distributed. On exposed surfaces the spots were darker brown in colour. There was no pigmentation of nipples, axillae, or mucous membranes.

These cases present some features of interest. The entire duration of Case I from the onset of distinct symptoms was five months, and the course, though showing the peculiar periodicity of the disease, was typically "progressive." Hunter¹ states those acute cases are the rarest form, and Cabot,² in an analysis of 1,200 cases, found 14 per cent. progressive. The patient definitely dated the onset to an attack of diarrhoea—in itself, as a cause, out of all proportion to the anaemia that followed—and his only previous complaint was of biliousness. It is interesting to note that he made no complaint of a sore mouth until particular inquiry was made on that point, though it had given him considerable pain and he had had recourse to treatment for it frequently. Both diarrhoea and glossitis appeared—according to his statement, when he was "quite well"—before any definite symptoms of anaemia had developed, and both recurred frequently during the course of the illness. In the second case the patient attributed the onset voluntarily to a "sore tongue" followed by diarrhoea. She had been anaemic for some years previously, but after this attack of diarrhoea her condition became rapidly worse. From her history she has had two relapses, and in each the gastro-intestinal symptoms were early and periodic.

These cases appear to me to agree with Hunter's conclusions. As a result of his prolonged experimental, pathological, and clinical inquiries he holds that pernicious anaemia is not merely a special form of anaemia, but that it is a specific entity. "The primary etiological factor is a specific haemolytic infection, giving rise to a specific infective glossitis, gastritis, and enteritis, with sepsis of the alimentary tract, as a potent predisposing factor." "A definite, specific, haemolytic, infectious disease, localized to the alimentary tract, with characteristic mode of onset, clinical features, and course; haemolytic and infective lesions."¹

The appearance and symptoms of Case I at first suggested Addison's disease. The typical lemon-yellow tint of the skin was nowhere present, and the pigmentation of the face to some extent obscured the extreme pallor. N. S. Davis,³ writing on Addison's disease, says "the symptoms of pernicious anaemia are so much like those of Addison's disease that the former might be suspected until the characteristic pigmentation appeared on some part of the surface"; and other writers refer to a possible confusion. In this case the widespread pigmentation of the skin, the presence of well-marked pigment spots on the buccal mucous membrane, with progressive asthenia, gastro-intestinal symptoms, and a tendency to syncope, made a diagnosis doubtful until the blood examination revealed the characteristic changes of pernicious anaemia, and further inquiry brought out the suggestive points in the history.

Pigmentation of the skin is an unusual feature in pernicious anaemia, and most of the textbooks do not refer to its occurrence. Cabot, in his analysis above referred to, found in 38 cases mention of a "brownish tint of the skin resembling sunburn, and usually attributed to overdosing with arsenic." Case II was possibly of this nature, as she had arsenic frequently and over long periods; but the resemblance of the spots in appearance and situation to those in Case I is suggestive. In Case I the administration of arsenic as a cause could be definitely excluded. A number of similar cases have been reported. Laache⁴ noticed a dirty yellowish discoloration of the skin in several cases, which recalled Addison's disease; and Immerman⁵ reported two cases in which a well-marked bronzing of the skin developed. Packhard⁶ has reported a case in which areas of pigmentation were present over the face and body, with areas of leucoderma, and quotes Broadbent as having described a similar case.⁷ Decastello⁸ has reported three cases, in one of which the pigmentary changes corresponded with sensory nerve areas; and Fortune⁹ a case in which well-defined brown patches and brown spots were present over body and limbs. It is noteworthy that in the cases which came to necropsy (Laache, Immerman, Fortune) the suprarenal capsules were found normal. On the other hand, Stanley¹⁰ has described cases of anaemia (pernicious?) in which pigmentation of the skin occurred and in which at

necropsy there were marked changes in the suprarenal bodies.

With the exception of its presence in Addison's disease, buccal pigmentation does not appear to be of common occurrence. It has been reported as having been found, without any very evident cause present; in chronic gastric conditions; in abdominal conditions (Schultz⁹); in Graves's disease (Sibley¹⁰). It does not seem to occur as a result of the prolonged use of arsenic.

