in 1903 had suggested that pre-natal tuberculosis might in some cases possibly be caused by the foetus swallowing liquor amnii containing tubercle bacilli derived from a disintegrating lesion of the placenta. How rare cases of true congenital tuberculosis must be may be judged by the fact that in 1916 one of us was able to summarize all the hitherto proved and probable cases of true congenital tuberculosis in a short article published in the *British Journal of Children's Diseases*.¹¹

In our present paper it would perhaps have been better to use the term "malignant melanoma" instead of melanotic sarcoma, as it might possibly be suggested that the primary growth in the mother (the site of which is not certain) was a melanotic carcinoma. The tumours in the child's liver were obviously of multiple metastatic type, and it is the absence of any primary tumour in the child that makes the case unique, the real primary growth having been, of course, in the dead mother. The inoculation of the child may have taken place not long before, or even at, birth.

The liver, now in the museum of the Royal College of Surgeons of England, was demonstrated by us on February 28th, at the Section for the Study of Disease in Children, of the Royal Society of Medicine.

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APHONIA, DYSPHONIA, AND THE "SINGER'S ATTITUDE."

BY

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At the last meeting of the Section of Laryngology of the Royal Society of Medicine I referred to my application to the treatment of functional aphonia of Mr. Negus's observation that in certain animals, particularly the climbing ones, the efforts made with the fore limbs were accompanied by an approximation of the vocal cords. Mr. Negus kindly placed at my disposal an apparatus containing a strong spiral spring, which resisted the pressure made by the hands on the two ends. The result was most satisfactory, as the involuntary approximation of the cords added a valuable additional factor in the restoration of voice. I found that in the absence of the spring-pressure instrument a similar result was obtained by making the patient press together my hands or those of a nurse standing behind her (or him). This procedure helped to restore the voice with less frequent resort to the distressing faradic stimulation which is sometimes inevitable.

In the treatment of singers suffering from functional difficulty in voice production with paresis of the internal tensors or transverse arytenoid muscles (elliptical glottis or posterior triangular gap) I have found this "arm-adduction" pressure most helpful. The following is a recent case in point.

Miss Y., aged 23, a contralto of considerable ability who had been studying singing for over a year, found that for some weeks her voice was husky and the "attack" uncertain. The laryngoscope showed imperfect approximation of the cords, the vibrating parts of the cords having an elliptical opening between them and the cartilaginous portion a triangular one. The "arm-adduction" against resistance was followed by an approximation of the cords

to almost the normal degree, and with it a great increase in the certainty of the "attack." The confidence in herself, which is of such importance to a singer, was again established, and she was at once able to apply the appropriate general principles inculcated by her teacher with every success.

The "attitude" adopted by many singers in which the hands are held together as in prayer, or in holding a little book of the words, is in most cases probably a fashionable affectation, but it may become an extra help in producing approximation of the cords if the hands are not merely in contact but compressed together. I can conceive this application of the attitude described as being of great use to a singer. It should, however, be accompanied by the lower lateral costal method of breathing, which is, for singing purposes, probably the best.

Among other ancillary helps towards combating the perverse gaping of the glottis in functional aphonia I find induction of the "inspiratory phonation" of the vowel sound "ee" followed by the expiratory "aw" effective in spite of, or, perhaps all the more, on account of, the grotesque effect. Another adjunct is the application of "Bárány's noise-box" to the two ears while asking the patient such a question as he may be anxious to answer. If the noise is suddenly turned off while he is giving his answer he may be surprised at the discovery that he is talking in a loud or even shouting voice.

I am grateful to Mr. Negus for his masterly investigation, and am pleased to have given it immediate clinical application.

A NOTE ON DISSEMINATED SCLEROSIS.*

BY

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DISSEMINATED sclerosis is one of the most common organic diseases of the nervous system met with in Northern Ireland, and apparently occurs more frequently here than in other parts of the world. In the Royal Victoria Hospital, Belfast, 728 cases of disease of the nervous system were treated in the wards during the past three years, this total including neuroses, psychoses, epilepsy, chorea, and neuritis; 106, or 14.5 per cent., of these were cases of disseminated sclerosis. I have analysed 100 cases, 40 of which were under my own observation. From this analysis I have obtained statistics regarding the sex, age, and occupational incidence, also mode of onset and relative frequency of certain symptoms. Doubtful cases were rejected, and the possibility of syphilis was invariably excluded.

