of all of the lesions took place at about the same time irrespective of the type of dressing applied, that (2) the "Reynals Factor" markedly enhanced the size of the lesions, that (3) the bacteriophage lysate obtained with the highly invasive strain, presumably containing "Reynals Factor", definitely increased the size of the lesions as compared to the controls, and that (4) the bacteriophage propagated on the homologous non-invasive strain though causing no enhancement, produced no therapeutic effect.

Thus it is apparent that if the culture of staphylococcus used in the preparation of the bacteriophage happens to be of the invasive type the local application of the lysate thus prepared may result in undesirable local reactions.[2] Similar experiments performed with highly invasive staphylococcus are now in progress, and will be reported subsequently.

8117 P

Morphology of Bacillus of Rat Leprosy.*

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Ziehl-Neelson stained sections of tissues prepared by the new freezing and drying technique (Gersh,[1] Bensley and Gersh[2] and Scott[3]) show bacilli of smoother outlines and much less granular in consistency than those brought to light by the same stain after fixation in the ordinary way in 10% formalin in absolute alcohol or Regaud's fluid. Since the new and the old methods give such different results with exactly the same material (liver nodules of rats, kindly sent to us by Drs. E. B. McKinley and E. L. Walker) both cannot be equally true to life. The freezing and drying technique involves instantaneous freezing of tissue by plunging into liquid air and dehydration *in vacuo* while still frozen. No fixative is required, no alcohol for dehydration and no xylol for clearing. Bensley and Gersh have great faith in it. They conclude, be-

2 King, W. E., Boyd, Jr., D. A., and Conlin, J. H., *Am. J. Clin. Path.*, 1934, **4**, 336.

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1 Gersh, I., *Anat. Rec.*, 1932, **53**, 309.

2 Bensley, R. R., and Gersh, I., *Anat. Rec.*, 1933, **57**, 369.

3 Scott, G. H., *Protoplasma*, 1933, **20**, 133.

cause well-formed Nissl bodies can be stained in sections thus prepared, that the said bodies must exist in living nerve cells despite the fact that they have never been seen therein. Thus far we have not compared the homogeneous looking bacilli of the new technique and the more broken up organisms observed in preparations made by standard methods with bacilli of rat leprosy in living cells. We have, however, made a parallel study of human tubercle bacilli in visceral lesions (for which we are indebted to Dr. Ralph S. Muckenfuss). In this case also, the bacilli were distinctly less granular after the freezing and drying technique than in tissues preserved by immersion in 10% formalin in absolute alcohol, straight 10% formalin, formalin-Zenker or Regaud's fluid. These observations suggest, either that there is some unsuspected flaw in the freezing and drying method, or that the bacillus of rat leprosy and the human tubercle bacillus as they exist in the tissues are less granular than is commonly supposed.

8118 P

Effects of Extract of Cattle Anterior Pituitary Gland on Endochondral Ossification in Young Guinea Pigs.

MARTIN SILBERBERG. (Introduced by Leo Loeb.)

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It has been established that the anterior pituitary gland enhances bodily growth as a whole, but it is not yet known whether it has a specific effect on the growth of cartilage and bone and, if this should be so, wherein the effect consists. We wished, therefore, to study the action of anterior pituitary gland extract on the epiphyseal cartilage and bone formation in young not yet fully grown guinea pigs.

About 30 guinea pigs (fall and winter animals) on the average weighing 130 to 220 gm. were injected with from 1 to 1½ cc. extract[1] daily. Additional guinea pigs, of similar weight, were not injected and served as controls. The injections were continued up to 21 days. After 4, 6, 11, 14, and 21 days, the animals were killed and tibia and fibula were used for the study of the epiphyseal line. In each case the specimen, as a whole, was fixed in 10% formalin; then put into absolute alcohol and subsequently trans-

[1] Loeb, Leo, and Basset, R. B., PROC. SOC. EXP. BIOL. AND MED., 1929, **26**, 860. Silberberg, M., *Virchow's Arch.*, 1933, **289**, 201.