At the end of the third week of the experiment, all the animals were sacrificed and the Harderian glands were examined under ultra-violet light. The glands were normal in all but 3 of the experimental animals. In the 2 rats in which porphyrin accumulation had been very slight or absent, the Harderian glands were found to be abnormal. In one of these rats, both glands were abnormally small; and in the other, one gland was small and almost non-fluorescent. However, in the third rat in which one gland was likewise small and non-fluorescent, porphyrin incrustation was similar to that observed in water-limited rats with normal glands.

Summary. Porphyrin incrustations on nose and fur, the most conspicuous symptom of pantothenic acid deficiency in albino rats, has been induced by partial dehydration of normal rats. This indicates that pantothenic acid may be involved in the regulation of water metabolism.

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Effect of Antigenic Material from *Eberthella typhosa* upon Migration of Guinea Pig Leucocytes.

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Recent work by one of the authors (Morgan)[1, 2] demonstrated that an experimental leucopenia could be produced in rabbits by the intravenous injection of a protein-free antigen derived from *Eberthella typhosa*. Because of this property of the antigen it was desired to determine whether the material would exert a positive or negative chemotaxis towards polymorphonuclear leucocytes.

The technic employed in these experiments was that of Chambers and Grand.[3] It utilizes a small capillary tube filled with the material to be tested and one end of this tube is sealed with beeswax. This capillary is embedded in a drop of normal guinea pig plasma with its open end near a small fragment of normal adult guinea pig spleen. (The plasma was prepared with 1:1000 solution of heparin.)

* Part of this work was carried out under the award of the Taussig Traveling Fellowship of the University of California.

1 Morgan, H. R., PROC. SOC. EXP. BIOL. AND MED., 1940, **43**, 529.

2 Morgan, H. R., *J. Immunol.*, in press.

3 Chambers, R., and Grand, C. G., *J. Cell. and Comp. Phys.*, 1936, **8**, 1.

After a few hours' incubation at 37°C the leucocytes begin to migrate from the fragment of spleen, and then, depending upon the properties of the material in the capillary tube which lies at right angles to their path, they either turn into the tube or avoid its open end.

The substances tested were (1) cells of *Staphylococcus albus* to serve as a control and (2) *E. typhosa*. Each of these was washed 3 times and suspended in Ringer's solution. The third was an antigenic extract of *E. typhosa* cultured in a synthetic medium and prepared as described by Morgan.[1, 2]

Twelve or more satisfactory preparations were made with each material and observed at intervals after 3 to 24 hours' incubation. The results of these tests, in brief, were as follows:

(a) With *Staph. albus,* which served as a control, the migration of the leucocytes from the splenic fragment was very pronounced, especially to the area about the point of the capillary tube. The leucocytes entered the tube in all preparations, and in most cases completely filled its lumen.

(b) With *E. typhosa,* the total migration of leucocytes from the splenic fragment appeared to be somewhat inhibited. The number of leucocytes reaching the tube was much smaller than with *Staph. albus* and but few of them entered the tube.

(c) With the antigen prepared from *E. typhosa,* the migration of leucocytes from the tissue appeared to be much repressed and few, if any, leucocytes invaded the capillary tube.

The foregoing results showed that although washed typhoid cells exerted a rather weak positive chemotaxis for the leucocytes, the antigenic extract of typhoid cells had a negative chemotactic effect. *Staphylococcus albus,* which gave strongly positive chemotaxis, constituted a useful control for the experiment.

It might be suggested that the release of this protein-free antigenic material from organisms of *E. typhosa* present in the lesions of the infected host may be a factor in the observed lack of infiltration of polymorphonuclear leucocytes into these areas in typhoid fever.