THE JOURNAL OF MENTAL SCIENCE.

[*Published by Authority of the Medico-Psychological Association of Great Britain and Ireland.*]

No. 149. NEW SERIES, No. 113. APRIL, 1889. VOL. XXXV.

PART 1.—ORIGINAL ARTICLES.

Insanity following Surgical Operations.

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So far as my researches extend little attention has been paid to the subject of this paper. Yet I think it would be rash to assume that what is unrecorded is necessarily rare, even in days when so much more is put into print than any of us can either read or mark, much less digest, and when the number of writers seems in danger of exceeding the number of readers. Insanity, in some degree, as a sequela of surgical operation, though certainly rare, is, I believe, less uncommon than usually supposed, and it is chiefly in the hope of eliciting additional information from others that I venture to record my own small experience. On two subjects medical science has still an infinite deal to learn: first, the influence of disease on the mind; secondly, the influence of mind on disease. In attempting to contribute a little to the first-mentioned subject, I can really deal only with a subdivision of it, viz., the effects that may be produced on the mind by surgical measures undertaken for the relief of disease.

In three ways a surgical operation may obviously produce physical disturbance; (1) by anticipation; (2) by the actual operation, which may cause pain, afford relief, entail shock, etc.; (3) by the after-effects. These, like the actual operation, may act by producing pain or giving relief, or by setting up septic mischief. A more important factor still in producing physical disturbance is mental reaction. The importance of this factor is usually underrated even if its very existence is not ignored; yet it needs only a moment's thought to convince us that in the vast majority of cases a patient can

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hardly steel himself to undergo an operation with the same equanimity that the practised surgeon can to perform it. The relaxation of control previously exercised, the loosening, as it were, of the mental tension, or the physical disturbance resulting from the removal of a diseased part which had led to much mental contemplation and called up unduly the subjective qualities of human nature, are all factors which, to say the least, must be taken into account more or less in successful after-treatment. The sea may calm down after the storm has disturbed it, but once in a way wreckage will be seen floating on the surface. Without attempting any classification of degrees of mental disturbance, I may, for my present purpose, be allowed to indicate certain arbitrary grades which everyone recognizes. Starting from a healthy condition of normal mental equilibrium, we speak in an ascending scale of Emotional disturbance, Hysterical disturbance, Loss of Control, Unreasonableness, Delusions and Hallucinations, and Mania in its various forms. Such rough classification is employed merely for the purposes of present argument.

With regard to the first-mentioned cause, anticipation, little need be said. Everyone has experienced its effects. Lives there the man so hardy or so fortunate as never to have felt what is familiarly termed "nervousness" at the anticipation of a slight surgical operation, such as the extraction of a tooth or the removal of a foreign body from the eye, however skilfully we may know it will be performed, and however certain we may be of the result. In short, we become to a greater or less degree emotional, or even more; the effect is very transitory as a rule, but it may readily pass to a higher degree, such as loss of control, or unreasonableness. Our eyes, our ears, too, for that matter, can without difficulty obtain evidence enough of the physical phenomena produced by anticipation in the dental department of any hospital; and I suppose any dentist could cite instances enough in which tolerably profound mental disturbance has followed tooth extraction. Cases are given below in which mental disturbance so grave as to amount to insanity has followed such slight operations. Recently I had a patient in St. George's Hospital who suffered from urethral stricture. The man was said to be a bleeder, and, like many of that class, was naturally an emotional subject. He was greatly interested in his own complaint, and on nearly every occasion when I succeeded in passing an instrument through the stricture he burst into laughter, only a shade removed

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from a hysterical explosion. Here there was a very slight and temporary disturbance, and an almost immediate return to the normal mental equilibrium. The instance, though trifling, is not uninstructive. There is no need now to multiply cases, and I may rest satisfied with pointing out that anticipation in its relation to mental reaction after surgical operation has an obviously important bearing. In the case of persons with strong hereditary tendency to insanity we are often enough able to watch the various grades I have named develop one after another pretty well in the order given, till finally the mania becomes pronounced; similar results may occur also in those who have no such tendency, though in the vast majority the pendulum swings back again to the normal standard.

