Hence it is not an iron-containing derivative of blood pigment. 4. Iodine and sulphuric acid give no distinct blue or violet colour. This excludes lipochromes (fatty pigments); the solubilities of the substance are, however, against this supposition. 5. Boiled with hydrochloric acid and a drop of nitric acid, then shaken with chloroform, no pigment is dissolved out by the chloroform, and therefore we may conclude indigo is absent."

The results of the chemical examination were only negative. Professor Halliburton expressed the opinion that the colour was probably due to an aromatic body produced by bacteria. This no doubt is the correct explanation if one may judge by analogous changes produced in milk outside the body under the influence of bacteria. Unfortunately, the bacteriological examination of the milk was not made. The patient disappeared from observation, and the little secretion that I had rapidly became putrid. When I saw the patient about two months later the green colour had entirely disappeared. The case was a most interesting and curious one, and I believe it is unique. The literature of coloured milk, as far as I can ascertain, affords no similar instance of such a change in milk before it has left the mammary glands. Bile pigments were described in a case of jaundice by Franck, but subsequent observers have failed to find them.

Blue milk¹ owes its colour, according to Fürstenberg, to triphenyl rosaniline. The colour is due to the development of bacillus cyanogeneum, and it is found in the serum of the milk. Blue milk is said to cause diarrhoea. Red milk is due to the presence of micrococcus prodigiosus, which grows with great rapidity in milk allowed to stand. The micrococcus itself is colourless. The colouring matter is probably fuchsin. Yellow milk is produced by the growth of bacillus syxanthus. In cattle plague² the milk may be red owing to the presence of blood.

According to Hueppe some of the pigments produced by the chromogenic bacteria belong to the aniline and others to the phenol colouring matters.

Cardiff.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

COEXISTENCE OF INFECTIVE DISEASE IN THE SAME INDIVIDUAL.

BY G. WRIGHT HUTCHISON, M.D. ABERD., M.R.C.P. ED.,
PRESIDENT OF THE OXFORD BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

THE following case may prove interesting.

On April 30th, in the midst of an epidemic of measles, I was asked to see a boy five years of age, the youngest of a large family. At my first visit I was told that four of the children had passed through an attack of measles, and were then convalescing. They were kept warm in bed and fed on slops, and, the rash having developed kindly and the cases apparently doing well, medical aid was not sought. My little patient had been vomiting, shivering, sneezing, and running at the nose, and he was complaining of headache, general malaise, and aching of the limbs. His forenoon temperature was 101° F. I gave it as my opinion that the child was probably developing measles. The above symptoms went on for eight days, when very offensive diarrhoeal motions, with tympanitic distension of the abdomen, and in a day or two a rose-coloured rash, appeared. Enteric fever was now diagnosed. Things went on as they generally do in a moderately severe case of enteric fever in a child, when, towards the end of the third week of illness, the evening temperature being under 100°, one morning a copious measles rash came out on the upper part of the body. The measles ran its usual course, the rash coming out in three crops. Convalescence began at the end of a week. The little patient could not be kept in bed. He had to be dressed. In another week the temperature again went up, and diarrhoea again came on. He had a relapse

(typhoid). In ten days this subsided. He once more convalesced, this time rapidly and decidedly, and he has kept well ever since.

Chipping Norton, Oxon.

A NOTE ON THE REFLEX EFFECTS OF GASTRIC DISTURBANCE.

BY J. SNOWMAN, M.R.C.S. ENG., L.R.C.P. LOND.

IT is now generally recognised that the stomach, and particularly the gastric mucous membrane, should be looked to for the explanation of many transient cardiac derangements, such as palpitations and pain. These conditions are occasioned by abnormal impulses transmitted along the nerves—cerebro-spinal or sympathetic—which are distributed to the heart. These impulses are started in the stomach by certain morbid changes occurring therein acting as stimuli to the nerve terminals of the vagus. Now, these impulses arriving at the medulla, may influence the centres in its substance or may become reflected to various viscera, notably the heart. An indigestible meal produces a sudden attack of syncope by reflex stimulation of the vagus *via* the cardio-inhibitory centre; chronic dyspepsia produces palpitation either by inhibition of the vagus centre or reflex stimulation of the sympathetic. With increasing knowledge it will be fully realised how the events of gastric digestion or indigestion are fraught with weal or woe for the body generally. There are several well-recognised reflex results of gastric disturbance, others still remain obscure. The cardiac results may be regarded as the best known; there are the vaso-motor phenomena which produce urticaria, and the cerebral conditions which cause headache and vertigo. It is to the reflex effect on the pulmonary system that the following case points.

