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THE NEUROTIC CONSTITUTION A Statistical Study of Two Thousand Neurotic Soldiers

BY

ELIOT SLATER

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Introduction

The emergencies of war demanded the enlistment of an army of maximum size. The National Service Boards had to work with great rapidity, and with medical standards that were not so much lowered as dropped. The doctors composing these boards seem to have had but a sketchy knowledge of psychiatry, and no knowledge of the extent to which psychiatric disabilities can unfit a man for military duties. Large numbers of men proved useless within a few months or even weeks of enlistment, and arrangements had to be made to return them to civilian life as expeditiously as possible. Most of this work has been done by Army psychiatrists; but where there was a possibility that treatment might make a man fit for further service, or where his condition had so deteriorated that he was not fit for ordinary civilian work, admission to hospital has been arranged.

The clinical picture presented by these patients has been of a monotonous character. They were admitted to the Neurosis Centre on a psychiatrist's recommendation, and neurotic symptomatology was therefore to the fore. The obviously psychotic, mentally defective or physically ill went elsewhere; and though examples of these conditions have been seen, as is recorded, they usually showed an admixture of neurotic symptoms. In general the "neurosis" exhibited was not so much an illness as a simple failure to adapt to army routine and discipline, in part an incapacity to adapt, and a response to this incapacity. Whether ill or not, the commonest symptoms were those of anxiety, hysteria, depression, hypochondriasis, etc., and tended to be shown by members of all diagnostic groups. The causes of breakdown were of the same uniform character: separation from home and family, home worries, a life of relative hardship, army discipline, the pressure of tasks physically, intellectually or temperamentally beyond them.

Only in a minority of patients were the more violent stresses of war the main precipitating factor. There have been a few who went through the Norwegian campaign, or served in the Middle East, or had to defend intensively attacked aerodromes or other places of military importance. But the evacuation from Dunkirk did provide a number of acutely ill patients; and here the operative stress seems to have been a combination of both physical and psychogenic factors: inadequate training, exposure to terrifying weapons of war (e.g. the dive-bomber, of which there had been no experience), the discouragement of defeat, prolonged marching with inadequate food, rest and sleep, etc. These patients offered a great contrast to the others, but they still presented the same constellation of anxiety, depression and hysteria, though in much severer degree. We have seen no single case of acute schizophrenia, as reported by Hubert, (1941) or of mania or psychotic depression released by such stresses, though there was a sufficiency of acutely agitated anxiety states, exhaustion syndromes and hysterical twilight states.

The monotonous character of precipitating cause and clinical picture was mirrored by a monotonous uniformity of the underlying personality. There were few who did not show to some degree a psychic asthenia, a feebleness of will and purpose, coupled with tendencies to worry, pessimism and moodiness or hysterical traits. This was indeed the fundamental disability, and indications had been shown in childhood and adult life. When one considers the large number of men who have had to be invalided for such conditions as these, one is impressed with the size of the problem. The analysis which follows attempts to give a general survey of the clinical material with which we have had to deal in one E.M.S. Neurosis Centre, and to elucidate the aetiological basis of this, socially, important group of patients.

The Statistical Method

In medicine, as elsewhere in science, statistical methods are only employed when exacter methods are not practicable. Under certain circumstances they are capable of yielding results of precision and reliability, but these are always the expression of a probability. Statistical methods can be employed in fields where the known stands in very unequal relation to the unknown, but they can be so used as to disguise ignorance and to cover the effects of factors which cannot easily be taken into account. The principal advantage of a statistical approach is that it permits the introduction of numerical methods in dealing with observations which are themselves purely qualitative. This advantage alone assures it an important future in psychiatry, where quantitative measurement of such things as degree of depression remains a dream of the future. For statistical methods to give reliable results there must be a certain uniformity in the material investigated, and there must be no biased sampling, no sources of systematic distortion of the results, whose presence is at once adventitious and unsuspected. In this material these criteria are only partly fulfilled. The patients are not a fair selection of the total psychiatric material of the Army, not to speak of the Armed Forces in general. There is on the one hand a negative selection of epileptics, defectives and the grosser psychopaths, who could be dealt with out of hand by the Army psychiatrists, of the delinquent who tended to seep into other channels, and of the psychotic and more severely psychopathic who were mostly admitted to Army mental hospitals. On the other hand only very small numbers of men were admitted from distant theatres of war. These factors affect different parts of our material to differing degrees. The schizophrenics are clearly a most unrepresentative selection, being only admitted by virtue of an error of diagnosis on the part of the Army psychiatrist, and therefore including only the quieter, more insidious and least typical forms of that illness. The same is to a lesser extent true of the epileptics, defectives, manic-depressives, and the psychopaths. In regard to the neuroses, our admissions represent probably a selection in favour of gravity, as the minor degrees of neurotic illness were frequently dealt with by regimental medical officers and Army psychiatrists in an out-patient capacity. Nevertheless our material, though not representative of all the psychiatric problems which face the Army organization, does give a fair picture of quite a large part.

It is frequently objected to psychiatric research that both diagnosis and the observations on which it is founded are matters of opinion and of degree, from which it is argued that the findings which are dealt with by statistical analysis must be largely subjective, and correspondingly worthless. The material here analysed is based on the day to day work of more than a dozen different psychiatrists, most of them of many years experience. Factors, then, which have a purely subjective value should be so randomly distributed as to have little influence on

the results. It will in any case hardly be contended that such terms as schizophrenia and such observations as positive family history correspond to no biological reality; and in so far as they do, differences between the various diagnostic and other groups will reflect to some extent the underlying fact. Statistics operate by an analysis of frequencies observed in qualitatively defined classes. The very finding of systematic differences between one class and another is evidence in favour of the real significance of the distinctions so drawn.

Collection of data.

The patients studied below were admitted to Sutton Emergency Hospital neuropsychiatric wards between November, 1939, and June, 1941. They were nearly all soldiers, but included a few sailors and airmen, but no civilians or members of civilian defence services. They were all men and below commissioned rank. In the course of ordinary history taking the psychiatrist filled in a summary form, in which specific yes/no answers were demanded to a considerable number of questions, with space for amplification where deemed necessary (e.g. on personality, symptoms, etc.). What these questions were will appear from the following tables. Not every psychiatrist was equally punctilious in filling the form, and definite information was not always available to every question. The consequence was that on a certain number of forms there were some queries or blanks where questions had been left unanswered. It is further clear that the detail in which questions were answered depended to some extent on the interest of the individual doctor, and the frequency of a positive family history, the number and even type of personality traits noted down, among other observations, varied from clinician to clinician. Eventually the summary form of the first two thousand serial admissions were taken, about a hundred excluded as containing too many blanks to be useful, and a further hundred or so forms from the next admissions added to make up the number to exactly two thousand. Where yes/no answers had not been possible, the relevant material was coded for counting. The Scientific Computing Service Limited* prepared summary tables using the Hollerith Punched Card System. The information given on each form was coded and punched on a card, and special machines (tabulators) then sorted the 2,000 cards into the various classes (of diagnosis, etc.), counted and printed the frequencies in each class. Finally the tables were submitted to statistical analysis.

In this paper the results will be discussed of analysis by diagnosis, by degree of stress undergone, and by outcome. It is possible that at a later time it may be worth recording the results of other counts that were made, e.g. by age, religious confession, sexual life. In the tables that follow, to avoid an excessive cumbersomeness, the presentation of absolute figures has been avoided and only percentages are given. But the totals on which the percentages are based are available in every case, and from these absolute figures could if desired be derived. Furthermore, although the standard errors of these percentages have been calculated, they have not been included in the tables; percentages which differ from that of the general average by more than twice the standard error of the difference have been taken as statistically significant, and in the diagnostic tables are printed in heavy type. In a certain number of patients a double diagnosis had to be made (e.g. mental defect + anxiety state, psychopathic personality + hysteria, head injury + depression), which has resulted in two thousand soldiers providing 2,037 diagnosis. In the diagnostic tables we have therefore the equivalent of 2,037 patients, and percentages have been calculated on

* With the aid of an expenses grant from the Maudsley Research Fellowship.

this total. In later tables only those particulars are entered which provided statistically significant deviations from the norm.

Diagnostic classification

Diagnoses were classified into the following groups:—

1. Organic States, inclusive of general paralysis, arteriosclerosis, neurological disorders, post-meningitic syndromes, and cases of cardio-vascular, respiratory and alimentary disorders incorrectly admitted as suffering from neurosis without physical basis. To have dealt with these groups severally would have made numbers too small for statistical handling.

