SUICIDAL HEAD INJURIES.*

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DAMAGE to the frontal lobe is liable to produce personality changes; it is highly probable that lesions have to be bilateral to have this effect. But beyond that, there is little agreement about type, extent and localization within the frontal lobe of the lesions which are followed by personality change. Little is known about the different types of clinical picture caused by bilateral frontal lesions. In a certain proportion of the cases euphoria is the most impressive symptom, and it is for this reason that operations on the frontal lobes have been proposed in the treatment of depressions. (*Lit.*, see Hutton.) The value of the procedure is still under discussion, and its theoretical foundation is far from being understood. This is not surprising, for if one tries to analyse such an operation, one has to take into account at least four variables: the patient's previous personality, his mental illness, the psycho-physiological effect of the lesion, and the psychological effect of operation, nursing care and environmental changes. The cerebral factor is obviously the most interesting one; to judge its importance one tends to interpret the operative results in the light of experience after other frontal operations or injuries.

It is evident that the effect of frontal lobe damage on a depressed patient need not be the same as on a normal personality. It was therefore thought of some interest to study the effect of cerebral injury in depressed patients with self-inflicted cerebral damage. There are other difficulties in the interpretation of the results in these cases which will be discussed at the end of the case histories. By comparing and contrasting clinical conditions in which some factors are constant while others vary, one gets a composite picture as a substitute for the experimental methods in which one is able to control all factors at will.

The following case histories will show—

1. That some patients with suicidal cerebral injuries show a dramatic change in their mental states.
2. That this damage is relatively independent of the localization of the cerebral damage.
3. That therefore other factors than the local injury must be sought to account for the change in the mental state.

CASE 1.—Man, aged 36, intelligent and well adjusted. Endogenous depression of three or four months' duration. Suicidal gunshot wound. Injury to both frontal lobes. Recovery from depression; slight loss of initiative.

Sgt. G. T—, R.A.F., aged 36, was transferred to a Military Hospital (Head Injuries) on 27.vi.41. He had shot himself with a revolver on 8.v.41 and was admitted to the nearest hospital, where he was treated until his physical recovery. During the initial delirious state he reproached himself of having taken money. On arrival here he showed a large bony defect in the left frontal region, and another one to the right of the midline. He had no neurological signs. He gave the following history: A sister committed suicide when she was 42. The exact reason is unknown; it was thought "the blackout got her down." Patient himself was an average scholar; he reached top standard at school. On leaving school he became a clerk. He had two clerical jobs in 13 years. He then started a wireless business with a partner, but gave it

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up after two years. In 1937 he joined the R.A.F. (clerical duties) and felt perfectly happy in his job. He had been working very hard since the outbreak of the war and had had no leave since December, 1939. For the last three or four months he had been feeling rather depressed and found that little things worried him. He thought he needed a holiday, but there were so many changes in the office that he did not see how he could possibly get leave.

Although he had been depressed for some months he had not contemplated suicide. He had a revolver in his custody which belonged to another man, and he had had it for some days when one afternoon he felt so depressed that he thought he would finish things off. He did not write a farewell letter; there was no chance of his being prevented.

Domestic background: He was married eight years ago. There is one child of seven. He separated from his wife four years ago and is giving her a voluntary allowance. There were no specific troubles, no acute break. They hit it off well at first, but he got irritable with his wife's relations. He has no financial worries.

He describes himself as a "happy-go-lucky" fellow who did not bother about the future. He was never ambitious, perfectly content when he had his living. He never worried much and soon got over the break with his wife. He was always a good mixer, fond of company, and had many friends. He had never had any depression or hypomanic phase before, and no phases of insomnia or anything that could be interpreted as manic-depressive equivalents.

On examination he was quite cheerful (though his sister reported that he was very dejected at times; he explained that it was because he was not allowed into town with the other patients). He spoke little, unless he was asked, but he was in good contact with other patients. When talking about his depression he tried to make light of it. He denied being depressed now. He was rational and critical, he had no demonstrable defect of memory or concentration, and his behaviour during two months' observation was unexceptionable. He was boarded out soon after.

Follow-up, August, 1942: After his discharge he went to live with his mother. He registered with the Labour Exchange, but has not been employed yet. He attends no doctor and has no complaints. But his mother says his temper is very uncertain and there are times when she hardly dares speak to him. On the other hand, she says that to anyone else he behaves cheerfully and normally. He goes out very little and mostly sits at home reading.

