

upon long-standing and serious cases should put the examiner on his guard. Fortunately, but very few of them are presented, and the mere mention of their names is enough to draw attention to the probabilities of their presence. Affections of the liver and spleen are of more practical moment, when one considers the fact that a large proportion of our recruits is drawn from sections of the country in which malaria is rife, and where men whose systems are broken down by the influence of this poison are forced to quit their ordinary employments and seek a livelihood in some other and more healthful region: the army offering the easiest means for accomplishing the object. In these instances enlargements of the liver and spleen will be found, and associated with them the anemia and generally debilitated condition characteristic of malarial poisoning. From some of the rendezvous subsidiary to the depot at Columbus, O., which were located in malarious regions, the men enlisted were feeble and anemic, with enlarged spleens, dropsical legs, and a mental depression which was an apparent bar to improvement under their changed condition of life; in many instances this change of climate, etc., brought about a recurrence of the periodic fever, necessitating admission to, and protracted treatment in, hospital, and leaving the men utterly useless for future service. The evil became so great that orders were finally issued to discontinue the objectionable rendezvous, and abandon the infected districts; attention, then, must be given to the condition of these organs, in all cases in which the general appearance indicates malarial poisoning. Obesity, or pendulous abdomen, impairs the efficiency of men for military duty; they cannot take active exercise without loss of breath, or in warm weather without suffering from excoriations, prickly heat, etc.; and moreover, in all such cases the presence of fatty degeneration of the heart and arteries is to be suspected. Hemorrhoids are so very common, and of so many degrees of severity, that it is impossible to lay down any fixed rule by which all cases are to be decided; each must be judged upon its own merits, and rather by the effects of the disease upon the individual, than by the size of the tumors or their age. Internal hemorrhoids, except when protruding, cannot be discovered unless they are bleeding at, or just before, the time of examination, the evidences of which will appear upon the person or clothing of the applicant; they may possibly be ulcerated, in which event there will be a purulent discharge from the anus, which, however, may occur from other causes; but its appearance should be the occasion for a careful inspection of the rectum, if the man denies being the subject of piles. Their existence is an absolute cause for rejection. External hemorrhoids, if multiple and large, ulcerated or inflamed, should reject. The small, accidental pile, commonly met with in men of constipated habits; the pedunculations found in men of lax fibre, or old piles in which the former mucous lining has become transformed into a hard and insensitive covering similar to true skin, are not causes for rejection, if the man states that they have not given him trouble. These statements should, however, be taken with many doubts, as the desire to enlist will lead men to prevaricate about that point, and the medical examiner will be obliged to form his own opinion from the appearances presented by the tumors, and from their effects upon the surrounding parts.

Although fistula in ano may be discovered by means of the discharge from its track in most cases, a careful inspection of the parts near the anus, for the external opening of the fistula, is necessary; in very hairy men, the hair must be pushed aside and every point suggestive of the appearance of a fistula explored with a probe.

There should be but little difficulty in discovering any well-developed forms of hernia; it is those cases which are incomplete or partially developed about which the surgeon may be perplexed. The examination should always be made while the man is standing, and with his hands extended above his head; the surgeon should examine the umbilicus, and afterward each inguinal canal,

carrying his finger well up to the internal ring, and requiring the man to cough vigorously; if the bowel protrudes to any degree from the abdominal cavity into the canal, it can easily be felt. There can be no doubt as to the unfitness for service, in time of peace, of an applicant who has a hernia, all varieties of which, whether complete or incomplete, are absolute causes for rejection; cases, however, in which the inguinal rings are relaxed, in which there is supposed to exist a "tendency to hernia," are not so easily disposed of; the question as to the acceptance of men having this tendency being still an open one. In some foreign armies it is considered a sufficient cause for rejection, but in our service the judgment of most medical officers is adverse to such an opinion. While it is true that the exertion incident to certain phases of military life may produce a hernia in men having relaxed inguinal rings, it is equally true that the accident may happen quite as often (relatively) to men who do not have this defect; indeed, there is no especial evidence to show that this is more frequently a predisposing cause than is any other. The experience of the writer fully confirms the statement made by Tripler,²⁶ that "by far the greater number of hernia that have fallen under our observation have occurred in comparatively robust, thick-set men; just the men who rarely have relaxed external rings." The exclusion of this class of cases would, it is believed, result in the loss to the service of many excellent men, and until it is shown that they are more liable to the defect than others, rejection is not demanded. The examination for a hernia should, however, be very carefully made, and the applicant required previously thereto to run, jump, or take other violent exercise; care must be used in the examination of a scrotal hernia, that a mistake be not made in confounding it with other tumors connected with the cord or testicle—an error one might very easily fall into when examining any large number of men. The tissues covering an umbilical hernia are so very thin that there can be but little room for error in diagnosis; indeed, the fact is that any thinning of the abdominal walls in that vicinity amounts practically to a hernia; but one must not confound with a hernia a not uncommon malformation of the umbilicus, in which, through some morbid process during the separation of the cord, a nipple-like tumor has been left that bears no small resemblance to an umbilical hernia.

