

Hypostatic congestion and post-mortem rigidity gone. Examination of head: brain very large, no adhesions; the pia mater at base was adherent slightly; no recent lymph. Spinal cord: on opening the canal red stained serum came out after division of the dura mater; the pia mater on the posterior surface is a bright red, on anterior surface it was duller red. The redness is most marked in the cervical and upper dorsal region, showing that it is not hypostatic. Examination of the thorax indicated no disease, though there was a white ante-mortem clot in the right auricle.

*Abdomen.*—The liver mottled with yellow spots, friable, and dark red. The omentum was destitute of fat. There was no tubercle to be seen. The spleen was normal.

*Kidneys.*—Enlarged, capsules thickened, and easily separate. Both kidneys were thoroughly “rotten,” so much so that one could hardly hold them. There were caseous cavities, varying in size from a pin’s head to a filbert. There was no healthy tissue to be seen. The pelves were dilated, and contained bloody urine.

The bladder was thickened, congested, and contained bloody urine.

The diagnosis was acute spinal meningitis, and tubercular disease of the kidneys of long standing,—the wonder being that there were no marked symptoms of the tubercular disease of the kidneys during life.

(To be continued.)

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## VII.—TREATMENT OF SEVERE CASES OF BURNING BY HEBRA’S WATER-BED.

By W. J. LAWRIE, M.D., AYT.

THE report of a recent case of death by burning in Edinburgh is my reason for drawing attention to the treatment of such forms of injury by Hebra’s water-bed. The bed, which is simply a specially constructed form of bath, is highly suited to hospital practice, from its simplicity and efficiency, while the patient requires at the hands of nurses and dressers scarcely any attention. But it is not only cases of burning that may be advantageously treated in this way—all diseases associated with loss of epidermis, viz., extensive sloughing ulcers, erysipelas, pemphigus foliaceus, etc., all of which are associated with severe pain, supply most excellent examples. The entire absence of pain and apprehension on the part of the patient, associated with the removal of old dressings and application of fresh ones, is a marked and favourable element in treatment by the bath. The wounded surfaces are continuously out of contact with the air, and as they are not covered with any form of dressing, the discharges escape at once into the water, and the wounds are kept clean. There is scarcely any limit to the time patients may remain in the

bath; in more than one case they have been continuously submerged for 385 days and nights, only leaving the water for functional purposes.

In the Vienna General Hospital a separate ward is devoted to their use, and in the Royal Infirmary of Glasgow one has recently been established.

The following account is from Kaposi's *Pathologie und Therapie der Hautkrankheiten*:—

“In Hebra's water-bed we have an agent which in all its bearings on the treatment of severe burns we cannot value too highly. It consists of a zinc vessel, constructed in the framework of a bed. In the vessel an oblong iron frame is suspended by chains. The frame is so constructed that the portion where the patient's head is to lie may, by a hinge motion, be raised to an angle with the other part. The whole frame can be raised or lowered by means of toothed wheels. On the frame a thin mattress is laid; the patient rests on the mattress. When the zinc vessel has been filled with water, the bed, carrying the patient, is gradually sunk beneath the surface, taking care, of course, to keep the head out of water.

“At first the patient feels the water too hot, upon which it must be cooled. Feelings of rigor now set in, and additional warm water must be added. After this he feels most comfortable—the pains have almost entirely disappeared.

“The water-bed does not offer a remedy against the severe constitutional effects of all burns, nor against their fatal ending in all cases. Patients die of extensive burns under this treatment as under any other, but they die at least free from pain.

“On the other hand, the continual bath is an effectual therapeutic agent, and a real benefit for patients and attendants during the long period of suppuration. Let us consider the case. By the ordinary methods such patients cannot be kept in a state of perfect cleanliness, because the dressing of extensive burns requires much time. Lifting and turning, as well as separation of the adhering bandages, are most painful. Here fresh bleeding is induced, there retention and degeneration of the secretions occur, and fever is constantly maintained. There is continual dread of septicæmia, and constant nervous apprehension on the part of the patient at each dressing of the wounds. All of these disadvantages cease on the use of the water-bed. The patient lies and moves as he wishes, sleeps, eats, and employs himself according to his tastes. The wounds are always covered, always clean, and granulate normally, indeed often so luxuriantly that they must be repressed.

“According to those indications, therefore, Hebra's water-bed is, from the beginning, the best agent against pain, and during the period of suppuration is the best therapeutic agent. Removal of scabs takes place earlier. Retention of pus is avoided. Danger of septicæmia and erysipelas is reduced to a minimum, fever ceases, sleep and appetite return, by means of which the organism is en-

abled to withstand the effects of severe suppuration. In a word, granulation and healing, with the absence of all subjective and objective accompaniments, are furthered to an extraordinary degree by the water-bed."

### VIII.—REMARKS ON THE PUBLIC HEALTH OF THE INSULAR RURAL DISTRICT OF SCOTLAND.

By ROGER M'NEILL, M.D., Gesto Hospital.

No account of any scientific value has, to my knowledge, ever been given of the state of the public health in the Hebrides. The Registrar-General, in the Detailed Reports of the Births, Deaths, and Marriages, gives the rate of mortality in the towns, the mainland rural, and the insular rural districts. The latter includes the rural parts of Orkney and Shetland, Bute and Arran, in addition to the other islands on the west coast of Scotland. The number of deaths is given for each parish separately. The age at death is given for the islands in groups according to the county to which they belong. The causes of death are only given collectively for all the islands. The facts available have not been classified in such a way as to give any clear idea of the healthiness or unhealthiness of the inhabitants. The difficulty of collecting statistics renders any information less complete than might be considered desirable. It is, however, sufficient to show that in regard to longevity and to the death-rate at different ages the islands of Scotland compare favourably with any other part of Britain.

In a Report to the Trustees of the Gesto Hospital, 1885, I gave a table showing the yearly and average death-rate in the islands on the west coast of Scotland for the seven years 1878 to 1884 inclusive. The average mortality was as follows:—Islay, 19·44; Mull, 16·77; Skye, 16·86; Raasay, 16·73; Tyree, 16·88; Barra, 16·45; Gigha, 15·70; Colonsay, 15·47; Coll, 15·10; North and South Uist, 14·70; Lewis and Harris (*minus* Stornoway), 14·23; Jura, 13·34; Small Isles, 13·24. During the same period the average mortality in the five districts into which Scotland is divided by the Registrar-General was as follows:—

Principal Towns.	Large Towns.	Small Towns.	Mainland Rural.	Insular Rural.
23·36	21·88	19·21	16·06	15·68

The apparent healthiness of the insular rural district might be considered to be owing to the constitution of the population. But it can be shown that the chances of life due to that cause are more in favour of the towns. Thus, in the insular rural district there is a smaller percentage of the population under 5 years of age and from 20 to 40, while above 60 the proportion is considerably higher than anywhere else in Scotland. In Scotland as a whole the death-rate among the population from 20–40 is much lower than among those