2. Head Injury. Under this head come patients in whom there was thought to be a cerebral contusion or other lesion, old or recent, responsible for some at least of the symptoms. Grounds for this view were sometimes backed by an electroencephalogram, by the opinion of a consulting neurologist, or by indications of a typical change in personality dating from the time of the injury, but were sometimes rather nebulous; nevertheless patients in whom there was no evidence at all of neurological damage or anything more than concussion were excluded.

3. Epilepsy. Diagnosis was made on observation of a fit, of a typical history of fits or of periodic psychomotor attacks, or of petit mal waves in the E.E.G.

4. Schizophrenia.

5. Endogenous Depression. In this group were also included two cases of hypomania. The distinction between this group and that of the reactive depressions was based on such clinical findings as relative unimportance of precipitating factor, retardation, refractoriness of the depression to influence by suggestion, etc. The patients in this group could be regarded as manic-depressives or as suffering from involutional depression, with comparatively mild illnesses.

6. Mental Defect. Nearly all the patients so diagnosed were not so defective as to be certifiable, but they were all so dull and backward that it was considered that their defect was the main cause of failure in the Services and of admission to hospital.

7. Psychopathic Personality. This miscellaneous group included all patients in whom there was held to be a constitutional abnormality of personality of fairly severe degree, mainly responsible for any neurotic symptoms or failure of adaptation. The abnormality might be of any type, and included, for instance, cyclothymics, long-standing hysterics, the severely and chronically anxious, as well as those usually included under this head.

8. Anxiety Neurosis.

9. Hysteria.

10. Reactive Depression.

There were in addition three other small groups, too small to be dealt with severally: 20 obsessional neurotics,

16 enuretics without obvious other abnormality, 9 malingerers. The obsessional neurotics were a distinct group, though some patients of the same kind were admitted with a fairly severe degree of depression and have fallen into groups 5 or 10. Enuresis was a fairly common symptom but was usually accompanied by mental defect or the signs of a chronic neurosis, justifying inclusion in one of the other groups; but it may appear alone in the likeness of an "organic neurosis," perhaps with a specific heredity, perhaps accompanied by spina bifida occulta. The malingerers were men who deliberately pretended to an illness they did not have. Cases on the borderline between hysteria and malingering were not included, nor those who exaggerated symptoms to some extent certainly present (a very common finding). Though nothing certain can be said of them owing to the smallness of their number, they seemed to be more normal constitutionally than the neurotics and psychopaths. All these three groups, though not dealt with separately, have been included in the totals and general averages.

Age, Religion, Occupation, Rank, Unit

The different diagnostic groups showed no significant differences one from another in respect of age. The average age of the whole group, which varied from 16 to 59, was 28.3 years. Patients with organic states (31.4), manic-depressives (30.2), and reactive depressives (30.5) were older than the average; epileptics (26.2), schizophrenics (26.9), and enuretics (23.4) were younger.

No significant differences were noted between the various groups in respect of religious confession, except that psychopaths belonged to the Church of England, with a frequency significantly less than the average. Of all the patients taken together, 1.6 per cent. were Jews, 12.6 per cent. were Roman Catholics, 13.2 per cent. Non-Conformists, and 72.5 per cent. belonged to the Church of England.

Occupations have been classified into only four groups. The fourth of these included men belonging to the professions (37), clerical workers (162), persons having their own shops and businesses (109), and other types of work or unstated (63). These subdivisions were too small to handle separately and were therefore combined into a group which is characterized by a more sedentary type of activity than those of the other three. From the table it may be seen that the defectives came, as might have

Diagnosis	No. observed	Occupation				Per cent. N.C.O.s
		Unskilled	Semi-skilled	Skilled	Other	
1. Organic states	51	27.5	50.5	5.9	15.7	21.6
2. Head injury	109	24.8	46.8	16.5	11.9	23.9
3. Epilepsy	70	40.0	38.6	8.6	12.9	8.6
4. Schizophrenia	50	32.0	26.0	8.0	34.0	6.0
5. Endogenous depression	51	49.0	17.7	3.9	29.4	29.4
6. Mental defect	137	59.1	27.8	5.8	7.3	4.4
7. Psychopathic Personality	265	37.7	34.0	6.5	22.6	20.0
8. Anxiety neurosis	647	31.9	41.7	11.3	15.1	18.2
9. Hysteria	384	30.6	38.8	9.9	21.1	17.4
10. Reactive depression ..	228	26.4	40.4	11.8	20.6	26.8
Total	2,037	33.2	38.4	10.1	18.2	18.4

TABLE 1.

been expected, preponderantly from the unskilled labourers. It is surprising to find that manic-depressives also come with significantly high frequency from the same group, in direct contrast to the reactive depressives who do so with a frequency significantly less than the average. Schizophrenics come from sedentary occupations with a frequency almost double the average, which accords well with what one knows of the "schizoid" personality. Psychopaths are but rarely skilled workmen, perhaps because a psychopathic personality would be a hindrance in completing an apprenticeship.

The frequency of N.C.O.s is highest in the obsessionals (35 per cent.), in the manic-depressives and the reactive depressives, in that order, although the numbers in the first two of these groups are too small to be significant. These are findings that might have been expected. Clinical experience suggests that manic-depressives are often superior men, and statistics gathered in Germany by Luxenburger (1933) have shown an association with better types of occupation, in contrast to our material. Epileptics, schizophrenics, and defectives have seldom won themselves promotion, again an expected finding.

The data with regard to unit have been omitted from the table, as not sufficiently interesting. Of the total material 40.2 per cent. of the patients came from non-combatant units, obsessionals with the lowest frequency (25 per cent.), cases of physical disorder and head injury with the highest (47.1 per cent. and 45.9 per cent.).

Physical and Sexual Constitution

The differential diagnosis of asthenic, athletic and pyknic habitus was made on impressions only. Elaborate and exact methods of physical measurement have led to confusion in the past, and hardly seemed worth the trouble of making. On the other hand well-marked representatives of all types are easy to recognise at a glance and though there are many men of whom it is difficult to say that they belong to one group rather than another, it was thought worth while to make the distinction where possible. No great value is claimed for these figures. In only about half the patients was any

entry made in the record of the bodily habitus, which has necessitated doubling the figures by adding a further series from later admissions to get significant results. One notes the high preponderance of the asthenic habitus, the endogenous depressives singling themselves out from the rest by having a marked preponderance of persons of pyknic habitus.

Investigation of the sexual lives of our patients indicated that this was at least as important from the point of view of constitution as of psychogenesis. The number of men in whom sexual relations began at a late age, occurred with unusual rarity and were associated with little interest or satisfaction, was so high as to attract attention and to lead to the inclusion of a specific question in the summary form. "Inhibited" is really the wrong word, and "impoverished" or "inadequate" would be a better one, because the infrequency of sexual activity was far more often caused by lack of libido than by self-restraint. In general it may be said that complete abstinence was not regarded as "inhibition" until full adult life, say 25 years of age, was reached. The majority of our patients were married, and in these a coitus frequency of less than once a fortnight would generally be regarded as evidence of inhibition. In the analysis of the total material by sexual life several interesting correlations were found, for instance of inhibition with the asthenic and pyknic physiques, and with a poor outcome; but it is hoped to combine these with a genetic and biochemical investigation which is being undertaken at the present time, and will be made the subject of a later communication. From Table 2 it may be seen that an inhibited sex life is especially frequent among mental defectives and psychopaths, especially infrequent in cases of head injury. It is clearly a quality of deep biological significance, and it may be that it is genetically associated with the factors that make for inferiority of intelligence and temperament.

Mental Constitution, Affective

In 55.7 per cent. of our patients there was a positive family history, i.e. one or more of the first-degree relatives, parent, sib or child, had suffered

Diagnosis	Bodily habitus				Sexual life	
	Number recorded	Asthenic	Athletic	Pyknic	Number recorded	Inhibited
1. Organic states	74	39.2	33.8	27.0	36	50.0
2. Head injury	87	36.8	34.5	28.7	60	23.3
3. Epilepsy	60	38.3	35.0	26.7	50	44.0
4. Schizophrenia	56	39.3	37.5	23.2	35	54.3
5. Endogenous depression	52	25.0	23.1	51.9	28	53.6
6. Mental defect	131	51.1	35.9	13.0	85	57.6
7. Psychopathic personality	311	46.3	33.8	19.9	193	51.8
8. Anxiety neurosis	710	47.7	30.4	21.8	469	38.6
9. Hysteria	392	38.3	34.4	27.3	280	42.1
10. Reactive depression ..	232	44.4	29.3	26.3	176	40.9
Total	2,105	43.8	32.3	23.9	1,412	43.1

TABLE 2.

from definite neurotic illness or psychosis or epilepsy or from some form of psychopathy (such as drunkenness, shiftlessness or violent and brutal habits) which had entailed undesirable social consequences. As information was obtained almost exclusively from the patient himself, no claim can be made that the figures are of any absolute value; they would indeed appear to be minimum ones. It is of interest that a family history of fits is given not only by a third of the epileptics but by 10 per cent. of the defectives, and that comparatively high frequencies of a family history of psychoses are found in the schizophrenics and endogenous depressives. Generally, a positive family history is found with significant rarity in the physical states, with significant frequency in the psychopaths. The remarkably high figure provided by the latter supplies a strong suggestion that genetic factors productive of mental abnormality can reinforce one another and act cumulatively.