A woman forty-six years of age, of neurotic temperament, with good family history, complained of slight colic on the evening of July 22nd last. The following morning she stated she had suffered from severe diarrhoea, with griping and tenesmus and pain in the epigastrium. Thirty grains of aromatic chalk powder with opium were given. A few hours afterwards I was hurriedly called in. I found the patient practically in a condition of collapse, with cold skin, slow pulse, low temperature, and pale countenance. She informed me that, feeling faint, she had eaten some sardines with bread, when shortly afterwards she was seized with an attack of shortness of breath and an intense feeling of asphyxia. She had to struggle violently for air, and for some seconds she felt as though she would be choked. She was much terrified and feared impending suffocation. The attack lasted about three minutes, leaving the patient in the exhausted condition just stated. The simplest explanation of this "asthmatic" attack can, I think, be found in regarding it as a reflex action from the stomach. It is obvious that the organ was in a slight condition of gastritis. This in itself is often sufficient to give rise to several reflex troubles. There can be little doubt that the addition of the sardines—at best a member of the tinned-fish edibles—acted as an irritant to the already highly irritable state of the mucous membrane and set up morbid changes in the nerve terminals of the vagus which caused the dyspnoea, just as in other cases it might cause palpitation. The dyspnoea may be regarded as due to direct stimulation of the respiratory centre or possibly to spasmodic contractions of the bronchial tubes. If the latter be the case it may afford an explanation of the attack of "true asthma," which is often precipitated by an indigestible meal.

Oxford-road, Kilburn.

POISONING BY FATIGUE PRODUCTS.

BY W. ATKINSON WOOD, M.D. MELB., B.S.

A YOUNG man nineteen years of age ran nine miles in a harriers' competition across rough country on a hot, north-wind day (a very dry, enervating wind for which Victoria is noted). The full course was ten miles, but he stopped running when a mile from home. He felt in fairly good form when he started, but had not been training hard, nor had he ever run the same distance before at racing speed. He perspired pretty freely during the run, and felt well till one mile and

¹ Reiset: Comptes Rendus, vol. xcvi., pp. 682, 745.

² Comptes Rendus, vol. lxxiii., p. 1339.

a half from the finish, when he began to tire and had to stop. He had some whisky-and-water, a cold bath, and a rub down; he then walked about 300 yards to the railway station, feeling very well; he remembers no more after reaching the station. His friends, however, say that he was quiet in the train, and twenty minutes later walked down the street leaning on the arm of a friend. He said he felt hungry, but a minute afterwards fell to the ground unconscious. He was driven home, and I saw him at 6.30 P.M., one hour and a half after the finish of the race. He was then unconscious, and the body and limbs were quite cold. Both pupils were extremely contracted, and the conjunctivæ alternately absolutely senseless and slightly sensitive. The temperature in the rectum was 94° F., the pulse 50, irregular and weak, and the respiration 30, very shallow, and occasionally almost imperceptible. He was put in blankets on a stretcher before a blazing fire, hot bottles and bags were applied, and rubbing with brandy and oil carried on by relays of rubbers; ether was injected and hot brandy and beef-tea were given as an enema. After three hours of this treatment some response was shown by the conjunctivæ becoming more sensitive; the patient could now be roused to attempt to rise by deeply and very firmly rubbing over the heart; the pupils would then dilate widely and he would immediately relapse on discontinuing the rubbing. Dr. J. Williams was now (10 P.M.) called in, and as the patient had improved in condition it was decided to discontinue the rubbing and apply heat over the cardiac region. About 11 P.M. the patient opened his eyes and asked for a drink; he now seemed in an irritable condition, but half an hour afterwards he was able to recognise bystanders; he then had some broth and sank into a natural sleep. The pulse was 80, the temperature (rectal) 97°, and the respiration 25. There was a slight reaction the next day, the temperature rising to 100°. He lost weight for some months after the run, but has since regained it. All the organs of his body are healthy. Altogether sixty competitors started for this race, and I heard that two others suffered from "sunstroke" afterwards. On the morning of the race the patient had for breakfast fried fish, one cup of tea, and toast; for dinner underdone grilled steak, half a cupful of tea, and two half-slices of dry toast. In the morning he had a glass of water, and two table-spoonfuls before he started. The urine was not examined till the day after the race, when it was found to be normal.

South Yarra, Melbourne.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LONDON HOSPITAL.

CASE OF DISEASE OF THE SPINAL CORD FOLLOWING INFLUENZA; REMARKS.

(Under the care of Dr. SANSOM.)

