THE MANUALS OF PHYSICAL TRAINING IN GERMANY, AUSTRIA AND GREAT BRITAIN.

By Captain J. A. Balck, Royal Army Medical Corps.

This paper is the fruit of the suggestion made to me some time ago by Lieutenant-Colonel Melville that a comparison of the methods of physical training in use in the armies of various countries might be of interest. While I may claim a fair personal knowledge of the British system, my knowledge of the others is derived from a perusal of their manuals only. I have, however, made use of my position at the Curragh to supplement this to a certain extent by getting some of the exercises, which appeared to me to be of special interest, carried out practically by squads in their last week of training. This applies especially to "free" exercises and to parts of the obstacle training.

The German Manual.

This is in its spirit perhaps furthest removed from our own. It savours more of the drill hall than of the open field and its exercises show neither the practical application of the Austrian nor the reasoned analysis of our own.

It may be of interest to advert first to the system of training. It is purely regimental. On first joining the recruit is put through a few preliminary exercises and then when out of the recruit stage he joins the lowest class formed from the trained soldiers. In this he will remain until in the judgment of his Company officer he is fit to be promoted to a higher one and so on. It will be seen that the training is progressive during the whole of a man's service instead of being as with us practically concluded during the first six months. The difference is probably due to the different conditions of service. The German recruit usually joins at 20, and is more or less a made man and able to bear the fatigues incidental to military life. With the British soldier of 18 the first consideration is to make him "fit," and there is no good putting much work on him until he is.

The book is divided into five sections: (1) Free gymnastics; (2) exercises with rifles; (3) exercises with apparatus; (4) applied gymnastics; (5) description of apparatus.

Of the free exercises the manual says that they loosen the joints,
widen the chest, teach a man how to hold himself and produce co-ordination, and should be practised throughout the course.

After this one would expect to find the movements both varied and excellent. They are neither. The majority are common to all manuals; this is not in itself a fault, but the methods taught appear to me distinctly inferior to those found elsewhere. For instance take No. 20 “arms bend.” Instead of the arms being brought well back they are kept pressed close in to the sides and the forearms are brought straight up in front of the upper arms. One need only try the two positions to feel how the one opens out the chest, the other cramps it. Take also the method (No 83) of balancing on a beam taught in the German Army. The arms are flexed to a right angle at the elbow, the wrists dropped, and the knees also flexed. Our own seems infinitely preferable. There are, however, three exercises in this part of the book which in our own appear wanting. These are Nos. 22, 28 and 31. In the first the arms are extended sideways and then slowly rotated at the shoulder joint. The second is “leg raising forwards and sideways” but with a kick instead of slowly. The third is “knee raising and rotating the foot at the ankle joint.”

Of the next two sections “exercises with rifles,” and “exercises with apparatus,” I need say little. The former are in our Army largely practised during musketry training, the latter are simply all the old exercises at parallel and horizontal bars with which we were familiar in pre-Swedish days.

Then follows “applied gymnastics,” which with a description of the various gymnastic apparatus concludes the book. The course of applied gymnastics consists in training men to surmount the usual obstacles and contains nothing noteworthy. What is, however, I think of importance is that it is distinctly laid down that all the exercises in this section should be done not only in gymnastic kit but with gradually increasing loads, until the soldier carries his full war equipment. This appears a most important point and one to which I shall revert later.


The methods in use in the Austrian Army may perhaps be described as intermediate between those in use in the German and the British. While its apparatus is still that of the old school it includes in its “free” exercises many which are characteristically its own, and most of which are, I think, distinctly valuable. Its methods of obstacle training also are distinctly superior to those
of the German School, and some might to my mind be adopted with advantage in our own Army.

The preface contains a noteworthy summary of the practical character of the book. "The object of physical training is to teach men to pass such obstacles as they may meet in the field, and to enable them to do this with ease, in good order, and without undue expenditure of time and energy." The idea of physical training for the soldier could not be put more concisely, or in plainer words. One other remark I must quote from the preface. After explaining how an instructor should demonstrate a new exercise it goes on to say, "and then each member of the squad will go through the exercise separately until he knows it, and only then will several men be allowed to do it at once." It is evident that the Austrians also have suffered from that trouble which so persistently affects us, of instructors keeping a whole class in a constrained position while they are correcting one man. They have taken radical means to stop it. I am not certain whether we shall not be driven to similar measures. The loss of time is probably more apparent than real, as careful preliminary explanation saves many corrections afterwards.