His mother also gave this additional information. She was happily married and does not seem to have had any previous mental illness. She became depressed soon after she and her husband had moved to a new bungalow away from the place where they had spent all their married life. She visited her mother one afternoon, and suddenly made an excuse to go out at the back and disappeared. She was found later in the sea.

The patient himself was a "wonderful boy" and was much spoilt by his mother and sister. He married young and hastily against the mother's advice. His wife was always running to her mother and constantly found fault with him. Finally she went to her mother and patient joined the R.A.F.

It was at the time of his return to his unit that his sister died. He had had no leave for a long time and then had difficulty in getting it for his sister's funeral. This upset him a lot and he overstayed his leave.

CASE 2.—Man, aged 40, intelligent and syntonic. Endogenous depression, aggravated by circumstances, of more than three months' duration. Suicidal gunshot wound through left temporal lobe. Recovery from depression with residual monoparesis and aphasia; no noticeable deterioration of intelligence or character.

Major J. W—, aged 40, was admitted to the Military Hospital (Head Injuries) on 15.xi.41. He made a suicidal attempt on 16.ix.41. He gave the following history: His father died from heart disease. A brother suffered from nervous attacks as a result of having been blown up in the last war. Patient himself went to a secondary school until he was 15. He went into his father's motor business on leaving school and has been in the same business ever since. He joined the Army in January, 1940, having been in the Territorials before. He had to work very hard; he lost 6 st. in weight. The work got on top of him. He had only three days' leave. He felt he was not doing as well as he should, although he did not think other people noticed it, as he was promoted Major. But he became increasingly tired, fed up, and depressed. He was very upset by an incident in July, 1941, when he was criticized for not having finished a report on which he had been working till late the night before. He admitted he might have been slower in his work than usual and it cost him an extra effort. Though he felt the criticism was unjust he was very upset by it and he kept on "telling himself off" ever since. He became different, kept on asking himself whether he had done his work correctly and wasted a lot of time checking and re-checking. He spoke to nobody about his troubles, but he became more and more worried. He had no recollection of any incident that might have driven him to attempt suicide. He had a long ill-defined amnesia for some time before his suicidal attempt, and a post-traumatic amnesia of about three weeks.

On examination he had a slight weakness of the right upper limb and a left-sided nerve deafness. The scar of the entry wound was at the junction of the soft and hard palate, just to the left of the midline; the exit wound in the left parietal bone. X-rays showed a comminuted fracture of the left parietal bone and a track through the petrous bone, with numerous splinters marking the course of the bullet. The EEG was normal.

He had a considerable logorrhoea; his spontaneous speech contained numerous paraphasic words and syntactical errors. He had great difficulty in finding nouns, but he showed great ability in circumlocution and expression by mime and gesture. He had great difficulty in grasping the meaning of short requests, questions and reasoning problems. Writing and reading were secondarily involved. He did well in a non-verbal intelligence test (Raven matrices 46/60). His learning curve (non-verbal material) was only slightly delayed. He was quite cheerful, and tried very hard to improve his speech. He was very pleased with himself when he succeeded in saying something after much difficulty. There were not the slightest signs of depression at any time during seven weeks' observation. He was willing to believe that his injury was due to a suicidal attempt, though he felt it was quite unlike him to do such a thing. He was discharged home on 10.i.42.

History from his sister: Father was a master motor engineer in the very early days of cars. He died, aged 62, of cerebral haemorrhage. He was very generous and a very conscientious worker and patient is said to be very like him. Mother died aged 64 of an inoperable tumour. There were 12 brothers and sisters. They were an exceptionally united family and there is said to be no nervous illness.

Patient left school at 15 and became a clerk in his father's motor business. He was very conscientious and hard working, and by 1940, when he enlisted, he had become store manager of one of the largest garages in Hull. His health was always very good—a real specimen of manhood. He weighed 17 st. 9 lb. when he joined the army.

Previous personality: he was generous, good tempered, gentle; he would not hurt a fly. He was easily hurt and always apt to worry over trifles, especially about work. He never showed any inclination to get married, and seemed happy living with his parents and later with informant. He had many friends. He was a keen sportsman and a Freemason. He drank mildly, but was a heavy smoker.

Follow up, 2.iv.42: On arrival home he seemed tired, and his speech was poor; he began to improve, but when he was told that he was to be discharged from the Army and he would not be entitled to receive a pension he was very upset, and three days later he had an epileptic fit, with twitching mainly of the right side of his body. Since then he has made a slow but steady improvement again; he is up and about and does a bit of light carpentering about the house. He still hesitates about words and he worries about his speech and about his health in general. But this seems to be within normal limits, and there is nothing to indicate his being depressed now.

