the night gradual extinction of the circulation, death without pain. The necropsis was ordered by the juge d'instruction, and conducted by Messrs. Bouchardat, Caillard, and Emery.

(REPORT.)

The mucous membrane of the œsophagus presents a yellow colour, intermixed with black, and is covered with a yellow fluid, which so strongly adheres to it, as to be liable to be mistaken for a false membrane; the mucous membrane can be readily detached for an extent of an inch to an inch and a half, and is thicker than natural.

In the stomach,—five ounces of a liquid resembling that covering the œsophagus; this fluid lines the mucous membrane of the stomach, which organ, viewed internally after the removal of the fluid, exhibits a marbled appearance, yellow and black, and at a few points the mucous membrane is easily detachable. On scraping the stomach at the pyloric orifice, and in its neighbourhood, that viscus is found to be “charbonnée.”

The heart is of the ordinary size, and contains about 3 ounces of coagulated blood; the aorta is almost filled with coagula; the femoral artery of the right side is almost obliterated by firm coagula.

The uterus contains a six months' fœtus.

The fluid contained in a phial, (which, the patient asserted, contained the remains of the medicine she had taken,) was analyzed, and proved to be sulphuric acid, diluted with an equal portion of water. In the analysis of the coagula, a trace of the sulphate of baryta was precipitated, and the smell of sulphurous acid perceived. Messrs. Bouchardat and Couriard considered that death could be ascribed to no other cause than the coagulation of the blood by the acid, which they supposed to have been absorbed. This opinion was founded on the symptoms and morbid appearances, but particularly upon the coagulation of the blood, and loss of sensation, for they very properly deemed the analysis of the coagula inconclusive.

I have not translated the word *charbonnée*, which might be rendered by the words “charred” or “black.” Messrs. Bouchardat and Couriard, it would appear from the context, intended to express that the stomach in the neighbourhood of the pyloric orifice was really carbonized or charred, but they must have been mistaken; the tissues probably resembled charcoal in colour; it is hardly possible that so moist an animal substance could have been naturally charred; and this view is borne out by the mildness of the symptoms, and the absence of corrosion in any part of the organ, which merely showed in other parts the consequences of moderate inflammation. In fact, these physicians forget that acids absorbed into the vessels and capillaries render the tissues of an organ black, by the formation of a peculiar compound with the colouring matter of the blood, the same substance that was formed in the case of hæmaturia which I have referred to. The black colour produced in this way is very often mistaken for certain morbid appearances, as congestion or gangrene, a mistake which should be carefully avoided, destroying, as it does almost entirely, the value of the clinical reports in which it occurs. I may observe, that the account of the appearances noticed in the dissection of the body of the late Sir Astley Cooper affords an instance in which

this error was avoided, for the able men who conducted the examination, state that the black colour observed in the stomach should be attributed to the absorption of some of the natural gastric acids, and their action on the blood.

This case, and another contained in the same paper, coupled with the appearance observed in the case of hæmaturia, seem certainly to afford some grounds for the opinion entertained by Messrs. Bouchardat and Couriard, that the absorption of acids may effect such changes in the blood as to cause death by the interruption of the circulation, and that this may take place when the patient, owing to the dilute state of the acid, would escape being carried off by any of the causes previously acknowledged, namely—1st. Acute inflammation of the stomach, or of the stomach and abdominal viscera; 2d. Sudden sinking from the shock to the nervous system; 3rd. Chronic inflammation of the stomach and œsophagus; 4th. Inflammation of œsophagus and larynx, with obstruction of either.

A correct understanding of the nature of the changes produced by the acids on the blood, is not only interesting in connexion with the physiological agency of these substances, but is necessary, in order to avoid serious mistakes in estimating the nature and value of certain appearances in the dead body. I shall therefore give, from Berzelius, the little that is known regarding the dark compound of which I have spoken. “The acids combine not only with albumen, but also with the colouring matter of the blood, forming neutral compounds, insoluble in acidulated water, but soluble in pure water, which they tinge a deep brown colour. The colouring matter may be precipitated by ammonia, from the compound it forms with acetic acid, and the precipitate exhibits all the properties of the colouring globules coagulated by heat. The compounds formed with the various acids are of a dark colour.”

London, May 8, 1841.

CASE OF SPASMODIC COUGH FROM SPINAL IRRITATION,

CONNECTED WITH DERANGED SECRETION.

By T. B. WINTER, Esq.

MASTER A., aged ten, of strumous habit and highly excitable temperament, was attacked with a very violent cough on November 7, 1840. When I first saw him, on November 9, his cough was peculiarly severe and spasmodic, not unlike croup, but unattended with the stridulous breathing; the paroxysms returning every minute, but without much fever. At the same time he complained of a severe darting pain in both knees. His bowels were regular. His cough continued with very little intermission till the 15th, becoming more like barking than coughing, resisting every remedy both local and general. Emetics—purgatives, with and without calomel—anodynes—alteratives—leeching and blistering the throat, were all employed in active succession, under Dr. Hall's direction, as well as my own, but to no purpose. He occasionally fell asleep for an hour or two, during which time his cough ceased, and

he breathed easily. This peculiar feature of his complaint was noticed throughout his illness. But whenever he awoke, his cough became nearly incessant.