Again, with respect to the second of the three modes in which operations may affect the mind, namely, the actual operation, I need say little. The mental effects immediately following operation are of course familiar enough, but they could much better have been studied in pre-anæsthetic days. As a rule, we see rapid recovery follow. Sometimes, however, the effects are a little more persistent. Thus, after much loss of blood we shall see loss of control, perhaps unreasonableness for a while, or delusions. We reassure the friends, and tell them that all these symptoms will soon pass away; and so they do usually, but not always. They may persist. Thus it is no uncommon thing to see persons in a deeply hysterical state, continuing for days, after the extraction of a tooth, where no anæsthetic was administered. I well remember the case of a lad, about sixteen years of age, who was being treated for disease of the knee joint. A carious tooth, which was occasioning him much pain, was extracted without any anæsthetic, and persistent bleeding followed. The boy stoutly denied that he was a bleeder. He grew worse, notwithstanding every effort, and the hæmorrhage persisted. He absolutely refused to give the address of his parents or friends whom we desired to send for. Ultimately the mother's address was discovered, though not from the boy. We learnt from her that he had been subject to bleeding all his life, and that on two or three occasions, one being after the extraction of a tooth, he had nearly died. The boy recognized his relations, but treated them with the most absolute indifference. He talked rationally, though making constant complaints of a groundless nature to within a few minutes of his death.

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Slight operations, such as circumcision or the division of a tendon in a child, may lead to the development of a rash, resembling that of scarlet fever, all over the body when no anæsthetic has been given. In some patients the evidence of such disturbance is not seen on the skin, but may spend its force more centrally. The mind may become affected, and we shall then recognize the commotion by other senses in addition to sight. From the very moment of an operation, too, may date a persistent mental disturbance of a grave nature. The patient never recovers consciousness, or, in other words, does not revert to his normal mental equilibrium. For days or weeks he may practically not recover from the mental condition into which the anæsthetic plunged him. Such a case is mentioned by Dr. Savage as having occurred in the practice of Mr. Croft.* Dr. Savage attributes the insanity in this case to the effect of the anæsthetic; ether had been given. I am disposed in this particular instance to agree with him that in some cases there is a causal relation between the anæsthesia induced and the insanity. I believe in most cases, however, there is no such relationship. The subject will be discussed later on. For the present I need only remark that it will be conceded that some mental disturbance is produced by the operation, which may, and often does, attain the degree of loss of control, delusions, or what not. But it would be arbitrary to assert that these are fixed degrees, beyond which the disturbances may not travel. If the mental disturbance may from a given cause attain to one degree, further or continued stimulus may cause it to rise to another on the same scale. If, therefore, mania bears but the same relation to, say, emotional disburbance that the boiling point bears to, say, summer heat, the one condition may pass on to the other.

So far, then, I have attempted merely to show that there are no logical grounds for the assumption that the shock of a surgical operation may not act like any other shock, and give rise to insanity in a person of mental instability; but I may say at once that in the majority of cases I have seen or collected there was no history of mental instability either natural or inherited. Now this is a remarkable fact even when we admit to the full the extreme difficulty in most instances of eliciting a reliable history of insanity or neurosis. It is the special object of this paper to call attention to a class of

* "Insanity following the use of Anæsthetics in Operations." By G. H. Savage, M.D., "Brit. Med. Journal," December 3, 1887.

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cases in which, after the operation, the mind reverts to its normal condition, but subsequently, after a greater or less lapse of time, symptoms of mental disorder begin. Some of these cases I have had actually under my own observation, some have been kindly communicated to me by others, and a few, far too few, I have collected from published records.