CASE 3.—Man, aged 26, intelligent, slightly psychopathic, but well adjusted. Acute reactive depression of short duration. Suicidal gunshot wound through both frontal lobes. Recovery from depression with residual monoparesis. Slight and transient lack of initiative.

L.-Cpl. W. W. H—, aged 26, was admitted to the Military Hospital on 3.vi.41. He had attempted suicide on 1.v.41. On admission he said he had felt depressed and fed up for a week before his attempt because he had been told by his C.S.M. that he was not pulling his weight. He denied all other causes for his depression, which had only been present for a week or two; there had been no headaches or insomnia or any other symptoms before. One Saturday morning he decided to do away with himself. He took a .45 revolver and pointed the barrel to his temple. What happened after that he did not know. He was certain he did not shoot himself although he heard the revolver go off. He had an amnesia for the subsequent eight days. The notes of the hospital where he was treated first said that he was conscious and lucid on admission, but complained of headache. His family history was negative.

Personal history: he had a stutter from early childhood, varying in intensity but never as bad as it was now. He was always rather conscious of it, and became shy and sensitive, but always tried to overcome that. He was keen on all outdoor sports; he played rugger, cricket and water polo. He joined the Territorials three years before the outbreak of war. He lived always in his father's house, looked after by his mother and employed by his father. He did clerical work and was paid £2 15s. in addition to his keep.

Physical examination: Right lower facial weakness; spastic monoparesis of right upper extremity. Scar of entry wound in right lower frontal region; exit in left upper frontal region. X-rays showed corresponding bone defects. There was a small bony fragment carried into the entry wound. An air encephalogram showed a slight enlargement of the left anterior horn; no displacement of the ventricular system. The EEG was of low voltage, and there were low voltage 2–3 per second waves in the posterior part of both hemispheres.

Mental state: left to himself he used to lie in bed quietly. He read sometimes, but tended to do nothing. He did not appear to be depressed, nor did he laugh or smile spontaneously. He said he felt quite happy again and had no intention of repeating the attempt on his life. He firmly denied ever having been depressed before, but he had felt overworked for months on end, and for a fortnight before his attempt he had felt depressed about the conditions at his unit. One or two days before the incident he had a particularly bitter experience, being blamed for not sending in a report which was not his responsibility. He did responsible office work all the time, and it was only on account of his stutter that he was not promoted. He feels now mentally his previous self, in fact better than he felt before his suicidal attempt.

During the interview he was perfectly coherent and logical in what he said and he made an

intelligent impression. He explained his mental balance by his new faith in religion and God; he owed this to the influence and help of an officer of his unit, who, after the accident, came to see him and corresponds with him regularly. He was never religious before, although he was brought up in the usual way, going to Church on Sundays and so forth. He would not mind going back to his unit; he did not think he would feel self-conscious; not many people in the unit would know what had happened, and those who did would be nice and sympathetic.

There was no demonstrable disturbance of his mnestic functions. He was quick, but rather erratic and fatigable in a cancellation test, and in a Rorschach test his associations were poor in number and quality, and he showed some tendency to perseverate.

He was discharged from the Army and returned to his previous occupation. On 14.x.41 he wrote that he felt well and was picking up his old strength. He complained of some insomnia, but felt quite happy otherwise.

CASE 4.—Woman, aged 19, psychopathic personality of subnormal intelligence. Impulsive suicide under the influence of drink. Compound depressed fracture of skull with laceration of left temporal lobe. Transient aphasia, otherwise no change.

A. L. T—, aged 19, W.1 A.T.S. (R.I. No. 17948) was admitted to the Radcliffe Infirmary on 5.ix.41, after jumping from a first floor window about 20 ft. high. She had been unconscious, but on admission she was able to answer questions. She was in a state of deeply clouded consciousness, very restless, apparently frightened and repeated, " Don't hurt me, don't hurt me."

On examination she had a compound depressed fracture in the left parieto-occipital region; on operation a laceration of the brain under the fracture, i.e. of the posterior part of the temporal lobe, was seen and a spouting cortical vessel clipped. During the first day after the operation she recovered full consciousness gradually. She was paraphasic in the beginning and had considerable difficulty in naming objects. When transferred to a Military Hospital on 17.ix.41 she was free from focal signs.