In time of war it would not be proper to reject men who had hemorrhoids, unless, if internal, they were very large, and the constitutional effects produced by the bleeding, or the irritation set up by their presence, was plainly visible; in case of external hemorrhoids they should be very large, painful, and of long standing, to be cause for rejection. Hernia which are easily reducible and retained in position by a well-fitting truss, or those which are incomplete, should not be cause for exemption. All other defects which disqualify in time of peace do so equally in time of war.

The Genito-Urinary Organs.—Any acute affection of the genital organs, including gonorrhoea and venereal sores; loss of the penis; phimosis; stricture of the urethra; loss of both testicles; permanent retraction of one or both testicles within the external ring; any chronic disease of the testicle; hydrocele of the tunic and cord; atrophy of the testicle; varicocele; malformations of the genitalia; incontinence of urine; urinary fistula; enlargement of the prostate; stone in the bladder; chronic cystitis; all diseases of the kidney, disqualify.

The existence of gonorrhoea, or a venereal sore upon the penis, should be cause for rejection; aside from the fact that the subject of either of these affections is liable at any time to communicate it to his comrades, it is not possible for any one to foresee the complications which may arise during the course of either form, nor the sequelae it may leave behind. Venereal diseases are so very common, and held in such light estimation by the laity, and indeed by many of the profession, that their existence is looked upon rather as an incident in the ordinary life of a soldier, than as a serious matter which may disable the victim for life. Men who have been inadver-

tently enlisted with some form of venereal disease should be placed in hospital at once, both as a measure of cure and for the purpose of isolation. It is to the interest of the service that such cases should receive prompt attention as, even if their progress toward a cure is not delayed by complications, their terminations are liable to be marked by permanent disabilities, demanding final discharge. Cases of gonorrhoea are frequently followed by stricture of the urethra, and venereal sores are almost as likely to prove syphilitic as innocent. The instructions laid down in text-books for the differential diagnosis between chancre and chancroids will prove but a poor defence should a recruit who at the time of enlistment is the subject of a chancre be afterward discharged on account of constitutional syphilis. The principle that the Government is justified in caring for such cases in its hospitals, for the purpose of securing the services of good men temporarily unfortunate, is entirely wrong, and the desired result is seldom attained. The experience of the writer is to the effect that the large majority of such cases terminate by discharge, before the subject has been able to render any considerable portion of the service for which he was enlisted.

The existence of any stricture of the urethra is cause for rejection; its presence can be definitely determined only by the use of the sound, a procedure demanded in all cases giving ground for a suspicion of disease; the condition of the stream passed in urinating must be carefully inquired into, and all information relative to a history of the case elicited by closely questioning the patient, before resorting to the use of an instrument. Simple narrowing of the meatus, which is congenital in many persons, should not be considered a cause for rejection.

