

## GERMAN PSYCHOLOGICAL WARFARE AN AMERICAN SURVEY

[The following article reviews a Survey by the American Committee for National Morale.]

This Survey of German publications on the psychological aspects of warfare is of sufficient importance to make it desirable that its contents should be known not only to psychiatrists and psychologists in this country but, perhaps even more, to those who direct our war efforts. It makes clear the breadth and intensity of what might be called psychological organization of the German Army and people for war. It is evidence, too, of prolonged preparation dating from almost immediately after the last war—preparation for the war that was to come and is now in full swing, a war which many Germans regard as analogous to the Second Punic War, with Germany of course representing Rome and ourselves Carthage—two phases, in fact, of what is but one continuous struggle for power.

The detailed work is done, as one would expect from Germany, against a historical and philosophical background. The historical interpretations appear highly prejudiced to us, and would seem so to any dispassionate observer, if such a person exists any more anywhere in the world. The philosophy likewise is of an *ad hoc* brand; but these historical and philosophical studies together supply something that seems to be necessary to satisfy the German mind, serving its need for systematization, and adding thereby additional energy to the actions which its concepts at the same time are helping to justify.

### Beginnings of a Plan for Revenge

The *primum mobile* of the whole movement since 1918 was the disappointment and humiliation at the result of the "First German War," to use a very apt term favoured by Mr. Harold Nicholson. There were "frantic efforts," as this Survey shows, to find reasons for that defeat that would save the precious prestige of the German Army. One of the most picturesque of these rationalizations was that defeat came about only through a nervous breakdown of Ludendorff's. There is no doubt that Ludendorff underwent a mental deterioration after the war. He had made public views about Catholics and Freemasons which could only be regarded as the product of a paranoid or morbid persecutory trend in him. But it would be a weak system, anyway, that had to depend so vitally on one man, and other explanations were more popular as sops to the injured German pride, such as stupid politicians, defeat on the home front, inadequate moral indoctrination of the population as a whole, as well as of the troops, making them, soldiers as well as civilians, over-susceptible to foreign propaganda. Upon this period of self-examination there followed very soon the beginnings of a plan for revenge. The German people, it was decided, "must undergo a long process of physical and mental redirection" for the second world war. The increase of the speed of battle by mechanization, the invention of new devices such as parachute troops, the perfection of co-ordination between different arms of the Services, were the leading tactical reforms advocated after much hard thinking. The recognition of the need for "unfailing nerves" in military leaders, and of the need to plan to this end, led to the organization of special training centres for picked young men; while the strategy of economic warfare was held to imply a special economic staff to mobilize industry and agriculture for mass production, to regulate the labour market, to manufacture substitutes, and to store materials of all kinds. Psychology was enlisted as an instrument of politics and diplomacy, and as "an instrument of military strategy."

The last, being the only means that was left to a defeated nation in the early years, was used first, and has been used increasingly ever since. It has played an enormous part, and in view of the German successes this surely has lessons for us. The fact that no scruples hindered its use does not mean that we cannot learn from the employment of it. In particular, at the present time we should note the immense value to their war effort of holding up to the German people the prospect of positive goals to work for and not merely of defensive views limited to self-preservation. Morale, built by whatever means, is considered by the German leaders to be at least as important as weapons. This is all the more impressive when we consider

how important they have proved weapons to be. The second phase, of active economic rearmament, began to be added to morale-building in 1926 with the establishment of an economic general staff disguised as a "Statistical Society." Military rearmament naturally, as the Committee points out, came last, but the psychological aspect continued to be developed throughout and to be especially evident in the use of an offensive of its own, which has come to be known as the "war of nerves" and is arranged to take place between each "blitz" campaign.

To justify all these measures and to rationalize the naked desire for revenge and world domination which has been the ruling passion of at any rate the German leaders, if not of all their enslaved compatriots, a variety of pseudo-scientific philosophies, better called myths, were rapidly evolved. War was spoken of as an instinct; and biological sciences were raped to produce a moral justification for war: "Only the warlike nation deserves to survive," was their reading of Darwinism. This was embellished with German romanticism in the shape of the warrior as hero. Philosophically it was called realism. The political philosophy adopted conformed to the Machiavellian doctrine of might as right, a thing which any young Nazi encountered before the war could be found confidently to believe. Biology was dragged in again in the form of the mythical superiority of the Aryan race, and especially of the German branch. Economics were distorted into the "living space" philosophy (*lebensraum*) of Haushofer, a retired Bavarian general, head of the Military Academy at Munich; while the woolly-headed Rosenberg's "blood and honour" philosophy served as the representative of ethics. Politics were based essentially on power tactics. It was remembered in Germany but forgotten here that Clausewitz in 1916 wrote of war as the "continuation of policy by other means."