She refused to give an account of her accident; she seemed childish, anxious and suspicious. Her sister who brought her to the hospital said that on the night of the accident she was seen in three different public houses with a soldier and then with a sailor. She was drunk when her father found her and tried to persuade her to go home. Finally he succeeded, but the girl threatened to throw herself out of the window when he forced her to go with him. The argument continued on the way and at home, and in an unobserved moment she jumped through the window.

Previous history from her mother: She was backward at school. On leaving she was still in Class 3, and when tested psychologically she was thought to be at least three years behind her age. But at this time there were no signs of behaviour difficulty. After leaving school she stayed at home to help her mother in the house. She then had domestic jobs; but though she would satisfy her employers at first, she threw up every job after a short time for no very good reason. She wanted to have her evenings free, because she wanted to get about with boys and men. As her parents could not cope with her, they sent her to a home for six months. After her return the same trouble started again, and she was sent to a stricter home, where she managed to stay away for two nights and finally landed at Skene House. There she behaved quite well and was placed in domestic work again. She changed again twice within a few months, and then enlisted for the Land Army, where she stayed for less than a month. She worked in a cafe for a while, and about three months before admission she joined the A.T.S. She did canteen work there and got a satisfactory report.

At the military hospital she behaved quite satisfactorily, though there was no doubt that she was childish and stupid. She was sent back to her unit, but could not readjust herself; sent back to the hospital again, she said frankly that she was fed up and wanted to get out of the A.T.S. She sulked, and when she could not get a promise that she would be boarded out she made another attempt at throwing herself out of the window. She was finally discharged unfit.

CASE 5.—Woman, aged 34. Average intelligence. Recurrent endogenous depression, precipitated and aggravated by circumstances. Mild concussion with quick recovery. No change of depression.

K. P—, aged 34 (R.I. No. 13653), was admitted on 4.x.41 after jumping out of a running train in a suicidal attempt. She had no recollection of her decision, or of opening the door of the compartment, in which she was travelling alone. She found herself lying near the line, with a bad headache. She was able to walk to the nearest house, and was taken to hospital by ambulance from there. She had abrasions all over the body, and a fracture of her left tibia; no fracture of the skull. The neurological examination was negative. Patient had been feeling depressed for the last two years, but more so since the previous February. At this time she took up nursing again, after a break of seven months, and the work was not quite what she expected it to be. They were under-staffed, and she had the responsibility for a large part of the hospital. Overconscientious as she was, she started worrying whether she did everything right, and gave herself hardly any rest. She lost weight, and could not sleep. Her work satisfied the matron, who noticed no change in her behaviour or falling off in her efficiency. But she complained to Matron that her work was not satisfactory, and she came to apologize for leaving out the title " Daily Report " from her report—which seemed to Matron unnecessary. The week before her suicidal

attempt she had spent with her husband (who is in the Army) at the house of her in-laws. They weee happy together, and she seemed not unduly upset when they had to part again. But her husband thought her run down and over-worked, and made her promise to give up nursing. They travelled part of the way together, when he returned to his unit and she, travelling to her hospital and made the suicidal attempt.

Patient is an only child. Her father left her mother for reason unknown to her when she was a child of seven or eight. She was an average scholar, but shy, a bad mixer and had a lot of trouble with her stomach while at school. In retrospect she calls it " nervous." After leaving school she got a job in a shop which she did not like very much, and when she was 18 she took up nursing. She was always serious-minded and quiet, but not unsociable. She had several spells of depression, of several months' duration each, and once she was in a nursing home for a few weeks. Two years ago she had another serious " breakdown." She reproached herself for not being kind enough to her fiancé, for not satisfying herself and others, and for being unable to confide in anybody. She seemed to have made a suicidal attempt, but was found by her mother. Both are reluctant to go into detail. She got engaged to her husband 12 years ago; he had been a patient at her hospital. They got married at the beginning of 1941.

Patient recovered quickly from her concussion, but was still depressed and retarded when discharged in the care of a responsible relative. Six weeks later she started occupying herself with light housework and has since fully recovered.

Discussion.

Cases 1 and 2 are very similar in structure: Both were men of roughly the same age, well-adjusted personalities of the syntonic type, hard and conscientious workers; both developed gradually a state of depression while working strenuously, probably overworking themselves when their beginning depression made extra exertions necessary to keep up the standard of work.

