so when the blood lies on a piece of cloth, &c. 2. That although the globules of mammalia may be circular, and those of birds and cold blooded animals elliptical, yet when we examine dried blood from a piece of linen, we find elliptical globules in the blood of mammalia, and round or triangular globules in the blood of birds; this probably depends on the mixture of some foreign particles with the globules." The opinion formed by M. Orfila was derived from his imperfect method of examination, and since his experiments no others have been made for the elucidation of this subject, at least with the microscope.

M. Barruel, however, attempted to resolve the question by chemical means. On mixing sulphuric acid with blood he pretended that he could distinguish by the smell alone the blood of different animals, and even the blood of the male from that of the female. But, although the experiments of M. Barruel were fully confirmed by several other medical men, we must acknowledge that the sense of smell is too uncertain and fallacious a test to be applied to questions of medical jurisprudence; besides, for the experiment of M. Barruel a considerable quantity of blood is required, a circumstance which rarely occurs when the opinion of a medical jurist is required.

Hence, it results that we are not acquainted with any means of distinguishing the different kinds of blood from each other.

MODE OF DISTINGUISHING THE BLOOD OF MAN AND MAMMALIA FROM THE BLOOD OF OVIPAROUS ANIMALS.

When the medical jurist has decided that a spot examined by him is formed of dried blood, his task is not finished. The accused person may pretend that the stain was produced by the blood of a fish, a bird, or any other animal. I have just shown that we possess no means of distinguishing the blood of different species of mammiferous animals from each other, but my experiments enable me to affirm that we can distinguish the blood of this class of animals from the blood of birds, fishes, and reptiles. The following is the process which I adopt:—I have already mentioned that when a blood stain is macerated for some time in water we obtain the fibrine in a separate state: it is to this mass that we must direct our attention. Having prepared a piece of glass, like that used in other microscopic researches, we place on it a drop of distilled water, and then, with the point of a needle, scrape off some particles from the stain; we should choose in preference the edges of the spot, because here the dried blood is thinnest. The particles thus scraped off will be four or five in number, and not larger than pins' heads. They are next placed carefully in the drop of water, and allowed to remain for some time, until the coloring matter is removed; this generally occurs in half an hour at most. When the coloring matter is dissolved, we must remove some of the water by inclining the glass plate so as to let it run off over the edge; we then take a second plate, and place it carefully over the drop of water, avoiding any degree of pressure; persons accustomed to microscopic observations will soon be able to ascertain the quantity of water necessary for any given experiment.

We have now the particles, deprived of color and fixed between two plates of glass. The latter are placed under the field of the microscope. Our attention should be directed, at first, to the transparent edges,

where we can examine the particles most readily. If the spots have been produced by the blood of a mammiferous animal, we now find an unorganised mass, enveloping some white globules; but if the blood be taken from an oviparous animal, we see a great number of oblong nuclei, closely applied to each other, in a coagulated mass of fibrin; the external edges of each globule are not visible. We thus distinguish easily the blood of a mammiferous from that of an oviparous animal; but the microscope does not enable us to distinguish the blood of man and other mammalia from each other, because the globules present no distinctive characters. The presence of hair, &c., may, however, furnish some useful information: thus we can easily distinguish the hair of a rabbit, ox, &c., from human hair.—*Gazette Med. de Paris*, September 3, 1842.

CASE OF GLANDERS IN A MAN, PRODUCED BY THE ABSORPTION OF MATTER FROM A HORSE. TO THE EDITORS OF THE PROVINCIAL MEDICAL JOURNAL.

GENTLEMEN,—If you deem the following case of glanders worthy of insertion, I beg you will give it a place in the "Provincial Medical Journal."

Yours obediently,

JOHN L. SCARBROUGH, M.R.C.S.

Sheldon, September 5, 1842.

In the latter part of May I was requested to visit Andrew Foot, aged thirty-six, of good constitution, and of rather spare habit of body. When I entered the house, I found him sitting on a chair in the kitchen. He told me he had had for several days a very troublesome place in the back part of his neck. On examination, I found a swelling (resembling a carbuncle), very hard, shining, somewhat oedematous at the sides, and black in the centre. I made some free incisions into it; ordered him to poultice it well, and gave him a little alterative medicine, and in a few days (June 3) the sore was quite healed. On the 6th he sent for me again; I found him laboring under severe pain in the head, with a hard pulse of 96 in the minute. I bled him to the amount of twenty-four ounces; gave him six grains of the hyd. submur., with ten grains of ext. colocynth. comp., which acted very freely on his bowels; he then found himself very much relieved, but complained of pain in his foot. Being served with a subpoena to the Exeter assizes, I lost sight of him for four days. On my return I visited him again, and found him in bed with his foot very much swelled; he told me he had been in so much pain that he was obliged to call in another medical man, who treated him for the gout (his foot had that appearance); however, in the course of two or three days the swelling appeared to have considerably lost its vitality, and became flabby; when punctured it discharged a quantity of sanious matter; several pustular spots appeared on the body, face, &c.; his foot became gangrenous; the pulse low, hard, and irregular; there was severe pain in the head; breathing difficult, with cough, and rigors. The foot continued to present a bad appearance,