Phimosis, if complete, is liable to give a great deal of trouble to a soldier by repeated attacks of balanitis; if there is adhesion between the prepuce and the glans, partial or complete, graver symptoms may present themselves, and his efficiency may be impaired by reflex paralysis, epilepsy, or other nervous affections, for the relief of which surgery is required; for these reasons it is made a cause for rejection. When both testicles are absent from the scrotum, the inguinal canals must be carefully examined for evidence of their retention therein; loss by injury may be known by the scar remaining on the scrotum; should one or both testicles be found permanently resting in the inguinal canal, or absent from the scrotum from any cause, the applicant should be rejected. In affections of the testicle, discrimination must be made between true diseases of this organ and morbid changes in the epididymis, the result of inflammatory action. The most common defect among the class of men who present themselves for enlistment is the enlargement from interstitial deposits following orchitis—sarcocele—which, when inconsiderable in size, is not a cause for rejection; a diagnosis must, however, be made between it and other enlargements of the testicle, either syphilitic or malignant; and should there be reason to believe that the enlargement is due to either of the latter causes, or should its size be such as to give annoyance to the patient, rejection is demanded. A hydrocele may mislead one in cases of this nature, and the test by transmission of light should therefore not be omitted in any examination of the organs.

It is exceedingly rare to find a varicocele of such size as to become a real disability to a willing soldier in any branch of the service, excepting perhaps that requiring him to be mounted—under which circumstances he may injure it or the testicle—which in these cases hangs very low—against the saddle; but as it is a defect which may be made to appear a disability, the soldier has an ever-present excuse for the evasion of duty, or a ground upon which to base an application for discharge. So long as he can demonstrate the existence of a disease or defect in any organ, so long will it be impracticable to insist upon a performance of his duty, and it is this circumstance rather than any well-grounded belief in the disqualifying nature of a varicocele, as well as the more general principle that no men should be enlisted who are the subjects

of any recognizable physical defects, which leads to its being placed upon the list of causes for rejection. The rule laid down by Tripler is an excellent one for the determination of the degree of varicocele which should reject: "If the testicle on that side is atrophied, whatever may be the volume of the circocele (varicocele), or if the volume of the latter exceed that of the former, the recruit should be rejected."²⁷

Among malformations may be mentioned epi- and hypospadias, where the urethra terminates at a distance nearer the body than one-fourth the length of the penis. Incontinence of urine may be suspected by a urinous odor about the person of the applicant, or by the appearance of his clothing, which may be stained; of course there can be no evidence of the fact except after certain observation, and, therefore, the statement of the man must be taken as to its absence before he can be accepted.

If any disease of the kidney is suspected, a careful examination of the urine should be made by chemical reagents, extended if necessary to an examination by the microscope. It is, of course, presumed that the applicant will be closely questioned as to the existence of any symptom which would point to renal trouble; the presence of albumin, sugar, blood, or pus in the urine, although due to temporary ailments, is ground for absolute rejection, as would also be dropsical effusions into any of the tissues in the body.

In time of war acute affections of the generative organs should not exempt; the subjects thereof can be placed in hospital until cured of the primary difficulty, and those who are free from constitutional taint, or who have very slight strictures, should be sent to active duty. Phimosis, loss of testicles, hydrocele of the tunics and cord, unless interfering with locomotion, and spermatorrhoea, are not causes for exemption, as men suffering from these defects can be made useful in the administrative department, and in some cases in the line of the army.

Affections Common to both Upper and Lower Extremities.—Chronic rheumatism; chronic diseases of joints; old or irreducible dislocations or false joints; severe sprains; relaxation of the ligaments or capsules of joints; dislocations; fistulae connected with joints or any part of bones; dropsy of joints; badly united fractures; defective or excessive curvature of long bones; rickets; caries; necrosis; exostosis; atrophy or paralysis of a limb; extensive, deep, or adherent cicatrices; contraction or permanent retraction of a limb or portion thereof; loss of a limb or portion thereof, disqualify.

Nearly all defects in the extremities are apparent by some impairment of the natural shape or motion of the limb, and can hardly escape the notice of one who examines attentively his cases; indeed, in the inspection of large numbers of men one becomes so expert as to discover departures from normal shape and motion as if by intuition. Diseases which affect the continuity of limbs but which do not necessarily interfere with motion or alter shape, may occasionally require careful search for their detection.

