NOTES ON MEDICAL RECRUITING.

BY LIEUTENANT-COLONEL R. V. COWEY.
Royal Army Medical Corps.

AND

BREVET LIEUTENANT-COLONEL C. R. SYLVESTER-BRADLEY.
Royal Army Medical Corps.

(1)

One of the most important and difficult duties a medical officer of the Corps may be called upon to perform is the medical selection of recruits for the Army.

The maintenance of a voluntary Army is dependent on a regular supply of recruits to make good its wastage in personnel, and if this wastage is accentuated by the introduction of recruits who are liable to break down under the stress of training, or service, a vicious circle is started, and the efficiency of the Army is bound to suffer.

An important point to remember is that the medical examination of recruits is not confined to the selection of only those who are normal in every respect. If such were the case we should soon have no Army. A voluntary Army must fashion its demands for personnel to the available supply, and it is due to the fact that the supply of what we may term "normal men" is unequal to the demand, that it has been found necessary to introduce physical and medical standards based on the maximum degree of physical or medical abnormality with which a recruit may be enlisted without undue loss of efficiency; at the same time, it must be realized that the elimination of inefficients is already very high.

(2)

If we trace the history of a hundred men presenting themselves for enlistment, we find that about fifty of these are rejected by the recruiters
and recruiting officers for obvious medical and physical disabilities or purely military reasons, and that some forty per cent of the remaining fifty are rejected by the examining medical officer. Of the 30 who are passed medically fit, it is estimated that from 4 to 8 are not finally approved on account of unsatisfactory character, under age, etc., so that 22 to 26 only arrive at the depot, where a further 1 to 2 are discharged under six months' service on medical grounds, and approximately the same number by the Commanding Officer as not likely to become efficient soldiers.

In addition, there is a further wastage in the case of Cavalry, Royal Engineers, Royal Corps of Signals, Rifle Brigade, R.A.M.C., etc., where the final approval of the recruit rests with the Commanding Officer of the unit. The Commanding Officers can refuse any recruit whom they consider not fit for the duties of the Corps, and when these recruits are returned to the recruiting branch they usually refuse to join any other Corps and are lost to the Service.

The final result being that approximately only sixteen of the original hundred become trained soldiers.

With the present type of recruit, our experience tends to show that an average rejection rate below thirty-eight per cent means the acceptance of undesirable recruits, whilst an average rejection rate of over fifty per cent suggests a too pessimistic view being taken of minor defects.

(3)

Although the efficiency of the medical examination of recruits on enlistment is important, the question of their discharge under six months' service is still more so. When it is realized that the average cost to the State of each recruit discharged on medical grounds has been as high as £50, and that last year 2,460 recruits were discharged, costing £123,000, more or less, the interest in this question is readily understood.

(4)

The most frequent cause of rejection on medical grounds during the last recruiting year for which statistics are available, e.g., 1921-22, was "defective vision."

This disability accounted for no less than 52·2 per thousand of the total rejections for the year, and is a record so far as medical rejections are concerned.

Defective vision has always been a frequent cause of rejection; in 1862, 26 per thousand were rejected; in 1872, 45·4; in 1882, 35·6; in 1892, 42·33; in 1902, 39·23; and in 1921, 21·08. This wide variation in the ratio of rejections may be accounted for to some extent by variations in the standards of vision that have been laid down from time to time. In 1862 the minimum standard is said to have been R = 3, L = 20. In 1912 the minimum standard for infantry was with each eye without glasses. In 1922 with each eye without glasses, provided that with the
aid of glasses the sight could be improved to $\frac{3}{5}$ and $\frac{5}{6}$. Recently the standard has been fixed at $\frac{1}{6}$ each eye without glasses.

Although defective vision causes such a high ratio of rejections on enlistment, and in spite of the fact that the standard for the acceptance of a recruit is so definite and the medical examination therefore easy to carry out, this disability is responsible for a large number of recruits being discharged during their training.

