A REVIEW OF SERVICE PATIENTS IN A MENTAL HOSPITAL.

By D. K. HENDERSON, M.D., F.R.F.P.S.G.,
Physician-Superintendent, Glasgow Royal Mental Hospital, Gartnavel;

AND

R. D. GILLESPIE, M.B.,
Assistant Physician, Glasgow Royal Mental Hospital, Gartnavel.

THE problem of the treatment of ex-Service men who are suffering from prolonged mental illness arising out of, or in connection with, their war experience is one that has recently been prominent in Parliament and in the Press. These ex-Service patients are considered by many to suffer from a different and, as a rule, more favourable type of mental illness than the ordinary patients in mental hospitals, and the conditions of origin of their psychoses are considered as being entirely extrinsic. It is also supposed that these men would never have entered mental hospitals if it had not been for the stress and strain of war. It is with the purpose of examining these views, and if necessary refuting them, that this paper has been written. Subsidiary questions are—Whether the charge on the State is likely to be a temporary one, or for the lifetime of these men; and whether they—or any proportion of them—are likely to be of further service to the community. An inquiry such as this is likely to reveal the defects or otherwise of the system under which such men were passed into the army in large numbers.

Literature.—Robinson (of Wakefield), Hotchkis, Stanford Read, Eager, Marr, and Henderson, have all contributed papers, and have published statistics dealing with the treatment of nervous and mental diseases in soldiers. The general consensus of opinion has been to the effect that the great majority of such cases are in the nature either of mental deficiency or dementia præcox. It is not of special importance to differentiate, or to attempt to differentiate, the actual type of mental disturbance, but it is of value to recognise that

the majority of those who became mentally affected suffer from types of mental disturbance which run a slow and progressive course.

We have investigated 113 cases who have been resident at one time or another in this Hospital, and we consider that this series of ours is representative of those now residing in mental hospitals throughout the country. Forty-three per cent of this series are probably cases of the dementia præcox variety; 17·5 per cent are cases of mental deficiency; 16 per cent are cases of general paralysis; and the others are divided between cases of manic-depressive insanity, alcoholic insanity, epilepsy with insanity, and so on. These results have been of considerable interest, because when one compares them with an examination of 202 cases previously reported, and which occurred in home troops, one finds that while the dementia præcox cases were only two-thirds as many as the cases of mental deficiency passing through military hospitals, among the more permanent cases of the present series the proportion of dementia præcox is two and a half times that of mental deficiency. It is apparently safe to conclude, therefore, that while the proportion of mental defectives able to go back to civil life was considerable, the proportion of the dementia præcox reaction type in a similar position is much less.

Methods.—All the available data in the 113 "Service" patients who have resided in this Hospital are collected. Only in 67 still resident in the hospital could a complete inquiry be conducted. We have had access to the army records on enlistment and during the course of the illness. We have especially tried to determine the etiological factors. In a number of cases the friends were reluctant to admit hereditary predisposition, or traits indicating a psychopathic make-up. We have also been mindful of Adler's work on *Organ Inferiority*, and of the stress recently laid on the rôle of the ductless glands in the etiology of mental disorders, and a complete physical examination was carried out on each patient, with special reference to the presence of signs indicating possible endocrine disturbance.

Classification.—In order to correctly estimate the type of

material with which we are dealing, we feel that it is of great importance to attempt to classify these patients in terms of a system which is in wide use, more especially in America. In this way we should be able to compare our case material with that in other hospitals. We have therefore tried to avoid the use of vague terms such as "confusional insanity," "delusional insanity," "dementia," and "secondary dementia." An instance of the difficulty which may result from the loose use of terms is provided by Stanford Read, who, although admitting that a confusional state is not a form of insanity *per se*, goes on to subdivide confusional states into those due (a) to toxic causes, (b) to psychic causes, and (c) to trauma. Under group (a) he includes those cases which would be better classified as toxic—or infective—exhaustive states; under group (b) he includes amnesias and cognate types of mental disorder, generally recognised as psycho-neurotic; and under group (c) the only case quoted is one which is usually looked upon as a classical type of traumatic insanity. In our opinion, it is of much more value to think of cases as being examples of a certain type of mental reaction rather than as a specific disease.