Some degree of childhood neurosis is shown by 58.8 per cent. of the total material, the frequency of definite neurosis being significantly high for the psychopaths, significantly low for the two organic groups and for the manic-depressives. This is one of the many ways in which the endogenous depressions distinguish themselves from neurotic states. It is to be remembered that the frequency of some degree of nervousness in childhood is probably quite high in the average population, even in children who grow up to be quite normal adults; but from the facts provided here it seems clear that neurotic symptoms in childhood, especially if they reach at all a severe degree, are of considerable significance for later life.

Almost a quarter of our patients had had a previous nervous breakdown, and of the endogenous depressives over two-thirds. It is probable that in these latter this finding was used as a diagnostic criterion.

The frequency of an abnormal personality is also shown to be high, over 40 per cent. in the whole group, and in no category less than 20 per cent.

Persons so marked were held to show a degree of abnormality of personality, in structure and development, which could not be regarded as within the normal limits of variation of the population. A fairly well adjusted man, with some but no very serious neurotic or psychopathic traits, would not come within this definition. It will be seen that the organic syndromes score comparatively low figures, while the schizophrenics distinguish themselves by showing a high frequency of abnormality of the pre-morbid personality. The total frequency of abnormal personality in the whole group, including the psychopaths, is 48.3 per cent.

The individual personality traits are tabulated in Table 4, which is one of exceptional interest. It will be seen that throughout, with one non-significant exception, the organic syndromes do not reach the level of frequency of the general average, and for the most part are significantly below it. Epileptics score low values for all traits, except paranoid and impulsive tendencies; in the latter they have a high figure, and one which only just fails of significance. Schizophrenics are markedly lacking in hysterical traits, markedly rich in paranoid and unsociable tendencies, which would seem, from this admittedly unrepresentative material, to be the main features of the "schizoid" personality. The endogenous depressives score figures consistently lower than the average, and often significantly lower, in all qualities but obsessional tendencies and instability of mood. The latter is an expected finding, the former much less so, although some relation between manic-depressive syndromes and obsessional neurosis and the obsessional character has long been suspected. In this respect the reactive depressives resemble the endogenous depressives, as also in the low frequency of hysterical and impulsive and aggressive tendencies. But in general they deviate much less sharply from the average, and show a much higher incidence of anxiousness of disposition, in which the endogenous depressives rank significantly low. The mental defectives score figures which are for the most part rather lower than

Diagnosis	Positive family history			Childhood		Previous nervous breakdown	Abnormal personality
	General	Epilepsy	Psychosis	Neurosis	Neurosis and minor neurotic traits		
1. Organic states ..	37.3	2.0	6.8	13.7	35.3	13.7	31.4
2. Head injury ..	32.1	3.7	1.8	6.4	27.5	9.2	22.0
3. Epilepsy ..	55.7	28.6	2.9	24.3	47.2	12.9	35.7
4. Schizophrenia ..	52.0	4.0	8.0	24.0	60.0	34.0	62.0
5. Endogenous depression	62.8	2.0	9.8	13.7	45.1	68.6	41.2
6. Mental defect ..	56.2	10.1	5.8	26.3	55.5	16.1	49.6
7. Psychopathic personality	72.5	8.7	6.4	45.7	76.6	28.7	—
8. Anxiety neurosis ..	56.7	5.9	3.2	26.4	62.4	23.2	39.9
9. Hysteria ..	50.8	4.9	4.1	24.7	55.4	22.9	43.2
10. Reactive depression	55.7	3.1	4.8	21.1	57.5	22.4	45.2
Total ..	55.7	6.4	4.4	26.3	58.8	23.1	41.4

TABLE 3.

the average, significantly so in obsessional tendencies, instability of mood, and unsociability ; it is a little surprising that they do not show up more for anergic tendencies and lack of initiative, which would seem therefore to be almost purely a temperamental quality. It has often been asserted and denied that obsessional neurosis is rare in mental defectives ; there is some evidence here that there is a negative association between mental defect and the obsessional character. Anxiety neurotics in general approximate to the average of the whole group, but show as was to be expected a higher incidence of anxiousness of personality, and also a low incidence of hysterical tendencies and aggressiveness. The hysterics conform fairly well to the general average, but rank low in the frequency of obsessional traits, lability of mood and unsociability ; as was to be expected they show a high incidence of hysterical traits of character. The psychopaths score very high figures throughout the table, with the single exception of obsessional traits. It is interesting that, taking the material as a whole, the most common abnormal traits of personality were undue lability of mood, lack of interest in and talent for mixing socially with the rest of mankind, an anergia and spinelessness of character, and tendencies to anxiety ; the least frequent traits were hypochondriasis and paranoid traits.

Mental Constitution, Intellectual

The school record shows, expectedly, conspicuous failure on the part of the defectives ; cases of head injury, endogenous and reactive depression are associated with records better than the average. In this table a poor school record was taken as failure to reach the top standard of an elementary school by the age of 14, a good record as education at a Central or Secondary School, or better. The intelligence ratings were based for the greater part on a simple clinical impression and such intellectual tests of a brief character as are commonly applied in the course of a routine examination. Group

intelligence tests were performed on a fair minority of the patients, but they themselves were not entirely reliable. Some patients, particularly those of a hysterical disposition, who were out to show themselves as unfit as possible, did conspicuously badly on the intelligence test ; a repeated test would frequently produce a ten point rise or more in the I.Q. It will be seen that the intelligence ratings mirror fairly closely the school record. The epileptics and the hysterics tend to be of lower intelligence than the average ; the organic patients, depressives of both kinds, and the schizophrenics tend to do better than the rest of the material. The low rating obtained by the hysterics is of interest. As has already been stated, the figures are of rather doubtful validity but they cannot be entirely disregarded. The psychopaths, who, as will be shown, were as anxious as the hysterics to earn their discharge from the army by fair means or foul, do not show the same association with a low intelligence rating. Furthermore, as will appear later, mental defectives tend particularly to a hysterical type of neurotic symptomatology. There is a definite suggestion, then, of a real association of hysteria with subnormal intelligence. The most important finding given by the table is, however, that provided by the general averages. It will be seen that about a third of these patients were of poor intelligence and that the frequencies of the various groups differ sharply from the "normal" type of curve provided by the general population,* and in this population of neurotics the curve is markedly skewed, persons of low intelligence being represented in far great numbers than those of superior intelligence. The only groups to conform fairly closely to the normal distribution are the organic states, the schizophrenics and the endogenous depressives. It seems probable that subnormality of intelligence and of temperamental stability rein-

* And by Army entrants tested with the same methods by the Directorate of Selection of Personnel. For a detailed examination of our material on this point, see Halstead (1943).

Diagnosis	Personality traits									Number of abnormal traits per patient
	Obsessional	Anxious	Hysterical	Unstable mood	Hypochondriasis	Paranoid sensitive	Impulsive aggressive	Unsociable	Anergic	
1. Organic states ..	13.7	3.9	11.8	23.5	2.0	7.8	17.6	17.6	7.8	1.1
2. Head injury ..	9.2	9.2	7.3	15.6	1.8	9.2	26.6	19.3	16.5	1.1
3. Epilepsy ..	15.7	10.0	7.1	31.4	1.4	20.0	31.4	28.6	20.0	1.7
4. Schizophrenia ..	26.0	16.0	4.0	38.0	10.0	32.0	30.0	46.0	22.0	2.2
5. Endogenous depression ..	37.3	11.8	5.9	60.8	3.9	7.8	11.8	25.5	7.8	1.7
6. Mental defect ..	5.8	30.7	9.5	23.3	6.6	9.5	16.8	23.4	25.6	1.5
7. Psychopathic personality ..	23.0	30.2	20.0	47.2	12.8	24.5	36.2	44.9	36.2	2.8
8. Anxiety neurosis ..	20.6	29.1	9.6	32.1	6.5	10.5	14.5	32.0	24.3	1.8
9. Hysteria ..	14.6	19.3	26.9	26.0	7.8	10.7	20.8	25.5	22.4	1.7
10. Reactive depression	30.3	22.4	7.5	44.3	9.2	11.0	14.5	32.5	20.6	1.9
Total ..	20.0	23.5	13.6	33.4	7.4	13.0	20.2	31.0	23.8	1.9

TABLE 4.

force one another in producing failure of adaptation, and that in any collection selected on this criterion one will see the intermingling of both factors. The more stable defectives and the more intelligent neurotics will as a rule more easily escape the net spread for either.

