Clinical and other Notes

of sawdust, and during about three months added to it 626 ounces, i.e., 39 lbs., of urine, with the result that 3½ lbs. of filtrate appeared. The sawdust therefore absorbed, or caused to disappear by evaporation, six times its own weight of urine; and Dr. Poore asserts that his "experiments with sawdust, extending from December to July, and carried on in all kinds of weather, and indoors as well as out of doors, have in no instance given rise to offensive smell. If the surface of the filter, which has been some time in use, be stirred, and the nose almost buried in it, a strong smell of ammonia is perceived, but it is the smell of pure ammonia without foulness. The filter which I kept in my room at the College for some time never made me aware of its presence by any odour" ("Rural Hygiene," third edition, pp. 180-181). I think that the reason why sawdust has not been long since seriously tried in India is, as pointed out by Lieutenant-Colonel H. A. Haines (JOURNAL OF THE ROYAL ARMY MEDICAL CORPS, vol. vi., p. 671), because it is not readily obtainable, and, in the Simla Hills at any rate, it would be well-nigh as expensive as a chemical disinfectant; but as I have shown in another article, we have everywhere on the Himalayan slopes an excellent absorbent vegetable material which will, I feel assured, be found almost, if not quite, equal to sawdust in most respects; I mean pine needles (JOURNAL OF THE ROYAL ARMY MEDICAL CORPS, vol. vi., p. 662). These needles can be obtained in the vicinity of every hill station for the labour of collecting them; and I suggest that troughs containing the needles in the form of a rough powder should be placed on the verandahs of barrack-rooms and used as night urinals. These troughs should be placed at a convenient height, and well lighted by reliable lamps, as much of the fouling of the verandah under the existing system is, as I have shown, due to the fact that the urine receptacles are placed on the floor and in the dark.

This method is, I submit, worthy of trial, as it has the following advantages:—

(1) It is inexpensive; (2) it requires no elaborate apparatus; (3) the resulting mixture of urine and pine needles can readily be burnt; (4) the management of the troughs is quite within the comprehension of the native mind; and (5) the absorbent material is harmless and deodorant.

A CASE OF DISLOCATION OF THE SPINE; LAMINECTOMY; RECOVERY.

BY CAPTAIN L. W. HARRISON.
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PRIVATE M., 1st The Queen's (R. W. S.) Regiment, was admitted to hospital on November 25th, 1905, with the following history: About half an hour previously to admission he was engaged in building a bomb-proof shelter, and while crouching underneath undercutting the earth,
the whole of the overlying earth gave way, falling on his back and burying him. He was extracted after about ninety seconds. On admission he was found to be bruised about the back and face, with subconjunctival hemorrhage of both eyes. There was considerable swelling about the lower dorsal region, and on running the finger over the spinous processes, a marked depression was felt between those of the last dorsal and first lumbar vertebrae. No undue mobility or crepitus was noted. He complained of great pain all down his back, with tingling in the legs. Sensation to touch, heat and cold and pain were present, though dulled. Superficial reflexes and tendon phenomena in both lower limbs were absent, and there was complete paraplegia. Later the urine had to be drawn off by catheter, and an enema to open his bowels was returned unchanged. During the night, in spite of two hypodermic injections of morphia, \( \frac{1}{3} \) grain, he continually shouted with the pain in his back and legs.

A diagnosis of partial dislocation of the spine, with hemorrhage outside the cord, was made.

He was placed on a hard bed with all arrangements to prevent bedsores, and besides sedatives as required, he was put on 10 grains of urotropine thrice daily in view of probable bladder complications.

Colonel Whitehead, R.A.M.C., saw him with me next day, and advised waiting before operating.

On November 27th his condition was noted to be unchanged, except that some sensation had returned to the bladder, so that he asked for his urine to be drawn off. His bowels were opened, the motion being passed into the bed without warning or consciousness. There was rather less pain. The urine had become slightly ammoniacal, so the bladder was washed out.

On November 30th he was found to have much less pain, and he was able to pass his urine. Complete paralysis, with loss of reflexes, and loss of control over the rectum, still remained unchanged, and Colonel Whitehead, who saw him with me, agreed that operation with a view to removal of any blood clot pressing on the cord was advisable.

The troops had left the station on manoeuvres, carrying almost all the surgical instruments, so I had to collect instruments from various sources for the proposed operation, which, with the sterilisation of the silk for sutures, caused a delay of two days. Meantime the patient's condition remained unchanged.

**Operation.**—On December 2nd, assisted by Captain F. C. Rogers, I.M.S., by a \( \mathbf{I} \)-shaped excision extending from the eighth dorsal to the third lumbar spine, I exposed the spinous processes and laminae of the eleventh and twelfth dorsal and first and second lumbar vertebrae, and found the supraspinous ligament between the last dorsal and first lumbar vertebrae and the ligament connecting the left lower articular process of the last dorsal and corresponding upper process of the first lumbar
vetebrae torn. The spines of the eleventh and twelfth dorsal and first lumbar vertebrae having been removed, I attempted to snip the laminae at their bases with a pair of straight bone forceps, but these being ill adapted by their shape and also blunt, this failed; a similar attempt to cut the laminae with a locally made Hey's saw also failed, so with a half-inch trephine I removed discs of bone from the laminae of the last dorsal and first lumbar vertebrae at the bases of the spinous processes. The ligamenta subflava in this situation was torn and a clot the size of a haricot bean was lying on its posterior surface, while on its anterior surface was some organised blood clot. Snipping the same laminae outwards with forceps, the dura mater was exposed. It appeared healthy and shining, and did not bulge, so it was decided not to introduce complications by opening it, particularly as the conditions already found were sufficient to account for the patient's symptoms. Haemorrhage, which was pretty profuse without, was controlled by packing long pads of lint soaked in very hot water against the muscles, and by a previous injection of hemisine into the muscles on both sides of the first incision. The wound was closed by deep silk sutures holding the muscles, and similar sutures through the skin, a plaster jacket was applied, and he was put to bed on his face. He slept pretty well, but complained of the position.

On December 3rd he had to be changed to the side, as he positively refused to lie prone any longer. Two days after the operation he contracted his left rectus femoris slightly. The urine had to be drawn off till December 5th, when he passed it voluntarily. Except that the leg muscles seemed firmer day by day, no further increase of power occurred till December 11th, nine days after the operation, when he very distinctly contracted his right rectus femoris. The skin sutures were removed on the 13th, when the wound was found to be perfectly healed except at the top half inch, where a narrow line of granulations showed.

On December 14th he contracted his right hamstring muscles, and his power continued to improve, till on January 20th he commenced trying to walk, being able to move his legs, though not able to support his weight. On January 28th he walked across the ward unaided, and on March 3rd, when the plaster jacket was removed, he ran the length of the ward for my benefit. The only rise of temperature during the healing of the wound was fifteen days after the operation, when it rose to 99° F.

Patient, when last heard of, August 6th, was doing duty in the second battalion of his regiment, but it is likely that his back is not strong enough to allow of his performing all the duties of a soldier.