ETIOLOGY.

Although the disease is stated to be equally common in males and females, I found that males were more frequently affected, the proportion being 3 to 2 (males 61, females 39). The onset is most common between the ages of 20 and 40; the average age at onset was 29, the youngest patient being 11 years and the oldest 59. Five children under 15 were affected, and three adults over 50. As regards occupation, two-thirds of the patients were town workers and one-third country workers; 10 per cent. were farmers. The hospital records show that in 1927, out of a total of 5,450 in-patients treated, 540, or 10 per cent., came from the country, and 157, or 3 per cent., were farmers.

This would seem to indicate that disseminated sclerosis was three times more prevalent in farmers and in people living in the country than among those dwelling in towns. To check this I analysed another series of medical cases (heart and kidney), and found, somewhat to my surprise, that the proportion of country cases was only 10 per cent. and farmers 2 per cent. From these findings there would seem to be no doubt that disseminated sclerosis is more common among those living in country districts. The occupational statistics which I have given do not seemingly support the contention that this disease is more common in wood workers.

Heredity seems to have no bearing on the incidence of infection. Even in families with a definite neuropathic history disseminated sclerosis does not necessarily show

* Condensed from a Presidential Address delivered to the Ulster Branch of the British Medical Association.

itself. It is said to be exceedingly rare to have more than one case in the same family. Since preparing these statistics I have seen a brother and sister affected, and have been told of another brother and sister suffering from this disease.

I do not propose to discuss the question of the specific causative agent; it will suffice to say that, although considerable evidence has been brought forward in favour of a spirochaetal infection, this has not yet been definitely proven. It has been suggested that the infection might be transmitted by an insect bite, but, owing to the sporadic occurrence of these cases, I think that this is unlikely. In the cerebro-spinal fluid there is, as a rule, no definite change, except perhaps a slight increase in the cell content. In my cases the average number of cells present was 6, but in a few cases no cells were found.

CLINICAL FEATURES.

There are two distinct types of this disease: (1) the slowly progressive case with insidious onset; and (2) the case in which there is an acute onset, with striking remissions and often apparent cure. I feel inclined to believe that these types may constitute two separate clinical entities. Other types are described, depending on the part of the nervous system which is chiefly affected; these are: the spinal cord type; the cerebral type (headaches, dizziness, diplopia, optic atrophy, etc.); the cerebellar type; and the hemiplegic type.

Onset.—In 79 cases the onset was insidious, usually with weakness and ataxia of lower limbs, and frequently preceded by pains, tingling, or numbness. In 21 the onset was sudden. In 10 cases temporary diminution or loss of vision was the first symptom; in 6 cases diplopia; and in 3 cases headache and vomiting. Two cases started as hemiplegia, and afterwards developed the typical signs of the disease.

Remissions.—When the onset is insidious the course of the disease tends to be slowly progressive, with occasional partial remissions. When the onset is acute, complete, or almost complete, remissions are frequent. There were definite remissions in 25 per cent. of these cases. In one case there was a remission, with complete recovery for eleven years, before further symptoms developed.

Another patient of mine had a number of striking remissions.

This patient became ill thirteen years ago with paresis of left arm and leg, which cleared up completely. Four years later he was laid up for a time with dizziness and nausea, without paresis. Two years after this he suddenly lost the sight of his left eye. Vision gradually returned, but about a month later his speech became thick and slurring, and he lost the power of his left arm and leg; he also complained of diplopia. He recovered almost completely from this attack, and remained well and at work for a year when he had a slight attack, involving the right side of the body, which only troubled him for a short time. The following year he had a similar attack, which also cleared up. I saw him after this, and he was quite well, except that he walked with a halt. I have not seen him for some years, but am informed that he is keeping well.

SYMPTOMS.

The percentage frequency of symptoms is shown in the following table.