The uses of psychology were relatively neglected by Germany in the war of 1914-18. The High Command in that war called in the psychologists but usually disregarded their recommendations, although an aptitude test for aviators was introduced in 1916.

The Nazis, on the other hand, have regarded psychology as their most effective weapon. How far their success relative to the last war is to be attributed to this change is a matter of opinion, but in the case of France the Nazis' understanding of psychology appears to have been decisive. As a result of their employment of psychological methods against France, not only during the war but long before it, they were victorious, psychological devices being indeed the only ones used except in the final few weeks.

### Psychological Methods in the German Army

As early as 1929 psychological methods were introduced into the German Army in a limited sense. A psychological laboratory was established by the High Command in that year. Psychologists were employed in increasing numbers in various ways:

(1) With the armed Forces in the selection of personnel for all branches, and especially for the selection of officers and specialist personnel, such as the Air Force and the Tank Corps. They were also used in connexion with propaganda among the troops—"indoctrination," as the Americans call it, meaning instruction in what war is about and what the Army is for; that is to say, political instruction of a limited kind. (2) On the civilian front they advised political leaders on methods of education for the heroic life, and on the management of public opinion. (3) In the foreign field they were expected to analyse the strong and weak points in foreign nations and to analyse foreign news, so as to help in shaping the Fuehrer's policy, as well as in the framing of psychological offensives.

More limited problems were also studied, such as homesickness among the troops. Other psychologists were engaged to produce, for example, the pseudo-"science" of the new German race—e.g., Jaensch, whose work even in the non-political field has always seemed to me to be curiously far-fetched and impractical. It is, however, an odd thing how practical these psychologists have managed to be, in their collaboration with the political heads of the Nazi regime. Where they are themselves scientifically false the very falseness of their views is turned sometimes to clever account by the German propaganda machine.

The American Committee notes that even before the war there were already a hundred and fifty psychological testing stations throughout Germany as well as twenty-two psychological

laboratories in various universities and technical institutes. The qualifications required of psychologists are worth noting. They must have a Ph.D. with psychology as a principal subject; an all-embracing knowledge of the German military and cultural heritage; a personality that was expected to be gregarious, sensitive, self-controlled, warmly sympathetic towards youth and justice; and a complete devotion to psychological science. Their training consisted of three months in a psychological laboratory of the High Command, two years in the Army's psychological testing stations, six months of military training, and three additional months in the psychological laboratory of the High Command. Their examination comprised a thesis in psychological typology, an oral examination in characterology, and diagnosis, especially by the study of expression.

In spite of the exacting nature of the qualifications required of psychologists it is interesting to note that the military branch do not fully accept the need for psychologists in the Services; thus Van Seeckt denied the need for a special psychological service, holding that the "war lord" must himself be a good judge of men, and that Napoleon "was the greatest psychologist of all time."

Those who believed that psychologists had a definite place pointed out that the young officer generation must be taught to regard the soldier as having a mind of his own. It is worth noting that this tendency was much aided by the more democratic composition of the modern German Army as compared with its predecessors. The officers are very often drawn from the same social class as the other ranks (cf. Laird and Graebner's *Churchill's Britain and Hitler's Reich*). Notwithstanding opinions like those of Van Seeckt, a comprehensive organization already existed before the war. There was, for example, a central psychological laboratory for the High Command, with no fewer than twenty departments. The whole justification for the employment of psychologists in the selection of personnel is found in the statement that "masses of technical weapons are not themselves sufficient" to win a war. The Committee quotes from Hansen: "Our only hope for victory is based not on material but on mental superiority, achieved in the planned preparation of all human forces to multiply the fighting spirit of each soldier. . . . Mental superiority is contingent on the characterological make-up and the practical efficiency of leadership in high and low places. The selection of specialists has to go beyond mere examination of intellect and skill, and concentrate on the whole personality."

#### Requirements for Leadership

That the belief in leadership has been exalted in Germany to a foremost place in the political and Service organization is common knowledge, since Hitler is the supreme incarnation of this idea in the German mind. The Germans are very apt for this sort of organization, or, as we should call it, domination. Thus as early as 1920 Feder wrote: "The form of State best suited to the German character is civilian power centralized in the hands of one supreme leader." This notion was expanded to the international field with an appearance of the philosophical completeness so dear to Germans, so that Germany became destined in their minds to be a leader among nations.