Preconditioning

The frequency of a bad home environment, of a bad relationship with the father, of previous army service and of previous war service were analysed, but are not included in a table. These were the only factors whose effect in the environmental predisposition towards neurosis could be attacked, and the result was inconclusive. We found a bad home, in the sense of excessive poverty, drunkenness or family disagreement in 20.9 per cent. of patients, a bad relation with the father in 15.6 per cent. Both findings were significantly more frequent in the psychopaths (30.6, 26.8 per cent.), significantly less so in the two organic groups (1.5.9, 5.9 per cent.; 2. 13.8, 8.3 per cent.). But although a bad home environment may certainly predispose to neurosis, the finding is entirely ambiguous, as it is probably also an expression of neurosis or psychopathy in the parents, and thereby a function of bad heredity. The two effects, environmental and hereditary, cannot be disentangled, as they are necessarily bound up together. The number of men who served in the last war, 12.4 per cent., is surprisingly high. They were nearly all volunteers, and all middle-aged men, most of whom broke down under the severe weather conditions of the first winter in France, and a reactive depressive illness was significantly more common among them.

Precipitation

The innumerable external factors which may actually precipitate a breakdown do not readily lend themselves to analysis, but more easily so in the present than in a normal peace-time material. They were most commonly the stresses of war, comparatively hard life and discipline in the army, separation from family and home, home worries of various kinds (e.g. the illness of relatives, financial

stress, destruction of the home by bombing, worries about a possibly unfaithful wife, etc.), and physical ill-health. Some factor of one of the above kinds had fairly clearly played a part in nearly half the patients. In the remainder, breakdown had occurred under military conditions which were far from onerous, and these subjects must be regarded as being of a very low level of constitutional adaptability. The lowest figure is scored by schizophrenia, which would therefore in this material appear to be almost wholly endogenous. Epileptics, those suffering from organic states other than head injury, mental defectives, and psychopaths all became unfit with comparatively little in the way of additional environmental stress. In contrast to the other reactive states, the anxiety neuroses show themselves as associated with special frequency with some definite precipitation. They manifest the same phenomenon in their association with military stress, being the only diagnostic group to show a positive correlation there. Although anxiety neuroses constituted only 32 per cent. of the total material, they were diagnosed in 46 per cent. of the patients who went through some degree of military stress. This particular precipitating factor will be discussed in greater detail later on. The incidence of head injury provides interesting figures. Head injury, perhaps only a moderate degree of concussion, had occurred at some time in 13 per cent. of all patients, excluding those specifically diagnosed as traumatic syndromes. The incidence is low in the endogenous depressives and schizophrenics, but significantly high in the epileptics. Other physical disabilities (orthopaedic abnormalities, such illnesses as chronic bronchitis, etc.) were present in a further 14 per cent., and one notes that a relatively high proportion of the reactive depressives were handicapped by physical factors, and that many of the hysterics hung their symptoms on to some genuine physical disability. The psychogenic factors associated with adverse home situations show no predilection for one diagnostic group as compared with others, except that they were especially frequent in the psychopaths; this is presumably to be taken as an expression of the

Diagnosis	School record		Intelligence			
	Poor	Good	Recorded	Poor	Average	Good
1. Organic states	29.4	17.6	38	21.1	60.5	18.4
2. Head injury	20.1	13.8	76	25.0	69.7	5.3
3. Epilepsy	37.1	10.0	57	47.4	42.1	10.5
4. Schizophrenia	22.0	18.0	40	20.0	65.0	15.0
5. Endogenous depression ..	19.6	13.7	33	18.2	69.7	12.1
6. Mental defect	85.4	0.0	—	—	—	—
7. Psychopathic personality ..	30.2	15.5	212	33.5	55.2	11.3
8. Anxiety neurosis	28.1	15.5	546	29.9	60.6	9.5
9. Hysteria	29.7	11.9	322	39.8	52.5	7.8
10. Reactive depression	21.0	17.1	181	23.8	64.1	12.2
Total	31.2	14.2	1538	31.2	58.5	10.3

TABLE 5.

psychopath's tendency to make unhappiness for himself wherever he goes, rather than as evidence of any causative relation in the other direction.

Symptomatology

Roughly half our patients had been ill for periods of less than six months, a quarter for six months to two years, and a quarter for over two years. By this is meant not the duration of the condition, but of obvious disability or active symptoms caused by it. It will be seen that clear signs of epilepsy, mental defect and psychopathic personality had been present in a high proportion of those diagnostic groups considerably before the time the men concerned were enlisted. Very large numbers of these men, who were as a rule useless as soldiers from the beginning, might have been kept out of the army had they been given even the most cursory psychiatric examination, with a corresponding gain in efficiency in their units and in the medical services. Of all the diagnostic groups, the anxiety states distinguish themselves by being most frequently of recent origin.

Turning to the symptoms themselves we note that by far the commonest symptoms are depression, anxiety, and hypochondriasis in that order. These symptoms are shown with considerable frequency by every diagnostic group and therefore seem to have a rather non-specific character, although they are relatively less frequent in the organic and endogenous states. Hysterical symptoms, next in order of frequency, show a sharper differentiation and are very rarely found in schizophrenic and manic-depressive syndromes. All these symptoms, with the exception of hypochondriasis, are shown by the psychopaths with a frequency considerably greater than the average. Paranoid symptoms are less frequently shown, most abundantly by the schizophrenics and psychopaths. The great rarity of obsessional symptoms will be noted. The only groups to show them with any frequency are the schizophrenics, the psychopaths, and the reactive depressives. In this point there is a sharp cleavage between the reactive and endogenous depressions. The association between obsessional personality

traits and the occurrence of a depressive illness has already been shown in this material ; and it may be that some of these reactive depressives with obsessional symptoms might have been as suitably diagnosed as cases of obsessional neurosis. Symptoms of a non-neurotic, i.e. psychotic or organic, nature are but rarely seen in the neurotic states, with the exception of the psychopaths. They are symptoms which one knows from clinical experience have a highly specific nature and great diagnostic value. Finally, the quality designated by the term "scrimshanking," i.e. the wilful exaggeration of symptoms and illness to secure some aim, such as invaliding from the army, is recorded as grossly obvious only in little more than 5 per cent. of the patients, but with more than double that frequency in the hysterics and psychopaths. The interesting amnesic and dysmnestic symptoms have been dealt with in a previous communication (Sargant and Slater, 1941).

Statistical figures reflect the uniformity, but not the fluidity of the symptomatology in the neuroses. Apart from its dependence on the underlying personality, there was nothing fixed and stable in the clinical picture. A man admitted in a state in which anxiety symptoms were to the fore, might pass in the course of a week or two into one of listlessness, apathy and mild depression, or into one of dissociation with conversion symptoms or gross hysterical display. In general as the days passed and the patient settled into hospital, saved for the time being from the situation of stress, affective features tended to recede into the background and in their place hysterical aspects of the personality showed up for the first time ; in the endeavour to remain in his asylum, the patient hollowly repeated complaints which had long lost their basis in feeling and reality, endeavoured to claim the sympathy of the doctor or became resentful and disgruntled and threw the blame for his failure on the shoulders of others. Experience constantly fortified the impression that symptoms in themselves are of secondary importance. They may indicate a line of approach and determine the immediate treatment but are of significance for prognosis and ultimate disposal only

Diagnosis	Precipitation	Head injury	Physical factors	Unsat. home	Military stress		
					Severe	Moderate	Trifling
1. Organic states	31.4	13.7	—	13.7	5.9	21.6	72.5
2. Head injury	—	—	—	11.9	27.5	20.2	52.3
3. Epilepsy	20.0	27.1	15.7	11.4	7.1	8.6	84.3
4. Schizophrenia	10.0	6.0	6.0	22.0	8.0	12.0	80.0
5. Endogenous depression ..	35.3	5.9	9.8	15.7	7.9	7.9	84.3
6. Mental defect	31.4	18.2	17.5	13.1	16.1	10.9	73.0
7. Psychopathic personality ..	33.2	12.8	9.8	28.7	13.6	18.8	67.6
8. Anxiety neurosis	61.4	11.4	14.7	12.2	32.3	28.7	38.9
9. Hysteria	48.4	19.0	19.3	11.7	20.3	18.2	61.5
10. Reactive depression ..	47.8	11.0	21.9	14.9	19.3	21.5	59.2
Total	47.6	13.0	14.3	14.7	21.5	21.0	57.5

TABLE 6.

in so far as they act as indicators of something more fundamental. An exception is to some extent provided by the depressives. In patients suffering from depression it might be only after some weeks that the nature of their illness became apparent, when attempts at therapeutic influence had failed to change their state. This was particularly likely to be observed where there was an endogenous factor in the illness which was not at first apparent. Most of these men took longer to get better than the average, and official restrictions on the possibility of convulsive treatment were a handicap.