Etiology.—The etiological factors may be divided into two large groups—(a) existing independently of the war, and (b) associated with war conditions. Under (a) are included insane heredity, psychopathic predisposition, constitutional inferiority, and previous mental illness. To these should be added physical inferiority—definite organ inferiority, or evidence of ductless gland disorder—alcoholism, and syphilis.

A statistical analysis of the different factors in our cases shows that in 99 cases in which a complete investigation of the question was possible, congenital mental deficiency was found to have existed in 25, or practically 25 per cent. In the remaining cases a detailed account of the personality was obtained in 31, and in 17 (or 55 per cent) of these a definite psychopathic make-up seems to have been present. In addition, 7 (or 6 per cent) of the whole, had been previously under treatment in mental hospitals, while 10 cases (or 12 per cent) of those in whom records on this subject were complete, exhibited heredity alone as a predisposing factor. Excessive alcoholism had been present

in only 4 cases, in 2 of which no other factors were traceable. It would seem, therefore, that alcohol cannot be considered a common cause of permanent mental disturbance among "Service" patients. The importance of alcohol as an etiological factor in mental disorders is becoming more and more doubtful, because very often the alcoholism is merely a symptom of an already present abnormal mental state. It may thus be seen that mental deficiency, psychopathic predisposition, previous mental illness, excessive alcoholism, syphilis, or heredity, was present in 99 per cent of those cases in which complete records were obtained. A further analysis, however, reveals the fact that it is more common to have a combination of these conditions than to have only one of them leading to a mental disturbance. Adler's work on *Organ Inferiority* has called attention to the importance of realising that the mental make-up is determined in considerable part by the physical constitution, and, moreover, is determined as much by minor, often functional, anomalies, as by gross defects. Adler believes that somatic inferiority is compensated for through the central nervous system. He believes that the realisation of the somatic inferiority becomes a permanent impelling force for the development of the psyche, and that the possession of inferior organs is reflected upon the psyche in such a way as to lower the self-esteem, and to raise the child's psychological uncertainty. An attempt to investigate along the lines urged by Adler has already been made by Kirby and Gibbs, who remark that one must take a much broader view of mental make-up, and must recognise that the so-called constitutional types represent trend reactions, which in every individual have both somatic and psychic components. It is their opinion that the physical make-up should be investigated in as great detail and in connection with the mental make-up. They stress particularly the evidences of defective development and disturbances of function in the sex glands and in the secondary sex characteristics. This, of course, is in line with Mott's work in regard to the arrest of spermatogenesis, with alteration of staining qualities of the spermatozoa. Kirby and Gibbs examined a large number of cases of dementia præcox, manic-depressive insanity, general paralysis, and other types, and their conclusion was that the dementia præcox cases showed the highest rate of

