NERVOUS AND MENTAL DISORDERS OF SOLDIERS.*

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At this hospital there has been an opportunity to observe nervous and mental symptoms that has probably been unsurpassed in any of the forces engaged in the war. All cases, except those evacuated through England, were grouped for return to the United States at this point. All types, therefore, were encountered, and in numbers quite exceeding those seen in any similar centers in civil life. Numerous unusual conditions were observed. Types were seen which did not conform to those that are so familiar in civil life, and it may be said, particularly in respect to the purely mental cases, that the ordinary disorders of civil life were conspicuous by their comparative infrequency.

Lest any misapprehension should arise, however, as to the frequency of occurrence of nervous and mental symptoms in soldiers, it should be stated as a noteworthy fact that, considered as a whole, the mental attitude of the soldiers of the Expeditionary Forces was to a high degree that of normal and healthy men. Just as one was impressed by their physical vigor and hardiness, so, in general, a healthy and stable mental attitude was observed. This was true of at least 90 per cent of the men.

But it should not be inferred from this assertion that difficult adjustments were not encountered by the men of the army. A nation could not be confronted with all the emotions incident to the greatest war in history without a marked emotional reaction. Then when we consider the intimate association of different nationalities in the United States Army and the sudden alteration in social relationships between men, it is obvious that adjustments of an extreme degree were necessary. In view of the hardships unavoidable in any campaign, the delays in mail and pay, added to

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physical and nervous exhaustion, it takes little imagination to understand the state of mind in which many men found themselves. Incidentally it may be said that nothing could more conclusively prove the unity of purpose of these men and their faith in the right of the cause for which they entered the war than the patience, the fortitude and the determination that they displayed throughout.

To attempt to interpret these mental and nervous manifestations in soldiers in terms of civil-life conceptions would manifestly be ill-advised. Men have been subjected to emotional experiences heretofore unknown. The magnitude of the war itself, shaking as it did the very foundations of institutions and established customs, made a deep impression upon all who came under its influence. It is, therefore, in the sphere of purely mental reactions that the most unusual conditions were found. The nervous states and the neuroses, arising as they did from anxiety and anticipation, at times associated with physical exhaustion, conformed more closely to what is seen in civil life.

As stated above, all nervous and mental cases of the American Expeditionary Forces, with few exceptions, went through this hospital for evacuation to America, and therefore, since it is improbable that before the war these cases have been cared for in such numbers under similar circumstances, a discussion of administrative affairs, such as buildings occupied, personnel engaged and transportation of patients will probably be of interest. A résumé of the clinical material is subsequently given.

ADMINISTRATION OF THE NEURO-PSYCHIATRIC SERVICE.

Until November 6, 1918, the neuro-psychiatric service at Savenay was under the direction of the commanding officer of Base Hospital 8. It functioned separately with a chief of service, medical staff and special personnel. For the first six months comparatively few cases were admitted, from January 1 to June 1, 1918, the admissions being 369. Two wooden barracks of 90 beds each were used during this period. The mess was with other patients. One ward was partitioned off, one end being used for disturbed patients.

After June 1, 1918, the admission rate rapidly increased and additional wards became necessary. Three more wooden barracks

were used as required for this service, providing accommodations for about 500 patients. In the meantime, specially constructed wards designed by the chief surgeon had been erected for this service in a locality some distance from the main hospital. These 11 wards, situated on a slight elevation of ground, consisted of the administration building, a ward for officer patients, a mess hall, a barrack for enlisted personnel and a ward for disturbed patients, the remaining wards being of uniform type, with a large day room, shower baths and running water. This unit was occupied in the latter part of August, 1918. There were accommodations for something less than 200 patients, but by using officers' barracks and enlisted men's barracks, the capacity was expanded to over 250. During this period, however, the barracks connected with Base Hospital 8 were still retained.

In October, 1918, four additional buildings of concrete block were added to the 11 wards above mentioned. When these were completed, the original barracks of Base Hospital 8 were relinquished. No diminution occurred in the admission rate after the cessation of hostilities and therefore the unit as finally constructed proved inadequate. Indeed, in the late fall of 1918, admissions were so rapid that the commanding officer of the center found it necessary to designate wards from two adjacent units *i. e.*, Base Hospital 69 and Base Hospital 113, for the temporary use of the neuro-psychiatric service.

