

PERSONALITY CHANGES AFTER LEUCOTOMY.

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In this paper are given the histories of ten patients who have been treated by means of leucotomy, particular attention being paid to the study of character and personality traits.

The records are compiled from the information given by a relative or relatives, supplemented in some cases by data supplied by the patient as well. This method undoubtedly has serious disadvantages, for the information must inevitably be dependent upon the informant's veracity, powers of observation and description, memory, and conscious and unconscious subjective bias. In every case the interview took place at the patient's home, so that the interviewer could obtain a personal impression of the patient's home environment. Furthermore, the information regarding the pre-morbid personality was only obtained after the illness, operation, and recovery, and in some cases it was difficult to ascertain when the morbid changes actually began.

In this investigation, which was carried out between August and November, 1945, particular importance has been given to the pre-morbid personality, for it is felt that the evaluation of Moniz' operation must not only be based on the amount of improvement following it, but on the nature and degree of the changes between the pre-morbid and post-leucotomy personalities. It must, however, be borne in mind that some of these changes may be attributable to the illness itself rather than to the operation.

Of these ten cases, six had been certified and had been in a mental hospital for periods varying from two to six years. Of the others, B. Y— had been for many years extremely trying for her family and very miserable herself. The others, G. H. D—, G. R— and S. A— had all had periods in a mental hospital as voluntary patients, and would finally have had to be admitted to a mental hospital. In all these cases the prognosis, apart from operation, was bad.

These ten cases show considerable variations in age, social status, education and occupation, as well as in intellectual ability and temperament. Nevertheless there are certain features which they all seem to manifest in greater or lesser degree in their pre-morbid personality, and which seem to have disappeared after leucotomy.

The most outstanding feature is self-consciousness. In different ways, according to their temperament and circumstances, these people seem to have been abnormally aware of themselves. In the majority of them this self-consciousness was accompanied by shyness and reserve, and in some by

definite feelings of inferiority. In one or two cases this preoccupation with the self was undoubtedly increased by the critical and rather derogatory attitude adopted by the patients' parents (B. H— and F. H. D—).

Coupled with this self-consciousness there is a lack of social adaptation and a restriction of personal relationships. With one exception (R. J—) none of these patients made friends easily, though in some cases they showed considerable attachment to their family or to one or two particular friends. Some of the patients in this series seem to have been keenly aware of their social deficiencies, and to have been emotionally disturbed by them; while others seem to have rather prided themselves on "keeping themselves to themselves."

The majority of these cases are reported to have been conscientious and meticulous, some of them excessively so, with a definitely religious outlook, though the basis for this seems frequently to have been merely the adoption of the religious views of their environment.

In spite of their egocentricity and their preoccupation with themselves, many of them had genuine affection and sympathy for others, and were not intentionally egoistic, even when making exorbitant demands on their environment.

During their illness the egocentricity and preoccupation with themselves and their own affairs became enormously increased. It is perhaps worth quoting here Ibsen's description of the inmates of the asylum in *Peer Gynt*:

"Beside themselves? Oh no, you're wrong!
It's here that men are most themselves—
Themselves and nothing but themselves—
Sailing with outspread sails of self.
Each shuts himself in a cask of self,
The cask stopped with a bung of self
And seasoned in a well of self.
None has a tear for other's woes
Or cares what any other thinks."

As Fosdick says: "All the way from social embarrassment to insanity, egocentricity is ruinous to real personality."

Four of these patients became catatonic schizophrenics, entirely withdrawn from the external world; two became almost completely absorbed in their own physical symptoms, one originally developed delusions of persecution before becoming an agitated melancholic, and the remaining three were depressed with feelings of inferiority and self-reproach.

When we come to study the post-leucotomy personality, there seems to be a very obvious diminution of self-consciousness which shows itself in different ways. There is less shyness and reserve, so that there is no embarrassment on meeting strangers or casual acquaintances; there is more indifference to adverse criticism, and considerably less preoccupation with bodily functions. In a few cases the patient, after the operation, gives the impression of being smug and self-satisfied.

Accompanying this loss of self-consciousness there is also a decreased awareness of the feelings of other people. Some of these patients have become noticeably tactless, apparently neither observing nor caring about the effect of

their remarks upon their hearers; S. A— has even become openly rude and offensive. There is also a shallowness in their emotional life, none of them have shown any tendency to make new friends, and in some cases the relatives complain of a definite absence of their old affection. This was particularly noted in the case of E. J—, B. Y— and G. R—. Thus the sister of R. J— says that whereas before he was genuinely thoughtful and kind towards his family, he now seems insincere in his dealings with them, and the husband of B. Y— thinks that she would not now be unduly upset if he died. The improvement in the attitude of L— to her daughter also seems to be due to a relative emotional indifference rather than to any real loving devotion to her daughter's interests. In fact, the general tendency in the post-leucotomy phase is for an increased self-indulgence and egoism, the patient unconcernedly living his own life and attending to his own needs, but at the same time taking a greater interest than hitherto in the environment and having a rather wider range of interests. Where the dynamic drive is not very strong, as in the case of the elderly patient G. R—, there is a restriction of activity due to inertia, and a willingness just to sit, though even he reads more and listens to the wireless more than he did, but with less discrimination.