Treatment

Analysis of the figures by the method of treatment employed has been done but the results are not of sufficient interest to publish. Nearly 60 per cent. of the patients received no specific treatment other than that provided by the usual hospital routine, physical training, occupational therapy, etc., and perhaps a few short therapeutic interviews. Psychotherapy of a rather more intensive degree was given in nearly a fifth of the patients (18.7 per cent.), with especial frequency in the hysterics (36.2 per cent.); only half as many (18.2 per cent.) of the anxiety neurotics were so favoured. About 5 per cent. of the anxiety neurotics received continuous narcosis, which was otherwise little employed, for the most part with the quick inrush of acutely ill patients after Dunkirk. But some form of specially directed sedation was of much more general use. Eighteen per cent. of the schizophrenics were found fit for insulin coma treatment, a high figure considering the rather insidious nature of the illness in our patients. A modified form of insulin therapy (Sargant and Craske, 1941) was found useful as a form of physical rehabilitation in a wider variety of patients, particularly those who had undergone con-

siderable loss of weight. Previous papers by Cameron (1940), Sargant and Slater (1940) and Debenham *et al.* (1941) have discussed the methods of treatment most generally used in dealing with these patients; but by and large they constituted a therapeutically unfavourable material. The possibilities of treatment were limited on the one hand by the frequency of a rather low intelligence and firmly anchored constitutional instability, on the other hand by working conditions. There was great pressure on beds and a rapid turn-over. The time which the physician could spend with any one patient was very limited. The patients had every incentive not to improve, because thereby they might ensure escape from return to duty; and the concentration of large bodies of men of low morale in one hospital aided the spread of this attitude.

Results

In only one-tenth of the patients could complete recovery be obtained, but great improvement resulted in a further quarter. Complete recovery was most frequently seen in the endogenous depressives and in the hysterics, although it must be admitted that in both groups it was symptomatic, and the fundamental constitution was left unaltered. Great improvement was as a rule the best that could be hoped for in the anxiety neurotics, even in the most recent and favourable; the continuing stresses of war, the threat of air-raids, etc., were sufficient, even if the patient was discharged to civilian life, to prevent the possibility of removing all anxiety feelings. Nevertheless, taking great improvement and recovery together, the anxiety neurotics and the depressives did better than the hysterics, who only score an average figure, all other diagnostic groups doing comparatively badly. It will be noted that the highest rates of return were obtained in the organic

Diagnosis	Duration in months				Symptomatology									
	under 1	1-6	6-24	over 24	Obsessional	Anxiety	Hysterical	Amnesia	Fits and faints	Mood change	Hypochondriacal	Paranoid	Organic and non-neurotic	"Scrimshanking"
1. Organic states	15.7	29.4	25.5	29.4	0.0	21.6	13.7	7.8	9.8	25.1	17.6	11.8	—	0.0
2. Head injury	13.8	36.7	26.6	22.9	0.9	38.5	26.6	—	13.8	33.9	56.9	17.4	55.1	1.8
3. Epilepsy ..	4.3	18.6	15.7	61.7	1.4	22.8	21.4	18.6	—	27.1	20.0	14.3	32.9	1.4
4. Schizophrenia	6.0	34.0	34.0	26.0	8.0	20.0	2.0	14.0	4.0	38.0	24.0	36.0	—	0.0
5. Endog. degn.	17.6	43.1	17.6	21.6	0.0	35.3	2.0	7.8	2.0	—	31.4	21.6	51.0	0.0
6. Mental defect	10.9	27.7	27.7	33.6	3.7	44.7	38.7	11.7	16.1	38.7	38.0	11.7	16.1	2.2
7. Psychopathic personality ..	10.6	34.3	22.3	32.9	7.2	54.7	46.8	16.2	8.7	56.6	40.0	30.6	10.6	13.2
8. Anxiety neurosis ..	15.9	42.3	26.0	15.7	1.7	—	27.2	13.0	4.8	53.0	40.3	11.4	1.2	2.5
9. Hysteria ..	18.2	37.2	25.0	19.5	2.1	45.1	—	34.4	13.1	35.2	49.0	15.4	0.5	13.3
10. Reactive depression ..	15.8	42.1	25.4	16.7	6.6	42.6	19.7	12.7	2.6	—	43.4	14.9	5.3	2.6
Total ..	14.4	37.2	25.0	23.4	3.2	43.7	27.9	19.1	7.4	45.0	40.9	16.4	9.8	5.7

TABLE 7.

and head injury patients, in the anxiety neurotics, hysterics, and depressives, in that order ; other groups showed a conspicuously low rate of return. Four per cent. of the patients had to be transferred to other hospitals, though the figure is much higher in the schizophrenics and endogenous depressives, many of whom were too ill for treatment in our hospital and had to be removed to a neighbouring mental hospital. Nearly three quarters of the patients had to be invalided.

Follow-up records are available for 336 patients returned to duty, of whom approximately half later broke down again and had to be invalided any time from a few weeks or months to a year after discharge. The numbers are not big enough to provide significant differences in the individual groups, and for a detailed study of follow-up histories of neurotic soldiers the reader is referred to the paper by Lewis and Slater (1942). Later on in the history of the hospital, both the rate of return to duty and the follow-up statistics were greatly improved by new administrative arrangements for the Army as a whole. By this system it became possible to transfer a man from one unit to another on psychiatric grounds, to arrange his allotment to duties particularly suited to him, and to recommend him for a posting in the neighbourhood of his own home. At the time when the patients discussed here were discharged, they had either to go back to their own units to take pot luck in the duties that would be assigned to them, or to be boarded out of the army altogether.

These results are of course very disappointing. It seems that we are still very far from an effective, not to speak of a specific, method of treatment of the neuroses. The treatment of a neurotic patient resolves itself into two parts, the adjustment of the patient to his environment and the adjustment of the environment to the patient. That the latter is an effective method has been shown by our later results, when modification of the environment was

possible along the lines outlined above. It is in the readaptation of the patient that psychiatric treatment breaks down. No matter what the main system of treatment employed, the results are always about the same. As Curran (1937) showed on a peacetime material, the results of a simple out-patient supervision are as good as those claimed by the exponents of intensive psychotherapy. And on a series of military neurotic patients very similar to ours, the results obtained at the 41st General (Neuropathic) Hospital, as reported by Hadfield (1942), by psychiatrists of strongly psychotherapeutic leanings are almost identical with ours—20 per cent. of men returned to the army, of whom 40 per cent. broke down within three months. It would seem that what a man is by heredity and constitution is much more decisive for his future than any trifling alterations that can be brought about in him by psychotherapy and mental and physical rehabilitation.