variation in size, although the difference was not great. This difference was perhaps heightened by the fact that the majority of the dementia præcox cases (76 per cent) were under 41 years, whereas the majority of the other main groups examined were over that age. In our examination we have made an investigation along the lines suggested by Mott and by Kirby and Gibbs, but, in addition, we thought it would be advisable to attempt some investigation along the lines suggested by Leonard Williams, who emphasises the difference in the skin, the teeth, the hair, and nails in the various types of glandular disorder. Twenty-three (or 33 per cent) of our cases exhibited these defects emphasised by Adler, such as amblyopia, varicose veins, and hernia. The average weight of our patients was 9 st. 6 lb., the average height 5 ft. 6 in., both of which are rather low figures. The average chest measurement was only 33 inches, and the expansion was poor. Muscular development was good in 31 per cent, fair in 30 per cent, and poor in 31 per cent. The general nutrition was good in 34 per cent, fair in 48 per cent, and poor in 21 per cent. In the case of the teeth, in 7 per cent these were in a poor or bad state of preservation; in the remainder only a small proportion could be considered to show a high degree of preservation. In regard to the more constant features, we find that the hair was abundant in 21 per cent, moderate in amount in 20 per cent, and scanty in 59 per cent. Its distribution was masculine in 61 per cent, tended to be feminine in 24 per cent, and was distinctly feminine in 13·5 per cent. The testes were unduly large in 4 per cent, and abnormally small in 55 per cent. They were firmer than normal in 21 per cent, and softer than normal in a further 21 per cent. Thus, 59 per cent were abnormal in size, and 42 per cent abnormal in consistency. These figures correspond very closely with those given by Kirby and Gibbs.

If one compares the cases of dementia præcox with all the others, one finds in regard to the texture of the hair and nails that the dementia præcox cases showed a larger percentage—(1) with brittleness or glossiness of hair, or both; (2) with moist skin; and (3) with nail texture abnormalities.

We can summarise the above findings to a still greater extent, and say that in 15 per cent we found evidence of gross organic disease, in 33 per cent minor physical defects, in 30 per

cent a deterioration in the general physique, in 21 per cent a deficiency of nutrition, in 75 per cent a poor condition of the teeth, in 13·5 per cent feminine distribution of the hair, in 59 per cent abnormality in the size of the testes, in 42 per cent in their consistency, and, in the dementia præcox group, variations in the texture of hair and nails.

Etiological factors associated with the war.—Thirty cases (or nearly 26 per cent) served only at home, 71 (or 54 per cent) served abroad. Of the remaining 14 we were unable to get full particulars. The average length of service was 1·8 years, of which 1·2 years was the average length of service abroad. But the average length of service of those at home was only ten months, while the average total length of service of those who also served abroad was 2·2 years, so that the difference between the staying power of the foreign and home Service men was even greater than is superficially apparent.

In 14 cases no predisposing factor, and no history of war trauma other than service, could be elicited. Four of them had been, however, considerably below par physically, and one of them has developed symptoms of Addison's disease. The other 28 cases either suffered from wounds, from gassing, from shell-shock, or from other injuries. In nearly all of these cases, however, other factors were found pointing to mental or physical defects, which would have to be taken into consideration in the etiology of the disturbance.

Symptomatology.—We would like to say at the outset that we are in agreement with those others who state that the war was not instrumental in producing any new type of mental disturbance. On the other hand, types of mental disturbance occurring during the war were essentially similar to those occurring in times of peace. The war however, did augment the number of neurotics and psychoneurotics, and in some cases acute psychoses of a transient nature (*e.g.*, dementia præcox) were produced, which hitherto had been regarded as chronic, and usually progressive, reaction types. In all the cases, of course, there was an environmental colouring, but this did not in any way constitute a fundamental difference.

Dementia præcox.—Forty-six of the 113 cases are of the dementia præcox type. This is a large proportion, and as these cases are for the most part closely similar to the cases of dementia præcox occurring in ordinary asylum practice, the influence on the prognosis of the Service class of patients in general is considerable. The importance, both for the patient himself and for the nation, of the recognition of the dementia præcox reaction type cannot be too strongly emphasised. Many of these cases were classed in war hospitals as "mania," "melancholia," "neurasthenia," or "confusional insanity." All of these terms imply a much better prognosis than can be given in this type of case.

