Vitamin B_1 in the Gastric Juice.

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Impaired functioning of the digestive system was for a long time known to be one of the earliest and most prominent manifestations of experimental vitamin-B deficiency. A diminution of gastric secretion was also reported repeatedly (Miyadera,[1] Shinoda,[2] Farnum,[3] Gilman[4]). The data concerning the gastric secretion were however not very consistent, and furthermore there were considerable difficulties in interpretation for the reason that the experiments quoted above were complicated by many other factors, particularly by a loss of appetite and usually a high degree of inanition in the experimental animals. Recently it was demonstrated in this laboratory that a marked diminution of gastric secretion occurs in dogs on

[2] Dienes, L., PROC. SOC. EXP. BIOL. AND MED., 1932, **29**, 1205; 1934, **31**, 1211.

[3] Peirson, O., and Dienes, L., PROC. SOC. EXP. BIOL. AND MED., 1934, **31**, 1208.

[1] Miyadera, K., *Biochem. Z.*, 1921, **124**, 244.

[2] Shinoda, G., *Z. f. d. ges. exp. Med.*, 1924, **40**, 274.

[3] Farnum, M. B., *Arch. Int. Med.*, 1926, **37**, 42.

[4] Gilman, A., Dissertation, Yale University, 1931. Quoted from Cowgill, G. R., *J. Am. Med. Assn.*, June 18, 1932.