Discipline on the Parade-Ground.

IN these days of lose formations there is a great tendency to consider that the stricter forms of discipline are no longer absolutely necessary, even rather that they are a superfluity. We are glad, therefore, to find an officer not only insisting upon their importance, but also giving a well-reasoned argument, treated from a somewhat novel point of view, to prove the uses and effects of discipline.

Every single individual soldier is (Lieut. Stewart Murray, 1st battalion Gordon Highlanders, observes in a recent *brochure**) an important item in the pell mell of a modern European battle-field, upon whose conduct at critical moments and the example he sets to his comrades around him, weighty results may depend.

In considering any question where human nature is concerned, it is necessary first to get a clear grasp of the ideal theory on which its reason is based; secondly, to make the necessary allowance for human nature; and thirdly, to lay down the limit beyond which any further deviation from theory becomes detrimental, and which, therefore, must not be over-stepped.

In considering the subject of discipline on the parade-ground we must accordingly begin by stating the ideal theory thereof, so as to get to the bottom of the matter as much as possible.

Discipline aims at producing in every single individual the habit by which his very muscles instinctively obey the word of command. Instinctive obedience may be defined as the habit by which the brain, on receiving a command through the sensory nerve of hearing, instantly, without any consideration or opposition, sends it along the motor nerves to the muscles.

The theoretical bases of instinctive obedience are as follows:—The act of obedience to an order is divided into three periods: (1) The time taken by the nerve impulse travel ing along the sensory nerve of hearing to the brain. (2) The central period, or time taken by the brain considering the sensation and deciding what to do. (Thought). (3) The time taken by the nerve impulse traversing the motor nerves from the brain to the muscles.

Of these, (1) and (3) are measurable, while (2) is indefinite. The time taken by (1) and (3) is so small as to be practically of no account, yet to make the theory clear, it is as well to put it down. Nerve impulse travels along the sensory nerves at the rate of 140 feet a second, along the motor nerves at the rate of 110 feet a second. Now the nerve of hearing is about four inches long, so it takes an order, travel ing at the rate of 140 feet a second, only ·0024 of a second to arrive a the brain. In a man 5 feet 10 inches high it takes an order, at the rate of 110 feet a second, ·054 of a second to travel from his brain to his feet. Therefore, the total time taken by an order travelling along the sensory and motor nerves to the muscles is ·0564 of a second, or, roughly, one-twentieth of a second. To this, however, must be added the indefinite central period. And here comes in the personal equation. The central period is longer than the other two; even in the instantaneous process of blinking the eye, it takes ·0555 of a second. So the utmost possible rapidity with which an order to march can be carried out by a man 5 feet 10 inches high is:—

Reaction Period.
(1) ·0024 of a second.
(2) ·0555 of a second.
(3) ·044 of a second.

Total ·1119, or a little more than one-tenth of a second.

Foster, in his book on Physiology, states: "Roughly speaking, reaction periods for auditory nerves may be put at one-sixth of a second." Also: "Practice materially shortens the reaction period, and after long practice the process takes on more of the character of a reflex (involuntary) act, with a corresponding shortening of the interval." For purposes of this theory, however, it is sufficient to take the rough average for the three periods together as one sixth of a second; remembering that by constant practice the central period can be so shortened as to make the act almost instantaneous and involuntary.

When the soldier accordingly carries out an order to march or to turn one-sixth of a second after hearing the word of command, he is carrying it out with the utmost possible rapidity. Until he does so, he has not yet completely acquired the habit of instinctive obedience, as it is manifest that some delay or opposition must be taking place before his brain passes on the order to his muscles. Therefore, in order that the muscles may be perfectly trained in the habit of instinctive obedience, no time should be allowed between the word of command and its execution beyond the one-sixth of a second required for the order to pass from the soldier's ear through his brain to his muscles. Such is the ideal theory of instinctive automatic obedience.

As, however, our material consists of a mass of men differing widely in character and capabilities, we cannot, of course, expect to obtain this instantaneous complete theoretical obedience. Nevertheless, it has been shown by experience that, after making all necessary allowance for the imperfection of our material, we can go very near towards attaining the desired result if the regulations of discipline are thoroughly and consistently carried out. This is the reason that it is laid down in the Infantry Drill that "great precision is to be inculcated;" this is the reason that the greatest possible smartness in the execution of every command is insisted upon by strict discipline. It is insisted on, not because the motion will look better, some appeal to think, but because the idea which underlies all smartness in the execution of orders is to train the soldier to that habit of instantaneous instinctive obedience which may prove his salvation in the pell-mell of battle. Therefore, the greatest possible smartness and strictness at drill is most valuable as education in instinctive obedience, and is the best preparation for victory; on the other hand, slackness in discipline and drill does not educate the soldier's muscles to instinctive obedience, and can accordingly only be a preparation for defeat on a European battle-field.

If the subject be considered from this point of view, the necessity for the greatest possible smartness in the performance of every motion must be apparent to the intelligence of every non commissioned officer and private soldier. Those who have thus grasped this necessity should explain it to their less intelligent comrades, so that every single individual soldier, without exception, may thoroughly understand it and try to carry it out on all occasions.

The chief muscles which can be thus trained are those of the legs, feet, and arms; or, in other words, the muscles of marching, turning, and handling the rifle Therefore, in these three particulars, the greatest possible smartness should be insisted on as regards every single individual soldier without exception, always and everywhere. Those soldiers who at first are slow and awkward should be practised again and again till, in these three muscular movements, they have attained the same level of excellence as the rest of their comrades.

As an example of how the exact and perfect performance of these motions is an exercise in the habit of instinctive muscular obedience, let us take one of them and consider it in its relation to such exercise. Let us take for example the muscular movement in marching There is, as every soldier knows, a great difference between marching at "Attention" and marching "At Ease." The former is intended partly as an exercise in muscular obedience, partly to train the muscles of the soldier's legs to endure fatigue, and to teach him to take pace of a proper length; while the latter is used when it is desired to get over the ground without fatiguing the marching muscles. Two different muscular movements are therefore used, according as the soldier is marching at "Attention" or "At Ease." When the soldier is marching at "Attention" he is meant to carry out the muscular movement which he has been previously taught by the "Balance Step" On the word "Quick-March," "the left foot is to be carried smartly to the front, the knee being straightened as the foot is carried forward;" it is then to "be placed firmly on the ground, 30 inches distance from heel to heel." This is, undoubtedly, a constrained position; it is not the position in which a man naturally walks; but it is for this very reason that it is an exercise in constant muscular obedience of the legs, and in teaching the muscles to endure fatigue. This is one of the chief reasons that it is ordered in the Infantry Drill. When it is required to march in an easy, unconstrained position, the sol-