In a small number of our cases (6) dementia præcox-like reaction was transitory, and these cases are of special interest. The reaction was developed in them towards the special situation of military life, and when that situation was removed the abnormal reaction disappeared with it. McCurdy pointed out that anxiety and conversion hysteria in war time come about at a more superficial level, and react more easily to treatment than similar states occurring in civil life. We believe that this also holds true for the psychoses of war, and thus that many cases who showed a dementia præcox-like type of reaction occurred at a more superficial level and more acutely than those occurring in civil life, and in consequence made a quicker readjustment than is usual in civil cases. This conception, we believe, gives one a much truer picture of these states than is covered by the term "confusional insanity." It allows us to regard the transitory cases as reactions, the mechanism of which is exactly similar to these reactions in civil life, which also involve the innate tendencies of the individual, but which originate much more slowly and complexly, and consequently involve a more profound and more lasting alteration in the personality. I would merely mention as an example the following case:—A young man, 26 years old, for three months previous to his admission to the Glasgow Royal Mental Hospital, Gartnavel, had shown mental symptoms, which had developed while on home service. For a time he was greatly excited and incoherent, spoke a great deal about the Kaiser, said his brother was his father, was under the belief that he had some scheme,

and various commonplace things that happened had worked into this scheme. Frequently his thoughts seemed to become blocked, and he would make an irrelevant remark, such as "it was a sign, a puzzle." He also gave a history of having suffered from hallucinations previously. These features which have been emphasised are all more or less characteristic of the dementia præcox reaction type, but within the course of a few months he made an excellent recovery.

In the 48 cases of dementia præcox under consideration, 32 were of the paranoid type, 10 dementia præcox simplex, 4 catatonic, and 1 hebephrenic. This arrangement of types was in accordance with another series of 159 cases, of whom 111 showed hallucinatory paranoid features. Some observers have held the belief that these hallucinatory paranoid states were a special type of mental disturbance due to the war, and that it was erroneous to look on them as paranoid states occurring in dementia præcox on the ground that a great many of them ran a transitory course. We believe, however, that the varied nature and the constantly changing delusional ideas without any special systematisation, differentiates them sharply enough from paranoid states not dementia præcox in nature occurring in civil life. It seems to us more satisfactory to think of the matter in terms of a mental reaction of a dementia præcox type.

A case in point is that of a married man, 30 years old, whose history showed that he had developed normally, and had worked as a shipwright. While serving at Gallipoli he developed enteric fever and was returned home. After regaining his health he was transferred to munition duties, from which he was eventually demobilised. In the beginning of 1919, he became sleepless, suffered from hallucinations of hearing, and also developed ideas of persecution, saying that someone had put wires in his head. During the whole period of his residence in this hospital he has been constantly under the influence of aural hallucinations—has described his trouble as being due to a "sommyphone worked by the army authorities." A sample of his spontaneous talk shows very well his delusional ideas:—"Because I am always hearing voices which put me on jurisdiction for special visitors. . . . I have also got wires in my head. I receive wireless messages

to do stupid things; for instance, to commit suicide. Sommy-phones act on my body, they force my thoughts, and are like *x-ray* tubes. I have never seen them, but I can feel what they are like." Apart from his ideas, this patient shows a very large degree of emotional deterioration; he is happy and contented, spends a considerable part of his time reading his Bible, and refuses to work. We believe that a case like this—the fantastic nature of his delusional formation, accompanied by emotional deterioration, and consequent apathy towards the outside world—is much more in the nature a dementia præcox type of reaction than of a paraphrenic state.

Apart from the main question of the type of mental reaction, Read particularly has emphasised the preponderance of the paranoid types of disorder, and has held that this was a particular outcome of war conditions, the association of psychopaths with men only over long periods of time having presumably stimulated homosexual tendencies. We compared our "Service" patient cases with 204 cases of dementia præcox occurring in civil life, and found that there was no great discrepancy in the two series of figures, the paranoid cases numbering 68 per cent among the Service patients, and 59 per cent among the private cases. It may be of some importance also to note that a number of these cases occurred within a few days after they had been enlisted, whereas others of them did not occur until after a long period of war service, in men of apparently good make-up, but with perhaps a hereditary taint, and usually following on wounds or infection. One feels in this latter group that these cases probably never would have developed dementia præcox apart from their war service.