The first case to be mentioned was under my own observation, and occurred in a lady of a rather neurotic type; no hereditary tendency known; liable to occasional attacks of hysteria. Two rather severe operations had been performed at an interval of about a fortnight; recovery from both was perfectly satisfactory; temperature normal throughout, and the wounds were, I believe, perfectly aseptic. Some mental depression before the operations. Fair mental reaction followed; one or two hysterical attacks occurred during convalescence, passing off in a few hours. Some eight weeks after the operation another attack came on, and assumed more formidable shape. The hysterical behaviour became very pronounced; loss of control, in fact, to a great degree, supervened. The patient would scream or cry at the least thing; she became unreasonable, and conceived an intense and irrational dislike to a friend in whom ordinarily she had absolute confidence. The symptoms were those of a mildly delusional condition. The temperature was normal, and the healing of the wounds progressed with satisfactory rapidity. The patient acknowledged her condition, and regretted it. The prognosis therefore was good. Recovery took place in a few days, and no further trouble occurred. The chief point that is noticeable in this case, and the only one on account of which I mention it at all, is that the mental disturbance occurred at an unusually long period after the operation, viz., about eight weeks. I believe, however, that the attack was a direct sequela of the operations, for the minor hysterical explosions that occurred on two or three previous occasions linked the more severe trouble, as it were, to the others in a continuous chain. Iodoform was freely used.

The next case is in many respects a remarkable one, and may be given with a little more detail. It is that of J. W., aged 10, who was under my care for disease of the knee-joint. The boy was bright, fairly intelligent, not unduly precocious in any respect that could be discovered; no hereditary tendency to insanity, and, in fact, no disorder could be found save that of the knee. Some six weeks after his admission I excised the knee-joint by M. Ollier's method, making a vertical incision and sawing through the patella. All the diseased granulation tissue was removed; the patella was sutured and left. It was found necessary to take away a thin slice of bone from the femur as well as the tibia. Ether was given, Clover's apparatus being employed. The antiseptic agent used was corrosive sublimate, a point worthy of remark, for consider-

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able disturbance, sometimes mental, may follow the use of carbolic acid in operations on the bones in children.* Three days after the operation the wound was dressed and looked quiet. Nothing abnormal in the mental condition. About a week after the operation the boy began to be noisy at night; he developed, pretty rapidly, sub-acute mania, and was placed in a separation room. He slept during the greater part of the day, but it was a bad kind of sleep—a temporary torpor or suspension of the faculties rather than a rest. Then he revived rather than awoke, and would fall to singing or chattering foolishly or irritably. For a while, too, his habits became dirty. He constantly complained of feeling "tired," and I have no doubt this was a true expression of the condition of one who enjoyed organic but not mental sleep. The temperature, as usual in such cases, rose at times, but there was nothing in the chart suggestive of septic trouble, nor did the condition of the wound or the boy indicate any such mischief; in fact, the wound progressed favourably enough. The hair became coarse and stiff; the boy was incessantly biting his nails, and was fretful and peevish. At first he showed no recognition of his relations; after a while he modified in this respect to the extent of exhibiting marked dislike to his mother. Endeavours to interest him in life and to persuade him to occupy himself met with very partial success. We sought at one time to amuse the boy by furnishing him with a block of wood and a judiciously blunt knife. For a little while he became interested in carving; then he endeavoured to eat the chips he cut off, and we had to seek other distractions. Improvement gradually took place.

Some weeks after the operation it was found necessary to open a small abscess which had formed near the wound, possibly from the irritation of a leathern splint. Chloroform was given; the boy took this anæsthetic well, and recovered naturally. At this time he was the victim of delusions, imagining someone was coming to kill him. A month later he was sufficiently quiet at night to return to the general ward. In a case such as this in a general hospital isolation is necessary; for the boy's own sake it was, I think, undesirable, and he would probably have recovered more quickly if associated with other lunatics; but we had no choice in the matter. Complete recovery ensued. The union of the excised knee remained rather soft, and the possibility of having to amputate the limb was raised. However, as the boy was gaining ground physically, and his mind was reverting to its normal condition, I thought it best to leave the limb alone. The case then was one of sub-acute mania, with melancholia and delusions, which ran a chronic course, and was remarkable on account of the youth of the

* Confer in this relation a paper by Mr. Barwell, "Clinical Society's Proceedings," Vol. xviii., pp. 201, 202. Carboluria occurs more frequently in children than in adults, and the renal disturbance might by some be held accountable for the mental disorder.

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patient. At no period of the disease, to the best of my belief, was the boy's condition septic. No iodoform was used, at any rate before the insanity began.