On November 6, 1918, the neuro-psychiatric service was organized as an independent unit, taking over the quarters already occupied. The former chief of service was designated as commanding officer, and Major Joseph Betts became chief of service.

During the latter part of December, evacuations had been so rapid and admissions delayed to such an extent that for a short time there were but 65 patients in the hospital. Admissions, however, soon increased, so that early in January, 1919, the population exceeded 700 patients, including 40 officers. This was quite in excess of the hospital's capacity, especially since, except as a temporary expedient, the use of the wards of adjacent units was not feasible. Under these circumstances the commanding officer of the center gave directions that one of the new 1000-bed units be taken over as a neuro-psychiatric hospital.

In the period during which this organization was being changed from the neuro-psychiatric service of Base Hospital 8 to an independent unit, and during the subsequent transfer of the hospital to its present site, considerable administrative work was necessary. Occasion is taken at this time to state that all the personnel connected with the organization carried out their duties in an exceptionally capable manner. The responsibility of this reorganizing and of the subsequent transfer of the patients and property, as well as the opening and equipping of the new unit, rested particularly with the chief of the service, the quartermaster and the officer in charge of administrative details. These officers, Major Arthur H. Ruggles, Captain Royal C. Cannady and Captain Charles S. Little, performed this work successfully under exceptionally difficult circumstances.

The new unit was occupied January 21, 1919. The construction was not complete and special construction was necessary, this was chiefly by patients. A sitting room was made in one end of the officer's ward and furnished by the Red Cross. A similar sitting room for nurses was arranged in another ward. A staff-conference room was constructed in the officers' barracks. A diet kitchen, furnished by the Red Cross, was installed in the building used for occupational therapy. Four wards were constituted closed wards with screened windows, and in these wards partitions were constructed in such a way as to make patients' day rooms. One ward building was utilized for a Red Cross recreation hut and appropriately furnished.

The large building adjacent to the mess, used in other units for surgery and dressings, was fitted up for a work shop. This work shop was especially well equipped. It had the advantage of the use of material formerly used at Base Hospital 117, consisting of brass work tools, lathes, carpentering sets and an acetylene welding apparatus. Looms for weaving were made by the patients, and woven bags, belts and mats were manufactured. A forge was made by one of the patients. A supply of salvage material for use in the shop was secured from the salvage department at Tours. Six aides, under the direction of Miss Meta Anderson, were engaged in giving instruction. The average number of patients engaged daily was 42. A large amount of material of various kinds was manufactured in this shop. Much of this material, such

as benches, tables, chairs, cabinets and office furnishings, was used to equip the administration buildings and the wards of the unit. In the metal department, rings, trays and other souvenirs were made in great numbers. A considerable amount of material made was taken home by the patients.

PERSONNEL.

Prior to June 1, 1918, the neuro-psychiatric service at Base Hospital 8 was under the direction of Major Charles D. Humes, who had from two to three assistants during this time. Major Humes succeeded in securing the services of nurses and enlisted men with special training in this work. On the 8th of June, 1918, Base Hospital 117 arrived at Savenay from the United States, en route for La Fouché. A part of the personnel, namely, 3 medical officers, 28 nurses and 33 enlisted men remained at Savenay to take charge of the service, Major Humes being relieved and returning to his former station as consultant in neuro-psychiatry at Vittol center.

The organization therefore, after June 8 consisted of 4 medical officers, 28 nurses and 33 enlisted men; 15 of the 28 nurses were on general duty with Base Hospital No. 8. This small service almost at the outset suffered a severe loss by the death of one of its most valuable officers and one who commanded the highest respect of all associated with him. Major Morris J. Karpas, who had joined the unit in Allentown, died suddenly on July 4 of angina pectoris. His loss was deeply mourned not only by the members of the organization, but also by many of the officers and personnel of the hospital center, who had known him either personally or by reputation in civil life.

After June 1, 1918, the admission rate increased rapidly. In June, 256 cases were admitted; in July, 405; in August, 588; in September, 887; in October, 658; in November, 809; in December, 412; in January, 1919, 885; and in February, 824.

The organization received the cases, classified them, afforded appropriate care and treatment and furnished medical officers and personnel to transport them to the United States. Moreover, the trained personnel was sent to convoy patients to Savenay from other centers and organizations. It will be readily seen that demands on the enlisted men were very great, and no praise is

too high for the valuable service rendered both by nurses and enlisted men during this period.