	Per cent.
Paresis or paralysis of lower limbs	97
Knee-jerks exaggerated	96
Babinski's sign present	87
Ankle clonus present	79
Alterations of sensation (chiefly subjective)	79
Modification of abdominal reflexes	77
Nystagmus present	76
Paresis, paralysis, or ataxia of upper limbs	70
Bladder symptoms, (precipitancy, hesitancy, or incontinence)	49
Intention tremor	48
Atrophy or pallor of optic discs	47
Diplopia (transient)	36
Dysarthria	33
Mental change	32
Dizziness	26
Temporary loss of vision	15
Defective hearing	12
Ptosis	5

The commonest symptoms, therefore, were spastic paresis of the lower limbs, with Babinski's sign and ankle clonus (in some cases marked ataxia was the chief feature); subjective sensory changes; loss or modification of abdominal and cremasteric reflexes; nystagmus; bladder symptoms; and intention tremor.

Psychical changes are more marked in the advanced cases where delayed cerebation and mild dementia are common. Emotional instability frequently occurs. Euphoria is often a feature, but depression may occur.

The following subjective sensory symptoms are frequently noted: numbness, tingling, sensation of heat or cold, pains, headaches, stiffness, and aching feeling in back. Abdominal pain and discomfort are present in some cases. Two of my patients were operated on for abdominal trouble shortly before disseminated sclerosis was diagnosed, and no definite pathological condition was found to account for the symptoms. In another case an operation was performed for the relief of intermittent claudication of the right leg; a few months later the patient was found to be a typical case of disseminated sclerosis. Such cases would suggest that the vegetative nervous system may be involved in this disease.

Objective sensory change is not so common, but frequently careful examination reveals some definite impairment. Astereognosis occurs in a number of cases. Scanning speech, in my experience, is infrequent, and, if it occurs, is only found in advanced cases. Slurring speech is much more frequent.

The course of the disease is very chronic, though acute cases have been described. Most cases last from ten to twenty years, and death is frequently due to some inter-current disease.

Whilst the ultimate prognosis is undoubtedly grave, in a large number of cases with a fairly sudden onset and definite remissions the patients may live a useful life for many years. In a small percentage of these cases complete recovery seems to occur.

TREATMENT.

Since remissions are frequent, and the course of the disease is so chronic, it is difficult to assess accurately the results of treatment. Massage, electrical treatment, and re-education exercises are very important. Over-exertion is to be avoided, but patients should be encouraged to move about, if able to do so. Infection by the malarial parasite is stated to have been beneficial in some cases.

Of drugs, arsenic, hexamine, and potassium iodide are frequently prescribed. Silver salvarsan seems to be of distinct value, and appears to be superior to salvarsan in this disease. A course of seven or eight intravenous injections (0.05 up to 0.15 gram) should be given at weekly intervals till 1 gram has been administered. Not more than three or four courses should be given in one year. This seems to be a small dosage, but, in dealing with a chronic disease where treatment is likely to be prolonged for many years, it is better to err on the safe side rather than run any risk of injuring the liver, which would prevent further use of the drug.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PRIMARY OVARIAN PREGNANCY.

IN view of the rarity of the occurrence of ovarian pregnancy the clinical details of a case which appears to have been of this kind may prove to be of general interest.

A woman, aged 27, who had been married for six years, had given birth to a boy after a normal labour in 1924. She had had two miscarriages, in 1926 and 1928 respectively. Menstruation was of the 3/21 type, always preceded by pain.

About midday on December 10th, 1929, severe abdominal pain developed, being most marked in the right iliac fossa and spreading across the abdomen. It was thought to be due to colic, and continued all day, but became less at night, leaving, however, soreness, which prevented sleep. On the following morning the patient was able to get up and take a little breakfast, but about midday the pain returned; it was more severe than before, and again began in the right iliac fossa, spreading across to the other side. She returned to bed and applied heat to the abdomen, but the pain did not cease, and she became exhausted. On examination, at the first visit that night (9 p.m.), the temperature was found to be 101°; the pulse was 98, thready and irregular. The patient was very blanched and partly collapsed. The abdomen was slightly distended generally, with a little resistance and tenderness over McBurney's point; vaginal examination revealed