aortic area (the second right costal cartilage), and the superficial character of the heart-sounds over this dull area.

2. The dullness on percussion, absence of respiration, vocal resonance and fremitus over the lower two-thirds of the left chest.

3. The great displacement of the heart.

4. The much greater frequency of aneurism than of solid growth.

5. The constant pain of a boring character at one localised spot.

The pressure-signs, viz., the difference in the strength of the radials, the difference in the size of the pupils, the character of the cough and of the voice, and the dysphagia, were equally in favour of aneurism or of tumour. The absence of murmur (I am now speaking of the case as first seen) was rather in favour of aneurism than of tumour, many of the best authorities stating that, in aneurisms of the thoracic aorta, uncomplicated by cardiac valvular lesion, murmur is more frequently absent than present. Stokes, speaking of the differential diagnosis of intrathoracic cancer and of aneurism, says: "If we suppose a case in which the evidence on both sides were equally balanced, the existence of a soft single systolic bellows murmur should incline our opinion towards cancer. Bellows murmur in aneurisms of the arch is a more rare circumstance than has been supposed." The character of the murmur, when it did appear, was in favour of a solid growth. The murmur was single, systolic, of long duration, and *not followed by the second sound*.

Taking all the physical signs into consideration, the balance of evidence, when first seen, was to my mind in favour of solid tumour complicated with copious effusion into the left pleural cavity. The subsequent progress of the case, the increased oedema at the root of the neck, the gradual progressive displacement of the heart, the appearance of the infraclavicular systolic murmur, the obliteration of the right radial pulse, the appearance of a friction-sound over the lower half of the chest, the glandular enlargement at the root of the neck, and the feeling of a solid body by the probe when the thorax was punctured, showed conclusively the presence of a solid tumour within the thorax.

The Nature of the Tumour.—To the naked eye, it exactly resembled encephaloid cancer. On microscopic examination, it was found to be a lympho-sarcoma. The greater part of the tumour evidently consisted of enlarged bronchial glands. The nodule over the aorta corresponded in position to the remains of the thymus gland, an organ which is frequently the seat of these growths. The large size of the tumour is noteworthy. Its position in the thorax and its relation to the various structures fully explain the symptoms and physical signs seen during life. It is somewhat remarkable that, when at rest, there was little or no increase in the frequency of the respirations. The slightest exertion, however, made the patient very short of breath. The condition of the suprarenal capsule was a remarkable feature of the case, and tends to show the close physiological relation which these organs have to the lymphatic glandular system. The absence of pigmentation of the skin proves that all forms of disease of the capsules are not necessarily attended by bronzing. The case mentioned by Sir William Jenner at a meeting of the Pathological Society of London, in which there was pigmentation, the capsules being healthy, but the solar plexus injured by a mass of enlarged glands, confirms the opinion of Quekett, that the discoloration of the skin depends upon modifications in the solar plexus, and that the frequent occurrence of disease of the capsules with bronzing is accounted for by modifications induced in the solar plexus through the numerous filaments which supply these organs.

The early history of the case favours the idea that the disease originated in the thorax, and suggests the supposition that the enlargement of the bronchial glands was due to irritation, the result of inhalation of gunpowder-smoke.

A CASE OF LITHOTRITY WHERE NITRIC ACID INJECTIONS WERE EMPLOYED.*

By REGINALD HARRISON, F.R.C.S.,
Surgeon to the Liverpool Royal Infirmary.

THE solvent action of nitric acid upon the *débris* of a phosphatic calculus was well illustrated in the following case, which in many respects is similar to one recorded by the late Mr. Southam of Manchester, and alluded to by Dr. W. Roberts in his *Observations on the Solvent Treatment of Phosphatic Calculi*. (*On Urinary and Renal Diseases*, second edition.)

William C., a police officer, aged 45, was admitted into the Liverpool Royal Infirmary, under my care, on March 9th, 1875. The

patient had recently been under the observation of my friend Dr. J. S. Clarke, who, having diagnosed the existence of a stone in the bladder, advised his admission into the Infirmary.