The psychologist's task is the selection of leaders within the theoretically, but not really, classless society of the Nazi State. The political ideal of National Socialism is not at all realized in modern Germany, which in fact appears to neutral observers to be a kind of industrial feudalism, where the foremost leaders are certainly not chosen by psychologists but by themselves and by big business, which is said to be better off in Germany than in any other country in the world at the present time. The ordinary man lives in a kind of industrial serfdom (cf. Laird and Graebner, loc. cit.). Evidently the psychologist's task is limited in fact to the selection not of the highest leadership but of the minor leaders and the technicians. The specific qualities of a leader are laid down as positive will, determination, executive thinking, mental elasticity, strong character, integrity, selflessness, idealism, and well-controlled self-esteem. Particular attention should be called to the demand for mental elasticity. It may well be that this largely accounted for the Germans' tactical superiority over the French Army, the latter being devoted to principles of mathematical precision in its artillery manoeuvres with, as it proved, a fatal loss of elasticity.

The emphasis on idealism has also to be remembered. It seems paradoxical to us, but it has always been one of the marks of the effects of Nazism on German youth, that while on the one hand it stimulated all the more brutal side of their nature, it has stimulated at the same time their idealism to a fanatical degree, partly because they were offered something positive to aim at and not merely the defence of existing rights, and partly because they were asked to sacrifice something all the time and were not asked to accept bribes to work harder. There again the Nazis showed their psychological insight on how to get the maximum effort out of human beings. The apparent contradiction in the qualities included in the Nazi product is shown in their cultivation, side by side, of automatic obedience on the one hand and individual initiative on the other. They themselves recognize the difficulty of reconciling these two qualities in one and the same individual, but they seem to have succeeded to a large extent—for example, in the quality of their tank crews. The psychologists and others who promulgated these requirements for leadership must be admitted, unfortunately for us, to have been reasonably shrewd. Any tendency to academic preciousness seems to have been balanced by a remarkable practical intelligence: thus it is recognized that self-estimation—in other words, conceit—is a handicap to leadership, and that fatigue in a leader must be counteracted in every way possible. It is probable that the arrogance so often noted in prisoners is confined to their attitude to what they have been taught to regard as inferior races and does not extend to their own comrades.

The recommendations about periodic rest for leaders show also the marks of common sense. The fact that mountain climbing, etc., may be recommended for what is predominantly mental fatigue shows that the German psychologists appreciate the value of diversion, even by dangerous stimuli. All this is part of their scheme for ensuring the superiority of leadership, which in their minds is absolutely indispensable. Intelligence, it should be noted, is regarded as the supreme ingredient of the successful leader. In the Air Force the D.Sc. in engineering, the hardest degree to get in Germany, is an indispensable qualification for the Higher Command.

Point is given to the introduction of new methods by the examination of the history of former wars. For example, in the rapidly successful campaign of 1870-1 only two out of the eight commanders with whom Germany began the war survived in office throughout the actual campaign.

#### Selecting Officers and N.C.O.s

In the selection of officers and N.C.O.s psychological tests are given only to those whose suitability had already suggested itself in field service. It should be noted that in a sense selection had already begun in childhood, for from the age of 6 a record is kept of the individual's performance and of his temperament and character during his life in the Hitler Youth and afterwards in the Storm Troops. A comprehensive characterological examination is regarded as an essential basis for selection. Special emphasis is placed on will-power, mental energy, staying-power, readiness to act to the limit of physical capacity, coupled with clear thinking and planned behaviour. Formal knowledge is regarded as secondary to spiritual and emotional qualities. Various techniques used include a comprehensive life history, analysis of facial and other expression under artificial stress such as pain and effort, and analysis of voice, appearance, and handwriting, and of gesture, movement, etc. The total time taken for the psychological examination and special psychological tests is two and half days in the Air Force and two days in the Army. It would hardly be possible after so long a time to avoid knowing a good deal about the candidate. The claim of 98% success in the selection for the Air Force would certainly be worth considering if something so intensive could be improvised in a war, which it cannot.