The long-continued cough and disturbed sleep produced considerable constitutional irritation, and on the 15th of November he had some spasmodic motions of both arms, especially the right, together with much increase of pain in the knees. This led to the suspicion that this intractable case might be connected with irritation of the brain and spinal cord, which was confirmed by finding the occiput and the upper cervical vertebrae excessively sensitive to the touch.

Six leeches were applied to the upper cervical vertebrae, and a powder, with calomel, rhubarb, and James's powder, given every four hours. The leech-bites bled freely, and gave instant relief to the cough and the spasmodic action of the muscles. He continued to improve through the day, and at night he slept soundly for six hours, awaking at 4 A.M. November 16, with return of cough, and more violent spasmodic action of the muscles, the whole body being often violently contorted. The bowels had been moved freely, and the secretions were healthy. The occiput and cervical vertebrae being still very tender, the former was shaved and six leeches applied. The calomel powders were continued.

This second leeching removed all the cough and the spasmodic action of the muscles. His appetite never failed throughout his illness; his diet had been chiefly farinaceous, but now animal broth was allowed. From this time the only symptom which troubled him was the pain in his knees, which consisted in a series of lancinating pains darting into both knees several times in every minute, and often disturbing him during sleep.

Nov. 22. His cough returned with violent spasm of the glottis, threatening suffocation, and he became so violent as to require two or three persons to hold him. There was now no tenderness in the occipital or cervical region, but the dorsal vertebrae were found sensitive; three leeches were applied to that part with instant relief to most of the symptoms.

Calomel one grain, compound ipecac. powder two grains, at night; a purgative draught early in the morning.

25. The cough did not return till this day, when, as usual, it was accompanied with violent convulsive action of the whole body. The bowels had been daily moved by the calomel and cathartic draughts, but the secretions were darker than they had been. Three leeches were again applied to the neck, which gave instant relief to the cough and struggling. Mercury and chalk, 3 grains; compound ipecac. powder, 2 grains, at night. The knee-pain still continuing unabated, a blister was applied over the lumbar vertebrae, all local applications to the part affected having proved useless.

Dec. 6. The cough and convulsive action have returned with as much violence as ever. The secretions are free, but dark-coloured. The neck and sacrum were both cupped, with relief to the cough and involuntary action of the muscles, but producing no effect on the knee-pain. Calomel, half a grain; compound ipecac. powder, one and a half grain, night and morning.

7. The cough has returned, but is not accompanied by the convulsive action. Thinking he might have worms, he was directed to take, calomel, three grains, jalap, five grains, at once, and an enema of oil of turpentine, half an ounce, in the evening; also to be dry-cupped.

8. The dry-cupping stopped the cough; he had more sleep in the night. He looks better, and feels better. The bowels moved largely after the enema, and the secretions were very dark—no worms. The knees continue the same. Calomel powder repeated, and the enema in the evening.

9. He coughed very much during the night, but was again relieved by dry-cupping this morning. His general appearance is improved, and the knees are easier. The bowels act freely, secretions still dark. Repeat the powder at night, and the enema in the morning.

10. He had no cough in the night, but he strongly resisted the enema in the morning, and the agitation renewed the cough for a short time. His knees are easier. The bowels acting freely. The secretions the same. Repeat the powder at bed-time.

11. No return of cough. The pain in the knees nearly gone. Secretions greenish from the calomel. Repeat the powder to-morrow morning.

12. This has been his best day in every respect. His secretions improving. He can stand alone for the first time since the 22d of November, and he is free from pain. Till within the last few days he could not bear to have his knees straightened, owing to the severe pain produced throughout the whole course of the sciatic nerve.

An occasional aperient is the only medicine he now requires.

Jan. 27. He has had occasional spasmodic cough, but calomel and jalap powder have always removed it.

Feb. 27. He is in very good health.

In conclusion, I would only remark that the obstinate cough was apparently produced by irritation at the *origin* of the nerves that supply the muscles of the throat, the effects of that irritation being manifested only at their sentient extremities. But this was not the only source of irritation, as the cough returned frequently, and the peculiar pain in his knees never left him till after the active operation of the calomel and jalap, accompanied by the turpentine enema, which would lead to the supposition that unhealthy secretion from the liver and the bowels was the primary cause of the whole, although free purging, with calomel, prior to leeching the spine, was of no avail to any of the symptoms.

Brighton, May, 1841.

ON THE
PHYSICAL ALTERATIONS OF THE BLOOD
AND
ANIMAL FLUIDS IN DISEASE.*

By M. ANDRAL.

ONE of the greatest obstacles which will always oppose the discovery of a universal law in medi-

* Substance of a series of lectures on this interesting subject, delivered at the Faculty of Medicine, Paris.—*Gaz. Med.*