In 1912, 18 or 0.38 per thousand were discharged under three months service for defective vision; in 1922 (the period during which a recruit could be discharged had been increased to six months) the discharges under this heading had gone up to 207, or 2.67 per thousand. The only reasons that can be ascribed for this increase, apart from the lengthening of the period within which a recruit may be discharged, are careless medical examination on enlistment, and malinger on the part of a recruit after enlistment.

It is important for all medical officers to remember that when the recruit appears before the medical officer on enlistment, he wants to join the Army, and he will adopt every means to conceal any disability from which he may be suffering; if his vision is defective he will do his best, if given the opportunity, to learn the test types, and it sometimes requires the exercise of a considerable amount of patience and care before the medical officer can satisfy himself as to the recruit's correct vision.

After the recruit has been at the depot for a few weeks, his views may have altered completely. His ambition to join the Army may have changed to an all-absorbing desire to get out of it, and the most frequent method adopted to this end is to report sick and feign disease, or exaggerate some minor disability with which he has been enlisted in the hopes of getting his discharge on medical grounds. On this account it is important that medical officers should be most careful in recording a recruit's vision correctly, and never enlist a recruit unless they are convinced that he is up to the standard. Furthermore, when a recruit reports sick, and complains that he cannot see, it is up to the medical officer of the depot to look up the man's medical history sheet and ascertain what his vision was on enlistment. In nine cases out of ten, if a recruit reports sick for defective vision, and fails to read up to the standard shown on his medical history sheet, he is malingering, and should not be discharged on medical grounds because he states he cannot see.

Cases similar to the following illustration which actually occurred are frequent.

A recruit read $R = \frac{5}{6}$, $L = \frac{5}{6}$, on enlistment; again $R = \frac{5}{6}$, $L = \frac{5}{6}$, on re-examination at the depot. A few weeks later he would only read $R = \frac{5}{6}$, $L = \frac{5}{6}$, and was certified by a specialist as reading only $\frac{3}{4}$, $\frac{3}{4}$. After certain disciplinary action he again read $\frac{5}{6}$, $\frac{5}{6}$, with each eye. Eye specialists in some instances have carried out simple visual tests only, and have not examined the eyes after the use of a mydriatic. It is of the
Another disability which is of increasing importance in recruiting work is "otitis media." In 1882, only 0.62 per thousand of those rejected were suffering from this disability, but by 1912 the ratio had increased to 8.08, and in 1922 it was 15.53. This increase is supposed by some to be due to a greater incidence of the disease in the general population, but if those who can remember the perfunctory examination of the recruits' ears in pre-war days will compare it with the more elaborate auroscopic examination which is the regulation now, they will readily believe that the increase of rejections is due to the more careful and exacting examination.

Most of the reports on the "Health of the Army" prior to 1912 have drawn attention to the gradual increase in the number of rejections from this cause, and we have the additional evidence of the increased number of discharges of recruits for the same reason whilst undergoing their training. In 1912, 1.23 were discharged under three months service for middle ear disease, in 1922 (the length of time within which a recruit could be discharged had increased to six months) the ratio of discharges had risen to 4.01. Furthermore, the ratio of soldiers invalided for middle ear disease has increased from 0.59 in 1913 to 3.08 in 1921.

It is suggested that the increase in the number of recruits discharged and in the number of soldiers invalided is due to the fact that nearly all cases of "otitis media" are now discharged from the Service, whereas formerly a man with a "running" from his ear was treated as an outpatient, had his ear syringed occasionally, and carried on with his duties quite satisfactorily.