In the case of G. R— and E. J—, this emotional indifference prompted the relatives to use almost identical language in describing them. The wife of G. R— said "His soul appears to be destroyed, he is not the man I once knew," and the sister of E. J— remarked "He is without soul now," and asserted that whereas before they could always appeal to his better self, now he seemed to have no better self to which to appeal. G. R— also sees no reason why he should make himself do things he does not want to do.

In some of the other patients a change has been noted in the moral aspect of their character, and in most the change is for the worse; they tend to be less truthful, less reliable and less scrupulous than they were in their pre-morbid days. Allied to this there is a definite reduction of the interest taken in religion, and one or two are quite outspoken about it, J. B— remarking that she does not believe in all that rot!

There is, however, no evidence of any increased anti-social activity or immoral behaviour, and if there is some diminution of virtue, there is no corresponding increase of vice. In none of these patients has there been observed any indulgence in sexual excess, but in some cases the marital relationship has become somewhat more normal.

Intelligence certainly seems to remain unimpaired, and where the physical drive is adequate they seem to be as successful in their work as they were in the pre-morbid days, in some cases even a little more so. The sense of personal responsibility is somewhat reduced, and worry and anxiety about the future rarely occurs, though they react normally to immediate situations.

CASE I.—J. B—, female. Year of birth: 1919. Diagnosis: Catatonic schizophrenia. Date of leucotomy: 16.i.42.

Pre-morbid personality.—Good home, superior artisan type. Secondary school education; school certificate. Subsequently did clerical work. Brought up in religious atmosphere; used to attend church regularly. Very keen on Girl Guides and fond of games. Not very sociable; had two special girl friends but no friends of the opposite sex, and seems to have been somewhat jealous of her free-and-easy, socially

popular sister. She was excessively conscientious, and took tremendous pains to do her schoolwork well and worried too much about it. She was extremely neat and painstaking, and used to chide the rest of the family for their lack of tidiness. Reliable, kind and helpful in the home. Teetotaler, moderate smoker, no sexual experience. Shy, reserved, self-conscious, inclined to worry and anxiety, with feelings of inferiority.

Morbid personality.—Admitted to mental hospital from March–October, 1934; from April, 1937, to March, 1938; from June, 1938, to July, 1940. Finally readmitted in November, 1940. On this occasion admitted being jealous of her sister. In conversation was silly and disconnected. She was mischievous and interfering, noisy, restless, difficult, unemployable; solitary, and would not wash or dress without prompting. A course of E.C.T. in November, 1940, produced some improvement, but she quickly relapsed, and by October, 1941, was mute, catatonic, and semi-stuporose.

16.i.42: Leucotomy. Discharged. Was reported to be rather awkward with strangers, not very sociable and jealous. Rather slow and not very competent.

Post-leucotomy personality.—Considerable improvement. Since her discharge has taken an examination in typing and passed it, and has been working as a typist for over a year; likes it quite well, but is slightly worried by the noise of the machines. Still goes to church occasionally, but now says she does not believe in "all that rot." Takes no part in any sport, and has not resumed her old interest in the Guides. Seems more self-centred. Has one girl-friend with whom she goes out occasionally, but does not seek outside friendships or company. No evidence of any sexual libido. A little domineering with her sisters. Does not worry so much about the tidiness of her room, though still keeps it in good order. Tactlessness an outstanding feature; whereas previously she would always think twice before speaking, now she says what she thinks and makes the most tactless remarks without seeming to notice or care. Has ceased to worry and shows no anxiety, but occasionally seems to reproach herself, saying she has brought trouble and disgrace on the family.

Summary.—This patient's illness supervened before she had achieved a mature personality—while she was still in the adolescent phase. Of rather above average intelligence, her main interests were those of the schoolgirl, and she had evinced no overt interest in the opposite sex. (No information is available *re* masturbation.) Brought up in a church-going atmosphere, she seems to have been extremely conscientious and with a strong sense of responsibility, coupled with a painful awareness of her own shortcomings and jealousy of her sister, which gradually led her to retreat from the harsh world of reality to the inner life of the schizophrenic.

Following the operation she is now capable of living at home and has again become a wage-earning citizen, but is more self-centred than she was, and less considerate of other people. Tactlessness has become an outstanding characteristic, and seems to be allied with an indifference to other people's feelings. She also appears rather self-satisfied, and has no desire to make new friends, resume her old interests or take up new ones. She is still tidy, but the excessive meticulousness has disappeared, and she evinces no worry or anxiety. Although she still conforms occasionally to the church-going habits of her home, this is no longer from any inner conviction, for she now says that she does not believe in any of that rot.

