may be developed by adding sulphuric acid to blood and boiling. This process was formerly resorted to in order to distinguish blood in questionable cases, but it has been rendered obsolete since the discovery of the blood corpuscles by the microscope. Such a method would be well suited to drive off the ammonia, free from decomposition, together with the volatile oil—to which substances the odour is very likely due.

In my paper, referred to at the commencement, I was inclined to limit the occurrence of the manifestation to within a very short time of death. That it cannot be so restricted is evidenced by Instance 1, where it was encountered thirty-three hours before death. The conditions here were not unfavourable for its development. From the state of circulation, chemical changes were evidently proceeding in the blood, elevating its temperature and liberating those fugacious matters to which we would ascribe the origin of the death smell.

Richardson and Denis have shown by experiments that ammonia salts added to blood preserve its fluidity, by preventing the deposition of fibrin. This is not without a bearing upon the origin of the odor mortis. In gradual death coagulation commences first in the capillaries and proceeds towards the heart. The escape of ammonia from the blood in the peripheral vessels, liberating the volatile principles and engendering smell, permits local deposition of fibrin long before the heart has ceased its action.

But Lange has more recently investigated the action of ammonia in living and dead blood. He found that carbonate of ammonia added to living blood was only given off at a temperature of from 176° to 194° F. When, however, ammonia was added to blood from a dead animal it was evolved at a temperature of from 104° to 113° F. It is well ascertained that in many diseases, just previous to death, the blood temperature is raised above the lowest given by Lange. In some diseases, too, the blood heat falls below the normal body temperature. This affords another and principal explanation why the odor mortis may not be appreciable. These experiments of Lange also show why this smell is not developed by diseases characterized by great elevation of temperature—simply because the blood has lost none of its vital properties.

Walnut Hills, Cincinnati, Ohio.

432  R e a, Renal Calculus Discharged from the Kidney.  [April

ARTICLE XII.

Renal Calculus Discharged from the Kidney and Retained in Abdominal Walls Seven Years; Removal. By H. L. Rea, M.D.,
Professor of Anatomy in the Chicago Medical College, Chicago, Illinois.

Nov. 8, 1880, I was called in consultation by Dr. H. Tomboeken of this city, to see Miss E. W. She is 18 years of age, German parentage, fair complexion, plump and healthy, all the functions of the body normal.
Dr. Tomboeken, the attending physician, furnished me with the following history:

"In the spring of 1874, I was called to treat Miss W. for a lumbar abscess. The mother informed me that the patient began to complain one year previously of general bad feeling, losing strength and flesh, the face and limbs beginning to bloat, for which she was attended by her physician. Later a painful swelling showed itself in the left lumbar region which was poulticed until suppuration took place, and the abscess pointing was opened. About one pint of thick offensive pus was discharged, mixed with shreds half an inch long of what seemed rotten flesh. The abscess continued to discharge freely, the patient growing weaker.

"Topical treatment only was employed; poultices and injections, for about five months, during which time she continued to grow worse, and at the end of which time I was called in. The patient at that time was 12 years of age, anemic, edematous, and small for her age, hectic, with poor appetite.

"Examination showed a fistulous opening 3\(\frac{1}{2}\) inches to the left of lumbar spine, and one inch above the crest of the ilium, and a second cicatrix 2 inches nearer the spine, the seat of the original opening. A probe could be introduced to the depth of 3\(\frac{1}{2}\) inches upward, inwards, and to the left, the point of the probe being, as near as I could judge, 2 inches deep in a direct line from the surface. The discharge from the opening was sero-purulent, amounting to two or three ounces daily.

"I addressed my treatment mainly to the general health of my patient, giving stimulants, tonics, cod-liver oil, and nutrients, and opening the fistula up, shortening it one inch, I directed stimulating injections into it.

"This was continued eighteen months; at the end of which time my patient's general health was greatly improved, the discharge had diminished to two drachms per diem, but still showed no disposition to close. I would say here that there was not during my attendance or previously any pain, swelling, or soreness pointing toward the spine as the seat of the trouble.

"During an absence in Europe of several months, the patient was left in the hands of another physician, who made vigorous endeavours to heal the fistulous opening without success. Upon my return to the city, I found my patient in seemingly perfect general health, the fistula about the same as it had been for the last four years. Meantime the girl of 12 had grown to be a young lady, and the annoyance of the discharge, with my urgent solicitations, at last had the effect of gaining the consent of her parents to a surgical operation for her relief. With this object I called in Dr. R. L. Rea."

Examination revealed a fistulous opening two inches above the crest of the ilium, 3\(\frac{1}{2}\) inches from the spine, a probe could be passed obliquely upwards and inwards about 2 inches penetrating towards the centre of the body. Discharge sero-purulent, about one teaspoonful daily, very slight induration felt in the line of the fistula. It was determined to make an explorative operation, which was consented to by parents, to ascertain the cause of the discharge, feeling that there was some local cause if it could be reached.

On Nov. 22, the patient being thoroughly anesthetized by Dr. Tomboeken, I introduced a director into the sinus, and after making a free cutaneous incision followed the director, and detected a circumscribed callosity at the end of the canal, and upon opening it found it to be a sac from which I removed a calculus more than half an inch long (14 mm.), three-eighths of an inch (9 mm.) in diameter, rough mulberry shaped, con-
taining a smooth oval cavity, opening at one end. The position of this calculus in the body was midway on a line dropped vertically from a point 2-inches behind the anterior extremity of the last rib down to the crest of the ilium, 2-inches from the surface, near the anterior surface of the quadratus lumborum muscle.

Dr. Tomboeken analyzed a portion of the calculus, and found it to consist of oxalate of lime. How came it there? My impression, seconded by that of Dr. T., was that a calculus had formed in the pelvis of the kidney, its unusual size obstructing the ureter, inflammation set in, an abscess formed, the calculus was carried towards the surface of the body, detained, and was finally cysted as we found it. The nucleus of the stone was undoubtedly some of the more soluble elements that enter into calculous formations, which were exposed to the soluble action of the fluids, and were dissolved and passed off in the pus.

The wound was filled with carbolized lint, after stimulating the bottom of it with nitrate of silver; 10 grains of sulphate of quinia were administered every 12 hours for three days; and now, at the end of two weeks, the patient is in excellent condition, wound healing, and every prospect of a complete recovery.

Feb. 11, Dr. Tomboeken reports the wound healed and patient discharged on Feb. 5 in perfect health.

The case is one of unusual interest, as showing Nature’s possibilities.

Article XIII.

Statistics of Amputations Performed at St. Francis Hospital, Jersey City, N. J., from 1871 to 1881. By Theodore R. Varick, M.D., Medical Director of, and Surgeon to St. Francis Hospital, Surgeon to Jersey City Charity Hospital, Jersey City, New Jersey.

The value and interest which attach to statistics relating to amputations, are evidenced by the able reports of Norris and Morton of Philadelphia, Hayward of Boston, Eul of New York, Callender and Phillips of England, and numerous others in this country as well as in Europe. I shall, therefore, offer no apology for presenting to the Profession the results of nearly ten years’ service in St. Francis Hospital, Jersey City, viz., from July, 1871 (the time of the organization of the Hospital Staff), to January 1st, 1881.

Situated as Jersey City is, being the terminus of no less than eight lines of railroad, with their various connections, all converging to a point within an area of about one mile, together with their many shops and drill yards; it is not surprising that many injuries resulting therefrom are admitted to our hospitals.

The great preponderance of accidents from the sources alluded to will be seen by a perusal of the following statistics:—