Attention having become focused on this disability, it is desirable to invite consideration of a few of the problems underlying the subject. One of the chief difficulties connected with fixing a standard for the rejection of a recruit, or for the discharge of a soldier with middle ear disease, is that of getting aural specialists to think alike. Nobody at the present time would advocate enlisting a recruit with a purulent discharge from his ear or even with a definite perforation, but what is to be the line of action with regard to the clean and healthy scar of a healed perforation? One specialist may say that the conditions which produced the perforation have passed and are not likely to recur; another may point to enlarged tonsils or possibly a deflected nasal septum and say that any slight exposure or infection of the nasopharynx is likely to cause a recurrence. Then again, with regard to the discharge of a recruit or the invaliding of a soldier for this complaint, there are some who will say, "Too much attention is being paid to a minor disability, a slight discharge from the ear does not affect a man's fighting efficiency, and by invaliding a soldier with chronic otorrhœa you are throwing away all the money which has been spent on his training on
account of a disease which only rarely becomes a serious disability, and which normally should be treated in the out-patient department of the hospital.

In our opinion, a man with a clean healed perforation or old catarrh, provided that he has no nasal obstruction, adenoids, enlarged tonsils or deafness, should be accepted. This subject has recently been occupying the attention of a War Office Committee, and whilst their findings are not common property as yet, the following line of action is recommended. No recruit should be enlisted who suffers from any of the following defects: deafness, aural discharge, perforation, radical mastoid operation, dermatitis of the meatus. Conditions which after the removal of cerumen prevent a thorough examination of the ear (atresia of the meatus, etc.). Conditions giving a history of recurrent earache, deafness, tinnitus or vertigo which cannot be accounted for by the state of the upper air passages.

The examination will consist of:

(a) The removal, if necessary, of all cerumen.
(b) Auroscopic scrutiny.
(c) Testing the recruits' hearing.

(1) The recruit must be able to hear an ordinary whispered question put to him by an examiner standing six feet behind his back.

(2) In cases of doubt the following test must be applied. In a quiet room with each ear sealed in turn, the recruit must be able to hear a series of numbers including at random intervals the figures 66 (high note), 25 (medium note), and 44 (low note), uttered in the strongest whisper with residual air at twenty paces distant. This test gives the minimum standard of hearing.

According to our statistics of recruiting, "flat foot" would appear to have become more prevalent of late years.

In 1862 "flat foot" was not considered of sufficient importance to merit mention as a separate disease, but in 1872 the ratio of rejections for this disability was 6·66, since when there has been a more or less steady increase until in 1922 the ratio was 26·99. Furthermore, whilst the ratio of discharge within three months' service in 1912 was 0·77, in 1922 2·03 per thousand were discharged within six months of enlistment.

This increase may be due to a variety of causes. The incidence of flat foot amongst the general population may be on the increase, although in view of the less strenuous conditions of modern life this is highly improbable. Medical officers may be more careful to eliminate cases of flat foot than they were formerly, or medical officers may have altered their views as to the degree of flat-foot which is a bar to efficiency. Whatever view may be taken of the cause of the increase, it is important that the medical examiner of recruits should possess, if possible, some
uniform standard which will guide him. Unfortunately it is very difficult, if not impossible, to lay down a definite minimum standard of flat-foot.

The visual test is not always a sure guide; many “fit” individuals have flat foot from a visual point of view. Others, whilst showing a small loss of arch, suffer from a high degree of incapacity. The visual flat-foot may be due to the formation and laxity of connective tissue between the heel and the ball of the great toe, and not to a lowering of the bony arch. This condition is common amongst seamen and agricultural labourers and is not usually a sign of weakness.

The classical “Charlie Chaplin” gait in flat-foot cases is, however, a bar to enlistment. Other symptoms which should cause rejection on enlistment are:

1. Inability to hop.
2. Failure to restore the arch on standing on tip toes.
3. Actual collapse of the bony arch.

Inability to hop, although a bar to enlistment, is not necessarily a cause for discharge, as this condition in a recruit proposed for discharge for flat-foot is usually a manifestation of malingering.

One of the surgical symptoms of flat-foot is said to be tenderness behind the scaphoid bone. This is of little practical value in recruiting as no recruit desirous of entering the Service will admit anything detrimental to his chances of being passed fit, and all recruits anxious for discharge for flat-foot will complain of acute tenderness.