CASE 2.—F. H. D—, male. Year of birth: 1916. Diagnosis: Hypochondriasis. Date of leucotomy: October, 1943.

Pre-morbid personality.—Only child of elderly parents. Father neurotic since the last war; very contemptuous of patient; repeatedly accused him of being no good. Father said to have been clever, and patient admired him but was afraid of him. Mother reputedly fond of patient, but much influenced by her husband, and a rather fussy, excitable type;—both parents of French extraction. Good education: Clifton College; Oxford, two years; did not take a degree. Worked with London Transport and then went into the Army, 1939. At home, always quite friendly, generous and affectionate, fairly considerate and sympathetic, but very shy, reserved, obstinate, rather egoistic, suspicious and mistrustful. Moderately ambitious but rather lazy, and always faddy about his food and possessions. Serious-minded and "very gentlemanly." Fairly conscientious, truthful, religious, worrying, anxious, inclined to self-pity and with definite feelings of inferiority. Took a moderate interest in sport; connected with the Fighting French organization.

Some masturbation; libido said to be deficient, but had some hetero-sexual experience. Had several women among his friends, but there was never any emotional attachment on his part.

Morbid personality.—1940: Began to complain of abdominal symptoms; sent to General E.M.S. Hospital, then to E.M.S. Neuro-psychiatric Hospital. Invalided out of the Army. Had been thoroughly investigated by a large number of doctors. Complained continually of digestive disturbances and constipation; completely absorbed by his symptoms. Admitted on four separate occasions to a private mental hospital as a V.P. Was given three E.C.T., but was a very difficult patient, continually complaining, and treatment was discontinued. On the fourth occasion was admitted in July, 1943, leucotomy performed in October, 1943, and patient discharged two weeks later.

10.v.44: Apparently had a severe major fit.

Post-leucotomy personality.—Very considerable improvement. Got a job as French master in a prep. school; was there for one term, and then got his present job as French master in a co-ed. school. Married, March, 1946, to a French girl—a distant relative whom he met only a few months ago. Studying for a degree. Gets on better with both parents, *because now he does not mind anything his father says*. He is more self-satisfied, and is neither shy, reserved, nor self-conscious. His feelings of inferiority have lessened considerably, and he appears more ambitious and persistent. He has become rather placid, and a little absent-minded, but whereas before he was very self-absorbed and spent most of his time day-dreaming, he now lives right in the present. He is less lazy and apathetic, more independent and critical, less religious, but more truthful, and far less given to worry and anxiety. His excessive preoccupation with his bodily functions is markedly decreased.

Comment.—Both hereditary and environmental factors seem to have played a part in the production of this patient's illness. The derogatory attitude adopted by his neurotic father, coupled with his own shyness and reserve and a lack of real force of character, made him become increasingly preoccupied with himself, until ultimately his bodily functions became almost his sole interest. He was very sensitive to other people's opinions, and keenly aware of his own deficiencies and inferiorities, and compensated for these by withdrawing more and more from active life into one of phantasy, whence the impression that he was lazy. He was egocentric, though fairly conscientious, truthful and religious.

Since the operation he has become much less self-conscious, being no longer hurt by his father's criticisms of him, and his behaviour at home is more satisfactory. His excessive interest in himself has been replaced by renewed interest in work and finally in marriage. Freed from the paralysing effects of his own sense of inferiority, he now appears less lazy and apathetic, more independent, even more truthful and definitely more self-satisfied, though less interested in religion than before.

CASE 3.—V. B—, female. Year of birth: 1909. Diagnosis: Schizophrenia. Date of leucotomy: 9.xii.41.

Pre-morbid personality.—Devoted parents and on good terms with her sister. Elementary school education, then typist. Fair number of social activities; belonged to tennis, hockey and swimming clubs. Many women friends, but no other boy friend than her husband, to whom she was engaged for nine years and whom she married in 1935. No children, and relationship with husband seems to have been unsatisfactory. She was not very passionate, and coitus was infrequent, but she became very upset by her husband's growing indifference and suspected he was in love with someone else. Abstainer, moderate smoker, rather shy and reserved, but placid, good-tempered, friendly, kind, considerate and tolerant. She was conscientious, meticulous and very religious, worrying, anxious and apprehensive.

Morbid personality.—Became more and more preoccupied with her own worries. Admitted to mental hospital 26.iv.37–8.i.38.

27.xi.39: Readmitted. Talked continually of her own miseries and troubles, and blamed her husband for everything. She became very resentful and suspicious, and was finally asocial, exclusive and very unstable.

13.xii.41: Leucotomy.

7.ix.42: Discharged.