It is more frequently the case that the surgeon is called upon to exercise his judgment in deciding how far an existing blemish may impair the efficiency of an applicant, than he is to exercise his skill in searching for hidden or obscure disqualifications; this is particularly the case in severe sprains, dislocations, large cicatrices, and chronic rheumatism. It should be remembered, in the preliminary examination of the shoulder-joints, that it occasionally happens that men cannot touch the point of the shoulder with their fingers, and a careful search fails to reveal any imperfection of the joints of the extremity. It is important, in such a case, that the elbow and wrist should receive especial inspection, as a defect is most likely located at one or both of these points; but rejection is not demanded unless a defect is clearly made out, as an extreme muscular development may be the cause, or a congenital shortening of some of the bones exists without an interference with any other than this particular movement. Men desiring to enlist will seldom, if ever, admit the presence of chronic rheumatism, and it is

only when, as a result of this disease, one or more joints are swollen or otherwise disabled, that the surgeon can be aware of its existence. The absence of any of these evidences will occasionally enable a man to enlist who has been previously discharged from the service on account of alleged chronic rheumatism, in which event the medical examiner would be blameless of the charge of carelessness, as in all probability the discharge was procured through fraud and malingering. Chronic rheumatism of sufficient severity to warrant a discharge from service should be followed by tangible evidence, in the shape of swollen or distorted limbs, deposits in the joints, or enlargements in the surrounding tissues, and these are not likely to disappear; close inspection must be made of all joints to discover any swelling or other evidence of sprain; lameness of an inferior extremity, or stiffness of a superior one, should be an indication for careful questioning as to the receipt of injury.

It is not always wise to place too much confidence in the statements of men as to their freedom from pain or ability to move joints which have been injured. It is well known that the remote effects of sprains and other joint injuries, particularly of the ankle and wrist, are liable to manifest themselves, even at a late period, in swellings or pain after severe exertion; and however honest one may be in the belief of his perfect cure from such an injury, and ability to perform all duty required of him, there may be an actual defect of which he is ignorant. The medical examiner, therefore, must exercise his own judgment from the appearance of the parts, their sensitiveness, etc., as to whether this is the case or not, and he should reject in all instances which give room for doubt. Fractures which have been properly treated, and have united without deformity, are not of themselves causes for rejection, but when they are followed by neuralgic pains, or if there has been much displacement of fragments, so that the symmetry of the limb is destroyed, or if from excessive bony deposits there is impairment of motion, they are causes for rejection. Fractures of the bones of the forearm are very likely to give trouble by interference with the motions of pronation and supination, both of which are necessary in handling the rifle during the exercises in the manual of arms. Malformations of the limbs, as excessive curvature—bow-legs—are objections rather because of the awkward gait they induce than from any interference with the ability of the man to march; when the curvature is caused by a constitutional taint, as rickets, etc., there can be no question as to the propriety of a rejection. Abnormal cartilaginous or bony formations in the muscles, or loose cartilages in the knee-joint, are objections when they impair the use of the joint.

In time of war especial care is necessary, particularly in those affections which present but little external evidence of injury, to detect deception; chronic rheumatism, sprains, alleged dislocations and fractures, must not be made causes for exemption unless the evidences of impaired strength and motion of the parts in which they are located are indisputable. Allegations of pain, loss of motion, involuntary contractions, etc., will constantly be made, and if the surgeon has no other means of completing his diagnosis in a case of suspicion, he should resort to the use of anæsthetics, under which simulation ceases, and the true state of an alleged disability will be made apparent. One must, however, bear in mind the fact that in central lesions of the brain contractions disappear during chloroform narcosis. It should be stated that authority for the use of anæsthetics is limited "to cases of professed rheumatic contraction of joints when unattended with perceptible alteration of form or structure,"²⁸ although it is recommended in a wider range of cases by Tripler and Bartholow, both authorities recognized by the War Department. An ingenious test for simulated contractions of limbs—flexures—has been suggested by a Russian military surgeon, and is published by Zuber.²⁹ It consists in applying tightly to the affected limb an Esmarch bandage, as if for amputation; when the bandage is removed, the rubber cord remaining, the limb straightens itself involuntarily. The test has been tried

in but few cases, and may not invariably succeed, but it is worthy of further trial.

All officers of experience in the examination of malingering soldiers agree upon the fact that their most vulnerable point is in an exaggeration of the symptoms which they endeavor to simulate. When a man comes limping before a surgeon with every expression of pain upon his countenance, or assumes the most unnatural and constrained positions of body or limb, he may, in nine instances out of ten, be set down as a malingerer, if he presents no external physical signs of disease; there is something about a real sufferer or cripple which is very hard to describe, but which every surgeon will recognize; and in a large number of instances the problem will be, not so much in recognizing the deception, as in compelling the subject to admit it.