Recruits enlisted with moderate degrees of flat-foot are likely to have the condition aggravated during the early days of their training, especially when the training consists of too much standing. Heel and toe exercises are not advocated as a cure because they are likely to still further fatigue over-tired muscles. As a preventative and cure, the raising of the inside of the recruit’s boot in the following manner is suggested.

Correction of the boot consists in raising both heel and sole on the inner side by one third of an inch and extending the heel forward on the inside by 3⁄4 inch. The correction should not be a patch, but an insertion into the leather of the sole and heel, so as to become an integral portion of the boot.

It should be recognized that flat-foot is a preventable condition, and if caused or aggravated by training the training is to blame.

The principal defects in the training of the recruit at the present time are the following:

1. Too much and prolonged standing.
2. Walking with the toes turned out.
3. Standing with the toes turned out in the position of attention.
4. Stamping.
5. The hard non-resilient floors in some gymnasias.

Remedies for the above are as follows:

1. Reduce parades for recruits to thirty-five minutes from fall-in to dismiss.
(2) Walk with feet parallel.
(3) Stand to attention with the feet parallel and four inches apart.
(4) Abolish stamping which is very injurious to the feet. The hard non-resilient floors of gymnasia are gradually being replaced by wood planking, which should have a beneficial effect in reducing strain and injury to the feet.

The present position of attention no doubt throws a considerable strain on the immature feet of the recruit as the weight of the body is thrown directly on to the bony arch.

In the words of Sir Robert Jones, "Considering one foot by itself, the weight of the body rests upon a half dome, touching the ground at its outer border. It is stable if the body weight is so balanced that it rests on its outer edge, but if the body weight falls too near the inner side of the half dome, there is a tendency for it to capsize inwards."

There will be considerable opposition to the suggested method of walking and the position of attention as being less smart and contrary to military tradition. It is, however, a curious fact that prior to 1792 the feet were held a pace apart in the position of attention.

(7)

Disordered action of the heart is a condition causing many difficulties in recruiting work. As it is being reported upon at the present time by a War Office Committee, it is undesirable to go deeply into the matter here. Until a satisfactory exercise tolerance test has been worked out, the following plan may be adopted.

A recruit should not be enlisted whose pulse rate is over 100 after sitting in a chair for five minutes. A recruit should not be discharged from the service for D.A.H. until after admission to, and thorough testing in hospital. The pulse rate may vary from day to day, and after pay day, when an extra supply of cigarettes may have been smoked, the rate may be largely increased.

(8)

Only those disabilities which are shown by recruiting statistics to be an increasing cause of rejection and discharge have been dealt with so far; there is some consolation, however, in the fact that fewer recruits are rejected for varicose veins and varicocele than was the case in former years. In 1862, the ratio of rejection for varicose veins was 20·62, in 1922 it was 11·22. In 1902 the ratio of discharges under three month's service was 0·87, in 1922 0·55. In the same way varicocele has decreased from 16·82 in 1872 to 10·47 in 1922. Neither of these diseases can have been affected very much by standards of fashion, and the evidence tends to indicate a decrease in the incidence of these disabilities in the general population. This is due possibly to the present generation living a less strenuous life than their fathers and grandfathers. It is not necessary to dilate upon the medical examination of a recruit suffering from these dis-
Notes on Medical Recruiting

abilities, every case has to be dealt with on its merits from a medical and surgical point of view. It is not advisable to enlist any recruit who needs, or is likely to need, operation. An operation directs the attention of the recruit to a disability which he may use to his own advantage at some future date, apart from any question of prognosis after operation.

(9)

The number of sound opposing teeth necessary to efficiency in a recruit has been always a subject of considerable divergence of opinion, and the many different standards that have been in vogue from time to time are reflected in the wide variation in the ratio of rejections which have occurred for defective teeth during the past sixty years.

