Her twin, however, A. L. W., who it may be remarked has never had anything in the nature of a "fit," gradually, but with short relapses, began to recover, and on June 11th, 1882, is reported as being better, and from this time the improvement was gradual, and unattended with relapse, till October 16th, when patient, being quite well, was discharged recovered.

General Paralysis from Cranial Injury. By Wm. Julius Mickle, M.D.

Traumatic general paralysis, in its broad sense, is so large a subject that attention is limited here to cases following cranial injury.

I have elsewhere* mentioned cranial injuries as being sometimes the predisposing, and sometimes the exciting causes of general paralysis, and their influence is usually accepted. In two of the twenty cases, of which details are given at the end of the work just cited, cranial injuries were alleged as presumptive predisposing causes.

In the cases that have come under my own observation, where cranial injury has conduced to general paralysis, it has, in the majority, seemed to play the part of a predisposing rather than of an exciting cause. And yet in some examples this may be so in appearance only, and may not represent the actual course of events; for the injury may have left behind it not only a permanently damaged condition of encephalon, but also some obscure, insidious and undetected inflammatory process about the brain-surface and meninges, which, either with or without any augmentation of its activity and extent from the operation of some other existing cause of the disease occurring later in time, and perhaps acting more directly, may have culminated in general paralysis.

From cranial injury may arise molecular perturbation of the cerebral tissues, or bruisings, crushings, hæmorrhages, and even ruptures in the same, or in the meninges.

In speaking of cranial injury as a predisposing cause of general paralysis, we may suppose that in consequence of latent residual results of the above-named hurtful immediate effects of trauma, either the cerebral tissues are simply less resistant to the influences of ordinary causes of the pathological process which underlies general paralysis, or that this

* "General Paralysis of the Insane," pp. 98, 108.

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process springs more fully into being by assisting in, and in its own turn being assisted by, the intensification and extension of slight local inflammation or hyperplasia sequential to the brain injury; or, again, assisted by morbid vaso-motor effects of that injury.

On the other hand, where cranial injury acts as an immediate exciting cause of the disease, it will do so by the direct development, into the lesion of general paralysis, of secondary results of the melecular, or fine, or of the gross, local damages already named. To which vaso-motor effects of the traumatism may or may not be contributory. For injury to produce this result the brain-tissue must, perhaps, be ready to move (as it were) in the direction of general paralysis.

Usually, no doubt, several influences conduce to the occurrence of this and other mental diseases.

Cranial injury has appeared to be a factor in the production of general paralysis less frequently in my experience than in that of some observers. Sometimes it is doubtful whether the cranial injuries are in any way causal or not. Avoiding statistics, therefore, I will give a few brief extracts from notes on several hitherto unpublished cases, to which others might be added.

The following is an example of the sort of case of which mention has been made, where injury was presumptively a predisponent:—

A. T., Sergeant 77th Regiment; admitted March 10th, 1880, at the stated age of 29, but looking older; service in army $5\frac{7}{12}$ years. General paralysis had come on in an insidious manner more than a year before admission.

The patient, a fairly educated French Canadian, had for some time been a mercantile clerk at Paris. Serving in the cause of civilization against the desperadoes of the Paris Commune in 1871, he was struck by a partially-spent rifle-ball on the head just behind the left parietal eminence, and lay insensible for several days. Subsequently, entering the British army, his good conduct, temperate habits, fair education, general intelligence and docility, gained for him promotion as sergeant. Unfortunately, his promotion brought with it numerous worries and anxieties and overwork in the orderly-room at Dublin. He became depressed, melancholy, and strange for several months, slovenly, forgetful of orders, and careless as to duties. Then, on June 20th, 1879, he was placed in hospital under observation, until discharged on July 27th. But after this he still was strange, asked for whitewash for his tent-roof, got up in the night to wash the floor and clean belts, said he was going to the Curragh to shoot for a £40 cup, and was about to be married; there being no real foundation for either statement.

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After this tremor of lips, thickness and hesitation of speech, greedy eating, dirty and mischievous habits, impaired deglutition, defective memory, and confusion of ideas, were noted.