The manual itself is divided into five sections: (1) Free gymnastics; (2) exercises with apparatus; (3) applied gymnastics; (4) bayonet fighting; (5) swimming; of these the two last are peculiar to it.

That swimming is not taught in our Army is, I think, to be regretted. Physically it is, I suppose, one of the finest exercises known, its utility is undoubted, and its cleansing value not to be disregarded. Personally I should like to see a swimming-bath attached to every gymnasium, but that is, I suppose, a counsel of perfection and not likely to be realized. Still it might be done at some of the larger ones (with shower baths at the smaller ones) and wherever possible I think swimming should be officially taught to the soldier.

Bayonet fighting is of course taught elsewhere in the British Army, and is a subject on which I am not qualified to speak. The same holds good for the "rifle exercises."

Of the "free" exercises I will only mention those which are not found in our own or in the German manual. Of these the first is "grätschen"—i.e., separating your legs as far as possible with a spring, and then bringing them together with another spring. It does not appear to be specially valuable. The next one "anfersen"—trying to kick one's own buttock—is a powerful exercise for the
hamstrings. Distinctly good is No. 28, which consists in swinging the lower limb from the hip joint forwards, inwards, backwards, and outwards, keeping the knee stiff. The British manual has the same exercise done in sections, raising the leg alternately forwards, sideways and backwards, but the Austrian complete circle is much more powerful, and I think a decided improvement. The only other exercise I need mention is No. 35, which is circling the arms with closed fists from above the head downwards, backwards, and upwards, and which appears valuable. The “free” exercises are concluded by a series of “combined” movements, the details of which are apparently left to instructors, a few examples only being given as guides. This method of leaving a certain amount to the initiative of the instructors appears on the whole good. It must develop in them an intelligent appreciation of their work, and for the men avoid the monotony which is apt to be marked in the senior classes. But this method also requires some safeguards. While the instructor should be encouraged to think out new exercises he should also be required to submit them for approval to the medical officer and superintendent of the gymnasium before executing them.

The exercises with apparatus are simply those of the old physical drill and call for no comment. They include, however, “pole jumping,” which I think it is a pity we do not practise.

Of the applied gymnastics there are several which are worthy of note. They seemed so good that I tried them practically with a class and confirmed my previous opinion. The first is “passing on the beam.” Two men on the beam meet each other coming from opposite directions. The first lies down across the beam, legs on one side, trunk and arms the other. The second man simply steps over him and both continue on their way. The second man simply steps over him and both continue on their way. The exercise is simple and practical, but requires a little practice. The next is “getting over a six-foot wall without assistance.” Lean your rifle against the wall, pull yourself up and get astride the wall. Then hook the knee into the top of the wall, lean down until you can grasp the rifle, sit up and drop down the far side. Next “getting over a ten-foot wall with assistance.” Three men run forward and place their rifles against the wall. The centre man is grasped just above the ankles by the other two and raised until he can grasp the top of the wall and pull himself up. He gets astride the wall. Of the remaining two one man kneels down, the other gets on his shoulders, the kneeling man rises up and thus lifts his companion level with the top of the wall. He gets astride facing the first man.
Rifles are passed up and the third man grasping one held by each of his companions also reaches the top. Finally, "getting over a fifteen-foot wall," six men form a pyramid and thus get one of their number to the top. A rope is thrown up to him and while the rope is held this side he shins down the far side. Then he holds the rope on the far side while the next man gets up it on this side, and a continual procession thus results, the man going down balancing the man going up. Finally the rope is used to pass over any packs which may have been taken off, and the last man either drops down the far side, or is assisted down by renewed formation of the pyramid.

In concluding my remarks on the Austrian manual I may say that it is characterized by excellent illustrations superior both to the German and our own.

The British Manual.

The principles governing this manual have in a previous number of this Journal¹ been so excellently described by Lieutenant A. S. Amy, and are now so well known that there is little need for me to do more than to emphasize the differences between it and the two we have just considered, and to point out a direction in which it might possibly be amplified.

The first difference is one of internal arrangement. While hitherto we have seen manuals basing their classification on the question whether the exercises are being done with apparatus or without, the British manual is arranged on a purely anatomical basis. Arm exercises follow leg, dorsal follow abdominal, and so on. The difference is a fundamental one. It shows for the first time an attempt to classify an exercise not as a mere tour de force or feat of agility, but to dissect it into its component parts, and to realize definitely what muscles are affected by it and what untouched. This is a great advance on previous ideas. From it must follow that for a harmonious development of the human body a series of exercises is necessary, each bearing its share and filling up the gaps left by the previous ones until the whole frame has received its share of attention. And so in fact we find it. A series of tables has been arranged, each containing its due proportion of exercises, so that when completed the body will as a whole have made a step forward on the road of development.