My next case need only be briefly mentioned: it is that of a thin, feeble woman, aged 65, with symptoms of granular kidneys. The thigh was amputated for a large epithelioma of the leg. Ether was given for the operation (in such patients I now prefer to give chloroform). The stump did badly. Eleven days after operation mental symptoms were first noted. The woman was restless and maundering. The flaps broke down, and thirteen days after operation there was some low cellulitis about the thigh. Very slight elevation of temperature. The mental condition grew worse; she failed to recognize those about her or her relations, and gradually drifted into a condition of senile dementia. Her habits were dirty; some bedsores formed, but healed up again, as did the stump to a great extent; but when discharged to the infirmary, seven weeks after operation, there was still a long unhealed sinus, lined with flabby granulations, extending up the back of the thigh. In this case there was no history of insanity. The patient's mental condition for some days after operation was normal; but then she developed chronic mania, passing on to dementia, which promised to be incurable.

My colleague, Mr. Bennett, has kindly permitted me to mention the case of a man under his care somewhat similar in one or two respects to the foregoing.

The patient was aged 43, and is described as a very alcoholic man. He stated that he had been in the habit of taking ten quarts of beer daily, and was said to have had an attack of delirium tremens on one occasion. He was operated on for the radical cure of a huge scrotal hernia, which rendered his life burdensome. Ether was given. Three days after operation, having been previously normal in his mental condition, he became tremulous and noisy. Bromide of potassium was given, and he became quieter. The wound became foul, and the temperature rose to 103°. Eight days after operation the notes of his case say "tremulous and irritable. Talks wildly about his private affairs." The temperature soon fell, but the mental condition persisted, though he became quieter. Four weeks after operation the notes mention—"Takes no notice of what is going on around him; is in a state of dementia." Nine weeks after the operation the wound had healed, and he was more rational. For a while, however, he became noisy again, especially at night, and isolation was found necessary. Ten weeks after the operation he was removed to Bethlem Hospital. In this case the onset of the mania was little matter for surprise. The delirium, which might almost have been expected in so alcoholic a patient, would readily enough pass on into insanity. Indeed, it was remarkable

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that recovery from the surgical procedure took place, and the point on which I specially wish to remark in connection with this case is that it furnishes a good example of how little prejudicial effect these attacks of insanity following operation have on the progress of a wound. At the same time the prognosis, as regards the mental condition, was unfavourable.

I must run the risk of becoming tedious by the mere enumeration of cases; but the following instance is remarkable in many respects, and I can find but few recorded of a similar nature. It is noteworthy because the mania was of a very acute type, because it followed the operation of ovariotomy, and because it ended fatally.

Sarah C.; married; aged 48; was admitted February 1, 1883, to St. George's Hospital. She had had eight children, of whom six were alive and well, and the youngest six years old. She had always lived in the country, was of healthy appearance, of slightly reserved manner; hair dark, smooth, and commencing to turn a little grey. Absolutely no history, even remote, of hereditary disease, and no trace of insanity in her family, concerning whom she readily gave me full particulars.

Four years previously she had noticed a small swelling in the abdomen on the left side; this increased rapidly up to a certain point, and then appeared to remain stationary. A year before her admission the swelling was tapped in a provincial hospital and fluid withdrawn. The feet and legs were occasionally œdematous, but the tumour gave rise to no other physical signs.

Ovariotomy was performed on February 17th. No adhesions were found and no difficulties of any kind presented. The tumour consisted of one large cyst, and several smaller cysts, all containing blood-stained fluid. The pedicle was tied with twisted silk ligature; strict antiseptic precautions were observed, and, so far as I could see, efficiently carried out. Ether was given. The progress of the case subsequently for the first six days was satisfactory enough; she was cheerful, anxious to get well, and slept and ate normally. On the sixth day her physical condition was satisfactory, but her expression had entirely altered. She still recognized her husband and those of us who were immediately concerned with her care, but her mind was full of delusions varying in their nature, but all to her of an alarming character. She was very restless in bed. On the eighth day she was in a condition of acute mania. She recognized no one, attempted to injure those about her, and was very violent. The hair became coarse and rough. My friend Dr. Savage was kind enough to see the patient with me, and looked upon it as an ordinary case of acute mania. The wound was dressed on the eighth day, for the first time. There was a little superficial suppuration in the wound, where she had

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torn the edges apart in her struggles, but in all other respects, so far as the immediate operation was concerned, everything was perfectly satisfactory. During the next eight-and-forty hours the mania continued with undiminished intensity. Her physical condition became weaker, and the greatest difficulty was experienced in getting her to take any food. She died exhausted on the eleventh day. The mental condition did not seem appreciably to affect the actual progress of the surgical aspect of her case. But the insane mind in a body which was sound, save from the effect of the operation, decided which way the balance should fall. No iodoform was used, nor carbolic acid; no peritonitis was found, nor, indeed, anything in the abdomen worthy of note, at the post-mortem examination.