On admission.—There was no history, acknowledgment, or sign of venereal disease. The speech, tongue, and face were moderately affected by the ataxy and paresis of general paralysis; but there was also incomplete left facial paralysis, especially of the lower part of the face, the upper part being little if at all affected; the left palate was also somewhat palsied. The pupils were slightly irregular in shape, somewhat sluggish to light, and about equal in size. The gait was somewhat shaky, jerking, uncertain in sudden turning, and the heels were rather brought down; if in walking, the eyes were closed, there was some staggering; the knee-jerk was absent, and there was no ankle-clonus.

Without transcribing the notes, it may be briefly stated that the patient was somewhat demented, childish in conversation, often restless, and of an anxious worried facial expression; yet, usually passing into a condition of self-satisfaction and gusto in describing what he had done, and what he hoped to do, the latter embracing projects beyond his capabilities. But during the—less than three months—time he was under my care there were no obvious exalted grandiose delusions, at least none of extravagant form; no complaint of cephalæa; no observed hallucinations, or apoplectiform or epileptiform attacks, or knee-jerk, except once slightly in left leg. Potassium iodide and ammon. carb. were administered.

On June 4th, 1880, he died of an acute affection, foreign to the cerebro-spinal disease.

Abstract of necropsy.—Dura rather thickened, congested, slightly too adherent to calvaria at parts. Arachnoid and pia very thick, tough, opaque, and pia œdematous; these meningeal changes being of unusually diffused distribution. Several atheromatous patches in basal arteries. Adhesion and decortication very slight, and found only over the middle of the left second temporal gyrus and tip of left second frontal. Grey cortex of cerebrum pale in anterior regions, somewhat wasted over convexity of frontal, and less of parietal, lobes, slightly thinner in right anterior and middle regions.

A slightly shrunken, withered appearance of posterior part of left nucleus caudatus.

Ventricles of encephalon all highly granulated; lateral ventricles appearing relatively rather large. Pons and medulla oblongata firm. Cerebellum rather firm, free from adhesion and decortication. No gross lesion of cranial nerves at base of brain noted.

The posterior columns of the spinal cord were unduly firm from incipient sclerosis, and in the cervical region they turned of a reddish grey colour after section and exposure to the air, but no local circumscribed patches could be made out.

Of other results of the necropsy perhaps it will suffice to mention:

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some atheroma of left coronary artery, and of aorta; very slight hepatic cirrhosis; slight traces of old adhesive perihepatitis; old adhesion of omentum in right groin; ulcers of large gut; slight adhesions of renal capsules to kidneys.

In the next case the cranial injury seems to have been the exciting cause of general paralysis.

P. G., 57th Regiment; admitted October, 1879, then aged 37; service 15$\frac{4}{12}$ years; of good conduct and temperate habits. Had gonorrhœa and a venereal sore in 1868. In 1869 had rheumatic-like pains in hips, knees, legs, and wrists, but no swelling.

Having been severely beaten about the head with sticks by some soldier prisoners, he was admitted into hospital at Kandy, Ceylon, for surgical treatment on Aug. 20th, 1878, and, with the exception of three days, he there remained until the end of September, but was immediately readmitted. Discharged again, after 42 days, he was not allowed his wish to go to the Zulu war. For some short time previously to this his manner had been strange, and after this refusal he became depressed, and was admitted into hospital at Columbo for mental failure. Deep-seated cranial pains were suffered; vivid hallucinations were evinced. The Virgin, and saints, he said, visited him; angels blew on his head and healed the cracks in his skull; he saw and heard the archangel Michael and others; he was born without a soul. With these was some emotional exaltation.

He suffered from diarrhœa during, and for two weeks after, the voyage from Ceylon to England.

On admission. Abstract.—Scars of the cranial injuries remained, especially about the left brow and temple. Speech somewhat hesitating and stumbling, with occasional repetition of syllables. Tongue fairly protruded, this movement being accompanied by some twitching of upper lip; forehead contracted from time to time, and brows raised. Pupils rather sluggish, and slightly irregular in outline. Handwriting rather irregular and shaky. No indications of syphilis. He said he had had severe pain in occiput and vertex of head for nine months after the cranial injury; the pain wore away gradually. Mentally he was better, holding his former delusions apparently in doubt, and having no acknowledged present hallucinations. Ordered Potassii iodid.; ammon. carb.