Naturally much attention has been given to the production of the desired qualities by education. Total education affords "a mental, spiritual, and physical conditioning of all ages, sexes, and classes" to act according to the principles of the Nazi State. In the schools, subjects are taught in accordance with the requirements of a military upbringing—e.g., arithmetic is taught in terms of military science. The Nazi teaching places its main stress on the inculcation of those characteristics which

will best serve the group. This is an ideal which in itself anyone might be glad to pursue. The training in general has its emphasis on heroic aims in life, and has some capacity to turn the naturally timid youth, whose existence the Nazis recognize, into a useful fighting-man. The very practical common sense of their training is shown once more in that the will to live is inculcated rather than readiness to die. Dying for its own sake as a kind of masochistic performance is discouraged. No mistaken pride is allowed to commit the German soldier to acts of bravery as ends in themselves.

The technique of conveying the necessary attitude to the troops includes education in political events designed to give a sense of participation in them; education in the history of Germany; what are described as "social evenings of comradeship," and other social meetings which imply music and community singing; the study of events in German national history; lectures by officers with battle experience; and planned recreation in the form of visits to picture galleries and the like. It should, however, be noted that, given the same kind of schooling in childhood and youth, individuals who thereafter were trained along Army lines rather than Nazi lines did better in battle.

The training of officers is concentrated in bringing out leadership qualities by developing a sense of determination and responsibility. The officer learns to be "a father to his company." While a large proportion of the officers are drawn from the middle and lower middle classes, the Army is not completely democratized, the higher ranks belonging to the traditional military caste. Nazi officials find it nearly impossible to get senior jobs in the Services. Each potential officer, however, of whatever origin, spends six months to a year in the military service, followed by a year in the Army, followed by a year in the ranks with a kind of father adviser in the person of a senior officer, and then two and a half years as an N.C.O. Attention is paid to teaching these officer candidates how to handle their men as human beings.

Quality, not quantity, is wanted; morons and the like are removed from the Army at once. The morale of conscripts presents special problems, and special efforts are made to cultivate it. Problems regarding promotion are carefully studied.

### Psychology of Battle

Offensive war is regarded as the fulfilment of a soldier's life; defensive war is in the Nazi view a civilian idea. War is regarded as a struggle of efficiency and morale, and it is envisaged as requiring energy, skill, altruism, steadfastness, obedience, and the team spirit. The organizations used to cultivate these qualities are the German Society of Military Politics and Military Sciences, the Propaganda Ministry, and other organizations of the Nazis, including the Secret Police. Both mass and individual psychology are studied and used according to the indications. A keynote of morale in the German armed Forces is the privilege inherent in being chosen to be a soldier and to join the sacred fellowship of military men. Thus no guard-houses are maintained by the German Army. The very idea of one soldier guarding another is repugnant to the whole German military ideal. Instead, the offender is summarily dismissed from the Army. At the same time it is recognized that ideas alone are not enough; quality and quantity of equipment and the knowledge of adequate supplies are regarded as fundamental to the maintenance of sound morale. The soldiers themselves are invited to collaborate in suggesting modifications in design of equipment, thereby fostering the intelligent use of the mechanized arms.

The principal factors in impairing morale are fear, isolation, insecurity, deficiencies in changes in command, fatigue, defeat, losses, and idle waiting for enemy attack. It is recognized that soldiers suffering from neurotic anxiety are not necessarily cowards. Bombardment from the air is looked at more from the point of view of disintegration of enemy morale than from that of material destruction. To combat the same results in their own troops various measures are suggested, officers being even instructed to play up to religious feelings, which are found to be exaggerated during exposure to danger. The monotony of waiting is recognized as a special danger, and concerts, variety performances, organized radio listening, and so on, are all encouraged behind the lines.

### Total War

The Committee points out that the word "blitzkrieg" was not coined by the Germans, but is a journalistic rendering of the term "offensive battle." The latter is but one phase of a longer war, which is not regarded as a whole as a "blitzkrieg" at all, but as something with phases of extreme activity interspersed with phases of relative quiescence and psychological offensives. In the actual technique of offensive it is the accepted rule that there shall be no formal declaration of war. The attack begins unheralded, with a superior force and at tremendous speed. The Air Force is concentrated on perhaps one single vital point, while parachutists and air-borne infantry are landed to destroy power stations, communication centres, bridges, etc. Surprise is regarded as essential, and there has to be an overwhelmingly superior attacking force with enormous reserves in the background, and this "blitz" phase has to show results within about fifteen days. All this is of interest, and presumably represents what would be used in an invasion of these islands as it has been used both by Germans and by Japanese elsewhere. But it should be remembered that military action is the last resort in the Nazi technique. Prophetically the writer Von Hentig, in 1920, predicted the "leader of the future as a military psychologist, a sort of aggressive pacifist, withholding the use of armed force until all other means of warfare have failed to realize his aims." The German leaders have proved that economic, political, and psychological attacks can be sufficient by themselves to win a war, or at any rate important phases of it, without resort to military action.