For purposes of classification, all patients were admitted to one large admitting room of 90 beds. A special nursing force was maintained here, and observations for classification were made at once. The organization was most fortunate in having with it Mrs. Janet Cranston, who had experience in charge of the psychopathic department of Bellevue Hospital, New York. Captain John J. Hughes was in charge of the receiving ward, where considerable experience and judgment was necessary to classify these cases properly. All patients, upon admission, were seen by the receiving officer and assigned to proper wards. The acute psychoses, cases of chronic alcoholism and delinquents were sent at once to closed wards. Mild psychoses, epileptics and mental defectives were kept in open wards under supervision. Cases of psychoneuroses were sent to separate wards and, as soon as space was available, to the specially constructed wards mentioned above. These wards were under the charge of Major Henry M. Swift.

By examining and classifying at once every case, administrative difficulties were reduced to a minimum. During this period but two serious accidents occurred, although delinquents of every description came through the service. At the same time patients were given as much liberty as possible, indeed, liberties that in civil life would have been considered impossible. There was no separate mess for many months, patients going to the general mess. The Center Red Cross recreation hut was used by all, and the convalescent patients from the neuro-psychiatric service often contributed very considerably to the entertainments.

The transportation of these cases to America was supervised by this organization to the extent that it furnished medical officers and enlisted personnel. The convoys consisted, as a rule, of from 50 to 200 cases and occasionally more. They went by train to Brest or Saint-Nazaire for embarkation, the patients being loaded in cars especially designated, with acute cases in one special car. The number of attendants sent varied according to the types of patients. The train left the hospital under the charge of a designated medical officer, who exercised supervision until the patients arrived at their destination in the United States. Such convoys drew heavily upon the personnel. This work could not have been carried on had it not been supplemented from the hospital center.

CLINICAL SUMMARY.

A large amount of clinical material passed through this hospital, no less than 6093 cases having been admitted up to March 1, 1919. Observations were necessarily incomplete, and the recording of cases was impossible. The various types, some quite unusual, came under observation with such frequency that they became fairly familiar, and therefore clinical pictures, which otherwise would have been uncertain, became well established. It will be best to discuss the clinical material under headings, as indicated below, the number of each class being likewise stated:

Psychoses	1,916
Psychoneuroses	1,663
Epilepsy	752
Constitutional psychopathic state.....	634
Mental deficiency	524
Organic nervous diseases.....	148

PSYCHOSES.

The number of frank psychoses, amounting in all to 1916 cases, is probably not excessive, considering the forces engaged. Interest in these cases is more in their clinical character than in their numbers. It was soon observed that, in addition to ordinary civil-life types, many unusual cases were encountered. It is true that many cases of dementia præcox, general paresis and other familiar diseases were admitted throughout this period, but they were not the only types seen. Soon after active hostilities began, cases appeared with which the staff were unfamiliar from their civil-life experiences, and in these unusual cases the reactions and the clinical pictures did not conform to any recognized types. It is possible that a number of these unusual cases would have been made more clear by adequate previous histories and longer periods of observation. This, however, was not true of all, and so it is considered that a tentative formulation of these unusual cases should be given at this time. They probably do not form a distinct class from every point of view. They doubtless have a common etiology, however, and they have groups of symptoms in common which are sufficiently striking to warrant their being discussed as a group. Such cases at this hospital have been

referred to as "war psychoses," and so this term is somewhat arbitrarily used.

These cases of so-called war psychoses were observed in considerable numbers. No actual record of their number was kept, but they probably amounted to one-fifth of all the cases diagnosed as psychoses. Many of them improved considerably while at the hospital, and it is quite probable that by the time they reached the United States, the acute symptoms had disappeared. Such clinical descriptions as can be given here, therefore, although incomplete, may be of service in checking up with observations made elsewhere.