A few other cases have been recorded of insanity following ovariotomy. In some there was a hereditary tendency to insanity; in others, as in mine, this appeared to be absent.

Thus, Mr. Barwell has recorded a case in which a slight attack of insanity followed ovariotomy and the patient made a good recovery.* Reference is made in the paper to other cases. Mr. Sydney Jones kindly communicated to me a case occurring in his hospital practice. Here there was a tendency to insanity, and the patient had previously been in an asylum for three months. Her condition was attributed to the abuse of morphia. At the time of operation there was no trace of insanity. Acute mania commenced on the third day and reached its height on the fifth after operation; she then became quieter, but died very suddenly on the same day. The case of a patient was communicated to me from the Middlesex Lunatic Asylum, who suffered from an ovarian tumour, and had been subject to attacks of recurrent melancholia (the form of insanity most often associated with disease of the sexual organs), but symptoms of mental disorder had been for a long time in abeyance. Three days after the operation of ovariotomy she became very insane with melancholia.

It is somewhat remarkable that in most of the cases I have collected the peritoneum has been involved in the operation. Thus my colleague, Dr. Champneys, had a curious case at St. George's Hospital; the patient, a woman aged 53, a medical rubber by occupation, was naturally rather a talkative and excitable person, on the emotional side at any rate of the commonplace or perfectly balanced. Hysterectomy was performed, the whole organ being removed per vaginam for cancer of the cervix uteri. Ether was given. Two days after the operation the patient was found to be in an extremely nervous state, exaggerating all her sensations greatly. Gradually this condition became more and more intensified; she grew more restless and garrulous,

* "Clinical Society's Transactions," 1885, Vol. xviii., p. 199.

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and made constant unreasonable complaints. Then she had delusions; for example, one day she imagined she was unable to swallow. Some milk was poured into her mouth and the nostrils closed, whereupon she swallowed, and remarked that "a weight had been lifted off her forehead and some strings at the back of her head had been broken." One noteworthy symptom she had midway between a delusion and hallucination: she asserted that she was unable to see, although it was her habit to write letters to people. She suffered, like many of these patients, from time to time from diarrhœa, but her chief complaint might more fitly have been termed logorrhœa. A fistula formed, and the patient had to be kept for some time in hospital, but it eventually closed. Her mental symptoms improved, but when she was discharged, after about five months' stay, she had not recovered completely. About a year after the operation we heard that the mental symptoms still persisted.

In a feeble man, aged 53, operated on by Mr. Pitts, of St. Thomas' Hospital, for strangulated hernia, delusions and melancholia occurred on the fourth day. Complete recovery followed in about a month. There was no family or personal history of insanity. Dr. W. J. Collins has recorded a case * in which mental disturbance began the day after operation, and culminated in acute mania on the tenth day in a man aged 69 who suffered from a strangulated inguinal hernia. Recovery followed. Chloroform was given and iodoform used. Here the symptoms were thought to be possibly due to the anæsthetic. Dr. Shepherd has recorded six cases of mania following operations,† and refers to others. Three of Dr. Shepherd's cases followed operation on the abdomen and its walls. Two of the cases had a distinct family history of insanity, another was an epileptic, and a fourth "had always been queer, and at times very excitable." In one the family history could not be ascertained, and in the remaining case, though there was no distinct history of insanity, several of the relations are described as having been very peculiar. Most, if not all, of Dr. Shepherd's cases then must be classed with the less remarkable variety in which there is a tendency to insanity. I know also of cases in which acute mania came on after tenotomy (no inheritance), and after perineal section (possibly inheritance).