No external cause for the depression is evident in either case, though in Case 2 the depression was aggravated by external circumstances. In both cases suicide was not really premeditated, but the result of sudden impulse after the patients had had suicidal thoughts for some time. In both cases the suicidal cerebral injury led to a sudden disappearance of the depression. The injuries in both cases were of the same order of severity, viz., extensive lacerations of the brain. There is one difference of great theoretical importance: in Case 1 the injury is bi-frontal, involving the left frontal lobe more than the right, but in Case 2 the left temporal lobe is lacerated, and there is nothing to indicate any involvement of the frontal lobes, either in the clinical picture or in the X-ray findings.

Case 3 is more complicated clinically. The patient's pre-morbid personality is slightly abnormal; he is shy and introverted, a stutterer, who is very conscious of this handicap and tries to overcome and to over-compensate it. His depression is much more acute and of much shorter duration at the time of the attempt. The latter itself seems to have been a play with suicide with an unfortunate end. It is, however, not out of the question that his overwork before the onset of what he calls depression was actually the beginning of his depression.

His recovery was equally sudden, accompanied by some transient " organic " apathy and lack of initiative. His willingness to return to his unit in spite of everything that had happened may even be interpreted as a slight lack of insight or error of judgment. But there were external factors operative in his recovery—his newly formed attachment to an officer, which, seen in the light of his previous personality, cannot easily be disregarded. The localization of the injury in this case corresponds closely to that in Case 1; the severity is demonstrated in the post-traumatic dilatation of the anterior horn of the left ventricle.

Case 4 shows the lack of effect of a suicidal cerebral injury on a psychopathic personality of low intelligence. The localization of this comparatively mild laceration was in the posterior part of the left temporal lobe.

Case 5 finally demonstrates the negative result of a suicidal attempt producing a mild concussion without signs of focal cerebral injury on an endogenous depression of moderate severity.

Every psychiatrist seems to know cases of depression which make a sudden recovery after psychological or physical " shock," but I have not been able to trace any case histories in the literature, and no information seems to be available about the mechanism of recovery. In particular one would like to know whether in the cases of recovery after physical shock, physiological or psychological reactions bring about the clinical change. In cases of suicidal attempts (not involving the brain) this distinction is difficult enough. In two such cases recently observed by

the writer, psychological mechanisms were of obvious importance, but in neither case could one be definite about the further question, namely whether it was the relief of emotional tension by the suicidal act, or the change brought about in the patient's life-situation as the result of self-inflicted injury. The less complicated of the two cases may be quoted in brief :

C. B—, a borderline defective, aged 41, had lived and worked with his father all his life, sorting rags for low wages. He was always shy, had no outside interest or hobby ; he did not smoke, drink, gamble or read. He used to listen to the wireless in the evenings. He never touched a woman. He used to have days or periods of a few days when he felt depressed or rather fed up with himself, mainly on account of his difficulty in mixing with people. He was never off work or under medical treatment, and never made a suicidal attempt. He was afraid of being called up, and became rapidly depressed when he had to join up, and after four days in the Army he thought it was too much for him and cut his throat with his pocket knife. He injured his trachea and was seriously ill for three weeks. When seen after that period he was not depressed ; he denied any suicidal thoughts. He said he felt quite happy at the hospital because other people talked to him and he found it easy to mix. He intended even to play cards with other patients. He also expected to be boarded out of the Army.

Environmental factors like these cannot be disregarded in those three patients who recovered after their suicidal attempt. For all of them changes in their circumstances were brought about. The vicious circle of depressive retardation and overwork was broken ; Cases 1, 2 and 3 never returned to military duty. Though in none of the cases was there anything to show any intention of getting out of the Army, it was obvious that they were ill-adjusted to their particular army condition, and this ill-adjustment played an important part in bringing about their depression.

As mentioned before, very little is known about the effect on the depressive state of physical illness as such, in other words of effects of the subjective awareness of being or having been seriously ill. But there is no doubt that the focusing of attention, both of the patient himself and the medical and nursing staff, from the mental to physical symptoms is important. Cerebral injury, with the particular psychological significance attached to the head, the impressive experience of the amnesia and the break in the continuity of existence are particularly liable to bring such factors into play. It is difficult to exclude their importance in cases like those quoted, and it is probably significant that the fifth case, an endogenous depression, did not improve after a mild concussion which did not produce the experience of being seriously ill. The absence of permanent symptoms and the lesser degree of violence in the attempt are other factors to explain the difference.