When we came to analyse the mental level of the 38 cases of dementia præcox who are at present in hospital, a number of interesting facts were elicited. Eight of the cases were inaccessible to examination. An investigation of the intellectual level in the remaining 30 revealed the following:—Orientation was correct in all fields in nearly half the cases—25 per cent were approximately oriented, and 35 per cent showed considerable defect, varying in degree, but rarely amounting to entire disorientation. The memory for remote events was accurate in 35 per cent, fair (*i.e.*, with discrepancies in dates)

in 50 per cent, and poor only in 15 per cent. Recent memory showed very similar figures—school knowledge could be said to be good in only four cases (or 13 per cent), but allowance must be made for the previous educational level of these patients. In 5 cases, however, the grasp of school knowledge was very definitely impaired, and in these cases there was usually an associated defect in general memory. In simple calculation at least half exhibited a striking defect. General knowledge was defective in nearly all cases—only in 3 did it tend to approach a normal level. Apperception (as revealed by test-stories) was nearly always markedly defective. Judgment and general intelligence showed a corresponding defect. In every case—except 2—there was a disorder of thought, ranging from bizarre ideas to utter incoherence. Attention was in most cases fair or poor, and in some it tended to fluctuate. Only one case showed even a slight amount of insight.

In all cases there was great emotional alteration fundamentally in the direction of apathy, but in some cases combined with facility, or mild euphoria, or irritability. In all of them, also, volitional disorder was more or less marked. More than half are unemployable. Of the remainder, only a few work well, and then usually under considerable supervision.

It is obvious, therefore, that these patients, as a whole, exhibit a degree of dementia which does not augur well for the future. Five cases are outstanding, in that they exhibit a much less advanced degree of dementia than the others. They are of the paranoid variety, and of the type which, at least in the early stages, are apt to give rise to difficulty in diagnosis.

Constitutional inferiority (mental deficiency).—This is, *par excellence*, the class of patient that by a simple mental examination could have readily been excluded from the army, or, if enlisted, could have been allotted appropriate duties. If the defect is a very gross one, we do not think that such cases should ever be enlisted; but if the defect is less grave, then there is no reason why such cases should not be given such work at the Base as they are fit to do; but on no account should they be sent to the Front. During the Great War the tendency was to enlist practically everyone, and often to apportion them

duties for which they were quite unfit. The inevitable result has been that such cases have formed a large proportion of the patients passing through mental hospitals, and they now form a very considerable proportion of the ex-Service patients forming a permanent population of our mental hospitals. It is unnecessary to report in detail any of this type of case. The usual history was that shortly after enlistment these men were found to be unable to adapt themselves to army life, and often—for months—they were punished time and again for misdemeanours which they could in nowise be held responsible for. Such cases are a great trial to the men training them, and, furthermore, they are a source of great danger to their companions, and cannot in any way be trusted with fire-arms.

In regard to their war service, 18 of our cases served abroad, and their average length of service was 10 months (as compared with 1·2 year's service abroad for our whole series). Three of them were wounded, 3 had infectious fevers, and the remainder (13 in number) simply broke down from stress of service.

Manic-depressive.—All but two of these have now recovered, and this is in accordance with the prognosis of such cases in general. It seems advisable to inquire into the reason for the non-recovery of the two cases remaining in the Hospital. The cause is not found to lie in the severity of the stress undergone—one of them developed a psychosis within a week of enlistment, and the other, a ship's cook, broke down in the course of his first voyage—but must be sought in a pre-existing insufficiency. One of them had been in a mental hospital on several previous occasions, and the fact that the other became ill within a few days of enlistment is evidence of his instability. This latter case is now in a much more settled condition, is employing himself steadily, and the probability is that he, too, will eventually make a fair recovery.

