

Military Medicine and Surgery

THE WAR NEUROSES

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FRANCE

Few subjects have attracted more attention in medical circles since the beginning of the war than the war neuroses. Each belligerent nation has been confronted with the problem of caring for large numbers of soldiers afflicted with marked nervous manifestations resulting from the strain of war.

The careful consideration of this form of nervous and mental instability was found to be of military as well as of medical importance. The military authorities wished to know how this condition might be prevented, what percentage of men would be cured and how soon, and to what degree an individual was responsible for his actions while he was so afflicted.

The armed forces of the United States must now, by force of circumstances, consider the same problem, and while much has been written concerning this matter, I believe that a description of how the condition is actually cared for in the English army at the present time may be of value.

NOMENCLATURE

There being no definite knowledge of the neurologic pathology of this disease, and the psychologic processes being largely surmise, numerous terms have been suggested. Most of these are simply an effort to suggest a name that is descriptive of a syndrome, and many of these names depend to a large extent on an individual view regarding neuroses in general.

Eder makes use of the term "war strain," and then subdivides this into groups classified according to freudian principles.

Babinski has originated the word "pithiatism" to describe a hysteroid state in which the symptoms are the result of suggestion and may be relieved by suggestion. All other forms of the war neuroses he has designated as "reflex nervous disorders," and believes that they are on the border line between functional and organic disease.

The British medical offices consider the disease as purely functional in nature, and employ the terms "shell shock" and neurasthenia as a classification, the differentiation depending primarily on whether or not the individual has been exposed to extraordinary strain.

The statement has been made that the use of "shell shock" as a diagnosis has resulted in an increase in the prevalence of the disease, and chiefly because of this the name is not used until the patient has been carefully examined in a hospital especially devoted to the treatment of nervous disorders, and not then until information has been obtained from his unit verifying his own statement as to how his illness arose. It is conceivable that malingerers will attempt to imitate this condition when it is remembered that many men at the front suffer from mild forms of it, and that a man who wishes to shirk his duty may easily exaggerate these mild symptoms. Such cases are usually discovered either by the battalion medical officer, or at the casualty clearing station, and the men are from there returned to their units. Such, however, is not

always the case, and therefore, until a decision is reached that there can be no doubt as to the genuineness of a man's complaint, he is classified as "N. Y. D. N.," or "not yet diagnosed, neurotic."

PREDISPOSING CAUSES

It should be understood that to suffer from shell shock does not necessarily stigmatize an individual as neurotic, although it is undoubtedly true that many of these patients have suffered from various forms of mental instability in civil life and that others are burdened with a bad family history. A certain number of cases occur in men whose life history evidences an inadequacy in coping with the ordinary difficulties of life. Laudenhimer states that 90 per cent. of the patients were predisposed before joining the army; Forsythe says 100 per cent.; Mott, 66 per cent.; Eder, 30 per cent. However, some of the most courageous men apparently free from all neurotic tendencies, are afflicted with this malady. The disturbance occurs among commissioned officers, noncommissioned officers and privates, and if there was a question as to the frequency of occurrence in the various ranks I would be inclined to say that a relatively larger percentage of the noncommissioned officers were affected than of the others, and yet the noncommissioned officers are men chosen especially for their bravery and dependability.

To understand shell shock it is necessary to understand the conditions under which the men live at the front. They are constantly under a strain, both from a physical and mental standpoint. For several miles behind the line there is no place of absolute safety; sleep is often out of the question, not only because of the enemy's shells but also because of the noise of their own guns. The shrill shriek of the shell is a distinctly unpleasant sound, and the knowledge that bombing experiences, such as they have already passed through, may be repeated at any time does not tend to increase their mental composure. The men often continue to dodge shells after being admitted to a hospital, so vivid is the memory of them; nor is it so very unusual for a man, dazed by his experiences, to assert that bombs were dropped near him the night before, when as a matter of fact none have fallen in the vicinity for days. Fatigue is also a very important predisposing cause. It is not unusual for a man to state that he has had very little rest for several days previous to the development of his neuroses.

