public performance which he gave in the asylum recreation hall and which excited him very much. When he recovered he had no recollection of what had transpired during the breakdown, but later on whilst in the hypnotic state he recalled the circumstances. Finally, I would like to take this opportunity of thanking Dr. W. G. Parker for permission to publish these notes, and for his kindness and help during their compilation.

Notes on Four Cases of Huntington's Chorea.

By RICHARD EAGER, M.B., Ch.B.Aberd., Senior Assistant Medical Officer, and J. R. PERDRAU, M.B., B.S.Lond., Junior Assistant Medical Officer, Devon County Asylum.

OWING to the comparative rarity of this disease a short account of the following cases admitted into the Devon County Asylum might prove interesting.

CASE I.—W. C—, male, æt. 35 on admission in 1882. Mother suffered from chorea accompanied by mental derangement during the latter part of her life. A brother, who died recently, also showed the same symptoms for several years before death at the age of 61.

On admission the most prominent symptoms were partial loss of memory and general mental inactivity with auditory hallucinations. The speech was slow, and was described as characteristic of general paralysis of the insane. The pupils were unequal, and he had fibrillary tremors of tongue and facial muscles. Gait unsteady. Heart-sounds normal.

The notes in the case-books until 1892 only record increasing dementia. In 1892 there is a note to the effect that his facial muscles were always twitching, and that he was very obstinate. In 1899 the notes are: "Very demented and obstinate, shows loss of attention and memory, and is inclined to be very irritable at times." Four months before death, which occurred last February, he was found to be always twisting himself about and constantly passing his hands in front of his face the movements being involuntary, irregular, slow, of small range and affecting the whole body. Knee-jerks exaggerated. Mental condition was one of profound dementia. No other signs or symptoms beyond those recorded above. He developed lobar pneumonia last February and died.

A *post-mortem* examination was held. The skull was thin and soft, and the membranes much thickened and adherent to each other. The pia was firmly adherent to the cortex, especially along the upper and anterior part of the margins of the great longitudinal fissure, where marked decortication was present. No further notes were made of the gross lesions of the brain, as it was kept whole for microscopical examination, as were the spinal cord and portions of various nerves. The general external appearance of the brain was very suggestive of general paralysis of the insane. The lower lobe of the left lung was in a stage of grey hepatisation, and the lower and middle lobes on the

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right side of red hepatisation. The rest of the *post-mortem* showed nothing of interest.

CASE 2.—M. A—, female, æt. 45 on admission in April, 1903. Family history same as in Case 4, whose sister she is. Has led a very loose life, and is stated to have been very intemperate. No details of personal history anterior to October, 1902, could be obtained. She is reported to have been excitable and impulsive then.

On admission she was garrulous and complained without cause of bad treatment at the workhouse, whilst her memory for recent events was impaired. Since admission she is reported as a very quarrelsome patient. She has expressed delusions of having been promised work outside, and on that account has made frequent requests for her discharge. Her mental condition has been slowly progressing towards dementia. She is now disorientated as regards time and place, and is inclined to be wet and dirty in her habits. Perception good, but power of attention poor.

Up to this year there are no notes to the effect that she had any involuntary movements, but the matron, who has known her since her admission, says, though not present on admission, they came on gradually and were much worse two years ago than now. The movements are slow, involuntary, of very small range and affect the whole body. They are most marked in the face and neck, and sometimes affect the hands in the form of athetosis. The tendency to pick up objects with the thumb and index finger, to the exclusion of the other fingers, is not so marked as in the other cases, but still is noticeable. The tongue cannot be kept still when protruded. The gait is unsteady, and she tends to bear to either side when walking. Nothing abnormal was found in the fundus of either eye.

CASE 3.—J. V—, female, æt. 47 on admission in November, 1907. Her father and paternal grandmother and great-grandmother suffered from chorea. In the father the disease started at the age of 37, and he died at 57. Grandmother died at the age of 70. They were all subject to great irritability of temper, but not of sufficient gravity to necessitate asylum treatment.

The patient has suffered from chorea since she was 33 years old. Until then she was bright, and held good situations, and the symptoms were stated on admission to have been coming on for one month.