General paralysis.—Of 19 cases admitted to this Hospital, 16 have died before this enquiry was begun. In many cases the data in regard to length of service, &c., were deficient, but a number of these cases show how important it is that there should not only be a good physical, but also a good mental examination, at the time of enlistment. For instance, one

case began to show symptoms of this disease within five weeks after enlistment, another within three months, and still another within six months. On the other hand, nine others, in whose cases data were available, served an aggregate of nineteen years, or an average of 2.1 years—practically the average length of service of the whole series of cases at present in this Hospital. Many people have held the belief that cases of general paralysis occurring during warfare have tended to run a more acute course than those which develop in civil life. In connection with this, Hotchkis remarks that certain of his "cases tend to confirm the view that, in many cases at anyrate, the strain of active service does not materially affect the progress of the disease."

Epilepsy.—Two of the cases of epilepsy originating on service are of special interest in that a strong psychogenic element seems traceable in the etiology. This is suggested in each by a study of the personality, and of the circumstances of origin—amid unfamiliar surroundings (both men were away from home for the first time), and with a fear, conscious or unconscious, of the future. It is to be noted that neither of these cases served abroad, and neither had a history of pre-war epilepsy (*c.f.* Purves Stewart). The study of epilepsy and of epileptiform states was prosecuted with a good deal of vigour during the war years and since, because it became evident that psychogenic factors played a more important part in the development of such states than had been previously thought.

Traumatic insanity.—The one case occurring in our series was typical in every way of this type of mental disorder. The only factor somewhat anomalous was the length of time which elapsed between the time of the head injury and the onset of the mental disturbance.

Prognosis.—Of the 113 patients who have entered this Hospital, 15 have been discharged as recovered, 7 as greatly improved, and 4 as not improved; 7 have been transferred to other hospitals, and there have been 15 deaths. There are still 65 under treatment. Of these, it can be confidently asserted

that only two are likely to be able to earn a livelihood in the near future, and then only in favourable circumstances as regards constancy of employment, &c. They are of the constitutionally inferior (mental defective) type. The remaining mental defectives have in the majority of cases reached their pre-war level, but even so it is better for the community that they should remain in an institution.

In the case of the two manic-depressive patients remaining, recovery is hoped for in view of the general prognosis of this type of insanity; but considered as individuals, they do not lend much support to this expectation.

Of all the remaining cases (61 in number) the most that can be hoped for (and that in comparatively few) is an arrest of the disease at a stage of more or less advanced dementia.

Summary and conclusions.—This paper analyses 113 "Service" cases of the more chronic type, of whom 67 were in this Hospital at the time of writing. Its purpose is to examine more particularly their etiology, symptomatology, and prognosis, with a view to augmenting the slender volume of collected data on this subject.

The existing literature is first summarised, and various points noted. The confusion and indefiniteness in diagnostic terminology in these papers is deprecated; and a plea is recorded for a uniform system of diagnostic classification. Most of the papers mentioned emphasise the inefficiency of the recruitment examination, as far as the mental status of the recruit is concerned, and the uselessness and positive danger of passing mental defectives and obviously potential psychopaths into the army. Further, it is shown that the proportions of the various disease types among Service patients has altered since the war-period, and that dementia præcox cases constitute, with mental defectives, by far the greater proportion of cases still under care.

The etiological factors are divided into those existing before the war and those associated with Service. Of the former, insane heredity, psychopathic predisposition (in the sense of the personality traits investigated by Hoch,⁷ Meyer,⁸ and others), previous mental illness, constitutional inferiority (*i.e.*, mental or moral deficiency), syphilis, and excessive alcoholism, together accounted for 99 per cent of cases where full data were available. These

factors, however, are found to be combined in many cases with physical inferiority, either of a gross or of a minor character, or with evidences of ductless gland anomalies—such as abnormalities in size and consistence of the testes, in the distribution of hair, &c. Thirty-eight dementia præcox cases were compared with 29 miscellaneous ones, and abnormalities in texture of hair, skin, and nails were noted to be more frequent in the former group. Testicular abnormalities were not more common in the præcox cases than in the others; but the series is too small for definite conclusions.