It should be remembered that one of the greatest factors in the development of a neurosis is intense and frequently repeated emotion; indeed, it is very doubtful if psychoneuroses occur as the result of fatigue unless associated with intense emotion. Fear is one of the strongest of the emotions; and while it may be repressed, nevertheless it exists and exerts its influence on the individual. Connected with this will be found sympathy for fallen comrades, disgust caused by death and dirt, anger, depression, concern about the relatives at home and in the army, remorse for past conduct, and fear that one will not be able to do one's part in the future as bravely as one might wish. And all the time the soldier must necessarily smother these thoughts in his own bosom.

It is true that the men at the front are all more or less subjected to the same physical and mental strain, but it is conceivable that a psychoneurosis can be produced by stress of external conditions acting on a

mind only a degree more sensitive than that of the average person.

REPORT OF CASES

The following case histories are related in order that the picture of the condition may be made as clear as possible:

CASE 1 (No. 242939).—An infantryman, aged 35, whose civil occupation was that of a window draper, whose total service in army was eight months, and who had been in France four months, had always been of a nervous disposition. He was married, and had two children, both of whom were well. He was very fond of athletic sports. His father was a drunkard. The patient had taken part in two raids on the enemy's trenches, and was once caught in a barrage fire, but was able to carry on his duties without feeling any ill effects.

While he was in a strong point in the front line trenches, with a machine gun squad, a shell fell within 6 feet of him; his companions were killed, he was buried, and he then lost consciousness for several hours.

He complained of being nervous and jumpy, had a severe occipital headache, was partially deaf, was dizzy, his teeth were very sensitive, he was constipated, he slept very poorly in the daytime, waking up with a start, and he could not sleep at all during the night. The pulse was 100, and the respiration, 18. The heart was three-fourths inch to the left of the midclavicular line. The hands were cyanosed, the strength less than the development, there were fine tremors of the fingers, the deep and superficial reflexes were lively, and the pupils were normal in size and reaction.

This is a typical mild case. The patient returned to his unit a few weeks after admission. The next was more severe:

CASE 2 (No. 74963).—An artilleryman, aged 29, whose civil occupation was that of a blacksmith, whose total service was eighteen months, and who had been in France seven months, had suffered from a mental breakdown seven years before, during which he was compelled to stop work for a few months. The family history was negative. He had been in many dangerous places since his arrival in France, and had been repeatedly shelled. He was stepped on by a runaway horse a year before admission.

He was in the trenches for three days, during which time his position was continually under shell fire. The second day a shell fell about 10 yards from him and he was almost smothered by the flying dirt. The next day another shell burst near him; he was knocked over, became unconscious and had to be carried to the dressing station.

He complained of pain in the left side of his chest, the legs ached and felt useless, he had frontal headache, he was dizzy, weak and tremulous, there was a mist before the eyes, and there was frequent urination and excessive perspiration. The pulse was 90, the blood pressure: systolic, 116; diastolic, 80. The heart and lungs were negative, the hands cyanosed, the patella reflex was diminished, the pupils were dilated, there were photophobia and slight exophthalmos, he was dazed, and strength was less than development.

It should be noticed that the explosion of the first shell apparently did not affect him. This is often the case. A soldier may be blown up several times without feeling any ill effects, and then finally become completely incapacitated by a shell bursting near him. I have seen one patient who was knocked over five times by bursting shells within the period of fifteen minutes. A man is not always overcome at the time of an explosion of a shell near him; he may carry on his duties for several days before he finds it necessary to report sick, or he may not report sick until his condition is noticed by one of his officers, who orders him to see the medical officer.

CASE 3 (No. 13582).—An infantryman, aged 32, whose civil occupation was that of a farmer, who had been in the army three years, and in France nineteen months, had never been seriously ill in his life, and did not know what it was to feel nervous. The family history was negative. He was married and had two children. He had been in five engagements with the enemy, over the top three times, and had been wounded twice. He had been decorated for bravery.