Post-leucotomy personality.—Since her discharge has lived at home with her parents and is separated from her husband. Got a job as a typist, but complained of her head and shoulder aching, and gave it up after two months. Since has helped with the housework and the family grocery business. Her old friends have moved away and she makes no effort to make new ones, and does not seem to be very upset by her husband's desertion. Does not worry like she used to do, but very occasionally seems a little apprehensive about what will happen to her when her parents are gone, and does not want people to find out about the mental hospital or about her husband. She is not so religious as she was.

Summary.—This girl came from a sheltered home, in conventional suburban surroundings, with the education, occupation, social activities, moral and religious outlook of her environment. She was of the worrying, conscientious, rather frigid type, and this probably was a far from negligible factor in the marital friction which arose. Her growing suspicion of her husband's fidelity and the unhappiness resulting therefrom finally assumed such proportions that she became psychotic. Since the operation she has successfully readjusted herself to the sheltered home environment, and seems very content with the ordinary everyday routine. She is more self-contained, and makes little or no effort to make friends, nor is there any strong sexual urge, nor any real concern over her husband's defection and the loss of her marital status. She is reported to be less religious than she was.

CASE 4.—H. L.—, female. Year of birth: 1884. Diagnosis: Melancholia with persecution delusions. Date of leucotomy: 26.i.43.

Pre-morbid personality.—Elementary school education, then children's nurse until she married, 1907. Husband in the Police Force. Very fond of her home, had few interests outside it and did not make friends. Very fussy and meticulous over her house and garden. Husband died of G.P.I. about 22 years ago. Patient had a breakdown following this and an early menopause at the age of 35. Following her husband's death she centred all her interest and emotions on her only child, and became exceedingly possessive; wanted to know everything her daughter did, invariably accompanying her everywhere. She was very quiet and reserved, but ambitious and determined, kind and affectionate, but very domineering to her daughter. She was conscientious, meticulous, truthful and religious, worrying and anxious.

Morbid personality.—Her illness seems to date from the time when a bomb exploded near her in April, 1941. She turned against her daughter, whom she had previously idolized, and accused her of stealing and of being in with a gang of thieves, and finally attacked her. She became depressed and unable to concentrate. She was admitted to a private mental hospital as a V.P., and transferred to a municipal one in December, 1941, and was finally certified. On admission she was still voicing ideas of persecution; she was being watched by the police; her daughter robs her and is immoral. Later she became agitated and developed ideas that her daughter had been murdered, and finally became more agitated, waving her arms in despair and accusing herself of being a wicked woman.

26.i.43: Leucotomy.

1.vii.44: Discharged.

Post-leucotomy personality.—Since discharge has again lived with her daughter, who is a school-teacher, but no longer clings to her or tries to rule her and dominate her. This naturally makes life very much easier for the daughter. She is amiable when she meets people, but does not seek friends. Her former gardening activities have not been resumed, she says because she must not work hard like that. She is neither very ambitious nor determined, nor as proud as she was. She is still quiet and rather reserved, but a little more impulsive than before. She is less interested in religion.

Summary.—A woman of average ability, whose range of interests was largely restricted to her own home. She was deeply attached to her husband and daughter, but the latter seems to have been subordinated to the mother's ego and was treated as a projection of it and not allowed to have a life of her own. (It is possible that the husband was treated in the same way, but there is no information on this point.) The patient's ego-ideal (including her ideal for her house and daughter) was fairly high, and she exerted considerable energy in trying to achieve the standard she

had set herself. Engrossed in her own affairs, she seems to have had little interest in other people or events. Her equilibrium was first disturbed by her husband's death, and later by the bombing. During her second breakdown she turned against her daughter, whom she had previously idolized, and developed delusions of persecution. (These may, perhaps, have had their foundation in the daughter's natural reaction against her mother's excessive domination.) These were later replaced by delusions that her daughter had been murdered, and she became very agitated and self-reproachful, accusing herself of being a wicked woman, and evincing strong feelings of guilt. After the operation this agitation and sense of guilt disappeared. Her daughter finds her much easier and pleasanter because of the diminution of the patient's ambition, domination and possessiveness, which seems to have been replaced by a much more contented acceptance of life as it comes. She is less religious than formerly.

CASE 5.—B. H—, female. Year of birth: 1914. Diagnosis: Schizophrenia. Date of leucotomy: 11.xii.40.

Pre-morbid personality.—Home relationships not very satisfactory. Father a parson (C. of E.), and parental outlook rather narrow and repressive. Much less intelligent and more difficult than her three brothers, of whom she was jealous and whom she exasperated at times by her behaviour. School record suggests that she was rather below average intelligence. Had very little contact with father, and extremely attached to mother, though at times showing great antagonism to her. Tried nursing in a children's hospital, but is said to have been very upset by some real or imagined advances by the night-porter. Stayed at home and helped in the house. Her natural interest in poetry and music was discouraged by her parents, and they were disappointed because she was slow in learning, inclined to be indolent, careless, unreliable. Worrying, anxious, and with feelings of inferiority, she was kind, affectionate, and demonstrative, but inclined to be jealous, envious, passionate and tactless, shy, reserved, self-conscious and egoistic. Very religious, eventually fanatically so, falling down in the road and calling upon God.

