1030, and was almost entirely converted into a coagulum of albumen on boiling and adding nitric acid. It was straw coloured, gave a very slight blood reaction with guaiacum and ozonic ether; no blood-corpuscles were seen, but numerous epithelial cells. The temperature was slightly subnormal, the pulse 64.

I first saw the patient on November 1st, and found the pulse 60, short and very compressible. The heart was normal in size, but the apex beat could only just be felt, and could not be definitely localised, and there was no right ventricle impulse; the sounds were everywhere weak and indistinct.

A week later the dropsy had everywhere increased, and there was a small amount of fluid in both pleural cavities. The pulse was still short, weak, and devoid of tension; the heart somewhat enlarged downwards, the first sound short, the interval between this and the second rather longer than normal, the second sound weak. The amount of albumen in the urine was still very large, the coagulum occupying seven-eighths of the volume; hyaline and granular casts were present.

The prognosis was at once formulated that the case would be of long duration, the basis for this being the defective pulse-tension and weak blood-propulsion by the heart. It was at the same time considered probable that the large proportion of albumen was not due to any specially severe affection of the kidneys, but was in part the consequence of the languid circulation, which would almost permit of complete stasis in the capillaries ramifying between the convoluted tubes in the cortex of the kidneys, and, consequently, in the Malpighian tufts. It was anticipated, therefore, that if the circulation could be improved, the amount of albumen might diminish rapidly.

The patient was, of course, kept in bed. His diet was mainly milk. Tincture of iron with sulphate of magnesia was given at first, to which were added in a few days nux vomica and digitalis; dry cupping over the loins was practised.

At the end of a fortnight, on November 14th, the dropsy had slightly diminished, and there was still much fluid in both pleural cavities. The pulse was short and compressible, the apex beat of the heart just perceptible in the fifth space slightly outside the nipple line. The urine had a specific gravity of 1018, and the coagulated albumen occupied half its volume.

On November 17th the albumen was somewhat diminished.

On the 21st a general improvement was noted in the pulse. The artery could easily be felt between the beats, and rolled under the finger, and was not so compressible. Simultaneously the amount of albumen had fallen, so that it was described as rather more than a trace. The dropsy and pleural effusion were much less.

On November 24th the apex beat could be distinctly felt in the fifth space, three-quarters of an inch outside the nipple line. The first sound was here indistinct and rather prolonged instead of short, as before; the second sharp and louder than normal, the interval still much prolonged; the pulse was long, and not easily compressible; albumen one-eighth; dropsy nearly gone.

Two days later the patient appeared to be so nearly well, that he was allowed by the resident surgeon to get up for a short time. There was at once, December 5th, some return of swelling in the legs. The apex beat and heart sounds became weaker and the pulse more compressible, while the proportion of albumen rose to one-third.

That this was not an ordinary relapse due to chill was clear from the rapid return to the previous condition of the urine when he was sent back to bed. The explanation was that the heart was not equal to the maintenance of the circulation in the erect position, and with the languid movement of blood so caused came the increased amount of albumen.

He was now kept in bed. He took his food, slept well, remained free from dropsy, and had only a varying trace of albumen. Before it was considered safe again to allow him to rise he had an attack of tonsillitis, in which the temperature rose to 103.8° on January 23rd, and the urine was now of a dark blood-purple colour, and contained four-fifths of its volume of albumen. Under the microscope, however, there were scarcely any blood-corpuscles. The blood and albumen rapidly disappeared, and were succeeded three days later by uric acid crystals in large quantity. The attack was, in fact, one of hæmoglobinuria. The patient is still in hospital, but his subsequent history possesses no points of interest.

The imperfect development of blood pressure to which I have called attention in this case is not to be looked upon as the cause of the slow recovery or of the complications observed in the course

of the disease; it merely reveals the constitutional weakness to which they are to be attributed, and shows that the patient is made of poor stuff. In doing this, however, it fulfils a useful purpose, as it throws light on the prognosis. The occurrence of hæmatolysis and hæmoglobinuria in the course of an attack of tonsillitis was an interesting confirmation of the opinion formed as to the feeble powers of resistance possessed by this young man's constitution.

The development or non-development of pulse-tension in the course of acute renal disease appears to me again to furnish some guidance in treatment. To raise the tone of the circulation is a help towards recovery when this is defective.

CASE OF SO-CALLED "SPONTANEOUS COMBUSTION."

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I WAS lately called to a case which vividly recalled the old tales of spontaneous combustion, and more especially an article that I had read on that subject by our late President, Professor Ogston. The term "spontaneous combustion" has been applied to two conditions: first, spontaneous ignitability, and, secondly, increased combustibility; and I need hardly say that it is to the second category that the present case belongs. As Dr. Ogston remarks on these cases, the subjects were all found dead, their bodies, their clothes, and the articles in their neighbourhood being partially or entirely destroyed by fire, the only remarkable thing about them being that the bodies were burnt and charred out of all proportion to the neighbouring objects, and to an extent which seems incapable of being accounted for by the heat of the burning clothes and objects in the vicinity.

