tococcus septicaemia. These concentrations are found to be significantly lower than those in normal rabbits.

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A Thermoregulated Foot Cradle for the Treatment of Peripheral Vascular Disease.

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When the circulation to an extremity is impeded the ability to maintain the proper temperature of the part may be seriously impaired. Therefore it seemed that patients with gangrene of the feet due to peripheral vascular disease might be benefitted by discovering and maintaining the temperature optimum for the circulation in their feet. This preliminary communication is submitted because of the relief from pain which has followed this procedure in 3 cases, two of diabetic and one of arteriosclerotic gangrene.

Each patient had a spot of dry gangrene on one great toe. The local lesions had been treated by placing the feet in a bed cradle containing an electric bulb permanently lighted, but pain had persisted.

Procedure. The threatened feet were placed in a large water bath equipped with a stirring device and heating unit. At the initial temperature, about 31°, the patients complained that the cold caused pain, and the skin was pale and blue with patches of deeper cyanosis near the gangrenous areas. As the temperature was gradually raised (about 1°C. in 5 min.) the pain lessened and the color improved. At a temperature of 34° in 2 patients, 35° in the third, pain disappeared completely and the color of the feet approached the normal. After the temperature had risen another degree pain and cyanosis returned. Increasing pain and deepening cyanosis accompanied a further rise of temperature. Therefore 34° or 35° appeared to be the optimum temperature for the feet of these patients.

After discovering the optimum temperature, a foot cradle* equipped with a thermoregulator was placed upon the patient's bed and the gangrenous foot kept in it constantly. The thermometer

* This cradle was demonstrated at the scientific exhibit of the American Medical Association meeting at Philadelphia, June, 1931.

was set to maintain the air at 1°C. above the temperature optimum for that foot in water (to allow for the cooling effect of evaporation from the skin). In 2 cases relief of pain promptly followed. The third patient was much more comfortable but attacks of pain persisted; therefore the air temperature was changed from 35° to 37°, then back to 35°, and finally to 33.5°. This last temperature was accompanied by almost complete relief. In all these cases the gangrene cleared up without amputation.

Conclusions. The optimum temperature for the feet of my patients proved to be considerably below their mouth temperature. It corresponded closely with the skin temperature of the feet of normal persons. When this temperature was rigidly maintained comfort was at a maximum and the color of the feet most closely approached the normal. Slight deviations from it were accompanied by pain and cyanosis.

It appears reasonable to believe that strict maintenance of the optimum temperature would increase the chances of recovery in many cases of gangrene secondary to peripheral vascular disease.

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Closed Loop Fluid.*

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In the course of work previously reported[1] on closed loops of small intestine, observations were made upon the nature of the fluid aspirated from the distended loop after complete recovery of the animal. While a closed loop may not show any accumulated fluid for weeks at a time it may at intervals become filled with fluid, which must be aspirated to prevent distension and necrosis of the loop. This fluid is gray in color and has a specific gravity of 1.012 (average of 108 specimens).

The reaction, determined by the quinhydron electrode, varied within relatively wide limits: 47 jejunal loop specimens gave an average pH of 7.5 with extremes of 9.0 and 6.3; 51 ileal loop specimens gave an average of 7.7 with extremes of 9.0 and 6.2. All

* Aided by a grant from the Committee on Scientific Research of the American Medical Association.

[1] Burget, Martzloff, Thornton and Suckow, *Arch. Int. Med.*, 1931, **47**, 593.