

(4) Into a second dog a similar dose of ephedrine is injected intravenously. Shortly after the maximum response has been secured—2 to 3 minutes after the injection—1 mg. of cocaine per kg. is administered intravenously. There should be a sharp break in the curve, and blood pressure should reach a constant level in about 5 to 7 minutes (Fig. 2, D1 and D2). Although in these 2 tracings a constant level is reached a little above normal blood pressure, we have 2 other tracings in which it fell to normal, though not below it.

These 2 demonstrations show that upon intravenous injections of small doses of cocaine the epinephrine sensitization and the ephedrine desensitization occur almost immediately. According to Trendelenburg² the beneficial effect of cocaine and other local anesthetics upon the epinephrine response may in part be due to the slowing of circulation by such substances, "so that the epinephrine reaches the arterioles in concentrated solution." Our tracing B2 shows that the sensitization takes place just as well when the epinephrine is already in the arterioles.

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Microincineration of Tubercles.

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The technic of microincineration as developed by Policard¹ and modified by Scott² has been used in studying the mineral content of tubercles from human tuberculosis and experimental tuberculosis in guinea pigs. Alternate serial paraffin sections were stained and ashed. The ashing process was carried out in a muffle furnace at a temperature of approximately 540°, about 4 hours being allowed for the incineration.

The general observation made by previous investigators that the nucleus is the part of the cell richest in ash, was confirmed. The

² Trendelenburg, P., *Die Hormone*, Julius Springer, 1929, 1, 244.

¹ Policard, A., and Doubrow, S., *Ann. d'anat. path. med.-chir.*, 1924, **1**, 163; Policard, A., *Protoplasma*, 1929, **7**, 464.

² Scott, G. H., *Compt. rend. soc. biol.*, 1930, **190**, 1073, 1323; *Proc. Soc. Exp. Biol. and Med.*, 1932, **29**, 349; Scott, G. H., and Horning, E. S., *Am. J. Path.*, 1932, **8**, 329.

distinction was found to be conspicuous in the tuberculous spleen, where the mineral-rich Malpighian corpuscles stood out sharply against a mineral-poor background, the latter being found by comparison with the stained sections to consist of aggregations of epi-

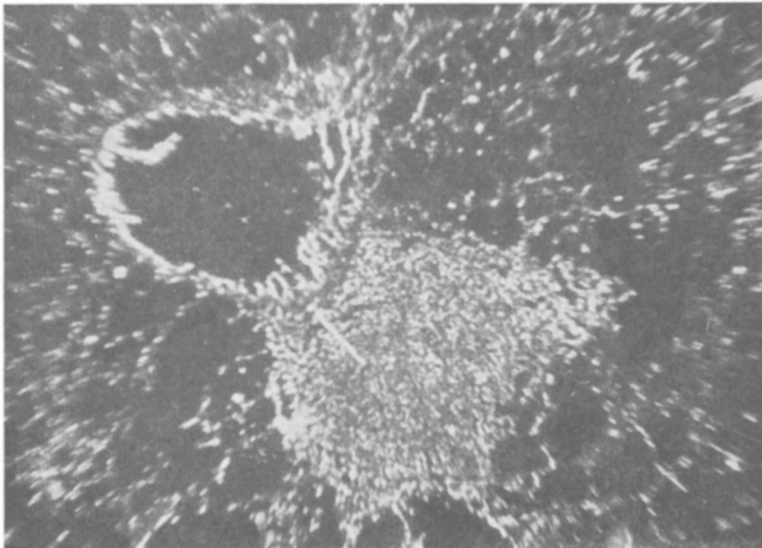
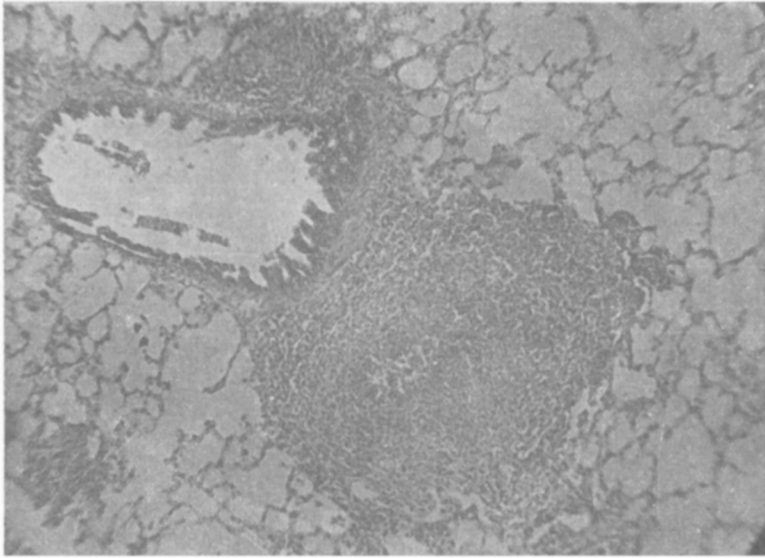


FIG. 1.

thelioid cells. In general the epithelioid cell cytoplasm was found low in ash.

As a rule regions of degeneration and recent necrosis were found to contain less ash than the corresponding undegenerated tissue. This was the case in guinea pig tubercles, acute tuberculous pneumonia in man and chronic fibrocaceous human tuberculosis. A peribronchial tubercle (guinea pig) in the corresponding stained and ashed sections is shown in the accompanying figure (Fig. 1). It will be noted that the center of the ashed tubercle contains somewhat less mineral than the outer zones, and that this region corresponds to a spot of early degeneration in the stained tubercle. It seems reasonable to attribute the loss of mineral to karyolysis and diffusion away of soluble mineral material.

In later stages of the human disease remineralization of necrotic tissue could be observed. In sections of experimental tuberculosis kindly furnished by Dr. Spies, taken from tuberculous rabbits given intensive oral treatment with viosterol, the speed of this process was found to be much enhanced (compare with other results of Spies³). On the other hand in 2 tuberculous guinea pigs given 50 cc. of viosterol by mouth in the course of a month in this laboratory no calcification was observed. It appears that viosterol is usually but not always effective in causing calcification in experimental tuberculosis.

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Reaction of Anterior Hypophysis of Immature Rat to Placental Hormones.*

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Lehmann¹ has reported that injection of placental extracts brings about pregnancy changes in the anterior hypophysis of the female rat.

³ Spies, T. D., *Am. Rev. Tuberc.*, 1931, **23**, 169; Spies, T. D., and Berryhill, W. R., 1932, **26**, 275.

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¹ Lehmann, J., *Virchow's Arch. f. path. Anat. u. Physiol.*, 1928, **268**, 346.