The following clinical picture is a composite of what was most frequently observed: Patients on admission were dazed, confused and disoriented, and, as a rule, they were not accessible during the acute period. They generally thought themselves at the front under fire, and were anxious and apprehensive. They wandered about rather aimlessly and showed bewilderment and confusion. Some were quite agitated. Frequently they preferred to be by themselves and volunteered very little in the way of conversation. As a rule, they were depressed, at times profoundly so, to the extent of making suicidal attempts. A few cases were observed in which there was an elevation of mood. The possibility of a manic-depressive condition was considered in these particular instances, but was regarded as improbable. In this general setting of clouding of consciousness, confusion and bewilderment, there were active hallucinations of sight and hearing. Patients complained of seeing shells bursting and of hearing the whistling of shells and bullets. In their highly emotional state it is probable that a part of this was a misinterpretation of noises about the hospital. The symptoms were worse at night, but were by no means confined to the night time. This general condition had some features in common with the psychoneuroses, such as anxiety, fearful dreams and visual hallucinations, but the condition differed in that the patients were inaccessible, disoriented and confused, with marked mood changes and no insight. Not infrequently there were delusional ideas of a transient character and of a changing nature, the content of which had to do with war experiences.

The interpretation of the nature of the conditions above described presents a number of difficulties. In some respects they resembled state of protracted exhaustive delirium. The English have designated these cases as acute confusional psychoses. It is thought, in view of the anxiety, the depression, the character of the hallucinations and the emotional conditions, that emotion and excitement played quite as prominent a part in them as exhaustion. Since patients, as a rule, were inaccessible, no clear idea could be gained as to what they had experienced. It is possible that many of them had been under heavy shell fire, but in what circumstances cannot be stated. It was necessary to return these patients to the United States as soon as their condition warranted transportation. The impression here was that the prognosis was good. The psychosis was considered an acute one, having little in common with ordinary civil-life types, although many cases bore the diagnosis of dementia præcox on their admission tags.

Another small group of cases observed resembled somewhat those above described but differed in a number of respects. Such patients were admitted in a delirious condition. As a rule, they had not been at the front, possibly having but recently landed in France. They were confused, rambling in conversation, inaccessible and restless. They were disoriented and presented the picture of delirium. The thought content was not remarkable. The condition was considered an hysterical delirium, arising in predisposed individuals.

Of the well-known psychoses, such as dementia præcox, manic-depressive psychoses and others, a few features of interest were observed. A number of cases of dementia præcox appeared to have developed since enlistment. Some gave a history of symptoms previous to enlistment and a fair proportion of these had had previous hospital residence. Of the manic-depressive cases there were relatively more with depression than with elation. Both showed a war coloring, especially the depressions, and, in fact, the thought content of many of the self-accusatory and depressed patients had to do solely with war conditions. They frequently had the idea that they were being accused of betraying their country or of being German spies. It is a noteworthy fact that comparatively few acutely maniacal cases were encoun-

tered. Their management was not as difficult as had been anticipated, although several very acute cases were admitted.

PSYCHONEUROSES.

No attempt will be made to discuss in detail the psychoneuroses in this report, not only because this would be beyond the limits of this record, but also because more favorable opportunities were offered at the other neurological hospitals for the observation of these cases. As a rule, when such patients reached this hospital, their symptoms had existed some weeks and even months, and so they presented clinical pictures differing in character and degree from those seen in the advance section. Only observation as to the general character and disposition of these cases as it pertains to this hospital will be made at this time.

It is probable that no cases that came under the care of medical officers were as imperfectly understood at the beginning of hostilities as the psychoneuroses. It is true that full information regarding them had been sent from the chief surgeon's office, and data of great value were likewise available from both French and British sources; nevertheless, the nature of these conditions was unfamiliar to most medical officers, and for this reason a number of weeks elapsed before the plans that had been carefully arranged beforehand for the care of these patients were in satisfactory operation.

During the early period of hostilities, as stated above, the psychoneuroses did not always come under the observation of the officers designated to take care of them. Some of these patients were sent from advance areas directed to base hospitals, where they were admitted to the various wards of the medical or surgical service. The fact that the case was a neurosis and not a physical disease was not always appreciated. They were retained in base hospitals without improvement, and many of them eventually arrived at Savenay for disposition. A number of others were classified by medical boards at base hospitals, sent to training camps when not fully recovered, and, being unfit at these places, were transferred to Savenay.

It can be readily seen that these cases, while relatively few in number, were unfavorable types for early recovery. Fortunately

their number was not great, and in a short time steps were taken by the chief surgeon to have cases sent to their proper destinations and not immediately to base hospitals in the service of supplies. The excellent results, as evidenced by the reports of the work done by the neurological hospitals in the advance areas, indicate the comprehensiveness of the plans as originally constituted. The general management of the psychoneuroses of the war, as demonstrated by the results accomplished, emphasizes the fact that to be successfully treated, such cases must be fully understood. The proper treatment of these conditions has been one of the most difficult problems confronting the physician in civil life. While it is true that they have always been understood by a number of physicians, it must be admitted that, as a rule, too little knowledge of them is gained by students in medical schools, and the fact that they are disorders in the functioning of the mind and not of the body is not always fully appreciated.