With regard to its occurrence in pernicious anaemia, I have found very little reference in the literature. Hale White¹¹ showed a case of pernicious anaemia with pigmentation in the buccal mucous membrane at a meeting of the Association of Physicians of Great Britain and Ireland (May, 1907) of which I have seen no report. Lazarus⁴ reports a case in which "on the tip of the tongue and on the mucous membrane of the cheeks, were circumscribed reddish-brown, mahogany-like discolorations, of punctate to dime size, which were undoubtedly the sites of hyperaesthesia, and probably represented haemorrhages into the mucous membranes."

In the present case the spots were on the palate, lips, and cheeks, but absent from the tongue; insensitive to touch; and no signs of haemorrhage were observed.

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- ⁸ *Ibid.*, February 16th, 1905.
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TWO CASES OF CARDIAC DISEASE.

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THE following notes of two cases of cardiac disease who were under my care at Llangammarch Wells, during the summer of 1908 may be of interest.

CASE I.

A youth, aged 16, who had had a weak heart for several years. His history showed that he had scarlet fever at the age of 6 years, and he also had subsequently several attacks of influenza. In 1902 he had a severe fainting attack, and consulted a specialist, when a cardiac lesion was first observed. A short time before his arrival at Llangammarch he had evidently strained himself by running when at school.

When I saw him in July he was somewhat feeble, being thin and tall; his height was 6 ft. and his weight 9 st. 3 lb. The heart was considerably enlarged. At the apex, which was in the nipple line, the sounds were normal, but at the right base there was a systolic murmur, which was also heard behind. The pulse was regular, 72, and the tension 130 mm. by Potain's manometer. There was extensive granular pharyngitis.

He was placed on a strict course of treatment, which he carried out very faithfully. He drank a glass of barium water three times daily, and he had daily either a barium bath or massage. At the commencement he was, owing to his feeble condition, restricted in his exercise, but after a short time he was encouraged to undertake a little hill climbing. His diet was carefully regulated, and he had a short rest every afternoon. The pharyngeal granulations were destroyed by the galvano-cautery.

He soon began to improve; he gained in weight and strength, and was able to ascend a fairly steep hill slowly without any marked acceleration of the pulse, and without any signs of dyspnoea. This treatment, after the method suggested by Oertel, I find to be of considerable value, and at Llangammarch there are special facilities for carrying it out. It is only used in selected cases.

After six weeks' treatment I found the patient much improved; the area of cardiac dullness had diminished, the apex beat now being distinctly felt half an inch inside the nipple line.

I heard from my patient a few weeks ago, and he reported that he felt very well, had gained in height, and had no cardiac symptoms to trouble him.

CASE II.

A young man, aged 19, had had rheumatic fever at the age of 11, and a second attack in 1907. He was also subject to chorea.

He was anaemic, he stooped considerably, and breathed chiefly through the mouth. The chest was flat, the area of cardiac dullness enlarged, the apex being in the nipple line, where there was heard a loud systolic murmur, which was conducted outwards and heard behind. The pulse was regular, the rate being 68 and the tension low. There was no dyspnoea

and no pain, but he had palpitation occasionally. At times there were slight choreic movements of the facial muscles, and also of the left arm and leg. There was considerable obstruction in the nasal passages owing to hypertrophy of the lower turbinate bodies.

He was placed on a course of general treatment similar to that mentioned above. The mucous membrane of the lower turbinate bodies was cauterized in several stages. After a few weeks he was able to breathe entirely through the nose, and ceased oral respiration. He made good progress, his palpitation ceased, and he was able to take walking exercise with ease and without discomfort. In addition to the balneological treatment I am convinced that the removal of the nasal obstruction had a marked effect in relieving the heart from obstruction in the pulmonary circulation.

A few days ago his medical attendant reported that he had no trouble with the heart and looked very well. The murmur was still present, but the pulse was regular, the rate being 68. He had increased in weight and had no dyspnoea.

One object of the treatment is to train the patient as to the amount and nature of the exercise he may take with benefit, and this forms a valuable guide to him when he returns to his ordinary life.

