

The globulin venom is destroyed by high temperatures, but the albumin venom is not so affected.

The globulin venom poisons the respiratory centre, producing no paralysis of muscles; the albumin venom does not affect the respiratory centre, but produces marked and progressive motor paralysis.

I may here mention, that from the result of some investigations I have for some time been making upon the blood of many animals, I cannot consent to the generally received opinion that cobra venom exerts no influence upon the blood. My investigations, which will shortly be published, have convinced me that cobra venom decolorises, by driving out the hæmoglobin, a large proportion of the discs, and breaks up a large number of the white discs completely, filling the plasma with minute granules. The bacterial forms which are present in such large numbers, in cobra venom, I do not think have anything to do with the activity of the venom. When recovery takes place from poisoning with a dose of the poison insufficient to kill, it is not improbable that a condition of blood poisoning may supervene, secondarily, as in one of the cases I have quoted.

I may add in conclusion, that the animals experimented upon, were in all cases white rats, and the injection was made always under the skin of the back, in the dorsal region.

The globulin venom is slower in its action than the serum albumin, and a longer period often elapses after the injection before symptoms supervene, or terminate life. The globulin is very deadly, and when once the symptoms have supervened asphyxia rapidly ends the existence of the animal.

#### EXCISION OF TONGUE BY SCISSORS BY BILLROTH'S METHOD.

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Dr. O'Brien in his remarks accompanying a case of removal of the tongue by the ecraseur, published in the August number of the *Indian Medical Gazette*, claims for that method of operating a superiority over all others, more especially that of Whitehead's, on account of its simplicity and its freedom from any risk of hæmorrhage. Whitehead's method of removal by scissors is, I think, simplicity itself, but the hæmorrhage which generally accompanies it is so profuse and alarming that, in the absence of qualified as-

sistants, it is not suitable for dispensary practice. By combining it, however, with previous ligature of the linguals, introduced by Billroth, the operation may be rendered as bloodless as in that by the ecraseur. In the case which I published in the May number of the *Indian Medical Gazette*, the bleeding proceeded chiefly from a vessel situated near the left tonsil, which had been divided in removing portions of diseased tissue in that region, and had evidently no connection with the tongue. The bleeding from the cut surface of the tongue was general, and was arrested by pressure with a sponge. In the two following cases there was practically no bleeding, and no precautions were required to keep the mouth clear.

Ligature of the linguals when once performed on the living subject, becomes in subsequent cases an easy operation. The dissection necessary to expose the artery is deep, but the line of incision avoids important parts, till the hypoglossal nerve is reached, when a few touches with the knife exposes the artery. The hyoid bone should be fixed with the tip of left forefinger pressed in the great horn; the finger thus placed serves as a guide to the position of the artery.

In extensive disease of the tongue requiring removal of the whole organ, it would, I think, be difficult to fix the wire of the ecraseur sufficiently far back as to ensure its cutting through healthy tissue. In disease limited to one side of the tongue, the organ must either be split with the knife or scissors, or removed in its whole circumference; in the one case the hæmorrhage would be equally severe as in Whitehead's operation, and in the other a healthy portion of the tongue would be unnecessarily sacrificed. For these and other reasons removal by scissors is, I think, a more surgical proceeding than by the ecraseur, but I can fancy certain cases in which the latter would be the most suitable instrument to employ.

*Case 1.*—A male Hindoo, admitted on 2nd July with a large excavated cancerous ulcer involving the middle and part of the posterior third of the tongue. The tongue was fixed to the floor of the mouth. The linguals were first ligatured, the mouth was kept open by a Mason's gag, and the whole of the tongue, with a portion of the floor of the mouth on right side, was removed with Allingham's spring scissors. There was practically no bleeding. He was fed for three days with milk injected through a catheter passed through

the nostril into the œsophagus. The mouth was frequently washed out with Boracic acid lotion. He left the hospital on the 12th July, when the wound in the tongue was nearly healed; those in the neck united a few days after the operation.

*Case 2.*—A male Hindoo, aged about 62 years, came to the dispensary, as an out-patient on the 16th July, with a cancerous ulcer situated in the middle of the right side of tongue. The submaxillary glands on the right side were enlarged. He was in a very weak state of health, and was unable to swallow solid food, and had great difficulty in swallowing liquids. He had a frequent short, soft cough and consolidation of a portion of the base of right lung on the anterior aspect. I at first refused to operate, but slight improvement having taken place in his general health, his friends solicited me to remove the tongue, as it was impossible, under the existing conditions, that he could live for any length of time. I consented to do so in the hope that on the removal of the tongue the patient might be enabled to take a proper amount of nourishment and give him a chance for life.

He was admitted as an in-patient on the 31st July, when, after ligature of the linguals and removal of a diseased gland on the right side of neck, I removed about three-fourths of the tongue with the scissors, cutting obliquely from before backwards from the left side of tip. The bleeding was very slight, and required no special means for its arrest. He was unable to swallow on the following day, and attempts to feed him through the nose or mouth by passing a tube into the œsophagus almost entirely failed, owing to his dread of the operation and to the difficulty experienced in passing the tube beyond an obstruction situated behind the larynx; he gradually became weaker and weaker from want of nourishment, and was removed from the dispensary by his friends on the 6th August. I subsequently heard that he had died a few days after removal. His temperature after the operation was as follows:—

	7 A.M.	6 P.M.
31st July ...	100°	101°
1st August...	99°6'	100°
2nd " ...	100°2'	100°2'
3rd " ...	99°2'	101°8'
4th " ...	100°	100°6'
5th " ...	100°8'	100°
6th " ...	...	...

A REPORT ON ULCERS OF THE LEG OCCURRING AMONGST THE MEN OF THE 39TH NATIVE INFANTRY.

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During the rainy seasons of 1881 and 1882, a very large number of cases of ulcer of the leg came under my treatment in the Hospital of the 39th Regiment, Native Infantry, at Morar, and although all the cases did not run the same course, yet the majority presented such uniform characteristics as to admit of a general description being applicable.

**ANATOMICAL CHARACTERS.**—The ulcer occurred almost exclusively on the ankle, dorsum of the foot or the skin, showing a very marked preference for the inner malleolus—the part most exposed to friction. The ulcer begins as a slightly swollen boggy patch, the skin at the spot has a sodden appearance, and is of dusky red colour: there is considerable tenderness on pressure. The skin then gives way at a point in the centre of the patch, and through the opening so formed a small quantity of a tenacious yellowish discharge, often mixed with a little blood, escapes. It is in this stage that the men generally come to hospital.

If a probe be now passed in at the opening, it will be found that it can be moved freely under the detached skin to some extent in all directions.

The loosened skin then sloughs away, leaving a somewhat circular ulcer from ½ an inch to 3 inches in diameter, covered with a sticky greyish yellow exudation, and bounded by somewhat overhanging ragged edges and an areola of low œdematous inflammation.

In this state the ulcer may remain for some weeks or it may spread either slowly or, in some few cases very rapidly; usually however, after remaining stationary for a few days, it begins to heal.

Healing is always preceded by a return to the natural state of the œdematous ring of inflammation round the ulcer, and is usually rapid. A flat shiny scar is left after healing.

The average duration of each case was a little over three weeks, and they mostly ran a very uniform course.

**VARIETIES.**—The ulcer is essentially a superficial one, and in only an inappreciable minority of the cases did it pierce below the subcutaneous cellular tissue, and in all these the men were much below par.