of Londoners who died within the last two hundred years. If cancer of the tongue were the direct result of carious teeth the disease should have been as well known to the surgeons at Rome as it now is to us. But neither in Celsus nor in the Latin satirical poets is there any allusion to it.

An examination of the records of St. Bartholomew's Hospital showed that 169 persons were admitted with cancer of the tongue during the years 1909-1916. Nine of the patients were women, the rest were men. The proportion of men to women admitted into the hospital during this period, therefore, was eighteen to one; the true proportion, as shown by the returns of the Registrar-General, being one woman to eight men. Of the women seven were married, one was unmarried, and the social state of the other is not mentioned. Of the seven married women one gave a history of syphilis, two showed signs of syphilis, and one was a widow who had only one child alive out of five; the note adds, "she looks as if she drank." One woman had leucoplakia of the tongue at the age of 17, and stated that her father had suffered from an "abscess of the brain" which was cured by medicine. This was probably a gummatous meningitis. There was no history of syphilis, either acquired or inherited, in the other two married women. The unmarried woman—a nurse—said that her father died of aneurysm, and that she herself had suffered from an abducent paralysis, which came on suddenly and was cured by medicine. None of the women smoked, but all had bad teeth.

In the case of the men 93 out of the 160 were syphilitic, 62 of these gave a history of syphilis, and the remaining 31 showed signs of the disease. The syphilis was invariably of long standing, and taking a few cases in the series without selection the primary infection was said to have been 26 years, 30 years, 29 years, 40 years, 28 years, 23 years, and 43 years previously. Twenty-six patients stated definitely that they had never had syphilis, but one of these had suffered from gonorrhoea, and two had a positive Wassermann test. Many of the patients had drunk to excess, but did not as a rule acknowledge that they had taken spirits freely. A Wassermann test had only been performed 26 times, with the result that it was negative in twelve and positive in six cases; in five it was doubtfully negative, and in three doubtfully positive. These results were compared with those obtained by Captain Arnold Renshaw, R.A.M.C., of the Manchester University Medical School, and Captain Archibald Leitch, R.A.M.C.(T.), of the Cancer Hospital, Brompton. The evidence brought forward pointed to a close association between syphilis and cancer of the tongue. The syphilis may be active, it is more often quiescent or even extinct, and the conclusion arrived at was that, as in some cases of tuberculosis, "syphilis makes the bed upon which cancer is born." It appeared further that an increase in the number of deaths from lingual carcinoma has occurred after periods when mercury has temporarily fallen into disuse in the treatment of syphilis. Such insufficient treatment was the rule in the later years of Queen Elizabeth's reign, when guaiacum, sarsaparilla and the "vegetable" cures displaced the original mercurial methods; during the Regency period when some of the army medical officers nearly succeeded in abolishing the use of mercury; and again in the early Victorian era, when the value of potassium iodide was unduly exploited. It is interesting to notice that many of the patients whose cases are recorded at St. Bartholomew's Hospital stated voluntarily that they had only been treated with mercury for a fortnight or three weeks, after which they considered themselves cured.

Syphilis cannot be considered as more than a predisposing cause of cancer of the tongue, because lingual carcinoma occurs in animals. An exciting cause, therefore, must be looked for, and that cause must have become more prevalent during the last fifty years if the increase in cancer of the tongue is to be attributed to it. The cause must also be one which acts in men more than in women. The increased consumption of tobacco seems to fulfil these conditions. Cancer of the tongue did not become frequent until some years after the introduction of smoking in the last quarter of the sixteenth century. The habit spread slowly during the seventeenth, eighteenth, and nineteenth centuries, until cigars could be smoked openly in the streets by the upper and middle classes, though pipes were taboo in public. Cigarettes

were introduced about 1877, and from that time onwards the smoking of tobacco has steadily increased, until it is now an almost universal habit with both sexes from adolescence onwards. Smoking acts in two ways as an irritant to the tongue, partly through the nicotine and partly by the increased heat in the mouth, which is measurable by the thermometer. In the latter respect it may bear the same relation to cancer that heat does in kangri cancer, where the thermal irritation appears to be a definite factor in the production of epithelioma. Although the predisposing and the exciting causes of cancer may be known, the actual cause has yet to be discovered; but if two factors are recognized, it ought not to be impossible to discover the third.

In conclusion the lecturer thought that it was theoretically possible to reduce cancer of the tongue to the subordinate position it occupied in man before the seventeenth century, and which it still holds in the domestic animals. This could be effected by a thorough treatment of syphilis in its initial stages. Persons who were being treated for syphilis should be told never to smoke, not to drink to excess, and to pay regular visits to the dentist. Such advice should be given whilst the patient was still under treatment, and should not be deferred until the tongue had become sore. Failure to follow this advice or a continuance of the treatment of syphilis on ineffective lines would be followed in all probability by a very large increase in the number of patients with cancer of the tongue. This increase should begin about 1950, and should affect women as well as men, for syphilis is now more widely spread amongst the younger generation than it has been for many years past, and both sexes smoke much larger quantities of tobacco than ever before.