He was selected to go on a raiding party carrying hand grenades. During this expedition a shell exploded near him, and he was partially buried. He returned to the trenches and awoke the next morning feeling queer, and found that he was weak and dizzy. Twelve hours later he fainted, became unconscious, and was carried to the dressing station.

He felt very nervous, jumped at the least noise, was dizzy, urinated very frequently, had no appetite, could not sleep, was somewhat deaf, and could not see distinctly at times. The pulse was 90, the blood pressure: systolic, 120; diastolic, 80. The hands were cyanosed, the strength was less than development, the heart was slightly dilated but otherwise negative, there were fine tremors of the fingers, and the patient had a left-sided facial tic.

This was a very stubborn case; the patient remained in the hospital over seven weeks, improving very slowly.

It is by no means necessary that a man be actually knocked over by a shell before developing shell shock. The following history is fairly typical of many cases:

CASE 4 (No. 96430).—A member of a labor company, aged 29, in civil life a mechanic, who had been in the army three years and in France sixteen months, said: "I grow very weak now; shell fire upsets me; I cannot sleep, and I have no appetite." His nerve had always been good. The family history was negative. He was married, and had three children. He had been wounded twice. The second time he was placed in a labor company, as he was not considered fit to be sent to a combatant unit. He had been in three engagements, and had been over the top twice. In 1916 a shell fell near him but it did not bother him.

He was with a party bringing up rations. The road was being shelled; shells were bursting all around him, but he was not blown over by any of them. When he returned to the camp he felt very queer, he began to tremble, and then lost consciousness for a few hours.

He was now suffering with a headache, he was very dizzy and weak, both legs ached, he urinated very frequently, his eyes ached, he slept very badly, his hands and feet felt cold, and he perspired excessively. The pulse was 118, the heart dilated, there was a functional cardiac murmur, the lungs were negative, there was exophthalmos, the hands were cyanosed, and there were tremors of the fingers, tongue and eyelids. The reflexes were lively, the pupils dilated and reacted to light slowly, the strength was less than the development, there was a positive Romberg sign, he walked on a wide base, he would fall down on turning around quickly, and he was dazed.

Quite a few men admitted into the hospital have had shell shock previously; some are recurrences and in others the patients are suffering from a second shock. Approximately 25 per cent. of the patients that I have examined during the last few months have suffered from shell shock previously. The following is the history of a soldier who had three distinct shocks:

CASE 5 (No. 5557).—A tunneller, aged 26, in civil life a contractor, who had been in the army seventeen months, and in France nine months, reported: "I have been shell-shocked again." The first shell shock occurred in 1916, and the second in February, 1917. He said he had recovered fully from both. Previous to joining the army his nerve had been good. He was married. He took an active part in all forms of sport. His mother was insane.

He was in camp when the enemy flew over dropping bombs, and while he was running to shelter a bomb fell near him and he was knocked over. He felt very weak and was carried to the medical officer. He was now suffering from a very bad occipital headache, he did not sleep well at night, but got a little rest in the daytime. If he did go to sleep at night, he was apt to wake up walking around in his sleep. He had diarrhea and had been so affected each time that he had shell shock; he was dizzy and weak, urinated very frequently, perspired excessively, and at times his vision became poor. The pulse was 128, the heart dilated, the hands were cyanosed, the strength was less than development, the reflexes were normal, the pupils normal, the eyes prominent, the skin very rough, the hair coarse, he stammered, the fingers and forearms were very long, and there were fine tremors of the fingers, tongue and facial muscles.

It is sometimes the case that a man attempts to run away from what appears to be a dangerous position and goes into one that is more dangerous, as was the case in the preceding history. I know of one officer who had suffered from shell shock previously but had recovered and was on duty in a hospital, who ran out into the country one night to escape the aeroplanes that were immediately over his hospital. While passing through a village 5 kilometers away the planes dropped bombs near him. He developed a severe case of shell shock and was carried to the base, and here again the enemy bombed the town. He was then taken to the United Kingdom and arrived there a few hours before bombs were dropped.