THIS example of the occasional effect of influenza on the spinal cord is of much interest, for although the affections of the nervous system which may follow that disease (*post* or *propter*) are numerous, they are not often so severe. As Dr. Gowers¹ has written: "But influenza may also induce disease of the spinal cord which is neither dubious nor slight. It has caused acute and severe myelitis, transverse and disseminated, as well as polio-myelitis in characteristic form. Myelitis is an occasional sequel of almost every one of the acute specific diseases, notably of typhoid fever, small-pox, and measles. The inflammation after influenza may involve the membranes of the cord as well as its substance, but the affection of the former has been partial. General spinal meningitis does not appear to follow influenza." We published in THE LANCET² the account of the post-mortem examination in a fatal case under the care of Dr. Mackay; in that case there was well-marked

inflammatory softening of the cervical region of the cord, with adhesion of the pia mater, but the examination permitted was only a partial one. Dr. Foa³ found hæmorrhagic lesions in the upper two-thirds of the dorsal and upper portions of the cervical regions, which he considered were caused by an occlusion of the vessels by an accumulation of micro-organisms in them. Accounts of the actual pathological condition of these spinal affections are not numerous. For the notes of this case we are indebted to Messrs. G. H. Cowen, house physician, and P. A. Chilcott and J. L. Sykes, clinical clerks.

A young woman aged twenty-two was admitted to hospital on Jan. 1st, 1894, complaining of difficulty in walking, weakness of the arms and legs, and impairment of the finer movements of the fingers. She was born and had lived in London all her life, and had had scarlet fever, measles, and whooping-cough when young. She never had rheumatism. The illness for which she was admitted began about the middle of October, 1893, with shooting pains in both legs from the knee to the ankle, and some stiffness in the right hand. About a week afterwards she was seized with a feverish attack, probably influenza, of an arthritic type, for she had pain in most of her joints, the right wrist and both ankles being swollen. Four or five weeks after this attack she began to have a sensation of numbness all over the body, but more marked on the right side. She then seemed to lose power in her legs, especially the right, and also in the hands and arms, so that she was unable to write or sew. These symptoms continued till her admission. Her condition on admission was that of a fairly well-nourished young woman, rather anæmic. The pulse and respiration were regular and quiet. The temperature was normal. Her thoracic and abdominal organs appeared to be perfectly normal. The urine was of an amber colour, acid, of sp. gr. 1022, and contained no albumen and no sugar, but there was a slight deposit of mucus. Her mental condition was good; she had no headache. Speech was unimpaired, and sight and hearing were good. The pupils were equal and reacted to light and accommodation; the ocular movements were normal. There was no affection of any cranial nerve. Ophthalmoscopically the fundi were natural, there being no trace of papillitis, old or recent. There was no affection of the sphincters, and the abdominal, thoracic, and spinal muscles seemed to be perfectly healthy. There was no tenderness or deformity of the spine. Both legs could be raised easily in bed, but she was unable to stand without support. Her walk was tottering, with slight tremor of the legs. The grasp of both hands seemed to be weak, the right perhaps rather weaker than the left; there was some tremor on movement. The finer movements of the hands were much impaired, so that she was unable to write or to pick up a pin. There was also much incoördination in the upper extremities. The interossei and thenar eminences of both hands were a little wasted, the right more marked than the left. The wasted muscles responded fairly well to the faradaic current, but to the galvanic the reactions were not well marked. There was no reaction of degeneration. No sensory loss could be made out by any kind of stimulation. Muscular sense was good. There was no tenderness of muscles or nerves, and no rigidity of muscles. With regard to reflexes, the superficial were normal. Wrist and elbow-jerks could be easily obtained; the knee-jerks were much exaggerated on both sides, and there was marked ankle and patellar clonus. Her hands and feet were usually cold and often covered with a clammy sweat. For about three weeks she remained in much the same condition.

On Jan. 20th it was noted that the knee-jerks were not quite so exaggerated; her walk was still weak and staggering. On Feb. 1st her walk was much better; she was able to walk up and down the ward with slight support. On this date Dr. Hughlings Jackson saw her and was inclined to attribute her condition to cervical pachymeningitis. On Feb. 5th she was able to get along by herself; the knee-jerks were still exaggerated, and there were ankle and patellar clonus on both sides. On the 17th she was able to walk fairly well by herself; the hands remained about the same. She had complained lately of a tingling sensation in the spine. On March 19th it was noted that the grip of the hands was much stronger, with more coördination of movement. She continued to improve, and on April 9th it was noted that the clonus had disappeared, though the knee-jerks were still

¹ THE LANCET, July 8th, 1893.

² THE LANCET, Aug. 1st, 1891.

³ Annual of the Universal Medical Sciences.