A NOTE ON A CASE OF ACUTE FEBRILE POLYNEURITIS.

BY

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UNDER the title "Acute febrile polyneuritis" Gordon Holmes has described a type of polyneuritis presenting a characteristic combination of symptoms which had not previously been described. This series of cases, some twelve in number, occurred among men from all parts of the territory occupied by the British armies in France, and other observers, French and German, have since reported similar cases appearing on the Western front. The case which we describe below appears to belong to this type, and, so far as we are aware, is the first which has occurred in the British Salonica Force, and therefore, we think, worthy of record.

History of Case.

Lieut.-Col. N., M.G.C., came to Macedonia from France in November, 1915, and with the exception of one trivial attack of diarrhoea, remained free from malaria or dysentery, and in good health until the onset of his illness on March 4th, 1918. He awoke feeling quite well, but in the course of the forenoon developed severe pain in the back of his neck. In the evening this was present in both lower limbs, and he had considerable difficulty in walking, his gait resembling that of a drunken man. He felt slightly feverish, but had no shivering, vomiting, or sweating. For the first two days of his illness he had no control over his bowels.

On admission to hospital, on March 6th, both lower limbs were weak, but slight pain was now only present in the small of the back and legs. Two days later he complained of being unable to open his mouth sufficiently wide to eat solid food. Articulation was altered, and some weakness of the upper part of the face noted.

On admission to a general hospital on March 10th his condition was as follows: Higher mental functions normal. Paresis of the left external rectus, and complete paralysis of all muscles supplied by the facial nerves; face expressionless, and drooping of both lower eyelids. Articulation difficult and slightly indistinct. Difficulty in swallowing, especially solids; other cranial nerves normal.

Sensory Functions.—Slowness of perception to rough tests (finger and pin) for tactile and painful stimuli over both lower limbs.

Motor Functions.—Trunk and abdominal muscles normal. Paralysis of diaphragm. Hand grasps weak. Both lower limbs can be lifted a few inches from the bed. Movement at ankles good; flexion of knee and extension of limb against resistance very weak. Gait staggering and greatly enfeebled. No definite inco-ordination of limbs. Sense of posture good.

Reflexes.—Abdominal and plantar reflexes absent. Supinator and biceps jerks equal and active; triceps not elicited. Knee and ankle jerks absent. Organic reflexes: Passes urine naturally, no retention. Anal sphincters intact.

Cerebro-spinal fluid clear under normal pressure. No increase in cells or globulins. Pulse regular, 87, good strength, vessel slightly thickened. Blood pressure 144 to 78 mm. Tongue clean, rather flabby. Abdomen, no tenderness. Liver and spleen not enlarged.

Four days later the facial paralysis had become less profound, the patient being able to half close his eyes.

On admission to the neurological department on March 22nd further improvement was found to have occurred. No disturbance of cutaneous sensibility could be detected save for the appreciation of simultaneously applied compass points on the limbs. Accessible nerve trunks were tender to pressure. The diaphragm contracted normally. The upper and lower limbs were still parietic. The abdominal reflexes were now present; triceps jerks could be elicited. The left plantar reflex was present. Electrical examination showed marked diminution to faradism in the facial muscles, especially those of the right side, and diminution in those of the lower limbs. On March 25th the patient had a typical malarial attack. Benign tertian parasites were present in his blood.

On March 29th (twenty-five days after onset of illness) considerable improvement was noted. Some degree of voluntary motor power had returned in the muscles of the face, and both lower limbs were much stronger. When examined a week later the patient could wrinkle his forehead, partially close his eyes, smile, and show his teeth. His knee-jerks were both present.

Slow but continued progress was made from this date onwards. When examined prior to evacuation, fourteen weeks after the commencement of his illness, his condition was as follows: He complains of difficulty in chewing, swallowing, in closing his eyes, and of excessive secretion of tears; also of occasional double vision. Mental functions normal. Fine tremor of outstretched limbs, and fibrillary tremor of right lower facial muscles. Articulation indistinct, especially labiodentals. Vision normal. Pupils react normally to light and on accommodation. Ocular axes parallel—no nystagmus. The facial lines of expression are almost entirely absent except those of the forehead. There is a falling in of cheeks, and widening of palpebral apertures. He is able to wrinkle his brow, to purse his lips, to expose his teeth, and to retract the angles of his mouth to a limited extent. He is able partially to close his eyes, the left more than the right. Emotional movements are present, but more marked on the left side. He is unable to blow out his cheeks or to whistle. Percussion of supraorbital nerves produces slight elevation of eyebrows. Palate moves normally on phonation; tongue protrudes evenly. Other cranial nerves normal. Sensory functions normal. Motor functions normal. Gait normal. Reflexes: Epigastric and abdominal reflexes present and equal. Plantar reflexes normal. Supinator jerks present and equal; biceps and triceps jerks brisk and equal; knee and ankle jerks normal. Organic reflexes normal. Electrical reactions: To faradism, diminution in all facial muscles, but most markedly in those of the right lower face.