During the period of active hostilities, the number of cases of psychoneuroses arriving at this hospital was not relatively large. Two general types were recognized: those resulting from battle experiences and those of ordinary civil-life type, the latter of which had probably existed prior to enlistment. The civil-life types, such as neurasthenia and psychasthenia, as a rule, came under observation soon after arrival in France and never reached the front. A certain portion of these were classified for duty in the service of supplies, and the more severe cases were returned to the United States.

The psychoneuroses arising from battle experiences came from two main sources. At one time a number came from base hospitals or reclassification camps, not having previously had special treatment. It was possible to return a considerable number of these cases to duty, and some were sent to Base Hospital 117. Other cases came from neurological hospitals in the advance section, mainly from Base Hospital 117. Cases arriving from these hospitals were intended for evacuation to the United States, being considered constitutional types with an unfavorable outlook for recovery in the immediate future. After hostilities ceased, arrangements were made by which the psychoneuroses of all sources eventually came to this hospital, and this accounts for their increase in number during the latter months of this report. It was not the

policy after the armistice to classify these cases for limited service, and therefore they were returned to the United States for disposition, the severe cases undergoing a period of treatment here before evacuation.

One feature of the symptomatology observed in this hospital was probably not seen elsewhere. It was found that a number of cases of mental deficiency, epilepsy and mental diseases exhibited war neuroses, such as mutism, tremors or hysterical hemiplegia. This association of symptoms was not infrequent, and these cases presented very unusual clinical pictures as a result.

EPILEPSY.

A comparatively large number of cases were diagnosed as epilepsy, amounting in all to 752. This number of cases afforded ample opportunity to observe the various manifestations of epilepsy, such as major seizures, petit mal and epileptic equivalents. In addition to these well-known manifestations, the constitutional make-up of such patients formed an important part of their disability, and at times was of more significance than the actual seizures. In other words, the seizures themselves, in some cases occurring at rare intervals, might not have been disqualifying, but the neurotic or defective constitution that made up their background rendered these patients unfit as soldiers. The vast majority of these cases were highly neurotic, so much so, indeed, that at times it appeared that the disease should be interpreted as a severe degenerative neurosis, of which the seizure, while the most apparent symptom, was not the most important. Those observers who have favored this interpretation of many cases of epilepsy would see much in the clinical material of this hospital to support their contention.

There were many borderline cases which were thought to belong to this general group. Such cases frequently had slight mental defect and were sluggish in mental reactions. They presented numerous neurasthenic complaints of years' standing. With this condition would occur minor attacks of loss of consciousness, with slight confusion and with occasional frank epileptic seizures. In these cases the mental defect and the constitutional neurotic condition were of more importance than the actual attacks. Many

cases came under observation who had had frank seizures at frequent intervals since childhood. These cases were readily recognized. Numerous types of epileptic equivalents were also encountered. Epilepsy was often associated with alcoholism. Where epileptic seizures occurred on an organic basis, the cases were classified as organic brain disease.

The question of so-called "hystero-epilepsy" arose at times, especially since this diagnosis occasionally appeared on the field card. No great difficulty was experienced in distinguishing the seizures of epilepsy from hysteria. A careful history and clinical observation were all that was necessary, as the hysterical seizures bore only a superficial resemblance to true epilepsy.

THE AMNESIAS.

These cases are discussed at this point because of the relationship of a number of them to epilepsy. A relatively large number of cases were encountered in which patients absented themselves from their organizations for periods varying from several days to several weeks. These patients maintained that they had no memory whatever of what had taken place. They either returned themselves or were picked up by the military police. Such instances occurred in both officers and men. A number of them were frank cases of epilepsy, the period of amnesia occurring either before or after a seizure or being an epileptic equivalent. Many other cases occurred after the excessive use of alcohol. After excluding both epileptic and alcoholic cases, however, many instances of amnesia of the type mentioned above remain to be explained. Such cases are not entirely clear. They were considered by many observers instances of hysterical amnesia, and this interpretation appears the most probable one, thus bringing such cases under the general group of psychoneuroses of the hysterical type. If this view is held, the amnesia could be most readily explained as a mechanism operating subconsciously, in which the individual escaped from a difficult or intolerable situation by wiping out from memory all circumstances associated with it. It is also probable that a number of such cases were conscious delinquencies, but the relative number of the latter type is thought to be comparatively small. All such cases raise court-martial

questions, as the matter of mental responsibility has to be determined.