surrounded by a high colored crysipelatous flush; wandering pains in the extremities; the pulse strong with thirst; the tongue became very tremulous, with considerable snuffing in the nose; the eyes and nose were very much tumefied; the snuffing very much increased; the expectoration was mixed with pus-like matter, which appeared to have been principally discharged from the nares by the mouth, as he was not able, from debility, to discharge it by the nose; also coma, with low muttering delirium. The tongue became very tremulous, as also the upper extremities; the pulse fluttering and thread-like; involuntary discharges; the swelling of the head and face considerably increased, extending down the throat; all which symptoms, after progressive aggravation, terminated in death. No post-mortem examination was allowed, but the body was in such a state as to oblige the friends to have it buried in a few days. The treatment was not conducted on any defined plan, but was varied according to circumstances, so as to meet the more urgent symptoms.

P.S. I could not discover any appearance of his having been inoculated, but having seen a glandered horse some time since, and thinking the above unfortunate case so much resembled that of the horse, induced me to inquire if there was any thing the matter with either of his horses, when he told me that one of them was laid up with a bad cold; on examining the animal, I found it had a profuse discharge from the nostrils, with the glands of the throat very much enlarged; it proved a decided case of glanders. The horse died in ten days afterwards.

TWO CASES OF BONY TUMORS.

By JONATHAN TOOGOOD, Esq.

Senior Surgeon to the Bridgwater Infirmary.

CASE I.—A servant of Mr. George Baker, of Cannington, a remarkably strong woman, twenty-one years old, consulted me on account of a tumor occupying the whole space behind the left ear, which had assumed its shape, and extended to the angle of the jaw. It was so firmly attached to the skull that it was only by fixing her head very firmly, and grasping the tumor with both hands, I could perceive the slightest lateral motion—so slight, indeed, that another surgeon, who saw the patient with me, thought it quite immovable. We both thought it bone. I made an incision through the scalp, which proved that our opinion was correct; but it was so closely bound down by the pericranium, that it became very difficult to detach any part of it; at length, however, I succeeded in doing so all around the base, and found that it was connected with the mastoid process by a bony attachment. With considerable difficulty I got a strong spatula between the skull and the tumor, and holding the tumor firmly with one hand, whilst I was endeavouring to raise it with the spatula in the other, the patient, who had been very ungovernable during the operation, made a desperate effort to get away from me, by which the tumor was torn from its attachment. It proved to be a solid piece of bone, weighing three ounces. The operation was a difficult one, and attended with a good deal of hæmorrhage. The skull was smooth under the tumor, except at the mastoid process, which was rough, and

appeared diseased. There was no exfoliation, and she recovered in a fortnight.

CASE II.—In this case the tumor was situated on the metacarpal bone of the ring finger of a boy of sixteen, and had grown to such a size as not only to render the finger useless, but to impede very considerably the motions of the hand. As all treatment had been unavailing, the removal was recommended, which was effected in the following manner:—An incision was begun at the carpus, by which the middle and little fingers were separated from the diseased ring finger, whose metacarpal bone was turned out at its articulation at the carpus. Notwithstanding the numerous vessels which were divided in the operation, none required ligatures; the parts were brought together and retained by plaster and bandage, and speedily healed.

Bridgwater, April, 1842.

ON THE EMPLOYMENT OF ARSENIC IN THE PRESERVATION OF MORBID PREPARATIONS.

By T. SPENCER WELLS, Esq., R.N., M.R.C.S.

Assist.-Surg. to the Royal Naval Hospital at Malta.

Very soon after I entered upon the duties of assistant-surgeon to this hospital, in January last, several highly interesting specimens of diseased organs and tissues fell under my observation in the dead-house, and I was much disappointed (as, I have no doubt, many of your readers have frequently been), to find how quickly the appearance of the parts changed from loss or alteration of color after preservation in spirit. Whilst conjecturing how these changes could be avoided with due regard to economy, it struck me that, as the stomachs of persons poisoned with arsenic were found in a state of perfect preservation after a considerable time, and under very unfavorable circumstances, solution of the arsenious acid would probably fulfil the object I had in view. In the early part of February a liver, which was the seat of an enormous abscess, was sent to me by Dr. Galland, the able professor of anatomy and surgery in the University of Malta, the putrefactive process having considerably advanced. The size was such that I hesitated about incurring the expense of alcohol, and determined to try the effect of an arsenical solution. It is proved that when arsenious acid is treated with boiling water, that water, when cool, will hold a much larger quantity of the arsenic in solution than when cold water alone is used at first. I accordingly made a saturated solution in boiling water, and filtered the solution, when cool, upon the liver, in sufficient quantity to cover it. After four days the fætor had diminished, but the solution had become turbid and blood-red in color. It was changed, and at the end of a fortnight the surface of the solution was thickly covered with a blue mould, and I again changed the solution. After a month, the same changes having taken place, the solution was a fourth time renewed, and I did not touch the preparation until yesterday. The experiment I then found to have been signally successful as far as regards the preservation of the liver; for in color, consistence, and general appearance, no alteration whatever had taken place; but the solution has entirely failed in