The Superior Extremities.—Fracture of the clavicle; fracture of the radius and ulna; webbed fingers; permanent flexion or extension of one or more fingers, as well as irremediable loss of motion of these parts; total loss of either thumb; mutilation of right thumb; total loss of the index finger of the right hand; loss of the first and second phalanges of all the fingers of either hand; total loss of any two fingers of the same hand, disqualify.

Fractures of the clavicle, which are almost invariably followed by more or less deformity, are causes for rejection in consequence of the painful pressure made at the seat of injury by the rifle, during certain movements in the manual of arms, and by the "sling straps" when carrying the knapsack or haversack. The mere fact that the clavicle has been fractured is not of itself cause for rejection, and even the presence of a slight deformity should not be objectionable, provided there is neither pain on pressure nor interference with the free motion of the arm. The improved means of transporting the baggage of the soldier have in a great measure done away with the necessity for his knapsack; the few articles of clothing which he requires in the field are rolled in his blanket, which is slung over the shoulder and across the chest, and thus carried without inconvenience or pain to any part of the clavicle which may have sustained an injury. The haversack strap may, however, on long marches, or when the sack is well filled, produce painful pressure, or even excoriate the skin, and the gun is very liable to injure a prominent deformity on this bone. Therefore a tumor at the seat of fracture, from whatever cause, if considerable, would be a valid objection to enlistment. Any fracture of the radius and ulna, particularly Colles', is liable to be followed by impairment of the motions of pronation and supination of the forearm—movements indispensably necessary in the drill of the manual of arms, the "set up" drill, and other military exercises. Should this be the case, rejection is demanded; otherwise, union and motion being perfect, the injury is not a cause for rejection. The degree of mutilation of the hand which should disqualify can be determined only by the facility with which a man so injured can handle a rifle. In loading the Springfield (army) rifle, the breech block is thrown open and the cartridge thrust home by pressure of the right thumb, the rifle is also cocked by the same member; hence it is very important that it should be intact; and any injury which materially interferes with its flexion or strength is a cause for rejection. The common distortion of the extremity due to contusion or felon need not disqualify; the loss of the entire member would, of course, reject; loss or mutilation of the last phalanx of the left thumb need not disqualify. The first and second phalanges of the right index finger may be lost or mutilated without necessarily disqualifying an otherwise very desirable recruit, or a soldier who desired to re-enlist; it is ordinarily the finger used in pulling the trigger, but this can be done with facility by a stump, or by the middle finger, as is the case with many marksmen whose fingers are perfect; it should, however, be the rule for recruits to have a perfect right forefinger, departures from which rule should be made only in rare instances and for very good reasons. Permanent flexion or extension, or loss of motion of any fingers, so materially interferes

with a military use of the hand as to demand rejection. The congenital malformation of the little finger of one or both hands, which is so common, is not considered a disqualification.

In time of war, the loss of the right thumb; loss of any two fingers of the same hand; loss of the first and second phalanges of the fingers on the right hand; permanent flexion or extension of two fingers of the right hand, or all the fingers united (webbed), are causes for exemption.

The Lower Extremities.—Varicose veins; knock-knees; club-feet; splay or flat feet; webbed toes; the toes double or branching; the great toe crossing the other toes; bunions; corns; overriding or superposition of any of the toes to an extreme degree; loss of a great toe; loss of any two toes of the same foot; permanent retraction of the last phalanx of any of the toes, or flexion at a right angle of the first phalanx of a toe upon the second, with ankylosis of the articulation; ingrowing of the nail of the great toe; bad-smelling feet, disqualify.