In several months he gained 12lbs. in weight, but in 1880 lost most of this again, and syr. ferri iod. was added to a mixture of potassium iodide. Mental improvement occurred for a time; but seven months after admission, and later, he wrote letters giving expression to absurd, rambling, exalted delusions, such as that the Almighty visited him, and made him carry a cross to save the world; that he was the Virgin, could stop the rain and bring it down, could redden the moon and brighten it again. The spelling, caligraphy, and composition pointed to general paralysis. Mentally he became better,

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but, refusing the above medicines, was given hydrarg. perchlor. unknown to him. The motor signs of general paralysis became much lessened; the tactile sensibility was fair.

In 1881 delusions, as above, could be elicited at times. Body-weight higher than ever. The nape was blistered, and a discharge kept up for many months by antimonial ointment; the mercurial was continued internally. The motor signs of general paralysis became very faint. No local palsies or epileptiform convulsions were observed. Treatment had kept the disease in check, and had assisted in procuring, at least, a decisive remission.

Another case, in which the cranial injury acted apparently as an immediate exciting cause, but in which there was a long syphilitic history, was that of a soldier, who suffered a severe injury to the head in a July, and on the 29th of that month was admitted into hospital with "maniacal" symptoms. Seven weeks afterwards he was discharged to duty, but was readmitted in the January following with general paralysis, the true onset of which had probably been marked by the mental symptoms which followed closely upon the cranial injury. Later on, he was admitted here. In the army he had been of good character and steady habits, and there was no record of sunstroke, convulsion, or palsy. But there was a distinct history of syphilis incurred ten years previously.

Finally, brief mention may be made of a case in which an injury to the spine was the one of the assigned causes of general paralysis that principally attracted the attention of the army surgeons; but there appeared to have been an injury to the head also, and part of this soldier's service had been abroad, and in unhealthy climates.

W. L., Sergt. 3rd Battery 10th Brigade Royal Artillery; admitted May, 1880, aged 35, after 18 years' service, mental disease having been very obvious from the preceding October, but apparently having been more or less existent for nearly four years, and the causes assigned for it being stated as "long military service, and injury to the spinal cord." The patient was temperate, of good conduct, and had no history of relatives affected with insanity or convulsions.

It appears that on May 13th, 1870, he was struck on the back and abdomen by "sheers" at Woolwich. (He stated that at the same time he was struck on the head as well, and explained a scar over the right parietal bone as being a result of that injury.) Supposed as a sequel to this accident, he was admitted into hospital at Halifax on April 16th, 1876, and for 41 days, the entry on the "medical history sheet" being "injury to spinal cord." Subsequently, he was in feeble health, mentally changed, slovenly, neglectful of duties and orders,

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depressed, discontented, making silly and unfounded charges against those about him. Stationed at Bermuda, he was admitted into hospital on September 29th, 1879, and was, or became, restless, excited, irritable, sleepless, peevish, sulky, dull, with outbursts of rage, gave absurd and confused orders, was noisy, mischievous, destructive to clothing, and on one occasion rushed from hospital to the sergeants' mess, and said he had put all those in hospital under arrest.

When here he had exalted delusions, co-existing with absurd delusions of ill-treatment, of being starved, of having, daily, frightful corporeal injuries inflicted, of his life being threatened, and attempts made to poison him. Though at times buoyant, he was usually sullen and morose; often threatening, and full of invective. There were hallucinations of sight and hearing; and muscular illusions as to flight of body. Knee-jerk well marked. No ankle-clonus. Once, left hemiparesis, and left facial paresis. Speech not excessively affected; pupils, face, tongue, &c., considerably. No epileptiform seizures.

The patient was subsequently transferred.

Brief Note of Cases Illustrating the Importance of Investigating the Patient's Environment in Testing his Sanity. By Samuel Wilks, M.D., F.R.S.

The last number of the Journal contains a valuable paper by Dr. Mercier on the Data of Alienism, in which the writer insists upon the importance of investigating the patient's environments before pronouncing upon his state of mind. This self-evident proposition is, I am confident, often overlooked by those who have not made mental disease their study, although I cannot call to mind more than one case where a certificate of insanity was given, entirely founded on a basis which was true enough as regards the majority of mankind, but false as applied to that particular instance. I have unfortunately no notes by me of cases, which by their detail only, could afford a warranty for my statement, but my memory furnishes me with some few examples which bear upon it.

A gentleman holding a good position in a Government office broke down in health, and his medical man sought the advice of two or three physicians as to the line of treatment which should be pursued. The consultants were informed by his attendant that according to the patient's own view of his case it was not so much office work as domestic anxiety and

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