A soldier often recovers from shell shock, returns to duty and renders valuable service to his country. The following is an example of such a case:

CASE 6 (No. 7490).—A sergeant and pilot in the Royal Flying Corps, aged 20, whose civil occupation had been that of office boy, and who had been in the army two years, and in France, seventeen months, had suffered from shell shock twelve months before. It was so severe that he was sent to England for two months. He had fully recovered when he returned to France. He was never nervous before he entered the army. The family history was negative. He was very fond of sports. He had been a pilot since February, 1917. During this time he had been officially given the credit for bringing to the ground nine enemy aeroplanes.

In July, 1917, he was over the line doing patrol duty when his squadron was attacked by the enemy, he was cut off from the others, three planes attacked him, his observer was killed, and he came down 12,000 feet with his machine not under control. A few hundred feet above the ground he managed to gain control of his machine and effected a landing behind the British line.

He was now very weak, was unable to walk, could not even stand alone, the muscles of his face, neck, arms and thighs were constantly twitching, he had a very severe headache, his eyes ached, he felt very dizzy, and he was constantly living through the fight in his memory. The pulse was 70, the blood pressure: systolic, 110; diastolic, 70. The heart was dilated, the deep reflexes exaggerated, the pupils dilated and reaction sluggish, the strength less than development, and he was apprehensive.

This has proved to be a very stubborn case. The man has been in the hospital over nine weeks and he is improving very slowly. As I review the case histories that I have taken, I feel quite sure that those patients who have suffered from shell shock previously do not recover as a rule as rapidly as those that have had no previous attack.

It has been said that shell shock does not occur among the wounded. This, I am sure, is a mistake, but I believe that a severe case is comparatively rare among the wounded, although I have often seen

wounded men in the hospitals suffering with mild forms of it.

There is yet another form of this condition which I myself have not seen, but which has been described by medical officers who are with battalions at the front. They say that death may be caused instantaneously by a shell bursting near a man, although most careful examination fails to show any cause for his death.

SYMPTOMS

I wish to emphasize the fact that shell shock is not a new disease to be added to the long list already puzzling the psychiatrists and neurologists. There is not a single new symptom to distinguish this malady, and it is certainly true that a similar complex of symptoms is frequently found in civil life. The disorder is peculiar in the acuteness of the symptoms and in the nature of the conditions giving rise to them. The war has enabled us to see examples of almost all varieties of hysterical manifestations, such as a special hospital in times of peace would only be able to exhibit in the course of years.

I have analyzed a hundred case histories in an attempt to discover the relative frequency of the symptoms, with the results given in the accompanying table.

RELATIVE FREQUENCY OF SYMPTOMS

Symptom	Percentage	Symptom	Percentage
Headache	85	Tinnitus	14
Tremors	70	Apprehension	14
Insomnia	62	Memory defect	14
Vertigo	55	Pupils dilated	12
Debility	44	Depression	12
Period of unconsciousness	41	Mutism	11
Cyanosis	35	Precordial pain	11
Hyperhidrosis	32	Stammering	10
Backache	30	Dyspnea	9
Heart dilated	29	Deafness	9
Reflexes exaggerated	28	Diarrhea	8
Tachycardia	26	Constipation	10
Appetite poor	24	Photophobia	6
Frequent urination	23	Tic	4
Eyes prominent	20	Spasticity	3
Nausea	16	Confusion	4

Besides the more common symptoms, there may be found areas of anesthesia or hyperesthesia, hysterical contractures, amblyopia, astasia abasia, hallucinations of sight or hearing, twilight states, hysterical convulsions, autopsychic amnesia, palpitation, and a tendency toward day dreaming.