The Diagnostic Groups

We now come to consider the diagnostic groups as a whole. The main particulars in which the individual groups show significant deviations from the general average are illustrated in Table 9. We note that the organic syndromes score figures significantly lower than the average practically everywhere ; they are constitutionally a much more normal population, have less in the way of neurotic traits of personality and correspondingly less in neurotic symptomatology, but are on the other hand liable to their own specific symptoms. The same is to a lesser extent true of the epileptics, the mental defectives, the schizophrenics and the endogenous depressives, as far as neurosis is concerned. The mental defectives show an increased liability to hysteria, and they and the psychopaths are the only groups to show a special liability to a generally impoverished sexual life. The schizophrenics tend to be abnormal personalities, with marked tendencies

Diagnosis	Improvement				Disposal			Follow-up		
	None	Slight	Great	Recovery	Returned to duty	Transfd.	Invalided	No. Obsd.	Success	Failure
1. Organic states ..	47·1	25·5	13·7	13·7	30·6	8·2	61·2	11	36·4	63·4
2. Head injury ..	24·8	48·6	19·3	7·3	27·8	11·3	60·8	23	65·2	34·8
3. Epilepsy ..	54·3	32·9	12·9	0·0	7·7	4·6	87·7	4	0·0	100·0
4. Schizophrenia ..	62·0	22·0	10·0	6·0	8·3	35·4	56·2	4	75·0	25·0
5. Endogenous depression ..	21·6	35·3	27·5	15·7	22·9	22·9	54·2	9	66·7	33·3
6. Mental defect * ..	40·1	43·1	10·9	5·8	12·2	4·1	83·7	14	14·3	85·7
7. Psychopathic personality * ..	30·2	45·7	18·2	6·0	10·0	3·2	86·7	23	34·8	65·2
8. Anxiety neurosis ..	14·6	42·5	33·2	9·7	26·5	1·0	72·5	122	52·5	47·5
9. Hysteria ..	17·7	40·9	20·0	15·4	25·2	3·1	71·7	77	50·7	49·4
10. Reactive depression	16·6	39·0	31·6	12·7	22·3	2·8	74·9	40	60·0	40·0
Total ..	23·5	41·2	25·2	10·0	21·5	4·3	74·1	336	50·3	49·7

TABLE 8.

* Improvement and recovery are from presenting neurotic symptoms. The disposal figures in this table have suffered a systematic distortion, not now to be corrected ; the rate of return was not 21·5 but 24·1 per cent. This error, however, should have no effect on comparisons drawn between one diagnostic group and another.

towards a paranoid and unsociable attitude, but on the other hand show an absence of hysterical traits of personality and of neurotic symptomatology when ill. Relative freedom from constitutional hysterical tendencies also distinguished the anxiety neurotics, who show otherwise most importantly an association with illness of definite exogenic precipitation and of short duration. The hysterics show a positive association with subnormal intelligence, a negative association with obsessional traits of personality and instability of mood; when ill they tend to hypochondriasis and somatic fixation of symptoms. Persons diagnosed as psychopaths show a markedly increased liability to every sort of abnormal manifestation, with the few exceptions of poor intelligence, repeated breakdown, obsessional and hypochondriacal tendencies.

The endogenous and the reactive depressives are worth somewhat closer examination, particularly as there is frequent discussion on whether they should not be considered quantitatively different manifestations of what is fundamentally the same syndrome. We note that both groups show a negative association with poor intelligence and hysterical traits, a positive association with obsessional tendencies. On the other hand, whereas more than half the endogenous depressives were of pyknic constitution, reactive depressives showed this type of bodily habitus with hardly more than average frequency; childhood neurosis is rare in the endo-

genous depressives, of almost average frequency in the reactive group. When all the tables are gone through it will be found that the figures provided by the endogenous depressives do not occupy an intermediate position in among the figures provided by the reactive depressives, the anxiety neurotics and the hysterics, but rather lie at one extreme, now one and now another of the neurotic groups approaching them most closely. The question of the existence of a real difference can be put to a specific test, which yields a decisive result in its favour.

I have taken the records of 94 endogenous depressives, all that were accessible and sufficiently complete, and of 254 reactive depressives, and examined the frequencies of association of childhood neurosis, previous nervous breakdown, anxious and anergic traits of personality and pyknic habitus. If previous nervous breakdown and pyknic habitus can be regarded as "endogenous" signs, and the others as "reactive" signs, the findings can be divided into three groups: 1. Endogenous outnumber reactive signs, 57 endogenous depressives, 54 reactive depressives; 2. Endogenous and reactive signs are present in equal number, 31 and 104; 3. Endogenous are outnumbered by reactive signs, 6 and 96. The χ^2 of this distribution is 57.4, indicating that the two groups certainly cannot be regarded as different samples of the same population. If it is not regarded as admissible to take any account of previous nervous breakdown, as a criterion which may have been used diagnostically, the frequencies in the three groups become: 1. 25, 31; 2. 52, 109; 3. 17, 114. The χ^2 of this distribution is 24.21, which is still far beyond even a 0.001 level of probability for two degrees of freedom.

Diagnosis	Inhibited sex life	Poor intelligence	Bad early home life	Positive family history	Neurotic childhood	Previous nervous breakdown	Abnormal personality	Personality traits								No precipitation	Prolonged duration	Symptoms																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
								Obsessional	Anxious	Hysterical	Unstable mood	Hypochondriacal	Paranoid	Impulsive	Unsociable			Anergic	Obsessional	Anxious	Hysterical	Depressive	Hypochondriacal	Paranoid	Specific																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Significant positive and negative associations between precipitation by military stress, diagnosis and outcome, and clinical features.

TABLE 9.

Boarding Category

Analysis by results is usually a most profitable method of attack. Unfortunately in this material analysis by follow-up record did not provide figures of interest, as the numbers in individual groupings were too small to give statistically significant differences. In any case a detailed attack along these lines has already been published (Lewis and Slater, 1942). Larger numbers were available for analysis by boarding category, i.e. mode of disposal. Nonconformity of confession, non-commissioned rank, normal childhood history, good school record, previous army service, satisfactory home life, breakdown occurring under military stress or with other adequate precipitation or with head injury, short duration of illness and treatment by psychotherapy are associated with a better than average chance of return to duty; whereas the opposite was true of asthenic habitus, positive family history, neurosis in childhood, certain abnormal personality traits, poor intelligence, unsatisfactory home circumstances, and a duration of illness exceeding two years.

PROPORTION OF MEN RETURNED TO DUTY

	Better than average	Worse than average
General average	24.1	
Religion : Nonconformists ..	32.8	—
Rank : Non-commissioned officers	37.3	—
Habitus : Asthenic	—	18.7
Positive family history	—	19.6
Childhood : Neurotic	—	12.4
Normal	38.9	—
Personality : Abnormal	—	13.9
Traits : Obsessional	—	18.1
Anxious	—	15.2
Paranoid	—	16.5
Anergic	—	15.7
School record : Poor	—	18.7
Good	34.1	—
Poor intelligence	—	17.6
Previous army service	29.9	—
Bad early home life	—	15.7
Bad relationship to father ..	—	14.7
Present home life : Unsatisfactory	—	16.9
Satisfactory	28.1	—
Precipitation : Positive	31.4	—
Severe military stress	33.1	—
Head injury ..	30.7	—
Duration : Over 24 months ..	—	14.9
Less than 1 month	47.2	—
Symptoms : Obsessional	—	13.6
Treatment : Psychotherapy ..	39.5	—

In this table only significant differences are recorded.

TABLE 10.

It can justifiably be contended that the mode of disposal reflects rather the factors that influence the clinician than those that actually are of prognostic significance. Such a criticism can, however, be pressed too far. The clinician judges a man on total impressions, rather than on items of information. Such a quality as, for instance, Nonconformist persuasion must correspond to an aspect of character and not be in itself a factor that influences a clinical view in any direction whatsoever. The fact that

Nonconformists were returned to duty with a frequency significantly greater than the average is fairly surely due to a greater frequency among them of a type of personality that takes religion, and probably also personal and social duties, more seriously than the average man, and is perhaps more imbued with a degree of conscientiousness and dourness of personality. In the same way it is very unlikely that the occurrence of head injury at some time in the history has operated with clinicians as an indication of suitability of return to duty. Its association with a high rate of return is probably because in the presence of an organic factor there need not be the same degree of constitutional instability to bring about breakdown, and it is the clinical impression of the underlying instability that decides disposal.

It is of interest that patients treated by psychotherapy were more frequently returned to the army than others. *Post hoc sed non propter hoc*. The good rate of return is more likely to be connected with the type of patient chosen for psychotherapy than with the effects of the treatment itself. Very few would be chosen for psychotherapy who obviously had no chance of return to the army; this would not apply to other, less time-consuming methods.

The only other exogenic factor of prognostic importance is the circumstances of home life. It was frequently found that if there were difficulties or sources of worry here it was almost impossible to rid the patient of the notion that he would be better at home to look after affairs himself; only in rare cases was it possible to clear up the unfavourable home situation from the hospital. The nature of these home worries was seldom financial; illness of a relative, often the obviously neurotic illness of the wife, was more frequent. Other usual worries were damage to the home in air-raids and resulting dislocation of home life, and fears on the part of the soldier that his wife was being unfaithful to him.