¹ The Journal of the Royal Army Medical Corps, vol. x, p. 474.
The value of the tables is not exhausted by this. The alternation of exercises is such that as far as possible the same muscles do not come into play in two successive groups and feats of strength and feats of agility mutually relieve each other. Finally, the definite place allotted to introductory and final exercises mark the recognition of the physiological need of gradually working up to a pitch and also gradually coming down from it.

Yet with all these excellencies one may find some defects. The first is a trivial one. I would like to see the somewhat meaningless words "span bending" replaced by what I gather it is meant to represent, "spine bending." Other possible improvements have already been alluded to; instruction in swimming whenever possible, and while keeping the general framework unaltered, some latitude to instructors to exercise their ingenuity in the invention of exercises.

More radical are the following suggestions I would make. The whole object of the "obstacle training" is presumably to enable a man to surmount these obstacles in war. To enable him to do so he should be trained in peace with the same load that he carries in war, but our gymnastic course takes him no further than doing it in gymnastic kit. It may be said that if the method is taught that will suffice. I do not think so. I took some squads which had completed their course of training and could go over the obstacle course with ease and put them over the same course in full marching order. It was almost ludicrous to see them boggle over low jumps and vaults and fail to surmount walls which in gymnasium kit they got over with the greatest ease. I then took some other squads and trained them over the course gradually, first in boots and coats, then with packs and gradually with full war loads. At the end of the week they got over the course when fully loaded as well as they did beforehand in gymnastic kit. But it was evident that training in this as in all other things was necessary. I should like to see added to the list a fourteenth table, giving this training and including also running for short distances when fully loaded.

This brings me to my last point. Running is at present done under regimental arrangements. I am somewhat doubtful whether this is the best possible arrangement. I have several times found men with doubtful hearts whom I had carefully shielded from all ill in the gymnasium being taken out for long runs regimentally with the result that their improvement was not as rapid as I had hoped. Running, properly taken, is, I suppose, as good an exercise
as you can get for the lungs and the heart: improperly taken it will probably do more harm than the book of physical exercises. And yet it is the one exercise at which a medical officer is not present to watch the recruit when he comes in, and it is the one exercise at which a recruit from a spirit of emulation is most likely to overstrain himself. Both Germans and Austrians include running in their curriculum at the gymnasiun. It would, I think, be an advantage if we did the same.

AUTHORITIES.


NOTE BY LIEUT.-COLONEL C. H. MELVILLE, R.A.M.C.

Since the above paper was written a new issue of the German Turnvorschrift für die Infanterie has appeared, and I have therefore thought it advisable to add a short appendix to Captain Balck’s paper pointing out the principal changes. These indicate to a certain extent the change of feeling in respect to physical training in the German Army, and possess therefore a distinct value.

The classification of exercises is slightly different and now runs as follows: (1) Free exercises and exercises with rifles; (2) exercises with apparatus; (3) exercises in applied gymnastics; (4) running and games. This last is a completely new section.

In the introductory remarks a new recommendation is made referring to the early introduction of applied gymnastics, and games, in the recruits’ course. The following, which is also new, seems worthy of note. “Sprinting and long distance running should be frequently practised with a view to improving the wind.” Instead of the old division of the trained soldiers into three classes, the recruits being kept separate, all men including recruits are now formed into two classes only. The promotion of a man from the lower to the upper class rests with the company commander. A suggestive new paragraph is inserted towards the end of these preliminary remarks pointing out that the effects of a good system of physical training will show themselves by an improved carriage of the body, both on and off duty, a power to undertake successfully severe exertions on the march and in manoeuvres, and to overcome artificial and natural obstacles.