These patients very often exhibit a marked impulse to flight; while they are being examined they may attempt to run away. If guns are fired in the vicinity of the hospital, or if the enemy's aeroplanes are in the neighborhood, many of them will become greatly excited. Following this excitement their symptoms are worse. After and during a bombardment, the sounds of which are heard in the distance, and although they realize that they are safe, nearly all of them complain that their headaches are much worse. They are easily startled and will jump at the least unexpected sound.

These individuals are very emotional; they might be described as being childish. They wish to be sympathized with, and very often if they are given the least opportunity, they will become lacrimose. They themselves are often at a loss to understand their condition and fear that they are going insane, and it is in such cases that the intelligent explanation of the medical officer is of great assistance.

Headache is probably the most constant symptom. It may be located over the frontal, temporal or occipital regions, but the last is the most constant and the

most troublesome. A man often complains that his head is worse when he is in a recumbent position, and it is also usually worse at night than during the day.

Insomnia is quite common. The patient may be able to sleep during the day but is unable to do so at night, although he will usually fall asleep near dawn. A sleepless night tends to make the other symptoms worse.

The cyanosis of the hands is quite noticeable. Frequently in a severe case a man's hands and forearms will be a dark purplish blue, the color resembling that seen in Raynaud's disease. This cyanosis may develop several days after the patient's admission to the hospital, and is worse in the morning than later in the day.

About one fourth of the patients suffer with tachycardia. When they are admitted to the hospital their pulse rate may or may not be rapid; but under favorable conditions, such as exercise or excitement, it will become so. Some patients are admitted who have a very slow pulse; as they improve, their pulse may become normal, or frequently after they have rested a few hours a tachycardia will develop in place of the bradycardia.

BLOOD PRESSURE

With a view of ascertaining the blood pressure, 200 patients were examined; in all, over 800 observations were recorded on these patients. Some of these patients were only passing through the hospital, so that it was possible to take the blood pressure once, while others remained six weeks and the pressure of some of these was taken on ten different occasions. Usually the observations were made under as nearly the same conditions as possible, three or four days elapsing between examinations. A record was kept of the pulse rate at the time of each examination. In deciding if the pressure was raised, the age and physical condition of the patient were considered. A pulse of a hundred or more was usually considered rapid, and a systolic pressure of 140 or greater was considered raised, although in each case an effort was made to ascertain if the physical status of the individual justified his blood pressure.

The patients were classified according to the severity of their symptoms on admission as, A, exceptionally severe; B, severe; C, moderately severe, and D, mild.

Out of sixteen exceptionally severe cases, in twelve there was a high blood pressure and a rapid pulse, in three a normal pressure and pulse, and in one a blood pressure of 110 systolic and 68 diastolic, and a pulse rate of 52. The average pressure and pulse rate for the group was: systolic, 158; diastolic, 99, pulse pressure, 59, and pulse rate, 127.

In a group of twenty-nine severe cases, in twenty-two there was a blood pressure above normal, and in nineteen of these a rapid pulse. The average for the group was: systolic, 144; diastolic, 85; pulse pressure, 59, and pulse rate, 90.

There were sixty-six cases classified as moderately severe; in forty-eight of these the blood pressure was raised, and in twenty-eight there was a rapid pulse. The average for this group was: systolic, 135; diastolic, 88; pulse pressure, 47, and pulse rate, 90.

There were ninety-nine mild cases; in twenty-nine of these the blood pressure was raised, and in fourteen there was a rapid pulse. The average for the group was: systolic, 125; diastolic, 81; pulse pressure, 49, and pulse rate, 85.

It was difficult to draw any reliable conclusions from these observations, other than to say that the

blood pressure and pulse rate in the severe cases were usually higher than in the mild cases; that there was a noticeable vasomotor instability in most of the cases; that as the condition of the patient improved, the blood pressure and pulse rate usually fell, and that the blood pressure was more persistently high than was the pulse rapid. It was noticed that the milder the case the quicker the blood pressure fell, and that convalescence took longest in those cases in which the blood pressure was persistently high. However, there were severe cases in which blood pressures and pulse rates were never above normal.