On the morning of Sunday, February 19th, I was sent for to examine the remains of a man, A. M., aged 65, which were found in a hayloft off Constitution Street. This man, a pensioner, of notoriously intemperate habits, had been seen at 9 o'clock the night before to enter the stable below in an intoxicated condition, and he asked the lad and girl who saw him to shut the stable door after him, which they did. They then heard him ascend the ladder leading to the loft above, and afterwards saw the skylight of the loft lighted, and later still the light put out. Between 8 and 9 o'clock next morning the wife of the proprietor of the stable, living near by, happening to look out of the window, observed smoke issuing from a hole in the roof of the loft. She informed her husband of the fact, and he, on entering the stable, was horrified to see through a hole in the loft floor the remains of the old soldier perched on the joists above, and leaning against the wall. The police were at once communicated with, and I was sent for to attest the accident. On arriving I ascended to the loft, and found the charred remains of a man reclining against the stone wall, and kept only by one of the joists and the burnt remnant of the flooring under him from falling through into the stable beneath. What struck me especially at first sight was the fact that, notwithstanding the presence of abundant combustible material around, such as hay and wood, the main effects of combustion were limited to the corpse, and only a small piece of the adjacent flooring and the woodwork immediately above the man's head had suffered. Several of the slates had fallen in over the corpse, making a small hole in the roof above it, and a small piece of the flooring had fallen through immediately round him into the stable below, leaving the hole through which he had been first seen. The body was almost a cinder, yet retaining the form of the face and figure so well, that those who had known him in life could readily recognise him. Both hands and the right foot had been burnt off and had fallen through the floor among the ashes into the stables below, and the charred and calcined ends of the right radius and ulna, the left humerus, and the right tibia and fibula were exposed to view. The hair and scalp were burnt off the forehead, exposing the bare and calcined skull. The tissues of the face were represented by a greasy cinder retaining the cast of the features, and the incinerated moustache still gave the wonted military expression to the old soldier. The soft tissues were almost entirely consumed, more especially on the posterior surface of the body, where the clothes were destroyed, and the pos-

¹ Read at a meeting of the Aberdeen, Banff, and Kincardine Branch on March 21st.

[From a photograph by Mr. W. Reid, 100, Holburn Street, Aberdeen.]

terior surfaces of the femora, innominate bones, and ribs exposed to view. This was doubtless in a measure caused by the falling of the slates on the body, and a more perfect cinder would have been found had we arrived earlier on the scene. Part of the trousers on the anterior aspect of the legs that had escaped the impact of the slates was still represented in cinder.

Regarding the condition of the internal organs, I regretted much having been denied the opportunity of investigating their condition, as wishing to have a photograph taken of the remains prevented me at the time, and on my return from other work later on I found that the whole had been removed. The bearers told me that the whole body had collapsed when they tried to remove it *en masse*. From the comfortably recumbent attitude of the body it was evident that there had been no death struggle, and that, obfuscated by the whisky within and the smoke without, the man had expired without suffering, the body burning away quietly all the time.

So much for the condition of the corpse. The strange fact remains that while round about in close proximity were dry woodwork and hay, loose and in bundles, these had escaped, and the body of the man was thoroughly incinerated. The exceeding stillness of the night (for it was remarked by the policeman on the beat that there was not a breath of wind) would only in part account for the facts.

To return to Dr. Ogston's paper. That increased combustibility exists cannot be denied, though at first sight it is not so clear to what it owes its existence. The question has given rise, as has been already seen, to numerous hypotheses, all of which, with one exception, are manifestly untenable, and it is owing to the wildness and illogicality of these hypotheses and deductions surrounding the subject that the whole question has come to be treated as a half-forgotten fable. In the doctrine that increased combustibility in bodies is due to excess of fat, Dupuytren has advanced the only explanation capable of setting the subject at rest, and on a true basis explaining rationally and philosophically the cases of so-called "spontaneous combustion."

When we consider the amount of fat some bodies contain, the subject grows even clearer, and a review of the cases demonstrates that the incineration was always most extensive in the skin and subcutaneous adipose tissue, and other places where fat is abun-

dant, and least marked in organs and regions with less fat. The fatty degeneration of various organs and structures, the intermuscular and subcutaneous adipose tissue, along with the masses deposited on other parts of the body, all present a body of oleaginous matter amply sufficient to account for the combustion, and which, once ignited, would tend rather to burn *in situ* than to flow out, thus explaining the greater destruction of the corpse than of objects in the vicinity.

Regarding the influence of alcoholic indulgence in these cases, it has been conclusively proved that tissues soaked in alcohol do not burn more readily than others not so treated, and that it is only as a stupefying agent and in its tending to the deposition of fat in the body that alcohol aids in increasing its combustibility.

THE DETECTION OF PROTEID BODIES IN URINE.

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THE test ordinarily applied for the detection of albumin in the urine is, as is well known, that of boiling and acidulation. This test is taken as indicative of albumin alone; it does not distinguish between albumin and paraglobulin, and, moreover, does not indicate the presence of those proteids which occur more rarely in urine, as for example, the albumoses and peptones. Of late years the methods for distinguishing and separating proteid bodies have greatly improved as our knowledge of their properties has advanced.

The object of the present paper is to discuss these more modern methods of the separation and detection of the proteids in the urine—methods which are not universally applicable in bedside clinical examination, but which are necessary for the elucidation of doubtful cases. The bodies which I shall consider are:

1. Albumin: serum-albumin, egg-albumin. 2. Globulin: paraglobulin (serum, fibrino-plastin). 3. Albumoses (globulin, hemi-albumose, propepton). 4. Peptones.

As was stated above, the heat test does not distinguish between these bodies. This test may be applied in two ways as follows: a small quantity of dilute acetic acid may be added to the urine