In conclusion, I should note that the mineral water, besides barium chloride, contains a considerable amount of calcium chloride, which recent observations have shown to have a somewhat similar action—that is, in slowing the pulse and increasing the force of the systole.

CASE OF GENERAL PARALYSIS OF THE INSANE WITH EXTRAORDINARY LYMPHOCYTOSIS IN THE CEREBRO-SPINAL FLUID.

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It is now generally recognized that in tabes and general paralysis of the insane the cerebro-spinal fluid usually—perhaps always—contains an excess of lymphocytes, and that this lymphocytosis may be of considerable value in

exact number could not be estimated. In the non-centrifuged cerebro-spinal fluid the number of leucocytes (almost all lymphocytes) was no less than 285 per c.mm.

I am indebted to Dr. Bramwell for permission to publish the notes of this case.

G. W., aged 30, single, a wine merchant's traveller, was admitted to the Edinburgh Royal Infirmary, under the care of Dr. Byrom Bramwell, on March 5th, 1909, complaining of nervousness and difficulty in speaking.

History.

The history furnished by an intelligent sister was that in July, 1907, it was noticed that he was beginning to speak indistinctly, slurring his words now and then. About six months later occasional twitchings of the lips and unsteadiness of the tongue were noticed. In the summer of 1908 he had a great deal of worry connected with money matters; shortly afterwards the articulation and the movements of the lips seemed to get worse. He was able to work up to June, 1908, but then found he was unable to get on with his employers; he had lived at home since.

His sister had noticed very little change in his general behaviour. There had been no grandiose ideas; his power of concentration was, she said, unaffected.

In 1898 the patient contracted syphilis, developed a rash and sore throat, and took pills for over six months. He had had no other illnesses of note.

Family History.

Nothing bearing on the case.

Social Conditions.

The nature of the patient's employment afforded numerous opportunities of taking wine and spirits, of which he seems to have availed himself freely; he states that at times he drank to considerable excess.

Present Condition.

The patient is a very strong, heavily-built man, with a somewhat hang-dog expression. His weight is 13 st. 5 lb.; two years ago he weighed over 15 st. There are no signs of syphilitic disease on the surface of the body.

Nervous System.

Although his mental symptoms are not well marked yet there is something strange in his manner. While speaking to

Fig. 1.—Photomicrograph of a lumbar puncture film in the case of general paralysis described in the text, magnified 60 diameters. The film was made after centrifuging 5 c.cm. of the fluid for ten minutes. The photograph was taken from a thin portion of the film.

Fig. 2.—Photomicrograph of a lumbar puncture film in the case of general paralysis described in the text, magnified 450 diameters. The film was made after centrifuging 5 c.cm. of the fluid for one minute. The photograph was taken from a thin portion of the film.

the diagnosis of the parasymphilitic diseases of the nervous system.

Under normal circumstances the number of lymphocytes in a field of 450 diameters, in a film made after centrifuging 5 c.cm. of the cerebro-spinal fluid for a period of ten minutes, is usually two or three. In tabes and general paralysis of the insane the number is greatly increased. In several of Dr. Bramwell's cases which I have examined during the past six months the number has been from 200 to 250. Dr. Purves Stuart states that he has observed 450 in a field. In the following case the enormous number of 3,450 was counted in a single field of 450 diameters; in places where the film was thick this number was greatly exceeded, but, owing to the thickness of the clumps, the

him you get the impression that you are dealing with a person of rather childish intellect. Sometimes he is timid, at other times suspicious and morose.

There are no abnormal sensations (paraesthesiae) and no objective disturbances of sensation, except that the patient is rather less sensitive to pain than the average man.

The gait is normal; there is no Rombergism and no paralysis. In the muscles of the legs, and to a lesser extent in those of the arms and trunk, there is a curious fibrillary tremor. When the patient holds out the hand there is a slight tremor. There is marked tremor of the lips, tongue, facial muscles, and eyelids.

The tremor of the eyelids is very marked when the eyes are tightly shut. There is no ocular paralysis and no definite nystagmus, though the eyes are jerky when the patient tries to fix a near object. The pupils are equal, each measuring 4 mm. in diameter; the left pupil is very slightly irregular in out-