On admission she was conscious, had delusions of grandeur, *e.g.*, called the asylum a castle, and herself and the nurse, queens. Perception good, some ideational inertia, attention difficult to attract; chatters incoherently, and is very irritable, obstinate and violent at times. Irregular, involuntary movements are present affecting the whole body, and are increased during excitement. The movements are slow, and of a twisting, eel-like character, and are most marked in the arms, neck and face. No tremors in tongue. Movements cease during sleep, but are present in a mild form in a half-sleeping state. Speech slow and halting, with some syllabic stumbling. Gait reeling and unsteady. Holds articles between thumb and index-finger. Knee-jerks equal and exaggerated. Pupils equal, small, and react to light and accommodation. Heart-sounds normal. Has slight optic neuritis, especially in right eye. She was treated without success

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with arsenic, and the disease has run a chronic course since admission. She still has delusions of grandeur, and is very impulsive, and shows signs of advancing dementia.

CASE 4.—H. V—, male, æt. 48 on admission in March, 1910. Father died at the age of 72, after suffering for several years from chorea and mental enfeeblement. One sister is M. A—, Case 2. Has had gonorrhœa, and was in the Army. He has been in and out of the workhouse for the past four years, during which time the most conspicuous symptoms have been marked choreiform movements and great irritability of temper, leading to acts of violence at times. Symptoms have been getting worse. On admission he was quiet, but irritable. Gives a good account of his past life, but his memory for recent events is bad. Speech slow and halting through lack of control over the movements of the tongue. Perception and attention umimpaired. Is inclined to be grandiose. Choreiform movements affect the whole body, and are of a twisting character. The muscles mostly affected are those of the trunk, neck and limbs. Facial muscles but slightly affected. The grosser movements of the tongue are impaired, but no fibrillary tremors are present. Handwriting almost illegible. Has a tendency to use thumb and forefinger to the exclusion of the other fingers. Gait waddling, the adductor muscles being especially affected. Pupils unequal, left being larger than right in subdued light, but they contract to the same extent in a bright light. Knee-jerks equal and brisk. Plantar reflex flexor. Skin-reflexes normal. Heart-sounds normal.

He has not been so irritable since admission, but the movements are as pronounced now as they were three months ago.

The diagnosis in all four cases was based on—heredity, age at onset, the presence and peculiar character of the choreiform movements, their irritability with progressive dementia and various physical signs resembling those of general paralysis.

They were all of the working class and belonged to Devonshire. No inter-relation could be traced between the three families, and it was found impossible to obtain more information of their family history than has been recorded above. No history of a sudden onset was obtained in any of these cases. The movements were involuntary and irregular, Case 2 showing a tendency to repeat the same movements at times. In Cases 3 and 4 the movements could be stopped voluntarily for not more than a fraction of a minute. Case 2 has shown a tendency at times to lose control over the sphincters. No gross affection of the ocular muscles was recorded in any of them, and none of them ever threatened or attempted suicide. Transmission was direct in all three families recorded. Cases 1, 2, and 4 represent the second generation as far as could be ascertained,

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and have brothers and sisters who have reached middle life without being affected. Case 1 had two sons who cannot be traced. Case 3 represents the fourth generation so affected and has a healthy daughter, æt. 21. Menzies, in a paper in the *Journal of Mental Science*, 1893, records the case of a family affected for six generations, and remarks that the tendency is for the disease to die out if the other partner in marriage belongs to a healthy stock.

The close resemblance of these cases to general paralysis of the insane is remarkable not only as regards physical signs in all four and the *post-mortem* appearance of the brain in Case 1, but mentally as well, *e.g.*, delusions of grandeur. Some continental writers seem to regard the two diseases as identical, though, from the point of view of heredity only, this is most unlikely. It might be mentioned that Wassermann's reaction has not been performed on any of these cases yet.

We are indebted to Dr. Davis for permission to publish these cases.

Three Unusual Cases of General Paralysis. By GUY R. EAST, M.B., Assistant Medical Officer, Northumberland County Asylum, Morpeth.

MY excuse for reporting the following three cases is to draw attention to the fact that occasionally the initial attack of insanity in general paralysis does not present any of the signs and evidences of that disease, so that such cases are easily passed over and not diagnosed, no matter how carefully medical examination is conducted.

There is no doubt that such cases enable one to account for reported recoveries in general paralysis, not one of which was ever permanent where the diagnosis proved correct. In none of these three cases were there any evident signs of general paralysis present when they were first admitted, and on recovery they were discharged as "recovered." J. C— remained rational for four years, G. H— for two years, W. H— for one year.

On re-admission all three cases were readily diagnosed as general paralysis, and in two cases, where a fatal terminal occurred later, the diagnosis was confirmed by *post-mortem* examination. In one case only (G. H—) will be found gran-

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