The preparation of civilians is regarded as almost as important as the preparation of fighting troops for total warfare. It is recognized that education has made great strides, and that the individual citizen is apt to be critical, so that an appeal to merely traditional forces is not enough. They believe that civilian morale can be made unassailable by the processes of education that have been alluded to. Himmler, however, considers that intimidation is one of the best methods. One of the bad features of the Nazi regime is the employment of 432,000 "morale-enforcing" agents—i.e., thirty-six S.S. divisions, each of 12,000 men, scattered throughout the country. This has its critics even in Germany. One writer remarks that it has become impossible to enforce people's will to sacrifice indefinitely. It is important perhaps to note that the removal or even the execution of high officials does not necessarily make a bad impression on the population. It is held that where high officials are impugned or even executed it has the effect of conveying the notion of impartiality.

Abroad, psychological methods are used to study the comparative national psychology with a view to predicting what the responses of whole nations are likely to be. Prominent individuals in other countries are studied and a dossier made of each of them so that their strength and weakness may be known and played upon accordingly. It is interesting to note that Churchill and Eden were regarded as extremely dangerous to German aspirations before the war. It is also worth while comparing the coldly scientific nature of these inquiries with the apparently unscientific appearance of the propaganda based on them; but, in fact, this very propaganda is itself scientifically compiled and its effect on the masses at home and abroad carefully calculated.

The essential principles of propaganda in the German view are that the emotions rather than the intellect must be appealed to; it must be simple, it must be repetitive, and it must have a reckless pugnacity.

### Conclusion

The chief points that stand out as a result of this American Survey are the long preparations that have been made, their comprehensiveness, their basis in the desire for revenge, their essential continuity with the spirit behind them—a continuity of the spirit that prompted the "First German War"—their combination of academic science with the ablest common sense, and, most dangerous of all, the enlistment of ideal moral qualities in the services of purely nationalistic aims of aggrandisement. But that there are weaknesses somewhere in the organization and shortcomings in the results is indicated very clearly by the need for a special corps of intimidators, nearly half a million strong. This in itself seems to be a confession

that in spite of all the techniques employed it is impossible to suppress individual thought and to command completely the individual's participation in the aims of the leaders who conceived all this.

The American Committee for National Morale, of which Mr. Arthur Upham Pope is chairman and which has comprehensive subcommittees representing not only psychology and psychiatry but general medicine, education, journalism, social sciences, foreign affairs, economics, industrial relations, radio and civic agencies, has earned our gratitude in making this Survey. The scope of it can be judged by the extent of the bibliography, which comprises 561 titles, almost without exception from German literature.

R. D. GILLESPIE.

## Reports of Societies

### CROSS-INFECTION IN WARDS

At a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on February 27 the subject of discussion was "Cross-infection in Wards." Dr. E. H. R. HARRIES presided.

#### The Pathologist's Point of View

Dr. R. CRUICKSHANK said there was no doubt that to-day the streptococcus was the arch-enemy so far as cross-infection was concerned, but staphylococcal infections were becoming rather common in evacuated infant nurseries, gastro-enteritis was a common secondary infection among young children, and diphtheritic cross-infection, often symptomless, could be administratively a nuisance in diphtheria, scarlet fever, and measles wards. Dealing with respiratory infections, in which the air was the principal vehicle, he said that when a person with an acute infection sneezed he ejected a large number of droplets, most of which described a short trajectory to the ground within a limit of three or four feet, but a fair proportion of very minute droplets remained suspended in the air for short periods, and these droplet nuclei, as they were called, might be an important factor in "air-borne" infection. Droplets falling on a horizontal surface, often the bedspread, might contain pathogens which resisted drying and were raised again into the air as infected dust. With regard to the carrier, attempts to show that carriers could eject pathogens had usually failed, and it might be that too much had been made of the streptococcal throat carrier as a source for the spread of respiratory infections. The nurse who was a carrier might, from her intimate contact with the patient, spread infection to susceptible tissue, but the carrier-patient in bed, unless he came into contact with another patient, did not seem likely to be a potent source. In the case of intestinal infections, which were spread mostly by the infection of food, symptomless carriers were probably important links in the chain.