CONSTITUTIONAL PSYCHOPATHIC STATE.

This group, which included 634 cases, consisted of patients who, while not suffering from frank mental disease, nevertheless were in a mental condition sufficiently abnormal to bring them into serious conflict with those about them. These cases did not differ materially from those seen in civil life, but presented such additional features as might be expected to develop under a military régime. Patients of this kind might make fair progress in civil life, where they could change their occupations and surroundings, but in the military service this was not possible, and they broke down nervously as a result. Indeed, they frequently suffered from temporary mental disorders. In this group were included some cases of alcoholism and drug addiction in whom such states were considered as symptoms in those constitutionally predisposed.

MENTAL DEFICIENCY.

Five hundred and twenty-four cases admitted were diagnosed as mental defectives. This number is not relatively large, and it is probable that many defectives were eliminated before arrival in the American Expeditionary Forces. The classification in respect to duty of these cases, particularly those with the lesser degrees of defect, was a question of considerable importance. It was considered that while defectives, as a rule, could not be used with combat troops, many of them could be serviceable in labor organizations. The disposition, therefore, was to reclassify such cases as were considered fit for duty in rear areas. The record of how these patients had conducted themselves in the military service was considered of greater importance than the testing of their mental age by scale. The emotional constitution of such patients was of considerable importance. A case with mild defect, if irritable and emotional, was often found unfit, while a case with a stable temperament, even with considerable defect, was considered fit for limited service.

In many instances physical defect was found accompanying the mental defect, this physical defect varying in character and

degree, at times being expressed merely by awkwardness in simple movements, at times making itself manifest in the gross, ungainly physical make-up of the mental defective. In still other cases appeared a constitutional physical defect of an ill-defined type. Such patients were stooped, had a narrow, ill-developed chest and often a prominent abdomen. These cases often complained of numerous neurasthenic symptoms. They were related to constitutional neurasthenic types frequently seen in civil life, with mental deficiency added. It was soon found that it was unwise to return these cases to duty of any kind. They went on sick report or in hospital very frequently, and they were more of a liability than an asset.

ORGANIC NERVOUS DISEASES.

This organization did not receive cases with lesions of the central or peripheral nervous system resulting from battle casualties, such cases being received by the surgical service of the center. The other organic nervous cases, amounting in all to 143, were cared for at this hospital. No attempt can be made at this time to describe them in detail. Peripheral neuritis, occurring after diphtheria, influenza or other toxic conditions, was frequently encountered. Evidence of syphilis of the central nervous system was found in more cases than might have been expected, considering the average age of the patients. Several cases were diagnosed as brain tumor. A number of patients presented mental symptoms or epileptiform seizures subsequent to brain injury. Comparatively few cases of paresis or tabes were observed, although other manifestations of syphilis of the central nervous system were not infrequent.

ENCEPHALITIS OF UNDETERMINED TYPE.¹

During January and February, 1919, a number of organic cases of unusual interest were admitted to this hospital. The clinical features of these cases were first recognized by Major A. H. Ruggles, chief of the service at this time. They presented symptoms of such unusual interest that it is thought they should be dis-

¹ Written before access was to be had to literature on this subject.

cussed here, regardless of the fact that the clinical observations could not be completed. This report is, therefore, made tentatively, with the idea that it may be of use in confirming reports of other observers made elsewhere. The following observations made by Major Ruggles are given as nearly as possible in conformity with his characterization of them. In all, there were about one dozen cases of this particular group.

The most striking feature of these cases was that they bore a rather close resemblance to paralysis agitans. They showed a stolid, masklike expression, a tremor suggestive of paralysis agitans, although differing somewhat from it, a shuffling gait and a rigid posture, which suggested rigidity of the muscles of the neck and trunk. These cases also appeared dull mentally, but this was more in appearance, due to lack of expression, than in reality. There was no actual paralysis of the facial muscles, merely a lack of mobility and of expression. One patient could smile but very slightly, and could not laugh. Another had noticed by looking in the mirror that his expression had changed. The head and neck in these cases were held in a stiff and rigid position, but little if any true rigidity was found. The arms were held in semiflexure, both when the patient was walking and sitting. Here, too, however, there was not actual rigidity. The tremor was of a rather coarse type. The hand, as a rule, was held partly closed, but a pill-rolling motion was not observed. As a rule, both sides were involved, but one more than the other. The gait was shuffling and awkward; in fact, all movements were slowly and awkwardly performed. The gait suggested paralysis agitans, but was not entirely characteristic of that disease.