Morbid personality.—Onset of symptoms about 1936, finally necessitating certification and admission to mental hospital in same year; she became resistive, negativistic, destructive, and seemed continually in a state of morbid apprehension, frequently reiterating, "What am I to do?" During her stay in hospital, treated with insulin, hormone therapy and E.C.T. Had 77 treatments over a period of eleven months. Reacted well at first, becoming mentally stable for periods of 3-5 weeks. Later remissions lasted only a few days. During remission went home on leave, but shortly became unmanageable.

11.xii.40: Leucotomy.

15.ii.41: Discharged.

Post-leucotomy personality.—Since her discharge has had two simple jobs, first delivering papers, and secondly in a bakery, but this was not very successful. Much less difficult than she used to be, less bad-tempered and more affable, but not making any real friends. She gets on well with people and is no longer shy or self-conscious. Very attached to mother. No evidence of any sexual urge. A little inconsiderate (will sing a hymn tune over and over, ignoring requests to stop), and unreliable (will leave the job she is doing in order to sit down and read a book). Incontinence has been rather troublesome in this case, and she is rather self-indulgent, and inclined to eat other people's rations as well as her own if they are not locked away. No sign of worry or anxiety, and is less troubled by feelings of inferiority. Is now only moderately interested in religion.

Summary.—Severe emotional difficulties seem to have been occasioned in this girl, who was rather below average in intelligence, by the home atmosphere and the attitude shown to her by her parents. They seem to have had little insight into the nature of their daughter's difficulties, which were exaggerated by the narrow standards imposed and by the moral condemnation of her shortcomings. The mother's attitude to sex tends to be prudish and repressive, and the patient was probably very ill-prepared for the problems of adolescence. Unable to cope with her emotional difficulties, the patient developed an extreme religiosity which culminated in schizophrenia. Since her discharge she has readjusted herself to the home atmosphere, and seems quite contented with the narrow circle in which she lives. The father has retired and financial circumstances are rather straitened. Has

neither the intellectual ability nor the training for any sort of responsible job. She is affable and friendly, but does not seem to have any urge to make friends. She is happy, self-contained, less self-conscious and more indifferent to her mother's criticisms of her, and so more placid and not so difficult. She is definitely less interested in religion than before.

CASE 6.—S. A—, male. Year of birth: 1888. Diagnosis: Chronic melancholia. Date of leucotomy: 11.iv.44.

Pre-morbid personality.—Record of early life not very complete. Apparently came of middle-class family and had public school education, but never achieved any great success either there or in his later life. Was rather a rolling stone and went to America, but never settled anywhere for very long. Seems to have gradually come down in the world, and was finally working as a motor mechanic. Subject to recurring attacks of depression, the first occurring at the age of 18. Married in 1910 a woman whom he felt was socially and intellectually inferior to himself and who has gradually become very deaf, so that conversation with her is now very difficult. He had two children, boy and girl. The boy is said to have considerable musical ability, but there is much friction between them, and patient despises his son for turning from classical music to jazz. The daughter made an unsatisfactory marriage with a man much older than herself, and had a mental breakdown after the birth of her child. Many conflicting traits in patient's character. He was very slow, pleasure-loving, fond of spending, not very keen on work, but also religious, conscientious, dogmatic. Made very few friends but was attached to a Methodist parson, in whom he confided a great deal, probably because he was the only acquaintance he considered his intellectual equal. Proud, but with feelings of inferiority, of despair, self-pity and self-reproach, and inclined to worry and anxiety.

Morbid personality.—First attack of depression occurred at the age of 18 and lasted about 18 months. Second attack at 27 and was in mental hospital, U.S.A., for one year. Attacks have tended to recur about every ten years, lasting for varying but progressively increasing periods of time. Present attack began eight years ago.

1932: V.P. in mental hospital for short period. Continually complaining of depression; obsessed with the idea of death. Could not bear to be alone; could not do anything on his own. Troubled by insomnia. Had managed to keep at work most of the time, but was becoming progressively incapacitated by his symptoms.

Post-leucotomy personality.—Has had three jobs since operation, each a better job with more pay. Wife finds him more difficult. Quicker in his movements and seems to have more initiative. Is no longer shy and talks more easily to people, but does not seem to have made any special friends and keeps himself withdrawn from his work associates, considering them uncouth and ignorant. Now more bad-tempered, sarcastic, intolerant, quick to criticize, tactless and inconsiderate. Takes advantage of his wife's deafness and says rude, impossible things about her in front of other people. He is more self-satisfied and no longer has feelings of inferiority, nor does he show anxiety or remorse, though he himself feels unhappy over his isolation, which is aggravated by his wife's deafness, his daughter's illness and his disagreement with his son. Libido is normal and coitus with wife more frequent. His interests now are chiefly wireless programmes dealing with music or the theatre. Less concerned with his personal appearance, and careless about washing and shaving. Will not go to church now; says he doesn't believe in religion; doing Christian acts is his idea of religion, not going to church.