For the control of infection, adequate ventilation, bed spacing, and isolation accommodation were necessary, but the last was not always easy to provide. Screens might be used as an alternative to isolation accommodation, but it was important that they should reach to the floor and be of proper design. In the case of the attendant there should be a freer use of masks while attending children. Dust was a major problem in dealing with infections in streptococcal and diphtheritic wards. Much could be done by instruction of nursing staff in the newer ideas concerning spread of infection, by ward discipline, by scrupulous care in admission of patients, and by tackling the problem of dust, which in an infectious diseases hospital must be settled before the relative importance of other channels for the spread of infection could be ascertained.

#### Children's Hospitals

Dr. R. H. DOBBS said that the first approach to a solution of the problem was by means of satisfactory hospital architecture. There should be an admission ward with cubicles in which each child spent the first forty-eight hours, and ward units should consist of six to eight cots, with a number of cubicles in which infectious children should be nursed. Such an arrangement now

existed at Great Ormond Street. Many hospitals, however, had to do their best with twenty or thirty beds in the ward and no admission unit. Here the provision of movable glass screens had been of great advantage. Bed spacing in infectious diseases hospitals should be 12 ft. between cot centres. In a children's ward this might be extravagant, and in fact 8 ft. or even less was often the best one could attain. At all events there should be one window to each cot.

Under nursing technique he included not only what nurses did but how doctors and visitors behaved. Strict isolation technique included the wearing of a gown when entering an infected area. Nurses who suffered from sore throats or colds should be suspended from duty. Masks must be worn and frequently changed, and in between the double layer of gauze they should have a thin layer of some impervious material. There must also be alertness on the part of the nursing staff to observe the earliest prodromal stages, and a standing order that children with pyrexia or rash be isolated even before calling in the house doctor to pass judgment on its nature. Non-immune children should be sandwiched among as many immune as were available. All medical and nursing staff should be swabbed and Schick-tested before taking up work in a children's hospital. The routine he had described, if carried out efficiently, would reduce the incidence of secondary cases to very small proportions and greatly minimize the danger to the children.

#### The Fever Hospital

Dr. N. D. BEGG said that the problem of ward infections in fever hospitals approximated to that encountered in a children's hospital, but with this difference—that one must also guard against secondary infection by different types of the primary infecting organism. The principle of structural separation had culminated in the construction at the North-Eastern Hospital of single- or double-bedded isolation units in the proportion of 40% of the total accommodation of the hospital. The most difficult problems were the enteral infections of unknown aetiology, which included infantile gastro-enteritis. In the general control of this most serious risk to infant life breast-feeding was the most important single preventive measure. Often the original condition for which the child was admitted to hospital was trivial and could well have been managed at home, but, what was quite unforgivable, it was regarded as a justification for stopping breast-feeding. A more realistic attitude to gastro-enteritis was certainly needed.

As to upper respiratory infections, the haemolytic streptococcus was widespread in its activity in a fever hospital. There was abundant evidence that cross-infection as indicated by change of infecting type was frequent in scarlet fever wards, but it would be a mistake to assume that all the late complications of scarlet fever must necessarily be the result of reinfection. In diphtheria the routine isolation of doubtful cases on admission, with subsequent bacteriological investigation, was a perfectly feasible proposition, although costly in accommodation. In measles a similar clinical supervision might be exercised to exclude gross septic cases, particularly those with rhinitis and otorrhoea. The convalescent ward, like the convalescent hospital, was not remarkable for its freedom from cross-infection, possibly owing to the fact that patients were selected for convalescence with rather more regard to their physical needs than to their particular infectivity. Carriers among the staff originated infection in wards from time to time. Full protection to staff against scarlet fever could be afforded by active immunization, but this did not preclude the possibility of streptococcal tonsillitis. Susceptibility in this respect was largely confined to new entrants, and there were obvious advantages in allocating such entrants to neutral wards—whooping-cough, for example—during the first few months of duty. Although the danger of staff carriers could not be ignored, they probably did not play an important part in streptococcal cross-infection in fever hospitals.

#### Hospital Infection in Wound Cases

Mr. W. McKISOCK said that there was a regrettable tendency to minimize the hospital infection of wounds. He gave a brief account of the cases of hospital infection with *Str. pyogenes* over a period of fifteen months in his own department in cases of clean operation wounds or wounds of the head of varying degrees of severity. Before the adoption of a special system of