Dr. Baxter, in his "Report of the Provost Marshal General's Bureau," says that to be cause for rejection varicose veins must be "voluminous and multiplied." There is no doubt of the fact that the judgment of many surgeons is in error as to the degree of varicosity of the veins of the leg which should disqualify, and men have been discarded with veins so slightly enlarged that they could hardly be called varicose. The network of small veins so often seen in the popliteal space, and inside of the thigh, upon men of spare habit, or in those whose occupations have required them to stand a great deal, are not sufficient in degree to cause rejection; nor, indeed, is such the case when a single vein may be more or less enlarged without the function of its valves being impaired. It is only when several veins are very large and tortuous, with failure of their valves, or when there is edema, thickening of the integument, or much ulceration, that they become disqualifications. An exception to this rule should be made in cases in which hemorrhoids are present, when even slightly varicose veins are causes for rejection. One may see occasionally an instance in a very muscular man, where there has been a rupture of the sheath of some muscles in the leg, which closely resembles a varix; if the finger is placed over such a tumor during the contraction of the muscle, its true nature will be apparent. Knock-knees, if existing to such a degree as to interfere with the free use of the limbs, should disqualify; as a general rule, if the inner borders of the feet, from the heel to the ball of the great toe, cannot be brought within one inch of each other without passing the inner condyles of the femur, respectively, in front of and behind each other, the applicant should be rejected. Flatness of the feet to a degree requiring rejection is very seldom met with among applicants for enlistment, notwithstanding the fact that it is supposed to be very common among the laboring population; as a cause for rejection it has been very much exaggerated; the ordinary flatness of foot so often seen, especially among negroes, is not more likely to become a cause of disability in marching than is the more shapely foot, unless an ill-fitting shoe is worn; the anatomical peculiarity which disqualifies has been described by Gorcke, of the Prussian service, substantially as follows: The inner ankle is very prominent, and is placed lower than usual; a hollow exists below the outer ankle of a greater or less extent; the dorsum of the foot is not sufficiently arched; the foot is broader at the ankle than near the toes; the inner side is flat and sometimes convex, and when the foot is placed on the ground the sole projects so much on the inside that the finger cannot be introduced below it; the body rests on the inner side of the sole, and the usual motion of the ankle-joint is impeded.

Bunions, if large and presenting evidences of old or recent inflammation, should always reject; they are a fruitful source of disability on long marches and in hot weather, the pain produced by the pressure of the shoe setting up an irritation which extends to the entire foot. The same may be said of corns when located on the sole

of the foot; those under the head of the metatarsal bone of the great toe are the most painful, and produce lameness sooner than any others; they are, moreover, very intractable. Of the malpositions of the toes, that in which the first phalanx is flexed at right angles upon the second to such an extent that the man walks upon the end of the nail (hammer toe) is the most painful, and will disable more speedily than the others; there is no shoe which can be made that will remedy the defect, and it is in consequence an absolute cause for rejection. In-growing of the nail of the great toe, if deep and accompanied with signs of irritation, inflammation, or suppuration, renders a man unfit for service; if, however, he is very desirable otherwise, the simple operation of shaving away the redundant tissue on the border of the toe, in a majority of instances effectually cures the disease, after which he may be accepted.

The fetid odor exhaled from the feet of some men is such as to make their presence in a squad-room unbearable to their comrades. The excessive perspiration causing this odor keeps the toes and under surface of the feet soft and the skin macerated, for which reason very slight exercise produces painful excoriations and unfits the man for duty. When the feet show evidence of this condition the applicant should be rejected.

In time of war very large varicose veins, club-feet, an excessive knock-knee, loss of great toe, and flexion of the phalanges of the other toes to an extreme degree, should exempt; men having other defects of the feet, if unfit to join the active line, can be made useful in the administrative departments and should be held to service.

Charles R. Greenleaf.

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RECTO-VAGINAL FISTULÆ. See *Vagina, Diseases of.*

RECTUM, MANUAL EXPLORATION OF THE.—In 1872 Professor Simon, of Heidelberg, published in the *Archiv für klin. Chirurgie*, an article "On the Artificial Dilatation of the Anus and Rectum for Exploration and Operation," in which he first described a method of exploring the lower bowel by the introduction of the entire hand. By this method of examination he asserted that not only was he able to explore all of the pelvic organs and to distinguish any pathological changes they might have undergone, but that the greater part of the abdominal cavity could also be reached. He further asserted that this method was so entirely free from danger that he had not hesitated to practise it on patients anæsthetized for other purposes.

Manual exploration of the rectum is now only of historical interest. It is no longer employed, and has been superseded by the no more dangerous and much more wide-reaching and satisfactory method of exploration, viz., by abdominal section. N. P. Dandrige.

RECTUM, SURGERY OF THE. See *Anus and Rectum. (Surgical.)*