In 1882, the ratio of rejections was only 7.93; in 1902, it was 49.26; in 1912, it was 22.44; in 1922, this disability ranked second as a cause of medical rejection on enlistment with a ratio of 49.98. The varying teeth standards which have been in force at different times may be attributed in part to the fact that recruits with particularly fine physique often have bad teeth and it has been argued that if the health of the recruit has not suffered from the effect of his teeth at the time of enlistment, there is no reason why he should not prove an efficient soldier in spite of his defective teeth. Whilst there is an element of truth in this assertion, the tendency at the present time is to pay more and more attention to the teeth as a cause of ill-health. This has resulted in the formation of the Army Dental Corps and a stricter standard of dental efficiency on enlistment.

With regard to the present dental standard, it is important for medical officers to realize how it originated. It may be accepted as an axiom that the degree of loss of teeth, and the number of decayed teeth with which a recruit may be accepted, is limited only by the amount of dental treatment the Army is prepared to carry out. As the establishment of our Dental Corps is a fixed one, a dental standard had to be laid down; and this standard is based on the assumption that if no recruits are accepted with a 'lower standard of teeth than the one in force, the Dental Corps should be able to carry out any conservative dental treatment necessary during the soldier's period of service.

Although the dental standard appears to be a simple one requiring only a dental mirror, good light and a simple addition sum, to carry it out, it has been a serious stumbling-block to many examining medical officers, owing to the large number of border-line cases which occur. Cases in which opposing teeth are carious, and there is a question as to whether they can be saved by conservative treatment, or cases in which the bite is abnormal, or the deciding teeth in the upper and lower jaws only partly oppose each other. In such cases, provided the opinion of a dental officer is not available, the examining medical officer must use his own judgment. It is fairly obvious that the standard laid down should be a definite one, so as to reduce the divergencies of opinion to a minimum; otherwise one medical
officer accepts a recruit as being fit enough for the Service, and after he has been clothed, fed, and paid by the State, another medical officer sees him and turns him down, for not having, in his opinion, sufficient teeth.

(10)

A very favourite method adopted by recruits in order to obtain their discharge is that of "bed wetting." Frequently, incontinence of urine has assumed an epidemic form in certain depots without exciting the suspicion of the medical officer in charge.

The following procedure is suggested as likely to lead to a diminution of these cases.

(a) Immediate admission to hospital of all persistent bed-wetters.

(b) Medical examination, with the cystoscope if necessary.

(c) If a permanent medical disability is found, discharge on A.F. B204.

(d) If the recruit refuses examination, or minor operation, returned to C.O. to be disciplined, trained, or discharged by him as not likely to become an efficient soldier.

(e) If no medical disability found, also sent to C.O. to be disciplined, trained, or discharged.

The point of the above scheme is that only men with a permanent medical disability should be discharged on medical grounds.

(11)

The present method of estimating the degree of "genu valgum" is very faulty, as it is largely under the man's own control. When he wishes to be enlisted he presses his knees outwards as hard as he can, and by this means it is possible to disguise knock-knee to the extent of two inches or more. When he is tired of the Service he stands with his heels apart and presses his knees inwards; the result being that a man may be enlisted having \(1\frac{1}{2}\) in. separation of his heels, and a week or two later discharged with six or eight inches of separation. Such cases have actually occurred, and are in no way exaggerated.

A method which is coming into use at the present time, with very good results, is to make the man sit on a chair and tell him to extend his legs fully at right angles to his body with his knees touching. The distance between the internal malleoli should be measured; more than two inches separation causing rejection.

(12)

A considerable number of discharges on A.F. B204 are classified as epilepsy. Medical officers are apt to be easily satisfied as to the genuineness of a fit, with the result that a large proportion of those discharged are malingerers. This shamming of fits is a most catching complaint, and when a recruit is able to obtain his discharge by this means, others in the same depot will follow his example. These malingerers will
90

Notes on Medical Recruiting

obviously not make efficient soldiers, but they should be discharged on disciplinary and not medical grounds.