The effect of fright on the symptoms was very noticeable. The following is an example:

CASE 7 (No. 68974).—A patient, aged 26, on admission, Aug. 12, 1917, could not walk or speak. The blood pressure was: systolic, 160; diastolic, 100; the pulse rate, 140. August 13, his condition was improved; the blood pressure was: systolic, 156; diastolic, 100; the pulse, 140. August 14, he had recovered the use of his voice and of his legs; the blood pressure was: systolic, 150; diastolic, 100; the pulse rate, 120.

August 21, six hours after an air raid, he was too weak to walk, and he stammered when he talked; the systolic pressure was 180, diastolic, 100, and pulse rate, 170. The blood pressure and pulse remained persistently high after this, and he was finally transferred to the base.

SYPHILIS

At one time it seemed desirable to know if syphilis played any part in producing the war neuroses. Therefore a Wassermann test was made in fifty consecutive cases of shell shock seen at the hospital. Seven cases out of fifty, or 14 per cent., gave a positive reaction. The spinal fluid was positive in three of these cases, although there were no symptoms suggestive of cerebrospinal syphilis.

This percentage of positive serums and spinal fluids is probably higher than is usually found among civilians, but the findings would not justify the conclusion that syphilis plays a part in causing shell shock.

TREATMENT

The treatment outlined here is simply a description of the methods of handling these patients in the two hospitals in which I was stationed. However, I believe that they are the methods in general use.

The patients are admitted, bathed and sent to the receiving ward. They are then examined and assigned to other wards; this has been always done within eighteen hours after admission to the hospital. At the time of the examination the following form is filled out:

Date. Name. Age. Civil occupation. Occupation in Army. Service in Army. Service in France. Adaptability to service. Family history (briefly).

Personal History: Education. Illnesses. Married or single. Active participation in sports. (Attempt to form some idea of the individual's personality.)

Previous Strain: Decoration for bravery, participation in raids, wounds, effect of shell fire, comrades recently killed, trouble at home.

Shell Shock: A complete story of what happened to him, where he was, what he was doing, and when it was. This is very important, for these facts are sent to his commanding officer for verification.

Symptoms: Headache, backache, weakness. Dizziness, dyspnea; nervous tremors, spasmodic movements, etc.

Physical Examination: This must be carefully made, for it is often necessary for the medical officer to state definitely whether or not the man is malingering.

Summary as to the severity of the case.

Treatment.

The patients are assigned to wards according to the severity of their condition. Cases of the same kind are grouped together, with the exception of the stammerers.

Military discipline is never relaxed for an instant in a shell shock hospital. The patients are not allowed to leave the grounds without a pass. These men are seen each day by a medical officer who makes a note on their record of their condition, prescribes the necessary treatment, and disposes of them as their condition justifies it.

Drugs are of very little use in treating this condition. Barbitol (veronal) is sometimes given for insomnia. Acetylsalicylic acid and also phenacetin are given for the headache. Bromids may quiet the patient for a while, but from my experience I do not believe that they are of much value. Digitalis appears to have very little effect on the pulse rate.

In the acute cases, several hours in a hot bath seems to be more beneficial than almost anything else. A man who says he has not slept for several nights will relax and go to sleep while in the bath, and probably sleep soundly for eighteen hours afterward, usually awakening much improved. The hot bath is especially good in the cases of mild hallucination and for those markedly apprehensive patients who lie curled up in a ball under the cover, as well as those whose thigh, leg and back muscles are spastic.

The patients should be reassured, the nature of their condition should be explained to them, and the medical officer should do everything possible to secure and keep their confidence, for many of these men remind one of children who must be taught to walk, to talk, and to adjust themselves to their environment.

Practically the same methods are employed as in civil practice in teaching the stammerers to talk. They are taught to breathe properly, to pronounce consonants and vowels, and finally to repeat simple sentences.