A case recorded by Dr. Davidson‡ is of interest, for the operation was grave and no anæsthetic was used. A railway guard (age not stated) had his thigh amputated for severe compound fracture. The man was in a semi-comatose condition at the time of operation. The flaps sloughed. Acute mania attacked him, but it is not mentioned on what day after the operation. He had delusions. Insanity lasted three weeks or a month, and recovery took place.

* "Lancet," December 15th, 1888, p. 1175.
† "American Journal of the Medical Sciences," December, 1888.
‡ "Lancet," Vol. i., January, 1875, p. 73.

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No history of insansity. The accident may have been the exciting cause in this instance rather than the operation. It makes little difference for my purpose.

I prefer rather to record the above cases simply than to attempt to draw any very definite conclusions from what is, after all, but a small number. Yet a few remarks, more in the nature of comments on the cases cited, may not be out of place. I think with regard to the group of cases affecting the female sexual organs that an impression prevails that insanity is more apt to follow operations of this nature than others, and that this is due to functional disturbance resulting from the parts removed; but removal of an organ such as a diseased ovary would be more likely to improve than to impair the functional capabilities of the other if sound. It is not so much the actual as the contemplated loss of function that gives rise to mental disturbance in those who have disorders of the generative apparatus. In a person mentally sound at starting, development of ovarian or uterine disease is apt to lead to constant introspection and to a self-contemplative subjective condition. In such an operation—ovariotomy, or hysterectomy, or what not—is but the disturbing force that tips up the balance. In this connection I may mention incidentally that I altogether traverse Mr. Barwell's remark (*op. cit.*, p. 202): "Insanity from such cause (viz., disturbance of the generative organs) usually leads to words and actions which betray its origin. Now, my patient never let fall an obscene or a doubtful word," etc. Surely disease of the uterine organs is associated commonly with melancholia and hypochondriasis, not with mania presenting symptoms of an erotic type. If hallucinations exist, they will probably be connected with the sense of smell. In one recorded case, hallucinations of this nature passed away after ovariotomy had been performed on a girl who was insane.

Although I have recorded, and wish especially to draw attention to cases in which insanity has followed surgical operation where no heredity could be traced, I have cited others in which such a tendency did exist. It follows that we ought to look—perhaps specially in cases of disease of the sexual organs—to the mental condition before operation. We cannot have too many data on which to found a prognosis. To my mind, indeed, the mental condition ought to be considered as carefully as that, for example, of the kidneys before all operations. Thus quite recently in a man who suffered from a painful ulcer of the rectum, and who

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was rather eccentric in his manner, I was able to predict the probability of increased mental disturbance following operation of division of the sphincter. Such disturbance did, in fact, occur, but passed off after a few days.

It is beyond the scope of this paper to do more than allude to a class of cases which may seem to bear a very close relation to those I have chiefly considered, viz., cases of puerperal insanity. In some of these I believe the insanity to be due to the anæsthetic, in cases, that is to say, where the mental disturbance immediately follows delivery. In a second class the insanity occurs about the second week, and these would seem to be most akin to the cases I have described. Finally, there is a form of puerperal insanity which is generally believed to be due to septic conditions. But in nearly all cases of puerperal insanity the patients have hereditary or natural tendency. Insanity after surgical operations may, as I have shown, occur in those who have no such tendency. Of course, the septic form may occur after surgical operations, but it may, as shown by my cases, ensue when there is no septic mischief. I do not myself think it probable that insanity following surgical operations is more rare than that following the puerperal state. It is true that puerperal insanity is by no means uncommon, but when we take into consideration that childbirth is not precisely an infrequent occurrence, and that the total number of surgical operations performed is, after all, not very large in proportion to the population, we may see that the assertion is justified.

The anæsthetic factor cannot of course be wholly eliminated in these days in considering the etiology of the insanity. Mental disturbance has been, however, observed to follow wounds long before anæsthetics were invented. Dr. Savage has recorded a series of cases * which, to my mind, leaves little doubt that insanity may follow the administration of an anæsthetic of any kind. This paper I have already referred to. At the same time I cannot believe that in the cases in which, as so frequently happens, complete mental recovery takes place after the anæsthetic, the mania then creeping in after this distinct and lucid interval of time, that the anæsthetic has anything to do with the matter. When the mental disturbance is the direct and immediate sequel of the anæsthesia it is probably due to the

* *Op. cit.*

https://doi.org/10.1192/bjp.35.149.1 Published online by Cambridge University Press

anæsthetic; in any case, insanity following anæsthesia is, I believe, an actual but a very infrequent occurrence.