Summary.—The discrepancy between this patient's ideal of himself and the actual facts of his life seem to have played a determining part in his psychosis. Failure to achieve his standards resulted in hopeless brooding, depression and self-reproach, this depression being accentuated periodically, but becoming more and more persistent as time went on. He never seems to have had sufficient aptitude, initiative, determination or self-control to achieve success. Proud and self-absorbed, but far from self-satisfied. Since his operation he has become much more self-satisfied, but much more inconsiderate and outspoken about the environmental conditions in which he finds himself. At the same time he is actually slightly more successful in his work than before. He is less religious.

CASE 7.—Male, G. R.—. Year of birth : 1877. Diagnosis : Melancholia. Date of leucotomy : 3.xii.43.

Pre-morbid personality.—Elementary school education, subsequently shop assistant in gentlemen's outfitters. Army 1914–1918. On good terms with his family, and had many acquaintances of both sexes, but no very close friends, and married late in life, 1925. Happy, friendly, taking part in local activities, church, whist-drives, theatres. Very keen and industrious gardener. Conscientious, meticulous, scrupulous, fairly religious, affectionate, sympathetic and considerate, fairly quick-tempered and impulsive, and inclined to worry and with some feelings of inferiority.

Morbid personality.—In March, 1942, had a quarrel with his management, and had to give up the job which he had held for 18 years. This distressed him very much and although he got another job as a temporary Civil Service clerk, he felt he could not cope with it. By August, 1942, he was restless, eating and sleeping badly, was unable to concentrate and had lost interest in everything. In November, 1942, he was admitted to a private mental hospital as a V.P. for two months, and then was in an ordinary nursing home for four months. In November, 1943, a course of insulin sub-coma was tried, but with no improvement. E.C.T. was not considered advisable in view of his general condition.

3.xii.43 : Leucotomy.

17.xii.43 : Discharged ; there was already considerable improvement.

Post-leucotomy personality.—Has held no jobs since his operation, although attempts were made to persuade him to return to his old occupation ; but in view of the fact that patient has reached an age when the majority of people tend to retire his refusal to take up work again is not very significant. He is, however, unduly content to sit back and do little or nothing, and leaves almost all the responsibility of the home to his wife. If she tries to push him into doing something he becomes irritable, sees no reason why he should force himself into doing things, and just wants to be left alone. Less considerate and thoughtful, not helpful, and evinces very little real interest in anything. Pleasant and affable when he meets people, but shows no enthusiasm for going out for social evenings or meeting people, and does not spontaneously converse, though answers questions pleasantly and intelligently. Will go to the theatre with his wife, but makes no comments, and quickly seems to forget about it. Reads more and listens to the wireless more, but seems less critical and discriminating, listening to anything. Takes no interest in the house or garden now. Patient himself says he feels very well, is no longer nervous and does not get depressed, and is quite satisfied.

Summary.—Before his illness the patient seems to have been a respectable, conventional citizen, of average ability. Reliable and conscientious in his work, but with no outstanding ambitions, drive or initiative. He enjoyed his work as a shop assistant and worked for many years with the same firm. The same conventional moderation obtained outside his work. He had no obvious vices, and his virtues were of a somewhat passive nature ; friendly, with a large circle of acquaintances, but no very warm friendships ; affectionate but not very passionate. He did not marry until he was 47, and although a little frustrated by his wife's frigidity, he cheerfully accepted this and was not unduly upset by it. (Even before his illness it seems probable that his wife was the dominant partner.) His pleasures were very simple, his main hobby being his garden, and he took a moderate interest in religion and attended church. There was very little aggressiveness in his character, and when the break with his firm came he was unable to adopt a fighting role, and became overwhelmed by his difficulties, being unable to eat, sleep or concentrate properly, and becoming increasingly preoccupied with his own inadequacies—physical, mental and moral. Since the operation the lack of energy and absence of drive has become very pronounced, probably due in part to his age, and in part to a diminution of his sense of obligation. He sees no reason why he should bother himself to do things he doesn't want to do, and has become less conscientious, less meticulous, less scrupulous and less considerate than he was. His wife is finding it very difficult to readjust herself to this change, and she says that his soul appears to be destroyed, and that she feels he is not there as the man she once knew !

CASE 8.—R. J—, male. Year of birth : 1905. Diagnosis : Catatonic schizophrenia. Date of leucotomy : 19.xii.41.