The etiological factors associated with the war included service, traumata, and infections. The average length of service of those who only served at home was ten months; while the average length of service of those who served also abroad was 2·2 years. Only 14 cases (or 8 per cent) showed no factor predisposing or exciting other than service, and it is probable that more accurate records would have much reduced this figure. Only 3 of the 17 wound cases showed no factor other than wounds.

A comparison of toxic-infective factors, with the resulting psychosis, shows that varied toxic-infective factors yield a comparatively small number of disease pictures, and these much more commonly are well-defined psychoses than of the simple infective-exhaustive type.

An examination of the symptomatology shows that no new type of mental disturbance has been produced by the war, but that certain psychoses (viz., dementia præcox) which in civil life are usually chronically progressive, appeared in an acute, recoverable form. A very large proportion, being more than half of the cases now resident in Hospital, are of the dementia præcox kind, and of these most are of the paranoid variety. This latter observation has suggested to some that the preponderance of the paranoid type may be due to war conditions, but comparison with civil cases of dementia præcox shows a similar preponderance in them. A detailed analysis of the mental status of the dementia præcox cases revealed in nearly all of them a considerable, and sometimes profound, degree of dementia. The prognostic inference is obvious. The inefficiency and lack of endurance of the constitutionally inferior (mental defective) group is demonstrated. On the

other hand, nearly half of the general paralytics had an average length of service practically equal to that of our whole series. Of the remainder, some at least must have presented signs of the disease when passed into the army.

Finally, it is evident that the majority of the cases under consideration would eventually have entered mental hospitals without the superaddition of war-strain; and that of those remaining under care, none are likely to reach a normal standard of mental health, and nearly all will have to reside permanently in an institution.

REFERENCES.

- ¹ Robinson, "The future of Service patients in mental hospitals," *Journal of Mental Science*, January, 1921.
- ² Pearn, "Psychoses in the Expeditionary Force," *Journal of Mental Science*, April, 1919.
- ³ Eager, "A record of admissions to the mental section of the Lord Derby War Hospital, from 17th June, 1916, to 16th June, 1917," *Journal of Mental Science*, July, 1918.
- ⁴ Hotchkis, "Renfrew District Asylum as a War Hospital for Mental Invalids, with an analysis of cases admitted during the first year," *Journal of Mental Science*, April, 1917.
- ⁵ Henderson, "War psychoses: An analysis of 202 cases of mental disorder occurring in Home Troops," *Journal of Mental Science*, April, 1918.
- ⁶ Henderson, "War psychoses: The infective-exhaustive group," *Glasgow Medical Journal*, December, 1921.
- ⁷ Hoch, "Constitutional factors in the dementia præcox group," *Review of Neur. and Psych.*, 1910, vol. viii, p. 463, quoted by Henderson.
- ⁸ Meyer, "Dynamic interpretation of dementia præcox," *Amer. Jour. of Psych.*, July, 1910, p. 385, quoted by Henderson.
- ⁹ Adler, *The Neurotic Constitution*.
- ¹⁰ Kirby and Gibbs, "The reproductive glands and mental disorders, with special reference to dementia præcox," *State Hospital Quarterly*, February, 1921.
- ¹¹ Cushing and Timme, quoted by Kirby and Gibbs.
- ¹² Mott, quoted by Kirby and Gibbs.
- ¹³ Williams, *Minor Maladies*.
- ¹⁴ Henderson, "War psychoses: dementia præcox in war time," *Rev. Neur. and Psych.*, November-December, 1918.
- ¹⁵ Purves Stewart, *Diagnosis of Nervous Diseases*, fifth edition, 1920, p. 556.
- ¹⁶ Stanford Read, *Abnormal Mental Strain—Military Psychiatry in Peace and War*.
- ¹⁷ Marr, *Psychoses of the War*, 1919.