The absorption of iodoform has by some been held responsible for the mental disturbance. I am no great believer in the efficacy of this drug as a dressing in operation wounds, and I think it was employed in only one case recorded above as occurring in my own practice.

The administration of morphia might be held accountable for the insanity produced. In none of my cases could I trace any such connection. Belladonna might give rise to an attack of insanity; so might eserine or other drugs; and so, I believe, might surgical operation.

A very important practical point is that the prognosis is most grave when acute mania occurs shortly after a serious operation, although the purely surgical aspect of the case may be favourable. Such patients are likely to die, and I should not myself hesitate to give a very bad prognosis if I saw a patient suffering from acute mania after an operation of magnitude, such as lithotomy, ovariotomy, or perhaps amputation. The more chronic the mania, the better the prognosis as far as life is concerned. I believe it will be found that in cases in which the wounds do badly, sloughing, breaking down, or showing no tendency to heal, that the mania is apt to become chronic. In ordinary insanity it is a good sign if a person gains weight and strength, and a wound is a delicate indicator of progress. When wounds do well the prognosis will be favourable, I think, as regards the mind; but it may be repeated that when the mania is acute, and the operation has been of a grave nature, the patient may die with the wound going on perfectly healthily.

It may be thought that opportunities of studying the sequelæ I have described will be but few and far between. My own distinct impression is that such cases are not nearly so rare as is commonly imagined. We are perhaps a little too apt to carry into after life the impression born in our student days that all mental disorders met with in hospital work are due to drink, and that to dub them delirium tremens is to have done with them. As a matter of fact, true delirium tremens is not so very common, while insanity due to drink primarily or principally is far less rare than might be imagined. Moreover, true delirium tremens may be but the precursor of insanity, melancholia, acute mania, or what not. For the most part the opportunities which occur in the wards of our general hospitals for the

https://doi.org/10.1192/bjp.35.149.1 Published online by Cambridge University Press

study and teaching of mental disorders are greatly neglected, and in surgical wards at any rate the septic or aseptic condition of a wound is apt to absorb so much attention as to almost exclude the consideration of other phenomena which may occur as the sequelæ of operations.

I do not believe that such cases as I have here recorded are particularly rare, and if this paper may lead others to publish the results of their experience, the object that I have had in view in writing will be fully attained. I hope I may not be accused of falling into the error which I sought to avoid of drawing too many conclusions from imperfect data, for I feel to the full that the nail of conviction is better and more truly driven home by repeated taps of observations and facts than by a single swinging blow from the hammer of dogmatic assertion.

Reflections on the Theories of Criminality. By Rev. W. D. Morrison, H.M. Prison, Wandsworth.

Recent investigations into the origin of crime point as a rule to the conclusion that all forms and manifestations of delinquency may be traced back to the operation of three causes, which have been called anthropological, social, and cosmical.* These three causes sometimes act individually and sometimes collectively, as well as in varying proportions, according to the nature of the crime or the character of the criminal. With respect to the second cause, it is admitted by criminalists of all schools that adverse social surroundings is one of the most potent factors in the production of crime. Some writers lay down the doctrine that crime is entirely social in its origin; they adopt as their motto the celebrated maxim of Quetelet, that society prepares crime, the criminal only executes it, and maintain that an adequate amelioration of the present unequal conditions of existence would quickly bring about the extinction of the whole criminal population.†

It is not my purpose, nor is this the place, to set forth the manifold and weighty objections which can be urged against assigning an exclusively social origin to criminal phenomena. As a decisive refutation of this theory, it may be as well to point out in passing that although deplorable social surroundings operate upon great masses of the people, it is only a few

* Ferri, "Socialismo e Criminalità," 59.

† "Revue Philosophique," xxiv., 625.

https://doi.org/10.1192/bjp.35.149.1 Published online by Cambridge University Press