Coming next to the “free gymnastics” we find that there is little change in the exercises without word of command. On the other
hand the exercises by word of command are ruthlessly excised. The head and arm movements are reduced to two each, viz. (I give the corresponding English, or rather Swedo-English names) "head bending backward and forward," and "head turning"; with "hips firm," "arms outwards, sideways, and downward stretch," which includes "arm bend." This is the exercise rather objected to by Captain Balck, on account of the faulty position of the elbows. Exercise 22 of the old manual, which Captain Balck favours, is abolished, which certainly seems a mistake, as it is an excellent movement for suppling the tissues in the vicinity of the shoulder. "Arms upwards stretch" is also omitted. These two exercises represent nineteen different movements in our book. Coming next to trunk movements we find only "trunk forwards and backwards bend." Two old exercises ("trunk sideways bend," and "trunk twisting") neither of which is in our book, are omitted. Leg movements are limited to "knee bending" and "foot sideways place" in which the foot is kicked smartly outwards. This is the exercise No. 28 of the old manual praised by Captain Balck. Four exercises in all are excised here. "On the heels raise" is also retained. The standing jump, and the standing jump with one foot advanced, close the list of "free gymnastics without word of command." These occupy eight pages of the new manual as against fifteen in the 1895 edition. They are represented in our manual by groups A, B, C, and D (38 pages), part of Group E, say, 15 pages, Group G, H, and I, 44 pages, and part of Group K, and all Group L. It may in short be stated that this part of the German manual indicates a tendency to limit the exercises in the gymnasium to those that are likely to be of use to a man afterwards, and to such as are necessary to render supple joints not in general use amongst inactive young men. This is probably a result of the training being entirely regimental and perhaps also to a deficiency of instructors. The great drawback to all free gymnastics is that in a large class a man can go through all the movements ordered without turning a hair, and often without even contracting properly any muscle.

Coming next to the "exercises with rifles" the first change is in the preparatory position, in which the rifle is held in both hands horizontally across the body with the arms at full length, instead of, as previously, flexed at the elbow. This seems a sensible alteration. The exercises with both arms are simplified and it is evidently intended that too much time should not be spent on these, as the extra positions recommended with a view to rendering the move-
ments more exacting are reduced from five to one. The same tendency is evident in the exercises with one arm only. The movements are much the same, but several that were previously done by word of command are now done "taking your own time." These exercises with the rifle are designed apparently to enable the soldier to handle his fire-arm with ease and, if the expression may be allowed, familiarity, and to do away with the stiffness inherent in pure aiming drill.

The portion of the manual devoted to "exercises with apparatus" is reduced from 41 pages to 24, and though this is partly due to the fact that the men are now divided into two classes only instead of four, the change is not without considerable significance. The apparatus is limited to an adjustable horizontal bar, about 2 in. thick, and 3 to 4 in. in vertical measurement, a jumping stand with a weighted string to mark the height jumped, a horse, and a climbing frame with vertical and sloped ladders, ropes, and poles. The work on the horizontal bar seems to me still far too much on acrobatic lines, and might well be cut down to one half. Pulling up, mounting on the bar, and jumping off it are all useful exercises as they are just the class of movement which a soldier might have to perform on active service, but circling might well have followed some of the other obsolete exercises. The same beam is used for vaulting. The horse does not appear but was added in 1897 in the 1895 manual. The exercises are simple and "splits" are apparently not practised.

The applied gymnastics begin with balance movements on the beam, which are limited apparently to walking, and movement in a "riding" position. A new exercise is that of creeping under an obstacle (Kriechen) which it is recommended should be practised under obstacles of varying breadth, both forwards and backwards, and also in heavy marching order. This is followed by jumping with and without arms over the jumping rope, hurdles, hedges, &c. Climbing over a ten to thirteen-foot wall is given a good deal of attention, and various methods with and without ladders and ropes are described. The whole of this part is most useful. The most important change, however, is at the end of the manual, namely the section on games. The most interesting are a game closely resembling prisoners' base, hand ball, and football on Association lines. In this last the game is played with eleven a-side, divided into a back, two half backs, three-quarter backs and five forwards. It is interesting to note that we who as a nation have always prided ourselves on getting our physical training out of
our games, should now be turning to formal exercises for that purpose whilst the leading military nation on the Continent is showing a distinctly opposite trend. There is not the slightest doubt in my mind that this new German manual shows a distinct advance in the right direction. We were undoubtedly right to leave our old gymnastic system which tended so strongly to the acrobatic side, but the danger of the Swedish system is that it is apt to lead to mere meaningless posturing. The illustrations in the German manual are a weak point, as they are in our own. One on p. 60 of the former, showing a man lying upon a roof, and supposed to be in a position to help a comrade up with a rope, is sufficient to make one giddy to look at. The Austrian Manual is illustrated with reproductions from photographs and is infinitely more instructive in consequence.