Pre-morbid personality.—Secondary school education. Good school reports, but took no outside examination. Moderately athletic, indiscriminate reader and wireless listener; fond of music-halls, moderate drinker, heavy smoker. Family relationships satisfactory; got on quite well with parents and sister. Very sociable; many men friends and normal hetero-sexual interest in women. Married at the age of 28; seemed to get on fairly well with wife. Commercial traveller; worked for several firms, bettering himself on each occasion; final salary about £400 p.a. Always envious of people with money and planning to make a lot for himself, but was not thrifty, and when he got money would waste it on having a good time. Friendly and affectionate, but inclined to be tactless and domineering, and rather vain of his appearance. Moderately conscientious and truthful, but inclined to be impulsive and erratic, and so somewhat unreliable. Tended to have feelings of inferiority, and was apprehensive and inclined to worry. Was not interested in religion.

Morbid personality.—August, 1935, had a nervous breakdown when he attempted suicide by drowning in the bath at a London hotel. At the end of April, 1936, became wildly extravagant in his talk and behaviour. Suddenly bought a café, valued at £2,000, without having the money for it, but nevertheless managed to raise £1,000 towards it before going into hospital as a V.P. on July 10. He remained impulsive after admission, but gradually his conduct deteriorated and he became solitary, disorientated, mute and catatonic.

Leucotomy: 19.xii.41. Within a month of the operation he was conversing rationally, but remained idle and lacking in initiative. Showed little concern when told his wife was seeking a divorce.

Discharged: April, 1943.

Post-leucotomy personality.—Since his discharge has changed jobs two or three times; latterly employed as a clerk by the Admiralty. Inclined to be lazy; took this job because it was easy work and good pay. On good terms with his family, but with lack of any emotion. His wife has divorced him, but he does not seem to worry about it at all. Has a number of friends, but all people seem more or less alike to him and he feels little or no gratitude to those who have helped him. Now rather negligent of his appearance and even of personal cleanliness. Even more of a spendthrift than he was; while his money lasts goes to cinemas and music halls, but when it is gone is quite content to spend the rest of the week going to bed early and reading. Rather smug and self-satisfied, with no feelings of inferiority. Very self-indulgent, less conscientious, less truthful, more unreliable. Lies unconcernedly and does not mind if he is found out. Sister says that whereas before he was genuinely thoughtful and kind towards his family, he now seems insincere in his dealings with them. Before they could appeal to his better nature when they thought something should be attended to and he seemed reluctant to do it, but now he seems to have no better self to appeal to and can never be bothered.

Summary.—The patient seems to have had a divided personality long before the onset of the actual psychosis. On the one hand he appears extremely extraverted and with many external interests, but on the other hand his subjective introverted tendencies are revealed by his vanity, his feelings of inferiority and apprehension, his ambition and his envy of people with money. Finally he seems to have had a manic outburst, during which he entered into wild financial schemes, followed by a wave of depression and self-criticism, when he attempted to commit suicide. After admission to hospital his conduct remained impulsive for some time, but slowly lapsed into a mute, catatonic state. Following the operation intellectual recovery preceded volitional recovery, and for many months he remained contentedly idle. Since discharge he has again become a reasonably useful member of society, but is still rather idle and self-indulgent, lacking in responsibility, rather indifferent emotionally, and not very reliable. His extroverted traits remain, but his introverted ones have disappeared. He has never at any period of his life evinced any real interest in religion.

CASE 9.—B. D—, female. Year of birth: 1887. Diagnosis: Involutional melancholia. Date of leucotomy: 21.i.44.

Pre-morbid personality.—Elementary school education. Foster-mother at Cottage Homes 18 years. Family relationships said to have been quite good; one sister and large family of brothers. Little interest in opposite sex; one special

woman friend and many female acquaintances. Never joined any social club, mildly interested in fiction, wireless, cinemas and music halls. Quick-tempered and excitable; very generous, affectionate, fairly sympathetic, but rather spiteful. Shy, reserved, rather self-conscious. Found the boys in the Home rather difficult and unruly, but had a way which cowed most of them until her breakdown. Hated the family cat, and when in a temper would kick it or starve it. Was always worrying about religion; sister used to find her religion rather annoying; rather showy, she used to try and put everyone else right. Used to get on the family's nerves with her "musts" and her "oughts." Very intolerant of noise.

Morbid personality.—At the end of 1940 became progressively more depressed, lost interest, and wished to die. Her menstrual periods had stopped at the beginning of the year. She developed delusions of extreme wickedness, and when admitted to a mental hospital in April, 1941, was retarded, deeply depressed, self-reproachful, refusing food and unemployable. The depression could be terminated by short courses of E.C.T., but these were always followed by a relapse.

Leucotomy: 31.i.44.

Discharged: March, 1944.