In general, the factors which seem to be associated with eventual disposal are constitutional ones. Neurotic childhood, obsessional symptoms, abnormal personality are of particularly bad omen. It was possible to return to the army more than three times as many patients with normal childhood history as those with a neurotic childhood. Nearly half the patients whose illness had lasted less than a month could be returned to duty; where the illness had lasted longer than 24 months, only a seventh. The favourable and unfavourable features recorded here are very similar to those noted as of prognostic significance in a follow-up study of soldiers returned to duty. Lewis and Slater (1942) found that positive family history, unsatisfactory work record, psychopathic traits of personality, long duration of symptoms, lack of definite precipitating factor, resentment of army life, a paranoid attitude, querulous hypochondriasis, and the occurrence of fugue or amnesia, were all associated with an unfavourable follow-up history. This indicates that on the whole the actual symptoms manifested are of

less prognostic significance than the indications of constitutional instability.

Military Stress

This table classifies the patients into three groups of graded resistiveness to psychological and physical stress, and the usual signs of constitutional abnormality are associated with the least degree of resistance. It is a striking thing how the frequencies of different findings in the three groups make a graduated scale, severe, moderate and trifling degrees of stress balancing mild, moderate and severe degrees of constitutional abnormality. The relationship is clearly a quantitative one. Certain other points of interest also appear.

	MILITARY STRESS UNDERGONE.		
	Severe %	Moderate %	Trifling %
Number recorded ..	386	368	950
Occupation : Semi-skilled ..	44.3	43.8	35.6
Sedentary ..	14.0	16.6	21.3
Rank : Non-commissioned officers ..	24.1	21.7	16.7
Habitus : Asthenic ..	37.5	41.9	54.9
Athletic ..	33.5	33.8	25.2
Pyknic ..	29.0	24.2	19.8
Inhibited sex life ..	33.1	34.6	47.8
Positive family history ..	45.1	56.0	57.2
Neurotic childhood ..	14.8	24.7	28.4
Previous nervous breakdown ..	16.6	23.4	25.6
Abnormal personality ..	33.9	42.4	48.9
Personality traits :			
Depressive ..	29.2	33.2	34.8
Hypochondriacal ..	3.6	7.6	8.0
Unsocioable ..	26.4	26.6	33.8
Anergic ..	14.2	24.2	26.1
School record : Poor ..	19.9	26.1	32.0
Intelligence : Poor ..	25.0	28.1	38.8
Average ..	67.2	62.0	50.6
Good ..	7.8	9.9	10.5
Previous army service ..	53.9	44.6	31.7
Previous war service ..	17.4	12.8	11.6
Unsatisfactory home life ..	10.6	13.0	14.9
Symptoms : Obsessional ..	2.3	3.5	4.0
Anxiety ..	80.8	73.4	46.4
Hysteria ..	47.4	38.3	35.3
Amnesia ..	31.3	16.6	16.2
Hypochondriacal ..	37.6	35.6	44.4
Scrimshanking ..	3.4	4.9	18.6
Treatment : Non-specific ..	30.2	52.1	64.8
Physical measures ..	43.9	30.1	16.3
Psychotherapy ..	25.9	17.8	18.9
Result :			
Slight or no improvement ..	46.3	52.5	72.4
Great improvement ..	38.0	38.1	18.5
Recovery ..	15.8	9.4	9.1

Observations all show a significant difference between two at least of the groups.

TABLE 11.

The relationship of intelligence to stress needed for breakdown, and to outcome (Table 11), is peculiar. In the group of men who broke down under severe stress there is a preponderance of persons of average intelligence, whereas men of poor and of superior intelligence show a relative concentration in the no-stress group. Similarly men of the semi-skilled occupations broke down most frequently under severe stress, those of

sedentary occupations under trifling stress. From Table 10 it can be seen that a poor school record and poor intelligence are unfavourable factors ; a good school record is a favourable factor, but not superior intelligence. The interpretation seems to be that men of substantially better than average intelligence are not likely to be happily placed in the ranks, unless employed in a specialist capacity, or otherwise doing more intelligent work than falls to the lot of the ranker or even the lower grades of N.C.O. At the time when these patients were being dealt with there did not yet exist facilities for dealing with these "round pegs in square holes."

Interesting differences in symptomatology show themselves in the three groups of Table 11. Obsessional and hypochondriacal symptoms and the tendency to scrimshanking are found for preference in the no-stress group ; military stress has a special tendency to produce anxiety symptoms, hysteria, and particularly amnesia. More active forms of therapy were necessary in the stress groups, and a better rate of return to duty was obtained ; we are not in a position to know whether this better result was maintained on follow-up.

The men who went through severe stress represent a selection for greater constitutional stability, but the signs of a neurotic make-up are still to be found (e.g. 45 per cent. had a positive family history). They had nearly all been involved in fighting and aerial bombardment in France, and had gone through a long retreat with prolonged physical exertion before reaching the beaches in the neighbourhood of Dunkirk. But only about half of them were admitted to this hospital immediately or shortly after this experience, and the rest dribbled into the wards through the succeeding months, some over a year later, having tried in the interval to carry on in their units under difficulties. These later cases proved difficult to treat and could seldom be returned to duty. By the time of their admission, their unpleasant symptoms had become so firmly connected in their minds with their life in the Army that treatment to be successful was hardly possible without a hopeful prospect of invaliding in view. These "conditioning" mechanisms were very frequent in our patients, but were not easily subjected to statistical analysis.

The Structure of the Neuroses

Table 9 represents in a highly compressed form the main results of our investigation. We note that the organic syndromes score figures significantly less than the average with great regularity, and in this respect show a parallel with states precipitated by military stress. This is presumably because both groups correspond more nearly than the average of our material to a normal, i.e. healthy, population, in the extent to which they are burdened with the signs of constitutional predisposition. At the other end of the table will be found the psychopaths and the patients whose illness had a bad eventual outcome, either in invaliding or a later repeated breakdown ; both these groups show figures significantly

greater than the average. They represent therefore the other extreme of greatest abnormality. These two associations provide ground for the hypothesis that the tendency towards failure and breakdown has to be regarded quantitatively. In some persons, though it exists, it is small and needs considerable stress for its manifestation; in others it is stronger, is manifested on slight stress, and is not so readily susceptible to treatment or manipulation of the environment.

Organic, endogenous and neurotic states offer contrasts one with another. An organic disability depends on the nature, severity and site of incidence of the exogenic factor; its primary effects are to a large extent independent of the individual constitution. On the basis of the organic injury there may then be added a neurotic disability, whose nature will be largely predictable from knowledge of the constitution, gathered from previous and family history. But the organic and the neurotic symptoms will be clinically distinguishable one from another. Further, the organic injury may itself predispose to neurosis, which will occur in its presence with a lesser intensity of constitutional instability than otherwise necessary. In the endogenous states (schizophrenia, cyclothymia, idiopathic epilepsy, obsessional "neurosis") the hereditary disposition is all-important; the manifest state does not occur in its absence, and none or only non-specific stimuli may be needed for its release. As with the organic states, neurotic features may be added but will be clinically distinguishable from the specific symptoms of the primary condition.

The neuroses and psychopathies show a more fluid state of affairs. The form of the exogenous stress is more important than in the endogenous states (e.g. military stress—anxiety), but far less so than in the organic states. But the form of the reaction is still principally determined by constitutional predisposition, and there are strong correlations between the make-up of the personality and the symptoms exhibited (see under). There are only a limited number of main types of reaction available—*anxiety, hysteria, depression, hypochondriasis, etc.*—and if neurotic breakdown occurs it will be along one of these lines, or more than one simultaneously. In the neurotic states there are no symptoms that compare in specificity with the retardation or the phasic change of mood of the manic-depressive, with the primary delusion or the thought disorder of the schizophrenic, or the neurological manifestations of the epileptic. Whereas endogenous states once initiated run their course largely independently of environmental influences (other than such deeply reaching ones as insulin coma, convulsion and leucotomy), the neurotic states are comparatively readily reversible and recur as readily as they are relieved. The neurotic states appear indeed to be forms of behaviour, frequently mere exacerbations of a type of response characteristic of the individual.