For the establishment of a diagnosis of acute febrile polyneuritis certain clinical features form a trustworthy guide, and their importance is emphasized by Gordon Holmes. These are:

Rapidly developing and widespread flaccid motor paralysis which involves to an exceptional degree the facial muscles, those concerned in deglutition, occasionally the ocular muscles and the sphincters. Sensory disturbances, on the other hand, are relatively insignificant, and the amount of pain and paraesthesia is slight in relation to the severity of the motor affection. The early date at which improvement sets in is another striking feature.

The symptoms exhibited by this patient conformed so closely to those described by Holmes that we consider ourselves justified in regarding the case as one of acute febrile polyneuritis. The sudden onset of the illness in a healthy man with a feeling of malaise and slight fever (but with no shivering, vomiting, sweating, or other symptoms characteristic of malaria), the rapidly developing flaccid motor paralysis, the implication of certain cranial nerves, the early loss of sphincter control, and the relatively insignificant sensory changes, are all in accordance with the usual clinical features.

In brief, the lower limbs showed a marked degree of paralysis, but no individual movement was impossible, nor were the distal segments of the limbs more parietic than the proximal. Muscular atrophy occurred to a very slight degree. The muscles of the upper limbs were much less severely affected. No affection of the intercostal or abdominal muscles was noted. Complete paralysis of all muscles innervated by the seventh cranial nerves was observed on the third day of the patient's illness, and formed a striking feature of the clinical picture. Articulation was slurred and indistinct. Neither the tongue nor the palate was involved, but the patient experienced difficulty in swallowing. There was no involvement of the

muscles of mastication, and phonation was unaffected. The reactions of the pupils were normal, but paresis of the left external rectus was noted, and the patient complained of occasional double vision. Cutaneous sensory disturbance was very slight. At first slowness of perception of tactile and painful stimuli was noted, and at a later date a raised threshold for the appreciation of simultaneously applied compass points. Joint sense and vibration "sense" were apparently normal. The abdominal and plantar reflexes were absent; also the deep reflexes (except the triceps jerks). Incontinence of faeces existed for two days. There was no disorder of mental functions. Definite improvement was noted twelve days after the onset of the symptoms. Examination of blood, the cerebro-spinal fluid, and the urine yielded negative results. It remains to be noted that in one or two particulars the patient did not conform to the usual clinical features. While sphincter trouble was very transient, the difficulty in swallowing persisted up to the time of the patient's evacuation from Macedonia. Paralysis of the diaphragm, not hitherto recorded, was present in this case. The proprioceptive forms of sensation, which are said to be frequently involved, were unaffected.

Etiology.

Finally, reference must be made to the problem of the actual cause of the condition. The possibility that the patient's symptoms were determined by the action of malaria toxins requires consideration, for, as noted in the clinical history, a typical malarial attack occurred on the twenty-first day of his illness, the parasite of benign tertian fever being demonstrated in his blood. The widespread prevalence of malaria in the Salonica Force has led to a great many clinical conditions being labelled "post-malarial" on very slender grounds, for it is undoubtedly the case that many of them occur just as frequently in other areas where malaria is unknown. The presence in the blood of a patient of the malaria parasite therefore gives no conclusive proof that some new disorder, developed perhaps weeks or months after the paroxysm, is conditioned by the malaria toxin. In the case recorded above there was no history suggestive of malaria, nor was the parasite found until the patient had been three weeks in hospital. It is of course possible that the patient may have had a latent infection or that he contracted the infection in hospital, although the season of the year does not favour the latter suggestion. Moreover, in many patients who have suffered from malaria, examination of the blood shows an increased proportion of lymphocytes. A differential blood count in our patient gave normal results.

But our chief grounds for believing that the nervous condition could not be considered a malarial sequela are clinical. In the cases of post-malarial multiple neuritis which we have had the opportunity of studying the clinical features have been very different from those described above. We have always obtained a history of a typical malarial paroxysm, preceding the onset of the nervous symptoms by a period of several days, and although the development of symptoms may be considered rapid it is certainly less acute than in febrile polyneuritis. Sensory symptoms are always marked, and affect cutaneous sensibility to a greater extent than the other proprioceptive forms of sensation. We have never observed involvement of the sphincters. On the other hand, the cerebro-spinal fluid is seldom normal, and may contain a markedly increased albumin content. The recent occurrence of a variety of poliomyelitis in epidemic form in the British Isles suggests the presence of some such pathological basis in the case described, but the complete integrity of the mental functions in our patient, and clinical course of the symptoms, renders such an etiology extremely unlikely.

We are indebted to Lieut.-Colonel N. J. C. Rutherford, D.S.O., R.A.M.C., for permission to publish this case.

COSTA and TROISIER have found (*Société de Biologie*) that the cerebro-spinal fluid in cases of spirochaetosis icterohaemorrhagica is more virulent to guinea-pigs than the blood.

THE Paris Academy of Medicine has awarded the Saintour prize to Dr. Augustin Cabanès for his recently published work entitled *Chirurgiens et blessés à travers l'histoire: origines de la Croix Rouge*.