Allowing for the relative importance of these factors one would like to trace any specific significance of the cerebral damage in the improvement of these patients as regards their depressive states. The frontal euphoria and disinhibition is the feature which one would expect to neutralize, as it were, the depressive state. There are, however, two arguments which make such an interpretation very difficult, though Cases 1 and 3 at first sight would lend themselves to such an interpretation : (*a*) the lesion in Case 2, which was no less effective than that in the other two cases, was limited to the temporal lobe, and there was no reason to suspect that the frontal lobe was involved ; and (*b*) in the two frontal cases no real frontal euphoria or disinhibition was present.

There is one case on record in the literature which corresponds much better to the anticipated picture :

M. Lebensohn published a case of a woman, aged 49, who in a state of depression shot herself through both frontal lobes. She was described as a good housewife, tidy, industrious, sociable and economical. However, seven years before the suicidal attempt she started drinking heavily, became tense and depressed, and unable to sleep. Several external causes made her depression worse in the subsequent years, and she made an unsuccessful suicidal attempt a year before the one in question. Following a trivial argument with her husband she shot herself with a ·25 calibre pistol. The entry wound was through the right frontal bone, and the bullet was lodged on the floor of the left anterior fossa, its nose pointing to the right—in other words it seemed to have ricocheted from some point of the left frontal bone. The patient had cerebro-spinal rhinorrhoea and a pneumocephalus. She made a slow recovery physically, at the same time passing through an acute frontal syndrome (fatuous euphoria and excitement). Re-examined three years after the event, she had readjusted herself to her home life, though she indulged sometimes in alcohol. She showed no intelligence defect, but her emotions were shallow ; she

was slightly euphoric or facetious, certainly not depressed; she had had no depression or suicidal ideas during the three years, and she was less concerned about some painful chronic arthritis than she had been before the injury.

The author mentions that many depressions have been cured by severe shock of general nature, but he points out that his patient's recovery hints at a more specific mechanism.

There is one example among Kleist's cases of a patient (Taucher, p. 1187) who developed fatuous euphoria, *Witzelsucht* and severe demoralization after a suicidal attempt (revolver bullet through the basal part of both frontal lobes, just missing the optic nerves, but leading to temporary blindness). This patient was an irritable and unstable personality to begin with, and he attempted suicide in a sudden outburst of anger following some quarrel with his wife.

These two cases illustrate very well the localization of lesions which produce this type of change of character. L. Welt was the first to point out that lesions of the orbital part of the frontal lobe produce this change of personality. Observations by Schuster in cerebral tumours, the present writer's observations in traumatic cases and Kleist's observations in cases of war injuries all seem to show that bilateral injuries to the basal part of the frontal lobe roughly corresponding to Brodmann's area 11, lead to euphoria, lack of insight, *Witzelsucht* and disinhibition. There is no agreement yet as to whether this clinical syndrome can be subdivided, and if so, whether more detailed correlations between the various components of the clinical picture and site of the lesion can be established. It is also open to discussion whether the clinical picture has any relationship to lesions of the base of the brain adjoining and posterior to the orbital gyrus.

Considering the positive and negative evidence the interpretation of the reported cases would go along the following lines: Euphoria and disinhibition are related to lesions of the basal parts of the frontal lobes; these regions were not affected in any of the cases. Correspondingly none of them showed the characteristic syndrome of the frontal euphoria. On the other hand, the two cases quoted from the literature with injury to the frontal base changed from depression into fatuous euphoria. Moreover, the recovery from depression was the same in the temporal as in the two frontal cases. Therefore the recovery from depression in the reported cases is not the result of a specific focal injury. Factors to account for the improvement are both physical and psychological. General damage to the brain and effect of injury and sickness on the organism on the one side, and on the other the release of tension, the substitution of recognized physical illness for hidden mental incapacity, the experience of interrupted consciousness and amnesia, finally the change of the life situation brought about by the injury, combine in bringing about the mental change. Case 5 might point to the relative unimportance of the suicidal act, and the importance of the severity of the injury, at least in the endogenous type of depression.

Summary.

Five cases of suicidal head injury are reported. Two endogenous and one reactive depression recovered mentally as the result of severe injury to the frontal lobes in two, to the left temporal lobe in one case. One psychopathic reaction with a laceration of the posterior temporal lobe showed no change. One recurrent endogenous depression was not influenced by a mild concussion. Comparing these cases with two cases found in the literature, the conclusion is reached that the recovery was not due to focal cerebral injury, but to the combined operation of physical and psychological factors which are discussed.

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