It is of interest here to enquire into the degree of association of particular personality traits with their corresponding symptoms. Taking a random group

of 400 of our case-records, the following tetrachoric correlation coefficients have been calculated.*

1. **OBSessional.**—*Trait*: Over-conscientiousness, caution, tendencies to doubt and re-checking, perversity, orderliness, devotion to duty, rigidity and unadaptability, etc. *Symptom*: Compulsive thoughts or actions, with insight, and resisted by the personality. $r = +0.76$

2. **HYSTERICAL.**—*Trait*: Egocentricity, emotional dependence on others, excitability, superficial emotionality, self-satisfaction, demonstrativeness, desire for attention, vanity, love of show, etc. *Symptom*: Conversion symptoms, or a markedly hysterical attitude to the illness. $r = +0.51$

3. **PARANOID.**—*Trait*: Sensitiveness to imagined hostility, tendency to resentment and disgruntlement, self-consciousness, suspiciousness, etc. *Symptom*: Suspicion of or hostility to physician, ideas of reference or delusions. $r = +0.50$

4. **ANXIOUS.**—*Trait*: inferiority feelings, self-distrustfulness, fear of trouble, timidity, ready embarrassment, tendency to worry, etc. *Symptoms*: Somatic anxiety, tremor, palpitation, tachycardia, sweating, tension, nightmares, prevailing mood of fear, etc. $r = +0.40$

5. **DEPRESSIVE.**—*Trait*: Ready pessimism or elation on trifling cause, moodiness, tendency for an upset in mood to persist unduly, etc. *Symptom*: Observed mood change of considerable duration. $r = +0.39$

6. **HYPPOCHONDRIACAL.**—*Trait*: Preoccupation with bodily health, with bowel regularity, interest in physical exercises and get-fit schemes, fondness for patent medicines, etc. *Symptom*: Tendency towards somatic localisation of symptom and preoccupation with physical aspect of illness. $r = +0.19$

These findings indicate that of all neurotic symptoms obsessional symptoms are most firmly rooted in a basis of specific predisposition, the next in order being hysterical and paranoid symptomatology. Depressive and anxious symptoms are distinctly less closely related to the endogenous predisposition, and hypochondriasis, at least as here defined, least of all. It is true that the constitutional disposition can nowhere be excluded, and its importance in anxiety and depressive states of all kinds is considerable. But hypochondriacal, depressive and anxious symptoms seem to be of all neurotic symptoms those most directly related to exogenic factors and those which can be most reasonably regarded as a general human weakness. The finding agrees with our preconceptions; under certain circumstances it would be abnormal not to be afraid, or depressed, or somewhat preoccupied with bodily processes.

It is to be admitted that this account of the structure of the neuroses leaves important factors out of the picture and provides a very inadequate theory for developmental purposes. It seems fairly clear that processes resembling conditioning occur in man as well as in experimental animals, and that neurotic states have their own dynamics. Our experience suggests that in the predisposed individual such reactive dispositions can be established with great rapidity. A man's experience of dive-bombing did not have to be very prolonged for the association in his mind of certain types of noise and a fear-pro-

* I am indebted to my brother, Patrick Slater, for much valuable advice on the statistical methods employed from here on.

ducing situation to become firmly fixed ; and for a long time after similar sounds, though recognized as harmless, would continue to produce the physiological and mental changes typical of fear. The disposition once established was difficult to break up, and even when it had apparently passed off was easily re-established. If this effect can occur so easily in the adult, there is plausibility in the view that the plastic mind of the child is even more susceptible.

The hypothesis presented here is, then, that neurosis represents a special case of a generalized type of behaviour, and signifies a failure of adaptation. The two primary reagents are the individual constitution and the environmental set-up of the moment. The individual constitution is in greater part determined by hereditary factors, to a lesser degree by environmental circumstances of the past producing their effects by organic lesion and psychological and physiological conditioning. These factors, especially the first, determine the form and the severity of the congeries of symptoms, which are the so-called neurotic states or neuroses. The momentary environment determines the time of manifestation, and to a lesser extent the severity and even the form of the symptoms (e.g. the association of military stress and anxiety). Other factors, such as physical illness or physiological upset and intellectual incapacity, can have an adjuvant effect, and may also influence the form of the reaction (e.g. mental defect in favouring hysterical manifestations, physical illness in favouring hypochondriasis).

On this view obsessional neurosis should be excluded from the other neuroses as more closely resembling in nature the endogenous psychoses. The syndrome called "psychopathic personality", on the other hand, though no doubt it includes types of abnormality of personality closely related to the psychoses, is otherwise an extremer form of the neurotic constitution, in which socially obnoxious or partially incapacitating symptoms are exhibited at all times, even when there is no perceptible degree of stress in the environment. There is little to be said for the convention by which certain traits, such as aggressiveness and asocial tendencies, are regarded as psychopathic, whereas tendencies towards

anxiety, instability of mood, dissociation, etc., are regarded as neurotic. If we wish to introduce system and reason into our nomenclature it will be necessary to discover further traits showing the degree of specificity and independence that obsessionalism seems to show, to work out their degree of specificity and independence from or association with other such traits, and then to rank personalities both horizontally and vertically by the specific traits they show and the degree to which they show them. The clinically convenient distinction as to whether an individual is subjectively and objectively ill or not appears to be only a crude quantitative measure, and of secondary biological importance.

We can now attempt a check on theory by observed fact. Positive family history, childhood neurosis, poor work record, repetition of nervous breakdown, abnormal personality make-up judged clinically, poor intelligence, are severally independent observations, touch different aspects of the life of the individual, have been shown to have relevance to outcome and prognosis, and can be taken as crude measures of the neurotic constitution and inadequate intellectual endowment. Neurotic constitution and inadequate intellectual endowment are held to be the two most important predisposing factors for the manifestation of neurotic breakdown. The frequencies of association in one and the same patient of these several observations have been counted in 1,600 records (i.e. omitting 400 records blemished by too many queries or unanswered questions), and the corresponding tetrachoric correlation coefficients are listed in Table 12.

From this table it can be calculated that 91.7 per cent. of the total variance can be accounted for by the first factor loadings 1-6 and the second factor loadings 3 and 6 ; i.e. our double hypothesis of a neurotic constitution and poor intelligence as the main cause of the observations recorded accounts for all but 9.3 per cent. of our observations. Within the limits of the statistical method employed and of the errors, which are probably considerable, of our original observations, this must be regarded as satisfactory agreement.

In Table 12 the factor loadings, which when multiplied by one another provide the individual correlation coefficients, indicate the extent to which the various findings are good tests of the underlying constitution. The best indicators of the neurotic constitution are, in order, clinically abnormal per-

Diagnosis	Correlation coefficients						Factor loadings	
	1	2	3	4	5	6	" Neurotic Constitution "	" Inadequate intelligence "
1. Positive family history		0.4521	0.1874	0.1716	0.4304	0.1368	0.5928	-0.0534
2. Childhood neurosis ..	0.0613		0.2870	0.0961	0.5644	0.1487	0.6617	0.0284
3. Poor work record ..	0.0375	0.0155		0.1212	0.4587	0.4061	0.4321	0.5857
4. Previous nervous breakdown ..	0.0302	-0.0542	0.0714		0.2245	-0.0578	0.2308	-0.0853
5. Abnormal personality	-0.0472	0.0215	0.0408	0.0458		0.1482	0.8157	0.1119
6. Poor intelligence ..	0.0816	0.0439	-0.0593	-0.0477	-0.0187		0.1374	0.4908

Observed correlation coefficients are given to the top and to the right ; second residuals, after partialling out the first and second factor loadings, to the bottom and to the left.

TABLE 12

sonality, neurosis in childhood, positive family history, poor work record; repeated nervous breakdown, a quality associated particularly with cyclothymia, and poor intelligence show but low correlations. A poor work record and poor intelligence as judged clinically are good tests of inadequate intelligence, but the other observations are no measures at all. Poor work record is, then, a good test of both types of inadequacy and should obviously have considerable attention paid to it clinically. The finding of greatest theoretical importance brought out by the table is that neurotic constitution and inadequate intelligence operate independently, and are clearly aetiological factors in their own right.

The neurotic constitution is then a useful hypothesis, and one which ranks with inadequate intelligence in accounting for social insufficiency, breakdown and impairment of efficiency for military duties. It is interesting to compare these two biological handicaps one with the other. We know that intelligence is practically solely determined by genetic factors; our evidence suggests that the same may be true of the neurotic constitution. We know that the genetic determinants of intelligence must be numerous, and that they operate cumulatively, so that in a random sample of the community rated by measures of intelligence one finds a normal curve

of frequency. There is no reason to think that the same would not be true of temperamental qualities, were we able to develop independent psychometric tests of the intensity of neurotic tendencies. It is clear that people can be more and less neurotic as they can be more and less intelligent. But there is an important practical difference. For whereas differences of degree of intelligence are much more striking than differences of quality, the opposite is true of neurosis, when we are more struck by differences of quality than of degree. Qualitative differences of intelligence and quantitative differences in neurosis have so far received little attention; the time will come when attack will have to be made along both these lines.

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