Upon examination, I found a single stone, rounded and having a diameter of two inches and a quarter. The urine was alkaline, and contained pus. Though the stone was large, I deemed the case not unfavourable for lithotripsy. The patient required some preparatory treatment, and I was not able to commence lithotripsy till April 5th. I repeated the crushings during April and May twelve times.

The patient never experienced any unfavourable symptom, and a very considerable quantity of broken-up stone was passed. As in Mr. Southam's case, to which I have alluded, it appeared to me that fresh phosphatic depositions were taking place almost as fast as the others were removed. I resolved, therefore, to use nitric acid injections.

On May 27th (two days after a crushing), I had the urine of twenty-four hours' collection. This was analysed by Dr. J. Campbell Brown, who gave me the following report. The quantity of urine submitted to analysis was sixty ounces; this was found to contain 74.029 grains of phosphoric acid as alkaline earthy phosphates; 250.516 grains of phosphoric acid as alkaline phosphates; in all, 324.545 grains of phosphoric acid passed in twenty-four hours. On the termination of this twenty-four hours, I injected into the bladder half a pint of tepid water with two drachms of diluted nitric acid.

All the urine passed during the subsequent twenty-four hours was kept and analysed by Dr. Brown, with the following result. The quantity of urine submitted to analysis was seventy-eight ounces; this was found to contain 96.237 grains of phosphoric acid as alkaline earthy phosphates; 461.94 grains of phosphoric acid as alkaline phosphates; total, 558.177 grains of phosphoric acid passed in twenty-four hours.

Thus it appears that not only was a larger quantity of phosphate of lime and magnesia dissolved in the urine after treatment with nitric acid, but there was a still greater increase in the quantity of phosphoric acid passed in the form of alkaline phosphates. It is to be noticed that the quantity of urine on the day after treatment was greater than on the day before; and that, if, instead of estimating the total phosphates, we estimate the percentage of phosphates in the urine, we find that the percentage of alkaline earthy phosphates was very nearly the same after as before treatment, namely, increased from 0.272 to 0.282, and that the percentage of alkaline phosphates was increased from 0.95 to 1.35. But the absolute increase of phosphates is much more marked.

On nine subsequent occasions, the lithotrite was employed, and, on every second or third day afterwards, the bladder was injected as before with nitric acid in tepid water. Further observations, though made in a rougher manner, showed the increase of the alkaline phosphates after each injection; it was also noticed that the fragments passed were much more finely triturated than previously.

Under this treatment, the patient made a good recovery and left the infirmary quite well on June 21st. The total quantity of broken-up stone collected weighed four drachms. The use of the acid appeared to me at once to stop any further deposition of phosphates, and to facilitate the removal of the pieces as they were broken up by the lithotrite.

Dr. Roberts concluded his observations on Mr. Southam's case with the remark (*op. cit.*, p. 313): "This method is evidently capable of wider application than is now made of it by surgeons."

CASE OF SUICIDE BY HYDROCYANIC ACID.

By JOHN W. TRIPE, M.D.,
Medical Officer of Health and Analyst for the Hackney District.

THE following case of suicide by hydrocyanic acid having been under observation almost from the moment of the poison being taken until death occurred, and some minutes having elapsed before any symptoms were observed, as well as some acts of volition having been performed during that period, I consider it to be of sufficient importance to justify me in bringing it under notice.

In the early part of July, I was called at about 9.15 P.M. to see D. A., who was said to be dying from poison. On my arrival at his house, which was nearly opposite to mine, I found him sitting in a chair supported by two persons, gasping for breath, with his mouth wide open, eyes prominent and glistening, and his pupils slightly dilated and insensible to light. The skin was clammy, the fingers contracted, the muscles of the arms relaxed, the pulse scarcely perceptible, and the lips as well as the tongue purplish. There was a strong smell of prussic acid in his immediate vicinity, and his breath

* Read at Southport before the Lancashire and Cheshire Branch.