Post-leucotomy personality.—Since her discharge lives with her sister and helps in the house, but indifferently and reluctantly. Is rather lazy and does not want to work; has no sense of responsibility or obligation to others, and resents it when her sister tries to make her do things, and says she is being bossed. Is now inclined to be sullen rather than quick-tempered, but on the whole is much more placid than she used to be, and any discord in the home now is caused by patient's lack of initiative and co-operation, and seeming disinterestedness. Is now rather self-indulgent, not always truthful, unreliable, artful and dishonest in small things, and is not so generous and affectionate. She is rather self-satisfied, and no longer shy and reserved. Less particular about her toilet and personal appearance. Has resumed her friendship with her woman friend, but has not made any new friends. Now makes a great fuss of the cat. Can stand any amount of noise. More outspoken, and less upset by what others say to her.

Summary.—A woman of average intelligence and limited education, with no outstanding abilities. She seems to have been rather a hard, somewhat bad-tempered woman, who was able to hold her job as Foster-mother at the Cottage Homes for many years, but who seems to have shown little real affection for or understanding of the children under her care. Her family evidently found her a little difficult at times. Shy and self-reserved, she seems to have had little interest in the opposite sex, limiting her friendships more or less to one woman friend and several women acquaintances. The psychosis was involuntional and showed the typical symptomatology. Increasing preoccupation with herself led to loss of interest in external things, and to self-reproach and self-accusation with delusions of extreme wickedness. Since the operation she has become self-satisfied, less self-critical, a little less truthful and reliable, and more self-indulgent. There is also some lack of initiative and apparent laziness, together with lack of concern and consideration for others, but this is, on the whole, outweighed by her increased amiability.

CASE 10.—B. Y—, female. Year of birth: 1905. Diagnosis: Hypochondriasis and depression. Date of leucotomy: 5.iii.43.

Pre-morbid personality.—Elementary school education. Mother died when she was 15 and she took over the household duties. Father reputed to have been a drunkard, but patient liked him when sober. Elder sister went out into the world and "did well for herself," and patient mothered the younger one. Got on well with her brothers, but they did not approve of her marriage, and gradually they drifted apart. Said to have been an extremely feminine, gentle personality, not very self-reliant, friendly, affectionate, considerate, and sympathetic, but shy, timid, self-conscious, and reserved. She was conscientious, meticulous, truthful and religious; inclined to self-pity, apt to worry and with feelings of inferiority. Relationship with her husband was good, but mainly because of his extreme tolerance and indulgence. Made no friends outside the family; never went anywhere without her husband; would not go in a train and seldom in a bus. No real interests, listened indiscriminately to the wireless and occasionally went to the cinema. Sexually frigid; never had any children because she was afraid of childbirth and intolerant of noise.

Morbid personality.—It is difficult to draw any dividing line between the pre-morbid and morbid personalities. There was a history of ill-health since the year preceding her marriage at the age of 22. Patient attributes it to her brother's disapproval of her marriage. She became anxious, unable to eat and sleep properly. Three years later she became more profoundly depressed and suicidal, and had to go into a nursing home. About 1931 began to suffer with pain in her jaws, which was only aggravated by extraction of her teeth. This pain continued, and she could only sleep with sedatives. September, 1940, a course of E.C.T. with considerable improvement, but still demanding sedatives because of the pain; effect wore off after six months. In 1942 she began to complain of pain in her abdomen and back, like toothache.

5.iii.43: Leucotomy. Considerable improvement followed, the pain became bearable and finally disappeared, and she had no further medicine.

Post-leucotomy personality.—Less dependent on her husband, but is also less truthful, less kind and considerate and more quick-tempered. Does not worry at all about the estrangement from her brothers. She is rather self-indulgent, tactless, critical, obstinate and intolerant. Uses very strong language at times, which she would never have done before. Has no friends outside the family and does not seek any, but will start a conversation with anybody—a thing unheard of before the operation. Much more independent; goes shopping by herself and will travel by bus or train; had developed a passion for the cinema and listens to the wireless a great deal, using it entirely for her own pleasure and caring nothing if it annoys other people. Reads more, but indiscriminately, light books preferred. Sexual frigidity much diminished. Husband thinks that now patient would not bother to defend or support him, whereas formerly she would have stuck by him through thick and thin. He thinks she would not be unduly upset if he died, but would be quite capable of going to the cinema within a week. Never wants to go to church.

Summary.—A woman of average intelligence and little education, whose interests, originally centred in her family, became increasingly concentrated on herself. Disapproval of her marriage by her brothers seems to have led to emotional conflicts, which finally issued in depression and hypochondriasis. She was strongly attached to her husband and her family, but very dependent on the former and did not assume normal adult responsibilities. Keenly aware of her own feelings, she showed some consideration and sympathy for others, though her own feelings and her own interests took precedence over all others, until she became conscious of little beyond her own pains and anxieties. Since her operation this preoccupation with herself has gone, and films, shops, wireless programmes and books claim her attention and interest; but although less self-preoccupied she is more egoistic and self-indulgent, and has as little regard for the feelings of others as she has for her own, and there is a definite diminution of emotional depth, though her superficial contacts with other people, including her sexual relations with her husband, are much easier and freer. There is also a definite loss of interest in religion.