(13)

At first sight it is not easy to anticipate any difficulty in carrying out the regulations regarding physical standards. The regulations governing the measurement of the chest are apparently quite clear, but unfortunately the accurate measurement of the chest is not so simple. If the recruit raises his shoulders when having his maximum measurement taken, that is, in deep inspiration, he will fall short of his maximum by one quarter to one inch. The way to get the full chest expansion is for the recruit to depress his shoulders as he inhales.

Owing to the fact that the expansion of the chest is so much under the recruit's own control, he may use his knowledge of this as a means of trying to obtain his discharge after arrival at the depot; and on re-measurement by the depot medical officer he may be found to be half an inch or more under standard chest. It is obvious, therefore, that no man should be discharged as under chest measurement who is up to weight and otherwise fit.

Weight should present no difficulty. The minimum weight for the infantry recruit is 112 pounds. This is a definite minimum, and should not be departed from by the enlisting medical officer. This does not mean, however, that a recruit should be discharged who is found later to have fallen a few pounds below this minimum, as it will most probably be due to the change in his environment, and be of a temporary nature.

(14)

Whilst ordinary professional knowledge must be the deciding factor in the acceptance or rejection of recruits there are certain minor points which need to be kept in mind by the recruiting medical officer.

Abdominal scars which show signs of having failed to heal by first intention must be regarded with suspicion. The principal reason for this being that if a man complains afterwards of pain in the scar, it is difficult to disprove his statement.

It is very necessary to ask a recruit on enlistment whether he has had any pain in the scar and to enter his reply in his A.F. B178. This makes it a little more difficult for him to complain of pain afterwards. It is well to remember that the entering of minor disabilities in the A.F. B178 shows a re-examining medical officer that the condition has been observed and considered by the enlisting medical officer when he accepted the recruit, also such entries are very helpful when claims for pensions are being considered.

A moderate degree of "hallux valgus" in an otherwise normal foot is no bar to acceptance, but if complicated with "hallux rigidus," bunions or corns, the man should be rejected.

Sufficient attention is not always paid to the entering of identification
marks. Cases of impersonation are by no means infrequent, both at the primary medical examination and when a recruit is referred for examination to a specialist. Some of the apparently flagrant cases of neglect by examining medical officers have been traced to impersonation, which could not have occurred if sufficiently accurate identification marks had been entered on A.F. B178.

Conclusions.

A close study of medical recruiting conditions forces the conclusion that there is a much greater amount of malingering in the Army to-day than has been the case before, and further, that medical officers are more prone to take a recruit at his own valuation than they were in pre-war days.

As some slight proof of this somewhat sweeping slander of the present day recruit, and to a lesser extent of the medical officers in charge of troops, one example out of very many may be given.

Out of a number of recruits proposed for discharge by medical officers for incontinence of urine, and who were sent to a special hospital for investigation, over eighty per cent were returned to duty and reported as having no appreciable disease. These recruits were mostly wetting their beds to obtain their discharge, and the medical officers had overlooked such a possibility.

The responsibility for the increased number of recruits and soldiers who are discharged from the Service on medical grounds, rests, in our opinion, with the medical officers.

The reason for this deterioration in medical work is probably the shortage of junior medical officers, resulting in their being rushed from one job to another, and so still further reducing their opportunities of being trained in the work; and the extensive employment of untrained civilians.

It is essential that all medical officers connected in any way with recruiting, including specialists, should have recent training in this work.

The medical examination of recruits is a most difficult task, requiring experience and sound judgment, and the sooner the idea is dissipated that a medical officer without special training is capable of examining recruits for admission into or discharge from the Army, the better it will be not only for the reputation of the Service, but also for the finance of the State.

It should never be forgotten that the discharge of every recruit on medical grounds reflects on the skill and judgment of the medical officer who passed him fit on enlistment.

A recruit's discharge on A.F. B204 should only be resorted to when it is certain that the recruit has a medical disability rendering him unfit, and shall not take place, as too often happens, merely because the recruit is tired of the Service.