Physical signs indicating disease of the central nervous system, except those described above, were not marked. One case showed a remarkable lateral and rotary nystagmus with exceptionally wide excursions. Otherwise the eye symptoms were negative. There was no actual paralysis of the facial muscles. One case showed considerable tremor of the lips, which made it appear that the patient was about to weep; however, there was no emotional instability. The deep reflexes showed nothing remarkable, except that in some instances the knee-jerks were very active. The superficial reflexes were normal. There was no actual motor weakness, but motor functions were performed awkwardly. No

abnormal sensory symptoms were apparent. The liver showed no evidence of disorder, and other physical findings were negative. Unfortunately, complete serological examinations were impossible. Spinal punctures were done in a few cases. No increase of cells or globulin was found, but punctures were done late in the disease and little definite could be inferred from these negative findings.

While these cases had a fairly close resemblance to one another, sufficient, it was thought, to place them in one group, they did not have that close resemblance throughout which is found in most cases of paralysis agitans. In some the tremor of the hands was the most marked symptom, in others the gait, and in others the lack of facial expression or the rigid posture. All, however, had some of the symptoms enumerated above to a certain extent.

Paralysis agitans is mentioned in connection with these cases for descriptive purposes only, not that they were thought to have any true relationship with that disease. The condition was thought to be encephalitis of unknown origin, the toxic agent showing a selective action, probably for the lenticular nucleus. No etiology could be established. Some cases had had a febrile reaction before admission and had been diagnosed as influenza. Others gave no history of any acute illness. Some of the cases had been confused and delirious at the outset of their illness, previous to their admission here. In favor of interpreting these cases as encephalitis of selective type is the fact that a number of other cases were admitted about this time in which the cranial nerve nuclei of the brain stem were involved. One such case showed first involvement of one seventh nerve. A few days later the other side involved. Both gradually improved and then a slight ptosis of both sides was observed. Later the sixth nerve on one side showed slight involvement, and there was also mental dullness during this period. All serological findings and physical findings were negative in this case. Other similar cases were observed during this time. Both French and British writers have recently described a condition which they term "lethargic encephalitis." This condition may have some relationship to the cases of encephalitis observed here. Cases seen here, however, were not particularly dull or lethargic, and although ptosis occurred, it was not as constant as observed by the French and British writers.

STATISTICAL TABLES.

TABLE I.—ADMISSIONS AND DISPOSITION OF PATIENTS FROM JANUARY 1, 1918, TO FEBRUARY 1, 1919, INCLUSIVE.

Admissions	6093
Evacuated to U. S. A.....	5191
Returned to duty.....	267
Otherwise disposed of, transferred, etc.....	30
Census, February 28, 1919.....	605
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Total disposition of patients.....	6093

TABLE II.—DIAGNOSIS OF CASES ADMITTED.

		Per cent.
Psychoses	1916	31
Psychoneuroses	1663	27
Epilepsy	752	15
Constitutional psychopathic states.....	634	10
Mental Deficiency	527	8
Organic nervous diseases.....	148	2
Otherwise diagnosed	200	3
Awaiting disposition, Feb. 28, 1919.....	263	4
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Total	6093	

TABLE III.—ADMISSIONS AND EVACUATIONS TO U. S. A. BY MONTHS.

Admitted.		Evacuated to U. S. A.	
January, 1918 .	} 369	January, 1918 .	}Not recorded
February, 1918		February, 1918	
March, 1918 ..		March, 1918 ..	
April, 1918		April, 1918 ...	
May, 1918}		May, 1918	
June, 1918	256	June, 1918 ...	
July, 1918	405	July, 1918	217
August, 1918	588	August, 1918	455
September, 1918	887	September, 1918	839
October, 1918	658	October, 1918	695
November, 1918	809	November, 1918	801
December, 1918	412	December, 1918	650
January, 1919	885	January, 1919	697
February, 1919	824	February, 1919	721
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6093		5075	