I have not seen a shell shock mute who failed to recover his speech; but the longer he has been mute, the more difficult it is to get him to talk. It is important that, once one attempts to make a man talk, one should not desist from the effort until one succeeds; otherwise the patient will become confirmed in his opinion that he cannot talk. The quickest and most effective method, though it may appear brutal, is to stimulate the patient with a faradic current, rapidly increasing its intensity, having explained to the patient beforehand that there is nothing the matter with his voice, that he can talk, and that the strength of the current is going to be increased until he does talk. As the current becomes stronger the man will begin to squirm and will either immediately recover his voice or will make some sound, a long "Oh!" being the most frequent. In the latter case he is told that if he can make any sound at all he can talk; and the stimulation is continued until he does talk. This method is very effective and will work when all others fail, but it is open to the criticism of being brutal.

Another very successful method is to instruct the man to cough; if he cannot cough, his pharynx is tickled and he is made to cough. Then he is instructed to cough out an "ah," then "a," then "oh." He can usually then be made to pronounce these sounds without coughing. Then with a little encouragement he will repeat the alphabet, then simple words like "mama" and "papa," and so on until he can talk; but this is often a very long and difficult process to carry out. Hypnotism has been advocated, and so has the

anesthetizing of the patient to the stage of excitement. Both are fairly successful.

I have seen hypnotism used in treating the symptoms of these patients with more or less success, but I do not believe that the claims of the advocates of hypnotism are justified.

A patient who says that he cannot walk is made to get out of bed and take the hands of the physician, who teaches him to walk in much the same way that a baby is taught.

Those patients who are not recovering from their hysterical symptoms are frequently stimulated with the faradic current, for it is undoubtedly true that many of these patients cannot see the need of hurrying their recovery, when they realize that as soon as they are well they will be returned to the front.

As soon as the patient is strong enough he is made to take physical drill, and as his condition improves, the exercises are made more difficult. They are also sent on long route marches daily. Besides this exercise they are encouraged to play cricket, golf, tennis, football, to swim and to take part in the track sports. Other amusements are furnished in the form of concerts, cinema shows and reading rooms.

As the patient's condition begins to improve, a long, confidential talk with the medical officer will often do much to hasten recovery.

DISPOSITION OF PATIENTS

If it is decided that a man will need careful treatment for several months, he is usually sent to England; otherwise he remains in France.

As the patient's condition improves and he becomes strong enough to leave the hospital, he is sent to a special convalescent camp, where he remains for several weeks before returning to his unit.

In some of the mild cases the men are practically well in a few days, and are returned to their units forthwith.

A man who has had several recurrences is usually unfit for the line, and he is often given work to do at the base.

It has been found beneficial to send patients out on farms to work rather than to convalescent camps. A man is in better condition to return to his unit after a month on a farm than after the same length of time spent in a convalescent depot.

Review of Public Health Work.—The year book of the Indiana State Health Department for 1917 contains a review by the secretary, Dr. J. N. Hurty, of public health work since the passage of the first health law in 1881. Efforts to establish a state board of health and laws under which it should operate were begun in 1855 in the Indiana State Medical Association, and it is to the organization that Dr. Hurty gives credit for all subsequent legislation. The efforts in 1855 failed, and not until 1875 was a committee appointed on state board of health. This committee drafted a bill which was introduced but failed in the legislature of 1875, and it was only in 1881 that the first law was passed and the board created. The latter made its first report in 1882. The law was amended in 1891 and again in 1909, and the state now has a board and a set of health laws and a health organization that is in the front rank among all the states. Among the important pieces of health legislation now on the statute books are a quarantine law, passed in 1903; a pure food and drug law, 1907, amended in 1911; a law for the prevention of infant blindness, 1911; laws enacted in 1913 relating to vital statistics, sanitary schoolhouses, public water supply, clean milk cans, public playgrounds, establishment of sanitary districts, housing plans, false advertisement law, schoolhouse recreation centers, and child neglect, and amended in 1915; also, among many others, an antituberculosis law passed in 1915.